State of Maine

Department of

Environmental Protection

2006 Integrated Water Quality Monitoring and Assessment Report

Document Number: DEPLW0817

Table of Contents

Index of Figures

Index of Tables

Notice to Readers: Anti-SPAM Measure

It is no secret that recent trends in junk e-mail (a.k.a. SPAM) indicate that these nuisance solicitations are finding their way into e-mail accounts with ever increasing frequency. Studies indicate that one of the leading ways spammers obtain legitimate e-mail addresses is through the use of "spam-bots", which are specialized computer programs that automatically search, ferret out, harvest and amass e-mail addresses from web pages and other documents that are posted online (just like this report). Once a valid e-mail address has been located, generally it will be added to a spammer's list and/or sold to other spammers, which is sure to dramatically increase the amount of spam received by that e-mail address.

With this report, a measure has been taken to help protect those individuals whose e-mail addresses are listed inside from having their legitimate e-mail addresses discovered and automatically spammed. Basically, the text "SPAM-ZAP" (without quotation marks) will be inserted directly after the "@" symbol in each e-mail address found in this report – an example of this format follows: steve.harmon@SPAM-ZAPmaine.gov. Inserting this "SPAM-ZAP" text creates a bogus e-mail address that will cause any automatically generated SPAM e-mail to be sent to the bogus, invalid address instead of to the real e-mail address. Ultimately, any e-mail messages that are sent to that bogus address will not make it through to the intended recipient – this is true of both legitimate messages as well as SPAM.

Instructions for readers who wish to e-mail a contributor to this report:

1) Click on the desired e-mail address or copy the address into a new message inside your e-mail client.

2) Remove the capitalized words "SPAM-ZAP" (there will be no quotation marks) from the e-mail address.

3) Write your message and send it out as you normally would.

Thank you for your understanding of this issue and for your willingness to work with any minor inconveniences associated with our use of this anti-spam method. We hope that readers will support our efforts towards eliminating this document as an inadvertent source of e-mail addresses that could be used by spammers, while still providing a means by which to contact individual contributors to this report.

Sincerely,

Steve Harmon

Chapter 1 PREFACE

Contact: Steve Harmon, DEP BLWQ, Division of Environmental Assessment (DEA)

Tel: (207) 287-4971 email: Steve.Harmon@SPAM-ZAPmaine.gov

The following report is submitted to simultaneously fulfill requirements of the Clean Water Act (CWA) particularly the Section 305(b) Report, Section 303(d) List, and information requested under Section 314, and, also to serve as a biennial report to the Maine Legislature as required under 38 MRSA Section 464.3.A. The Maine Department of Environmental Protection (DEP) assembles these reports with input from many sources and recognizes that the Section 305(b) Report and Section 303(d) List are important ways of regularly communicating information on the health, current status and trends of the State's waters.

Prior versions of the 305(b) Report and 303(d) List (compiled and published before 2002) were submitted as separate documents. For 2002 and 2004, the DEP utilized the "Integrated Report" format (i.e., combined 305(b) report and 303(d) list) that is recommended by the Environmental Protection Agency. The 2004 Integrated Report also included many updated narrative sections that were similar to those found in pre-2002 305(b) Reports. Combining these two elements caused the 2004 report and appendices to balloon up to over 350 pages. So, while the 2006 Report will maintain the format introduced in 2004, the narrative focus is shifting away from "boiler plate" program descriptions (website links are provided where possible to guide interested readers to additional program information) in order to reduce the size of future reports. Instead of describing programs, the 2006 Report is refocusing to better highlight the environmental results that these programs have achieved or new programs / program initiatives that developed during the current reporting cycle.

Specifically, this 2006 Integrated Report provides:

- Delineation of water quality assessment units (AUs), identified by their 10-digit HUC (Hydrologic Unit Code) followed by a waterbody-specific code (Appendices II-IV);
- Water quality attainment status for every Assessment Unit (Appendices II-IV);
- Progress toward achieving comprehensive assessment of all waters (Chapter 4),
- Basis for the water quality standard attainment determinations for each Assessment Unit (Chapter 4 and Appendices);
- Schedules for additional monitoring planned for certain Assessment Units (Appendices II-IV);
- Identification of Assessment Units requiring Total Maximum Daily Load (TMDL) determinations and a schedule (priority) for those waters (Chapter 8 and Appendices II-IV);
- An updated narrative on many of the state's water-related programs areas. The narrative includes a consolidated public health section along with many revised descriptions (e.g. the state atlas, watershed management for stormwater programs and landfills) (Chapter 3-9);
- New sections on wetland program coordination, red tide, and the DEPs Environmental Information Management Systems, among others (Chapter 5 and 9);

As in 2002 and 2004, an important feature of this report is the continued utilization of the five main assessment categories that were first established in the 2002 report (see Section 4-1 on listing methods for details). These assessment categories required attainment determinations that were different from previous reports and thus may not be readily comparable to pre-2002 reports. In particular, impaired waters that were previously combined into a single 303d list are now separated into a number of lists and sub-lists under categories 4 and 5 in the 2002 through 2006 integrated reports. Although a few of the sub-categories have changed slightly, it is still the case that only those waters that are currently listed under category 5 will require development and submission of Total Maximum Daily Load (TMDL) assessment reports.

The 2006 Integrated Report, for the first time, presents State of Maine water quality assessment summaries for rivers and streams that have been generated by the Assessment Database (ADB). ADB is public domain software developed by EPA to improve states' ability to track and document water quality assessment results. Maine lakes data has also been uploaded to ADB. The river and stream mile summaries presented in Chapter 4, Section 4-3 in this report are not directly comparable to those presented in the 2004 report because of differences in methods of tracking and summing assessment categories between ADB and the system Maine has used in the past. DEP expects this problem to improve in future reporting cycles because of the tracking consistency provided by ADB. Because ADB is a fully integrated, relational database, DEP will be better able to document complex monitoring information and assessment decisions and ADB automates EPA's process of reporting on national water quality status and trends in their National Assessment Database (NAD).

The ADB contains information on assessment unit and segment descriptions (dimensions, designated uses, attainment status etc.), assessment date, monitoring dates, types of information used in the assessment, and if use impairment is determined, the probable causes and sources. ADB also provides ample room for documenting noteworthy monitoring results and the rationale for assessment decisions.

Additional issues with the ongoing conversion to the ADB and efforts to improve DEP's ability to map results stem from the adoption of Assessment Units based on the 10 digit HUC, and a general transition to higher quality data with better spatial resolution (e.g. the 1:24,000 scale NHD). This results in an apparent instability seen in the totals of assessed waters from report to report. An example of this phenomenon is that river and stream mile totals used in this report (31,227) deviates slightly from those used in previous reports (31,199 miles in 2004, 31,171 miles in 2002 and 31,672 miles in 2000 and before). In addition to changes in the total numbers of assessed miles, some individual segment lengths have also changed slightly based on the improved coverage. Another example of slightly shifting totals for assessed waters would be the numbers of lakes and lake acres. Changes to these lake figures are contained in this report (e.g. 5,784 currently vs. 5,782 in 2004 and 5,785 assessed lakes in 2002). Staff in the DEP Lakes Unit expects to see additional refinements in the 2008 report, as the Department completes its migration from a purely tabular database into a spatially oriented database via updated GIS layers. These new GIS datasets will allow for improved management of both locational information and morphometric data, and should greatly assist in stabilizing lake-related spatial calculations.

Current guidance for the Integrated Report does not require that the State provide information on ground water or wetland resources, as has been the case in previous years. However, Maine has included information on assessment of these resources for many years in previous reports using the 1998 305b guidance document (see Chapters V and VI). Updates on progress made towards developing improved assessments of these resources have been included wherever available.

DATA SOURCES AND ACKNOWLEDGEMENTS

SOURCES OF RIVER AND STREAM ASSESSMENT DATA

The Department generates much of the data for the assessment through the various monitoring programs it conducts, notably the Biomonitoring Program, Surface Water Ambient Toxics Monitoring Program, the Dioxin Monitoring Program, and the Atlantic Salmon Recovery Plan. Additionally, data is provided from a variety of professional and volunteer monitoring groups. These include other state agencies and resources (Department of Inland Fisheries and Wildlife, Atlantic Salmon Commission, Department of Health and Human Services, University of Maine System), federal agencies (U.S. Environmental Protection Agency, U.S. Geological Survey, National Park Service), other governmental agencies (Saco River Corridor Commission, St. Croix International Waterway Commission), tribes (Penobscot Indian Nation, Houlton Band of Maliseets) and a number of volunteer watershed groups / conservation organizations that are working cooperatively with DEP staff and that employ approved monitoring practices (Watershed councils of the Dennys, East Machias, Machias, Pleasant, Narraguagus, Ducktrap and Sheepscot Rivers, Presumpscot River Watch, Royal River Conservation Trust, Sheepscot Valley Conservation Association, The Nature Conservancy).

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 Maine Volunteer Lakes Monitoring Program (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, St. Croix International Waterway Commission, Allagash Wilderness Waterway, Penobscot Indian Nation, Portland Water District, Auburn Water District, Acadia National Park, and Rangeley Lakes Heritage Trust. Data has also been acquired from private consultants (such as Lake and Watershed Resource Management Assoc., Biodiversity Research Institute, Florida Power and Light as part of regulatory requirements) and water utilities that belong to the Maine Water Utility Association. Additional data is acquired through the Maine Department of Inland Fisheries & Wildlife (DIF&W) and through cooperative projects with the University of Maine System, Colby College, Unity College, Soil and Water Conservation Districts and similar entities. Future lake assessments will include evaluation of 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.

SOURCES OF MARINE ASSESSMENT DATA

The Maine Department of Environmental Protection (DEP), the Department of Marine Resources (DMR), the Casco Bay Estuary Project (CBEP) and a variety of volunteer monitoring groups monitor Maine's coastal waters. DMR monitors for indicators of human pathogens (fecal coliforms) and biotoxins (Paralytic Shellfish Poisoning). The purpose of the DMR monitoring is to protect human health by managing shellfish harvest areas. DEP monitors toxic contaminants in tissues and assesses water quality using data collected by DEP, especially the Surface Water Ambient Toxics program, and others. DEP participates in the Gulf of Maine Council's Gulfwatch

Project that surveys toxic contamination in mussel tissue in the Gulf of Maine. Friends of Casco Bay monitors water quality in Casco Bay. The Casco Bay Estuary Project (CBEP), funded by EPA's National Estuary Program, also monitors and supports monitoring in Casco Bay and coordinates the National Coastal Assessment for the entire Maine coast.

Chapter 2 EXECUTIVE SUMMARY AND RESPONSE TO COMMENTS

EXECUTIVE SUMMARY

SURFACE WATERS

This report continues to base assessments of streams & rivers, lakes & ponds, and marine & estuarine waters on the five main listing categories that were initially established for these waters in the 2002 305b 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) report.

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

Section 4-1 on Assessment Methodology contains more detailed information on the listing categories and sub-categories.

Because waters in these new assessment categories were determined based on attainment requirements that are different from pre-2002 305b Reports, they cannot be readily compared to results from those earlier reports. However, the results from the 2002 through 2006 reports can be compared directly in order to observe changes in the amounts of waters in each category. This information is displayed in Table 2-1.

Table 2-1 indicates that there has not been a dramatic change over this reporting period for rivers and streams. This period saw some gains in category 3 and 4 waters along with a slight increase in the number of miles of rivers / streams in category 5, the category that documents impairments requiring a TMDL. This table also reveals that the lakes and ponds of Maine were relatively stable (as a percent of total assessed waters) with respect to their listing categories during the 2004 to 2006 time frame. This period saw reductions in categories 3, 4 and 5 and an increase in category 2 waters. In some cases waters moved into category 2 have actually improved; in other cases, acquisition of additional data confirmed attainment of designated uses. .

Reporting of marine and estuarine waters showed less change than the 2002 – 2004 reporting period. The changes at that time were due in large part to more thorough and extensive data reporting from the Department of Marine Resources (DMR). The changes in 2006 are principally related to changes in clam flat classifications by DMR. Clam flat closures may be related to changes in water quality due to runoff, development, failing septic systems, boating, wildlife and domestic animal wastes, etc.

Overall, this table reinforces the idea that monitoring of these marine waters shows large areas of attainment. However, there was a slight increase in category 5 because of clam flat closures. Once closed it takes significant resources to attain better water quality and reopen these areas.

Table 2-1 Summary of Changes to Surface Water Assessment Categories – 2004 to 2006

Rivers and Streams						
31,199= Total Miles Assessed in 2004						
31,229=Total Miles Assessed in 2006						
	2004 Miles in Category	**% of Total 2004 Assessed Miles**	**2006 Miles in Category**	**% of Total 2006 Assessed Miles**	**% Change '04 - '06**	**Change in Miles '04 - '06**
Category 1	4,328	13.87	4,338	13.89	+0.02	+10
Category 2	25,414	81.46	25,380	81.31	-0.15	-34
Category 3	269	0.86	297	0.95	+0.09	+27
Category 4	440	1.41	468	1.5	+0.1	+28
Category 5	737	2.36	746	2.4	+0.04	+9
Lakes						
987,172 = Total Acres Assessed in 2004						
986,952 = Total Acres Assessed in 2006 **						
	2004 Acres in Category	**% of Total 2004 Assessed Acres**	**2006 Acres in Category**	**% of Total 2006 Assessed Acres**	**% Change '06-'04**	**Change in Acres '06-'04**
Category 1	285,023	28.87	295,443	29.94	1.06	10,420
Category 2 *	569,518	57.69	596,065	60.40	2.70	26,547
Category 3	26,788	2.71	18,164	1.84	-0.87	-8,624
Category 4	86,936	8.81	72,288	7.32	-1.49	-14,648
Category 5	18,885	1.91	4,970	0.50	-1.41	-13,915
Marine Waters (Acres)						
1,821,433.6 = Total Acres Assessed in 2004						
1,821,433.6 = Total Acres Assessed in 2006						
	2004 Acres in Category	**% of Total 2004 Assessed Acres**	**2006 Acres in Category**	**% of Total 2006 Assessed Acres**	**% Change '06 - '04**	**Change in Acres '06 - '04**
Category 1	0.00	0.00	0.00	0.00	0.00	0.00
Category 2	1,722,079.30	94.55	1,718,509.09	94.35	-0.20	-3,570.21
Category 3	3,986.00	0.22	2,835.00	0.16	-0.06	-1,151.00
Category 4	697.00	0.04	0.00	0.00	-0.04	-697.00
Category 5	94,671.30	5.20	100,089.50	5.50	0.30	5,418.20
Marine Waters (Square Miles)						
2,846.0 = Total Square Miles Assessed in 2004						
2,846.0 = Total Square Miles Assessed in 2006						
	2004 Square Miles in Category	**% of Total 2004 Assessed Square Miles**	**2006 Square Miles in Category**	**% of Total 2006 Assessed Square Miles**	**% Change '04 - '02**	**Change in Square Miles '06 - '04**
Category 1	0.00	0.00	0.00	0.00	0.00	0.00
Category 2	2,690.75	94.55	2685.17	94.35	-0.20	-5.58
Category 3	6.23	0.22	4.43	0.16	-0.06	-1.80
Category 4	1.09	0.04	0.00	0.00	-0.04	-1.09
Category 5	147.92	5.20	156.39	5.50	0.30	8.47

** Loss of 216 acres due to disintegration of the Sherman Pond Dam and return of that area to a tidal environment.
* Does not include 6 Category 2 lakes (22 acres) on coastal islands, all 6 are not assigned to mainland HUCs.

As in the final EPA approved 2004 Integrated Water Quality Report, waters that are listed in non-attainment, caused solely by bacteria either from Combined Sewer Overflows (CSOs) or other sources, are in Sub-Category 5B. The DEP deems that the CSO Master Plans and associated enforcement controls provide fully adequate mechanisms for control of this cause of bacterial impairment and thus they are a low priority for Total Maximum Daily Load (TMDL) development. Secondly, waters with an impaired Fish Consumption Use caused by mercury are listed in Sub-Category 5C. The State has already taken aggressive action to reduce sources of mercury within the State's jurisdiction. Further mercury reductions will be required from sources outside the State's boundaries to provide the desired reduction of mercury in Maine's waters. The New England States and New York are developing a regional mercury TMDL to address these impairments. Category 5D, Legacy Pollutants, now includes many mainstem river segments that are listed for non-attainment of the Fish Consumption use due to PCBs in fish tissue.

WETLANDS

Maine DEP began development of a biological monitoring and assessment program for freshwater wetlands in 1998 as part of the biomonitoring program. The Biological Monitoring Program provides water quality information for a wide array of programs, and includes ambient monitoring, evaluation of water quality classification attainment, and assessment of risks and impacts.

The wetlands initiative currently focuses on aquatic macroinvertebrates as indicators of wetland ecological integrity, and plans to build capacity to assess multiple biological assemblages including algae (needed for development of nutrient criteria) and plant communities. Key wetland related activities include (1) ambient monitoring and assessment of wetland condition, (2) development of biological criteria for wetlands, (3) inclusion of wetlands in comprehensive State water quality monitoring strategy, (4) development of Internet Mapping Project to provide public access to biomonitoring data, and (5) development of landscape-level assessment tool to predict threats to wetlands.

Starting September 1, 2007, *significant vernal pool habitat* is protected by law under the State of Maine Natural Resources Protection Act (NRPA). For more information, see Chapter 5, Wetlands or visit the DEP's NRPA page at:

www.maine.gov/dep/blwq/docstand/nrpapage.htm.

GROUND WATER

The Groundwater Program is fully described in chapter 6. Responsibility for ground water resource assessment and protection is shared among the Department of Environmental Protection, the Department of Health and Human Services' Division of Environmental Health, and the Maine Geological Survey in the Department of Conservation. Several other agencies, particularly the Department of Transportation, Department of Agriculture, and State Planning Office may investigate ground water contamination problems in certain areas and they also contribute to ground water protection through development of ordinances and management practices that are designed to reduce the risk of impacting ground water quality.

A significant portion of Maine's ground water may be threatened by contamination, particularly in unforested areas, which comprise approximately 11% of the State. Drinking water quality is an issue that carries significant public concern for both private and public well supplies. Public interest in ground water is primarily focused on its use as a drinking water supply (ground water provides 60% of all human demand and 75% of livestock demand statewide) and on its use as a source of process water for industry. Numerous wells in Maine have been made unpotable by pollution from specific point sources and also from nonpoint source pollution. Important sources of ground water contamination in Maine include disposal activities such as landfills and septic systems, leaking storage facilities, agriculture, and sites contaminated with spilled hazardous materials or by previously unregulated activities.

Major impediments to effective ground water protection in Maine include; the 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 groundwater data (EGAD) has increased the accessibility of the wide variety of data collected on groundwater quality by various state agencies. Continuing use of this database will improve operations at the agencies responsible for groundwater protection and assessment, and provide a resource for increasing the general public’s awareness of groundwater issues. Principle uses of this database are to (1) help design clean-up strategies in areas of known contamination; (2) plan future development that better provides for protection of public health and safety; (3) assist in prioritizing protection of sensitive ground water 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 surface and ground water quality, in order to evaluate groundwater impacts on surface water bodies and on groundwater-dependent habitat.

Response to Comments

Process to Solicit Public Comments

The following subsections detail the actions taken by the Department of Environmental Protection to promote the public's knowledge of the existence and availability of the draft version of the 2006 Integrated Water Quality Monitoring and Assessment Report (commonly known as the 305b Report). This process was undertaken in order to gain comments from the public on the contents and conclusions of the draft report. The official period of time that the Report was available for public comment was from December 21 to the close of business on, January 19, 2007.

In addition to the public comment process outlined below, the draft version of the 2006 305b Report was reviewed internally by Department staff as well as by US EPA staff in order to produce the final version of the Report.

Report Posting on the Department's Website:

On December 21, 2006 the Department posted the draft 2006 305b Report as two digital files in the Adobe® Portable Document Format (PDF) on the public comments section of its Bureau of Land and Water Quality website. Hardcopies of the draft report are made available to the public on request.

Postal Mailing to the Agency Rulemaking Subscription Service List:

The Department offers a subscription service that provides notification of both rulemaking changes and rule adoption for all department rules. Subscribers to this service include both individual citizens and representatives of organizations that wish to be contacted when the DEP releases rulemaking information. During the week of the Department mailed out approximately 150 letters to people and entities on the Agency Rulemaking Subscription Service List, including all other natural resource agencies within state government. The text of that letter follows and is italicized in order to differentiate it from other text contained in this Report.

Maine's 2006 Integrated Water Quality Monitoring and Assessment Report

Available for Public Comment until January 19, 2007

The Department of Environmental Protection has prepared a draft 2006 Integrated Water Quality Monitoring and Assessment Report for submission to the U.S. Environmental Protection Agency as required of Sections 305(b) and 303(d) of the Clean Water Act, and in fulfillment of the reporting requirements of 38 M.R.S.A. Section 464.3.A of the State of Maine's Water Classification Program.

This report is available for public comment until January 19, 2007. Reviewers of the document should pay particular attention to the categories and listing methods required by the USEPA for the surface water assessments in this report. These methods are described in Chapter 4. Specific surface waterbody attainment and impairment assignments can be found in the Appendices (a separate file). The appendices are broken into three waterbody types: rivers/streams, lakes, and estuarine/marine waters. Categories 1-3 are for waters that are not impaired, categories 4 and 5 are for water segments that are impaired for one or more uses.

The draft documents (pdf files) can be found on the Department's website at:
www maine.gov/dep/blwq/docmonitoring/305b/comment htm

We encourage you to review the document and provide comment on this year's report. Comments become part of the public record and are published in the final version of the Report. Comments should be sent to:

Email: 305b.Comments@maine.gov
Fax: 207-287-7826

Contact:
Susan Davies, Maine Department of Environmental Protection
State House #17
Augusta, ME 04333
susan.p.davies@maine.gov

Legal Notice:

During the week of December 19, 2006 the Department prepared a legal notice that ran in four daily newspapers located around the state. Those newspapers (and current weekday circulations) were as follows: The Bangor Daily News (62,730), The Kennebec Journal (14,877), The Lewiston Sun Journal (34,278), and The Portland Press Herald (75,577). The text of that 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 for the "2006 Integrated Water Quality Monitoring and Assessment Report"

The Department of Environmental Protection has prepared the "2006 Integrated Water Quality Monitoring and Assessment Report" for submission to the U.S. Environmental Protection Agency as required of Sections 303(d) and 305(b) of the Clean Water Act, and in fulfillment of the reporting requirements of 38 M.R.S.A. Section 464.3.A of the State of Maine's Water Classification Program. This report is available for public comment until 5:00 PM, January 19, 2007. Reviewers of the document should pay particular attention to the listing methods required by the USEPA for surface water assessments for this report. These methods are described in Chapter 4 of the document. Specific waterbody attainment and impairment assignments can be found in the Appendices.

The report (pdf files) may be found on the Department's website at:
www maine.gov/dep/blwq/docmonitoring/305b/comment.htm

Comments become part of the public record and are published in the final version of the Report. All comments should be sent to:
by fax: 207-287-7826
by email: 305b.Comments@maine.gov

Susan P. Davies
Maine Department of Environmental Protection
State House #17
Augusta, ME 04333

Press Release:

On December 21, 2006 the Department of Environmental Protection issued a press release designed to inform the public of the availability of the draft 2006 305b Report. This release also described how the DEP was seeking public comment on water quality listings in the Report. Between fifteen and eighteen radio, television and print outlets around the state received the press release and it was also linked to a news headline on the Department's homepage. The release also went to the Associated Press, which places the release on its "wire" for other media outlets to run, if they so choose. The text of that press release follows and is italicized in order to differentiate it from other text contained in this Report.

Report Card Assesses State Water Quality: DEP Seeks Public Comment

December 21, 2006
CONTACT:
Susan Davies, (207)287-3901, 305b.Comments@maine.gov

(AUGUSTA)—The State wants feedback on its latest review of the health of Maine's lakes, streams, rivers, estuaries and coastal waters. The ratings contained in the final version of the 2006 Integrated Water Quality Monitoring and Assessment Report will determine planning and funding priorities for water quality improvements. DEP is asking the public to comment on the draft now posted on the web: www.maine.gov/dep/blwq/docmonitoring/305b/comment.htm

Comments become part of the public record and are printed in the final version of the report. The comment deadline is 5:00 PM, January 19th, 2007.

"Feedback from the public on the accuracy of our evaluations is important to this process", says Dr. David Courtemanch, director of the DEP's Division of Environmental Assessment. "Because these assessments drive decisions as to how particular public waters will be managed into the future, we encourage citizens to review the ratings."

The report (also known as the "305b Report", a requirement of the federal Clean Water Act) is a water quality snapshot. Because it is prepared every two years, the public can look back to see if and how the assessment of their favorite lake or stream has changed. One section of particular note to many is a listing of waters considered to be "impaired" due problems that affect one or more officially assigned "uses" of the waterbody, such as 'Recreation' or 'Fishing'.

"An 'impaired' listing can set into motion specific management activities designed to bring a water body back into full-use compliance," notes Courtemanch. "Those activities can range from more vigilant monitoring to complete abatement of a pollutant." For example, in June 2006 Governor Baldacci announced that Cobbossee Lake had been removed from the 303d list due to the success of long-term watershed restoration and protection efforts. The Lake has recovered from the impairments that were originally listed in 1995. The 2006 Report also notes the protection of six streams that were impaired or at risk of impairment due to fish hatchery discharges. New fish hatchery permits that will improve water quality have been issued for these streams by the Maine Department of Environmental Protection, At the same time, says Courtemanch, new impairments have been discovered in some waters, for example in small streams subject to pressure from urban development.

The 2006 Integrated Water Quality Monitoring and Assessment Report is based on information gathered by the DEP along with other state, federal, tribal and local agencies, non-government organizations and volunteer monitoring groups. DEP analyzes the data to assess the capacity of Maine waters to support drinking, fishing, recreation (such as swimming) and their ability to sustain aquatic life as defined in Maine's water classification laws. The report also provides extensive information on the status of Maine's groundwater and wetland resources.
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SUMMARY OF PUBLIC COMMENTS AND RESPONSES

The Department received public comments from the parties listed below. Issues raised by comments from these organizations or individuals are either quoted or paraphrased and are presented in italic typeface. The DEP response to that comment will follow the comment and may address how the issue was dealt with in the final draft of the report (if the text does not indicate that any changes were made to the body of report, then none were made).

Penobscot River

Paraphrased Comments from:

- Mr. Brian Rayback, Pierce Atwood on behalf of Penobscot River Dischargers Group;
- Mr. Dennis C. McComb, on behalf of Lincoln Paper and Tissue

We do not agree with the 2006 listing of the Penobscot River from Mattawamkeag River to Cambolasee Stream and from Cambolasee Stream to the Piscataquis River in Category 5A for failing to meet dissolved oxygen criteria based on 2001 data. We believe that these segments are meeting dissolved oxygen criteria and recommend that they be included in Category 2, or at most Category 3, as stated in a letter from MDEP Commissioner Dawn Gallagher on February 11, 2004. We think MDEP should have considered 2003 data, collected by a group of municipal and industrial dischargers on the River, in listing these segments. We think the low dissolved oxygen levels that were recorded in 2001 are due to natural causes because tributaries also showed low dissolved oxygen values during the 2001 sampling period. We think the QUAL2E model for the Penobscot River would be improved by: 1) using periphyton data and more phosphorus data in model calibration; and 2) giving a clear rationale for the loss of dissolved phosphorus used in the model. We think that improving the model in this way, along with the addition of more recent data, would be likely to show compliance with D.O. criteria.

MDEP Response:

The MDEP disagrees that Category 5A is inappropriate for the segments in question on the Penobscot River. The two Penobscot River mainstem segments from the Mattawamkeag River to the Piscataquis River were first listed in Category 5A (the '303d list') for dissolved oxygen impairments in 2002, based on data collected by MDEP in 2001 and 1997. The listing was continued in 2004 and 2006 because the segments do not meet delisting criteria established by MDEP. Criteria for delisting impaired segments appear on page 53 of the 2006 Draft Maine Integrated Report and are consistent with guidance from the U.S. Environmental Protection Agency. In short the criteria require the Department to fully document, with new high quality data (critical conditions for flow and loading), that water quality standards are being met, and that other controls are in place that will ensure attainment of applicable water quality criteria, or to show that a Total Maximum Daily Load plan has been approved by EPA since the last 303d list. It is the MDEP's position that the 2003 data cannot be used to justify delisting because the data do not meet established delisting criteria. Flows were too high when the monitoring was performed in August 2003. *(February 20, 2004 letter to Stakeholders of the Penobscot River from the MDEP-Paul Mitnik, responding to comments on the April 2003 Penobscot River Modeling Report).* The model that led to the 5A listing was based on data collected during flows much closer to target modeling low flows. Following discussion with EPA, in a letter to Penobscot River Stakeholders Group and Pierce Atwood, from Andrew Fisk, Director or the Bureau of Land and Water Quality (May 20, 2004) the Department rescinded the possibility of a Category 3 listing and reiterated concerns about dissolved oxygen.

The MDEP response to the suggestion that observed low dissolved oxygen levels are due to natural causes is documented in January 14, 2004, Responses to Comments: Penobscot River Modeling Report-April 2003, by Paul Mitnik, P.E. In summary the January 14, 2004 response states that the Penobscot River tributaries are chemically and hydrologically different from the Penobscot and are themselves impacted from non-point source pollution that causes diurnal dissolved oxygen swings. In addition, the main stem has a much larger watershed and would be much less affected by wetlands than any tributary.

Regarding comments on recommended changes to the QUAL2E model, the MDEP agrees that the model could be improved with additional data. Monitoring is planned for the summer of 2007, given sufficiently low flows to collect valid data. MDEP will be inviting the input of stakeholders in decisions regarding development of potential updates to the model.

Mattanawcook Stream

Paraphrased Comments from:

- Mr. Darold V Wooley, on behalf of Lincoln Sanitary District;
- Mr. Dennis C. McComb, on behalf of Lincoln Paper and Tissue

The Lincoln Sanitary District completed a Combined Sewer Overflow (CSO) abatement project in 1999 which eliminated the District's CSO. The overflow point at the Creamery Court Pump Station has an overflow weir that has been built up to a height that prevents discharge except in a catastrophic pump *station failure. The automatic listing for bacteria should be eliminated. Mattanawcook Stream water quality has improved and it may meet dissolved oxygen criteria. If recent data shows attainment it should be delisted.*

With the Following Additional Paraphrased Comments from:

- Daniel Kusnierz, on behalf of Penobscot Indian Nation

Recent sediment monitoring data shows sediment contamination in Mattanawcook Stream. (Reference: "Draft Preliminary Assessment/Site Investigation Report for Lincoln Pulp and Paper Co., Lincoln, ME. Prepared for US EPA Region I by Weston Solutions, Inc. Superfund Technical Assessment and Response Team, November 26, 2006.)

MDEP Response:

Mattanawcook Stream has been delisted to Category 2 for bacteria and dissolved oxygen standards, based on more recent, high quality data collected in 2004 by Penobscot Indian Nation that shows attainment.

Additionally, Mattanawcook Stream has been added to the Category 3 list (*Insufficient Information, one or more uses may be impaired*) for possible impairment of the fish consumption use based on recent, high quality sediment data. Fish consumption impairment needs to be confirmed with fish tissue data.

Lord’s Brook

Paraphrased Comment from:

- MDEP Internal Communication

Water quality monitoring in 2005 and 2006 showed numerous excursions of dissolved oxygen criteria in Lord’s Brook (Lyman) and tributaries; BOD and nutrient levels are very high.

MDEP Response:

Lord’s Brook and tributaries (2.35 miles) has been added to the 2006 Category 5A list of impaired waters for the following causes: Biochemical oxygen demand, dissolved oxygen, and Nutrient/eutrophication biological indicators. It is expected that full compliance with a pending modified solid waste management license and a future waste discharge license for a local compost facility will result in attainment.

Dioxin Monitoring Program Section Text

Paraphrased Comments:

- Dennis C. McComb, on behalf of Lincoln Paper and Tissue;
- Mike Barden, on behalf of the Maine Pulp and Paper Association

MPPA and Lincoln Paper and Tissue recommend that the language in the section on the Dioxin Monitoring Program (p.66) be modified slightly to be consistent with the Department's conclusions in its April 2006 Annual Dioxin Monitoring Program Report, or, as a minimum, simply state that Maine's bleached Kraft mills are in compliance with the state's 1997 dioxin law whereby dioxin levels in fish sampled from below the mills are no higher than levels found in fish above the mill based upon the DEP's Above/Below (A/B) testing protocols, and levels of dioxin in bleach plant effluent are <10 ppq.

The language in the Draft Assessment Report is misleading in that it seems to imply a value judgment that mills may be continuing to discharge dioxins, i.e., the 2004 A/B test documented that mills "were no longer *discharging significant amounts of dioxin." Conversely, the April 2006 Dioxin Monitoring report states that results from the A/B test indicated by 2004 that mills "were no longer discharging dioxin" (p.7).*

DEP Response:

The language in the Draft Assessment Report is more accurate than that in the April 2006 Dioxin Monitoring Report in that the Above/Below test can detect only moderately large differences and therefore cannot state that there is 'no discharge'. Nevertheless, the language has been modified to acknowledge that the mills are in compliance with the 1997 dioxin law.

Criteria for Listing Nutrient Problems

Paraphrased Comments:

- Paul Porada, on behalf of Woodard and Curran

The Category 4-A and Category 5-A lists contain a few river and stream segments which have impairments caused by nutrient/eutrophication. What criteria are used to make the listing? Chapter 4 of the report does not explain the nutrient/eutrophication assessment criteria applicable to rivers and streams. The criteria for eutrophication impairment simply appear to be the Department's policy of applying the lake criteria to rivers and streams.

MDEP Response:

The *cause* listing in question is "*Nutrient/Eutrophication Biological Indicators*". A more complete explanation of assessment criteria has been added to Chapter 4. This cause is linked to non-attainment of Aquatic Life Uses in rivers and streams, based on presumptive evidence that some significant portion of the cause of aquatic life non-attainment is due to nutrients. Non-numeric listing criteria for this cause consist of documentation of abnormal biological findings in rivers and streams that indicate nutrient enrichment. Excess nutrients impair Aquatic Life Use through alteration of habitat from excessive growths of plants and algae, changes in dissolved gases like oxygen, resulting in diurnal dissolved oxygen fluctuations, and alteration of benthic macroinvertebrate assemblage structure. Whenever one of these criteria is violated (i.e., dissolved oxygen, aquatic life), and the violation is found in association with eutrophic conditions, then nutrients are listed as a cause of the violation, regardless of the source of the nutrients. MDEP disagrees that we are simply extending lake listing criteria to rivers and streams. Maine does not currently have *numeric* nutrient criteria for rivers and streams but numeric nutrient criteria are not required in order to assign the *Nutrient/Eutrophication Biological Indicators* cause if there is documentation that a narrative criterion has been violated.

Long Creek Total Maximum Daily Load Target Date

Paraphrased Comment:

- MDEP Internal Staff Comment

Please change the Long Creek TMDL due date in the draft 303d list from 2008 to 2009, to be consistent with the delivery of a developing Watershed Management Plan. EPA has confirmed that these changes are acceptable.

MDEP Response:

Long Creek TMDL due date has been changed from 2008 to 2009.

Chapter 3 BACKGROUND

STATE ATLAS AND WATER QUALITY STANDARDS

Contact: Steve Harmon, DEP BLWQ, Division of Environmental Assessment (DEA)

Tel: (207) 287-4971 email: Steve.Harmon@SPAM-ZAPmaine.gov

This is a time of rapid change in Geographic Information System (GIS)-compatible datasets. While there is an increase in the resolutions and types of spatial data that are becoming available; conversely, there has been a reduction in the relative costs and time needed to acquire these data, particularly in the areas of digital aerial photography and satellite imagery. As a result, many state agencies and other organizations can now afford to acquire spatial data more often and with much better resolution than was previously accessible. One effect that these improving sources of spatial data have on periodic reports, like this document, is that they cause slight changes and shifts in figures that most people believe should be unchanging, such as the length of a river or the area of a lake. Although available sources of spatial data used to construct this atlas are improving, none should be viewed as absolutely accurate at every location.

For example, a comparision of Table 3-1 in the 2004 305(b) Report Atlas, with the equivalent table (also 3-1) in this year's atlas clearly shows differences in most land cover categories, such as fields, forested lands, wetlands, etc. These differences exist because the 2004 Report Atlas land cover categories were determined from the Maine GAP (Gap Analysis Program) Land Cover and Vegetation Dataset, which has the following characteristics:

- data was primarily derived in the early 1990s
- the smallest unit area in this dataset covers 900 square meters (or a square that is 30 meters to a side

While the 2006 Report Atlas land cover categories were determined from the Maine Landcover Dataset or MELCD 2004, which has the following chracteristics:

- data was primarily derived in the early 2000s
- the smallest unit area in this dataset covers 25 square meters (or a square that is 5 meters to a side

First, one would expect to see some differences between these datasets because they were collected over ten years apart from one another, reflecting both human-induced and natural changes in Maine's land cover. Additionally, in the first dataset, a unit area of 900 square meters contains many different types of land cover (e.g. a shoreline that is roughly half water and half land) that would be "misclassified" as only one of the many possible types much more often that the same area would be in the second dataset because it has a much finer spatial resolution. Results from the MELCD will be included in the 2006 305(b) Report Atlas, which will allow readers to directly compare differences between the MELCD and GAP datasets.

While the following written descriptions and Table 3-1 (immediately following) are useful in visualizing the composition of the State of Maine, these values should only be considered to be improved approximations that will change in future reports.

The State of Maine has a total surface area of over 35,000 square miles, the most in New England; with dry land occupying almost 31,000 square miles and the larger surface waters occupying about 4,500 square miles. With a population of about 1.3 million people, Maine also is the least densely populated state in New England. However, since most of the population is concentrated in the southern and coastal portions of the State and into bands on both sides of Interstate 95, regional population densities may vary considerably from the state's average population density.

Maine's 5,784 lakes and ponds cover 986,952 acres, an area that is somewhat larger than the State of Rhode Island. There are over 7,000 perennial brooks, streams and rivers in Maine, ranging in length from less than two miles to nearly 200 miles, with an estimated total length of 31,227 miles. These water resources are reported in slightly varying numbers in the 2006 atlas as compared to 2004 for reasons explained above.

Recently there has been increasing interest in both international and state borders. The St. Croix, St. John, St. Francis, Southwest Branch of the St. John and other rivers, lakes and coastal waters make up almost half (~279 miles) of the roughly 609 mile-long U.S./Canada boundary. Also, the Salmon Falls, Piscataqua and other rivers, lakes and coastal waters lie on the Maine/New Hampshire line and account for nearly one-third (~60 miles) of that roughly189-mile long boundary.

The current version of the Geographic Information System (GIS) boundary data layer indicates a value of 5,261 miles of coastline. As with many of the other data sets, this value differs slightly from earlier reports. The year 2000 atlas reported 5,296 coastal miles of shoreline (also based on 1:24,000 USGS maps data provided by the Maine Office of Geographic Information Services (MeGIS). This year's estimate was still higher, yet slightly closer to the number of coastline miles (5,249 miles) that were reported in the 1998 report.

Although there are no definative inventories of inland and coastal wetlands and marshes in Maine, this year's atlas estimated a total wetland area of almost 3,200,000 acres. This conservative estimate does not include over 7,500 known wetlands of less than 3 acres. Also noteworthy is that at least 1,281 square miles of the state are underlain by significant sand and gravel aquifers (up from 1,241 square miles as reported in 2004).

Over 400 river and stream watersheds, ranging in size from a few hundred acres to over 1,850 square miles, empty into Maine's estuarine and near shore waters. For most reporting purposes, Maine is divided into 6 major drainage basins. Two of these (the Western Coastal and Eastern Coastal Basins) are, in fact, made up of dozens of smaller basins that empty into the Atlantic Ocean. Large portions of 4 river basins extend beyond Maine's boundaries into New Hampshire, Quebec and New Brunswick.

Please note: The numbers and acreages of lakes, reservoirs and ponds used in this report are taken from the Maine Department of Inland Fisheries and Wildlife (DIFW) Lake Index file rather than from U.S. EPA RF3/DLG estimates. The Maine DEP believes that the DIFW Lake Index file (determined from 15' USGS topographic maps; 1:62,500 scale) provides a more accurate estimate of lake numbers and acres than the USEPA RF3/DLG estimates (based on maps having 1:100,000 scale). In addition, because our lake data is indexed to the lake identification numbering system used in the DIFW database, it would be a substantial task to link the U.S. EPA database and could potentially introduce error due to map scale differences. We do, however, plan to change from the DIFW Lake Index to a GIS-based system in the future.

Table 3-1 The 2006 305(b) Report State of Maine Atlas

Population or Natural Resource Category	Value Reported for 2006 [1]	Percent		Value Reported in 2004 [2]
State Population (July 1, 2005 US Census Estimate)	**1,321,505**	**100%**		**1,305,728**
Total State Area (square miles) [3]	**35,236.4**	**100.0%**		**29,699.2 [4]**
Total Fields (square miles) [3]	**1,546.5**	**4.4%**		**2,297.9 [4]**
Blueberry Fields	100.9	0.3%		50.7 [4]
Grassland / Herbaceous	57.9	0.2%		not reported
Pastureland / Hayland	644.8	1.8%		1,768.9 [4]
Cultivated Crops	742.9	2.1%		405.5 [4]
Total Forest (square miles) [3]	**24,666.9**	**70.0%**		**26,519.8 [4]**
Recent Clearcut	163.6	0.5%		448.7 [4]
Regenerating Forest (Post 1995)	720.3	2.0%		3131.7 [4]
Light Partial Cut (Post 1995)	2,285.1	6.5%		430.0 [4]
Heavy Partial Cut (Post 1995)	1,199.9	3.4%		577.5 [4]
Deciduous Forest	4,745.5	13.5%		5,326.9 [4]
Mixed Forest	8,899.4	25.3%		11,923.6 [4]
Evergreen Forest	6,653.0	18.9%		4,666.5 [4]
Total Scrub-Shrub (square miles) [3]	**1,186.4**	**3.4%**		**725.4 [4]**
Total Wetlands (square miles) [3]	**2,376.9**	**6.7%**		not reported
Wetlands	816.1	2.3%		806.3 [4]
Forested Wetland	1,560.8	4.4%		not reported
Total Open Water Surface Area (square miles) [3]	**4,210.7**	**11.9%**		**4,123.0 [4]**
Total Saltwater Surface Area (square miles) [4]	not reported	n/a		**2,273.4 [4]**
Total Unconsolidated Earth-Material Shorelines (square miles) [3]	**225.3**	**0.6%**		**152.0 [4]**
Total Developed Lands and Paved Ways (square miles) [3]	**972.0**	**2.8%**		**404.4 [4]**
Developed - Open Space	175.1	0.5%		not reported
Developed - Low Intensity	169.1	0.5%		261.2 [4]
Developed - Med Intensity	95.4	0.3%		134.5 [4]
Developed - High Intensity	98.5	0.3%		5.7 [4]
Road / Runway	433.9	1.2%		3.0 [4]
Total Alpine / Tundra (square miles) [3]	**10.3**	**0.0%**		**8.0 [4]**
Total Bare Ground (square miles) [3]	**41.5**	**0.1%**		**17.2 [4]**
Total Miles of Coastline (including tidal rivers & shorelines of islands) [5]	**5261.0**	**100%**		**n/c**
Total Miles of Border Coast, Lakes & Rivers Shared with CN and NH [5]	**338.9**	**100%**		**n/c**
Maine – Canadian Border (coastal water miles out to the "3 mile" limit)	39.4	12%		n/c
Maine – Canadian Border (lake miles)	33.0	10%		n/c
Maine – Canadian Border (river miles)	206.2	61%		n/c
Maine – Canadian Border (total water miles) [5]	**278.6**	**82%**		**n/c**
Maine – Canadian Border (total land and water miles)	*608.7*	*N/A*		*n/c*
Maine – New Hampshire Border (coastal water miles out to the "3 mile" limit)	17.3	5%		n/c
Maine – New Hampshire Border (lake miles)	17.7	5%		n/c
Maine – New Hampshire Border (river miles)	25.4	7%		n/c

Table 3-1 The 2006 305(b) Report State of Maine Atlas

Population or Natural Resource Category	Value Reported for 2006 [1]	Percent	Value Reported in 2004 [2]
Maine – New Hampshire Border (total water miles) [5]	**60.3**	**18%**	**n/c**
Maine – New Hampshire Border (total land and water miles)	*188.8*	*N/A*	*n/c*
Total Miles of Rivers and Streams in Maine [5]	**45,176.8**	**100%**	**45,149.0**
Miles of perennial streams (subset)	25,643.2	57%	25,617.1
Miles of intermittent [nonperennial] streams (subset)	13,463.0	30%	13,461.3
Miles of rivers (subset)	6,070.6	13%	6,070.6
Miles of Rivers and Streams by Water Class [5]	**Miles**	**Percent**	
Water Class — Streams — (% of Stream Miles) — Rivers — (% of River Miles)	*Class Totals*	*n/a*	*n/a [7]*
Class AA — 1,664 — 4.26% — 1,274 — 20.99%	2,938.0	6%	n/a [7]
Class A — 18,216 — 46.58% — 2,540 — 41.85%	20,756.0	44%	n/a [7]
Class B — 19,093 — 48.82% — 1,782 — 29.36%	20,875.0	48%	n/a [7]
Class C — 134 — 0.34% — 474 — 7.81%	608.0	2%	n/a [7]
Totals — 39,486 — 100% — 6,070 — 100%	***45,177.0***	***100%***	***n/a [7]***
Number of Lake, Pond and Reservoir Features in DEP's GIS Datalayer [5]	33,119	100%	33,114
Number of Above Waterbodies assigned a MIDAS ID Number (subset) [5]	6,088	18%	6,082
Number of Significant Publicly Owned Waterbodies (subset) [5]	2,314	7%	n/c
Total Areas of the Waterbodies Described Below:	**Square Miles**	**Acres**	
Lake, Pond & Reservoir Features the Maine DEP's GIS Datalayer [5]	1,563.3	1,000,527.2	n/c
Lakes, Ponds & Reservoirs with an assigned MIDAS Number (subset) [5]	1,518.6	971,885.6	n/c
Significant Publicly Owned Lakes, Ponds & Reservoirs (subset) [5]	1,477.4	945,506.2	n/c
Total Area of Near Shore Waters and Tidal Rivers (sqare miles and acres) [5]	**2,846.1**	**1,821,473.9**	**n/c**
Total Area of Bays, Estuaries and Harbors	2,717.3	1,739,051.0	n/c
Total Area of Tidal Rivers	128.8	82,422.9	n/c
Total Area of Near Shore Waters and Tidal Rivers by Water Class [5]	**Square Miles**	**Acres**	
SeaClass A	211.0	135,009.0	n/c
SeaClass B	2,606.3	1,668,047.8	n/c
SeaClass C	28.8	18,417.1	n/c
Total Area of Wetlands [6]	**4,972.8**	**3,182,563.4**	**n/c**
Total Area of Saltwater Wetlands [6]	**404.3**	**258,739.3**	**n/c**
Estuarine	239.8	153,462.2	n/c
Marine	164.5	105,277.1	n/c
Total Area of Freshwater Wetlands [6]	**4,568.5**	**2,923,824.1**	**n/c**
Lacustrine	1,466.6	938,621.7	n/c
Palustrine	2,954.0	1,890,553.6	n/c
Riverine	147.9	94,648.8	n/c
Total Area of Mapped Sand and Gravel Aquifers [5]	**1,281.0**	**794,624.0**	**1,241.6**

1 These figures were the most current that were available to the DEP in early 2006. And 2. These figures were the most current available to the DEP in early 2004.

3. Derived from the 2004 MeLCD (Maine LandCover Dataset) that has a 25 square meter (5m X 5m) spatial resolution.

4. Derived from the Maine GAP Landcover Analysis Dataset (based on the 1991 NLCD – National LandCover Dataset) that has a 900 square meter (30m X 30m) spatial resolution. Some categories were combined to allow a more direct comparison wi h figures derived from the 2004 MeLCD

5. Derived from MeDEP's GIS hydrography, geology and state boundary datasets (Source: Digitized 1:24,000 USGS 7.5" Quadrangles and Digital Raster Graphics). Significant Lakes are defined as publicly owned, have bathymetric/morphometric surveys, vulnerability modeling was performed or some trophic data has been gathered.

6. Derived from the National Wetland Inventory (NWI) dataset – based on polygons only, figures do not include a point dataset hat indicates loca ions of small wetlands.

7. A draft dataset was used to generate figures for the 2004 report; this dataset underwent significant revisions, so as not to be comparable to data in the 2006 report.

WATER QUALITY STANDARDS PROGRAM

Contact: Susan P. Davies, DEP BLWQ, Division of Environmental Assessment (DEA)

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Related Website: www.maine.gov/dep/blwq/docmonitoring/classification/index.htm

The water quality of Maine is described in terms of physical, chemical and biological characteristics associated with the state's water classification program. As established in Maine statute (38 MRSA Sections 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 and aquatic life), and characteristics (e.g. natural, free flowing) that specify levels of water quality necessary to maintain the designated uses. All State waters have a classification assignment (Lakes: GPA. Rivers and streams: AA, A, B, C. Marine and estuarine: SA, SB, SC).

Since the early 1970s, prior to adoption of the CWA, Maine water quality law has had a tiered structure, based on a gradient of water quality conditions. Maine's management classes range from Class AA, the highest water quality standard and greatest restrictions on human activity, to Class C, the lowest quality standard with more flexible allowances for human activities. Maine's classification system is goal based, that is, it may not necessarily reflect current water quality conditions but rather establishes the level of quality directed by the State to be achieved. Maine's classification system should be characterized as more risk-based than quality-based. In a risk-based classification system the difference in water quality between the various classes is not large, however, different restrictions placed on activities associated with each class establish varying levels of risk that water quality could be degraded and that the designated uses of the assigned classification could be threatened by allowed activities.

In addition to the Maine water quality classification system, the requirements of the Federal Clean Water Act (CWA) establish national objectives ("to protect and maintain the physical, chemical and biological integrity of the Nation's waters") and interim goals of swimmable-fishable ("wherever attainable ... of ... the protection and propagation of fish, shellfish and wildlife ... [and] recreation in and on the water"). All waters that attain State standards also attain the interim goals of the Clean Water Act.

Levels of protection afforded to aquatic life resources by goals stated in Maine's water quality standards and criteria are illustrated in terms of the Biological Condition Gradient in Figure 4-2 (Davies and Jackson. 2006; US EPA 2006) [‡]. The assessment listings provided in this report in Appendices II-IV give the attainment status of Maine's water quality goals established in the classification program. Thus, some waters may be listed as impaired even though they have relatively good water quality, for example, a stream may be listed for failing to attain a specific designated use of Class A waters. The tiered use feature of Maine's water quality classification law provides significant protection from degradation to high quality waters.

‡ Davies, S. P. and S.K. Jackson. 2006. The Biological Condition Gradient: A descriptive model for interpreting change in aquatic ecosystems. Ecological Applications and Ecological Archives 16:1251–1266 (including digital appendices).

U.S Environmental Protection Agency (USEPA). 2005. Use of Biological Information to Better Define Designated Aquatic Life Uses in State and Tribal Water Quality Standards: Tiered Aquatic Life Uses. EPA-822-R-05-001. U.S. Environmental Protection Agency, Washington, DC.

The classification program is reviewed every three years by the Department and the Board of Environmental Protection (Board). The Department will initiate the next round of water classification reviews in 2008. The Board may, after opportunity for public review and hearing, make recommendations to the Legislature for changes in standards or reclassification of selected waters.

EFFECTIVENESS OF POINT SOURCE POLLUTION CONTROL PROGRAMS

HIGHLIGHTS FOR POINT SOURCE POLLUTION CONTROL PROGRAMS

Contact: Brian Kavanah, DEP BLWQ, Division of Water Quality Management (DWQM)

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Related Website: www.maine.gov/dep/blwq/docstand/wastepage.htm

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, as well as upgrades or additions to existing facilities. Highlights for 2004 - 2005 for these programs are summarized below.

Technical Assistance / Pollution Prevention Program

Contact: Sterling Pierce, DEP BLWQ, Division of Water Quality Management (DWQM)

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Related Website: www.maine.gov/dep/blwq/engin.htm

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

Highlight for 2004-2005

A recent project involved implementation of a new state law that required dental facilities to install mercury amalgam separators by 12/31/04 to remove mercury prior to discharging to a municipal sewer or septic system. The Department worked with the dental community to ensure a very high rate of compliance with the law. While it is difficult to quantify, the use of amalgam separators will significantly reduce the amount of mercury discharged to the waters of the state from dental facilities.

Construction of Wastewater Treatment Facilities

Contact: Steve McLaughlin, DEP BLWQ, Division of Water Quality Management (DWQM)

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Related Website: www.maine.gov/dep/blwq/grants.htm

State Revolving Fund: SRF program monies are used to provide low-interest loans (2% below market rates) to communities and sanitary districts to upgrade treatment facilities. The program depends on a yearly Federal Capitalization Grant which must be matched with a 20% State Grant.

In State Fiscal Years 2004 and 2005, the Maine DEP Construction Grants Program provided grants to six projects and the State Revolving Fund (SRF) funded 43 projects, some with assistance from the United States Department of Agriculture (USDA) Rural Development program grants/loans and Community Development Block Grant (CDBG) grant money. These projects included new facilities, upgrades, additions, modifications, abatement of combined sewer overflows and refinancing for a total cost of approximately $5,435,000 in State grants and $75,364,000 in SRF loans.

Highlights for 2004 - 2005

In State Fiscal year 2004, the following projects were completed with the resulting improvements in water quality.

- Auburn: Sewer separation work to reduce wet weather discharge from CSOs.
- Bangor: Sewer separation to reduce wet weather discharges from Combined Sewer Overflows (CSOs)
- Camden: Upgrade of a major pump station to increase reliability and efficiency of wastewater pumping and transport.
- Kittery: Sewer rehabilitation to increase reliability of wastewater conveyance.
- Mattawamkeag: Replace lagoon aeration system to increase reliability of wastewater treatment and prevent noncompliance.
- Oakland: Sewer separation to eliminate CSO and reduce infiltration and inflow to the treatment facility.
- Old Town Treatment plant upgrade to provide wet weather primary treatment and disinfection and replace worn out equipment at the secondary facility to reduce CSOs and increase wastewater treatment reliability.
- Portland Water District (four separate loans): Primary sedimentation upgrade and dewatering system upgrade at the East End wastewater treatment facility to provide treatment of wet weather flow and reduce CSO discharges. Also, SCADA system upgrades at various pump stations to increase system reliability and reduce CSO discharges.
- Randolph: Sewer separation to reduce wet weather sewage discharges from a CSO.
- Skowhegan: Treatment plant upgrade to treat wet weather flow, reducing CSO discharges and increasing treatment reliability.
- Vinalhaven: New sewer system and treatment plant that eliminated discharges of raw sewage to Carver's Harbor to meet water quality standards.
- Winterport Sewerage District: Replacement of old sewer to reduce high infiltration and inflow to the treatment facility and reduce CSO discharges.

In State Fiscal Year 2005, the following projects were completed with the resulting improvements in water quality.

- Auburn: Upgrade two pump stations to improve wastewater flows and sewer separation work to further reduce wet weather discharges from CSOs.
- Danforth: Rehabilitation of sand filters to meet permit effluent limits.
- York Sewer District: Two sewer extension projects that eliminated discharges from malfunctioning septic systems to York harbor and Lobster Cove.
- Wells Sanitary District: Upgrade of two major pumping stations to maintain system reliability.
- Brewer: Sewer separation to reduce infiltration and inflow and reduce CSO discharges.
- Portland Water District: Treatment plant upgrade (Westbrook/Gorham Regional treatment facility) to increase sludge processing capability.
- Penobscot Indian Nation: Major upgrade of treatment facility to increase reliability and prevent noncompliance of effluent limits.
- Caribou Utilities District: Upgrades to six existing pump stations and aeration improvements at the treatment facility to improve reliability of conveyance system and improve environmental compliance.
- Scarborough Sanitary District: Upgrade and expansion of treatment facility to insure treatment of licensed flows and increase reliability.
- Kennebunkport: Expansion of the existing plant structure and upgrade of disinfection facilities for year round disinfection (to protect year round use by surfers) and blowers for aeration in new sludge holding tanks.
- Mount Desert (two separate loans): Consolidation of two treatment plants at one expanded Seal Harbor treatment facility, eliminating the treatment plant at Otter Cove.
- Corinna: Construction of wastewater conveyance system and new spray irrigation treatment facility to replace existing treatment facility and eliminate the largest point source of phosphorus to Sebasticook Lake.

Maine Combined Sewer Overflow Program

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Related Website: www.maine.gov/dep/blwq/grants.htm

Forty 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 for adequate treatment. However, during rainstorms or snow-melt periods, stormwater mixes with the sanitary sewage, causing flows that 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 waterbodies.

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.

Highlights for 2004 – 2005

Table 3-2 CSO Program Summary Statistics

Parameter	End of Report Year 2003	End of Report Year 2005	Increase/(Decrease)
Number of CSO Communities	42	40	(2) or (5%)
Number of CSO Discharge Points	215	205	(10) or (9%)
Total of Annual Discharge Days for Communities	777	1084	307 or 40%
Total Annual Volume of CSOs (Billion Gallons)	1.8	3.0	1.2 or 60%
Yearly Precipitation (Inches)	45	65	20 or 45%
Million Gallons Discharged per Inch of Yearly Precipitation (MG/Inch)	40	46	6 or 10%

- CSO Communities spent $30.5 million on CSO abatement projects in 2004 & 2005, $12.1 and $18.4, respectively.
- CSO abatement progress can not be measured solely by comparing the volumes discharged from one year to next because of the influence that variations in precipitation amount, intensity and timing, and the rate of snowmelt have on them.
- Two (2) of Maine's communities (Lisbon & Corinna) have completed their CSO abatement projects and no longer have permitted CSOs.
- Ten (10) CSO locations have been eliminated (Auburn-2, Lewiston-4, Winslow-1, Lisbon-2, & Corinna-1).
- 2003 was an average precipitation year in Maine, 45", whereas 2005 was an abnormally wet year with an average of 65". This additional 20" (45% increase) of precipitation increased CSO activity by 40% and CSO volumes discharged by 60%. 2005 was also punctuated by a number of severe rain events, further exacerbating the overflows. Over 16" of precipitation fell in October.
- Although CSO Communities reported discharging 1.2 billion gallons more in 2005 then in 2003, the 2005 total of 3.0 billion gallons was only 11% more than the 2002 total of 2.7 billion reported with only 46" of precipitation.
- A key factor in reviewing the success of CSO abatement is to analyze the trend of overflows compared to precipitation. If there is a growing separation between precipitation amounts and volumes discharged, then you are making progress. Graphically this is represented below.
- Mathematically this can also be represented by expressing the volume discharged per inch of precipitation. This form of analysis has the effect of removing some of the variability due to precipitation amounts, but is somewhat conservative in nature because it does not remove a base flow that would never be overflowed. However, as an averaging tool this method should show overall trends. In the relatively normal precipitation year of 2003, CSO Communities discharge 40 Million Gallons per Inch of Precipitation. In the wet year of 2005 the CSO Communities discharged 46 Million Gallons per Inch of Precipitation.

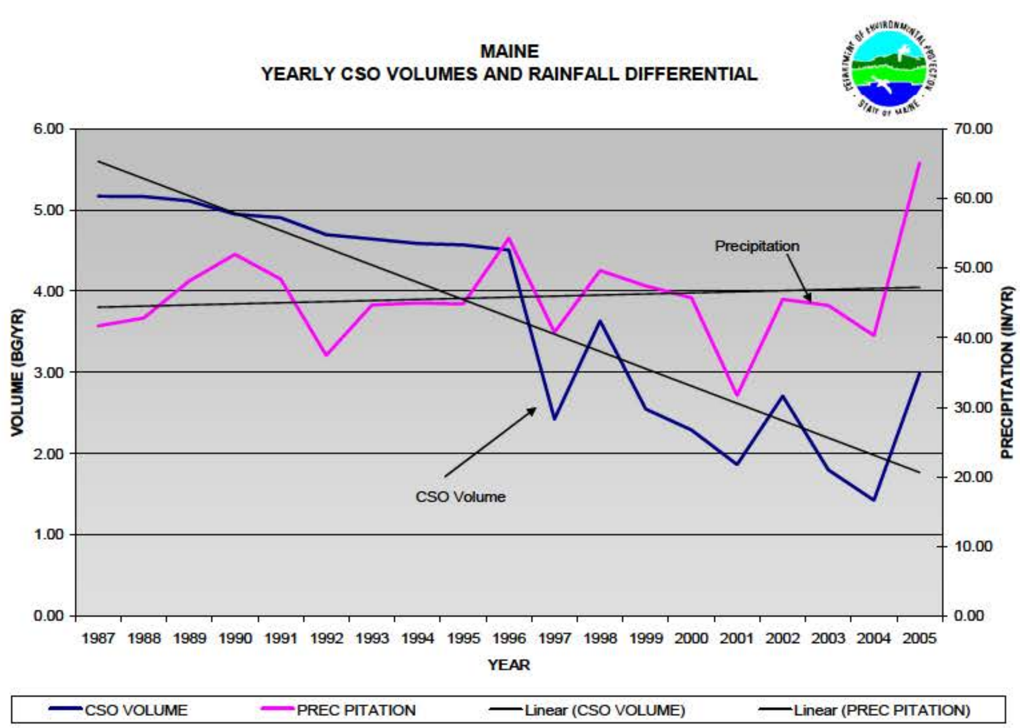

Figure 3-1 Yearly CSO Volumes and Annual Rainfall

Figure 3-2 is a chart representing the trend of CSO overflow volumes expressed in Million Gallons per Inch of Precipitation.

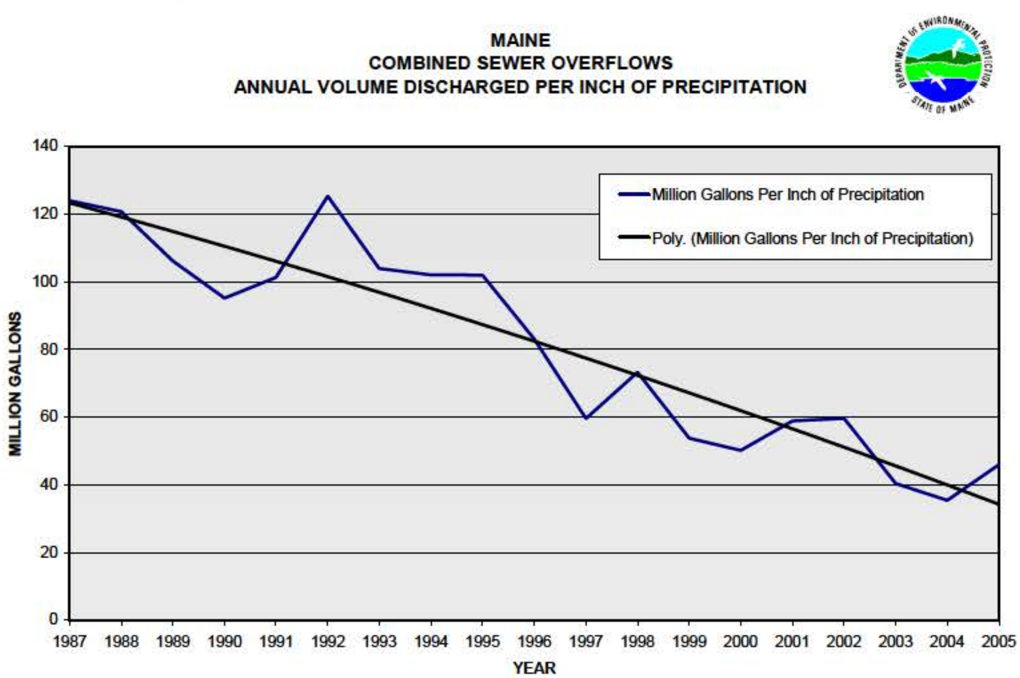

Figure 3-2 CSO Annual Volumes Discharged and Precipitation

Small Community Facilities Program

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Related Website: www.maine.gov/dep/blwq/docgrant/scgpara2.htm

From its inception in 1982, the Small Community Grant Program (SCGP) has disbursed $23.2 million dollars in grant monies and is estimated to have cumulatively eliminated the discharge of over 1.2 million gallons of untreated wastewater every day.

Although 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 that were designed to eliminate heavily polluted discharges from either already malfunctioning systems or non-existing system ("straight pipes"). This amount of funding has resulted in the construction of new wastewater treatment facilities in over 300 communities throughout the state. Currently, the total estimated value of the facilities built with Small Community Grants is approximately $28 million dollars.

Currently, requests for assistance far outweigh available funding. For example, in 2004, 95 communities requested funds totaling over $1.7 million dollars and the $0.7 million dollars allocated for that year were awarded to 72 communities. In 2005, 110 communities indicated a grant need totaling approximately $2.5 million dollars. Unfortunately, there were no funds allocated for that year. Table 3-3 provides a summary of information about the program on a year-by-year basis.

Highlights 2004 - 2005

2004 - 136 systems were replaced removing 36,720 gallons of untreated discharges.

2005 - 64 systems were replaced removing 17,280 gallons of untreated discharges.

Table 3-3 Yearly Summary of SCGP Activities.

Small Community Grant Program: Year-by-Year Summary				
Year	**Grant Amount Disbursed**	**Total Facility Value**	**Systems Installed**	**Wastewater Treated (Gal/Day)***
1982	$334,738	$403,299	115	31,050
1983	$945,758	$1,139,467	255	68,850
1984	$718,764	$865,981	156	42,120
1985	$1,185,070	$1,427,795	256	69,120
1986	$729,090	$878,422	177	47,790
1987	$865,771	$1,043,098	151	40,770
1988	$754,444	$908,969	111	29,970
1989	$921,980	$1,110,819	172	46,440
1990	$993,969	$1,197,553	183	49,410
1991	$1,376,411	$1,658,327	250	67,500
1992	$920,000	$1,108,434	277	74,790
1993	$944,785	$1,138,295	196	52,920
1994	$1,608,903	$1,938,437	335	90,450
1995	$1,099,043	$1,324,148	247	66,690
1996	$894,036	$1,077,152	195	52,650
1997	$910,692	$1,097,219	209	56,430
1998	$1,145,088	$1,379,624	187	50,490
1999	$769,086	$926,610	122	32,940
2000	$1,370,528	$1,651,238	251	67,770
2001	$1,142,009	$1,375,914	167	45,090
2002	$1,354,130	$1,631,482	208	56,160
2003	$1,086,265	$1,308,753	183	49,410
2004	$795,327	$958,225	136	36,720
2005	$399,078	$480,817	64	17,280
Totals:	**$23,264,965**	**$28,030,078**	**4,403**	**1,242,810**

* These figures are based on calculations derived from the Maine Plumbing Code.

Licensing of Wastewater Discharges

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Related Website: www.maine.gov/dep/blwq/docstand/wastepage.htm

The Division of Water Quality Management 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. As of 12/31/05 there are 169 POTW (Publicly Owed Treatment Works) licensees, 231 non-POTW licensees (includes industrial, commercial, cooling water and misc. sources), and 1,525 Overboard Discharge licenses or conditional permits for sanitary discharges from residential and commercial sources.

Highlights for 2004 - 2005

There were 127 permitting actions in 2004 and 73 permitting actions in 2005. Significant permitting actions for the improvement of water quality include:

- Mt. Desert-Otter Creek - This facility had problems with toxicity due to an extremely low dilution. This permit was retired when the facility was dismantled and the discharge conveyed to another nearby facility thereby increasing the dilution available for the discharge.
- Houlton Water Company - This permit implements a TMDL and reduces pollutant loadings on the Meduxnekeag River to improve dissolved oxygen level and reduce bottom attached algae problems. Implementation should return the river to attainment.
- Irving Forest Products - This permit (in conjunction with an enforcement action) eliminated a discharge to a wetland and associated Class A stream. The permit approved much more environmentally appropriate spray irrigation and subsurface discharges.
- International Paper - This permit implemented a Total Maximum Daily Load (TMDL) and reduced pollutant loadings to the Androscoggin River and to Gulf Island Pond to improve dissolved oxygen levels, habitat for aquatic life, and to eliminate algae blooms. Implementation should return the river and Gulf Island Pond to attainment.
- Rumford Paper - This permit implemented a Total Maximum Daily Load (TMDL) and reduced pollutant loadings to the Androscoggin River and to Gulf Island Pond to improve dissolved oxygen levels, habitat for aquatic life, and to eliminate algae blooms. Implementation should return the river and Gulf Island Pond to attainment.

Overboard Discharge Grant Program

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Related Website: www.maine.gov/dep/blwq/docgrant/obdpara.htm

As of December 31, 2005 Maine has 1,525 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 typically lead 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 causes the closure of shell fishing areas or that cause a public nuisance.

To date, the Overboard Discharge Grant Program has been funded with $7.5 million dollars from bond funds. Since the beginning of the program, approximately $6.3 million dollars have been spent in the process of removing 532 systems. As detailed in the following Table, the total acreage opened to shellfish harvesting since the start of the OBD Grant Program is over 17,000 acres. According to the DMR, opening and fully utilizing this much shellfish harvesting area has the potential to release a harvest with a retail value of over $4.4 million dollars annually.

Highlight 2004 - 2005

A total of 86 OBD systems were removed in 2004-2005. The numbers to date from the Maine Department of Marine Resources indicate 844 acres of shellfish habitat were re-opened to shellfish harvesting in 2004 (Table 3-4).

Table 3-4 Shellfish Areas Opened from 1991 to 2004

Town	Name of Shellfish Area	1991-1999 Acres Opened	2000 Acres Opened	2001 Acres Opened	2002 Acres Opened	2003 Acres Opened	2004 Acres Opened
Addison	Cape Split Hrbr, Eastern Hrbr	135					
Bar Harbor	Indian Point	49					
Beals	Black Duck Cove, Flying Place	107					
Blue Hill	Bragdon Brook Cove		198				
Bremen	Greenland Cove		100				
Brooklin	Naskeag Point, Center Hrbr, Eggemogin Reach	10					36
Brooksville	Seal Cove, Weir Cove, Orcutt Hrbr	1,549					
Cushing	Pleasant Point			189			
Deer Isle	Sylvester Cove, Dunham Point	241					
Eastport	Carrying Place Cove	400					
Freeport	Cousins River	87					
Friendship	Hatchet Cove	86					
Gouldsboro	Prospect Harbor	1,076					
Hancock	Jellison Cove, Hancock Point	749					
Harpswell	Quahog Bay	1,627					2
Isle au Haut	Thorofare	240					
Kennebunkport	Marshall Point						803
Kittery	Spruce Creek			478			
Milbridge	Pigeon Hill Bay, Back bay	443					
Mount Desert	Indian Pt., Mill Cove, Somes Sound, SW Hrbr- Western Way	290	1,893				3
Ogunquit	Oarweed Cove				120		
Owls Head	Otter Point	50					
Scarborough	Plummers Island		4				
Searsport	Stockton Springs	51					
Sedgwick	Billings Cove	9					
S. Thomaston	Waterman's Beach			59			
Steuben	Pigeon Hill Bay, Pinkham Bay	344					
Sullivan	Sullivan River	167					
Swans Island	Round Island, Mackerel Cove	99					
Tremont	Moose Island	965					
Trenton	MDI Narrows	69					
Vinalhaven	Arey Cove, Seal Cove	1,178	2,278				
W. Bath & Phippsburg	Bringham's Cove (New Meadows)					1,020	
Yarmouth	Cousins River	7					
York	York River		141				
Total Acreage Opened		**10,028**	**4,614**	**726**	**120**	**1,020**	**844**
Cumulative Totals		**10,028**	**14,642**	**15,368**	**15,488**	**16,508**	**17,352**

Compliance Evaluation

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Related Website: www.maine.gov/dep/blwq/docstand/wastepage.htm

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 sampling of their effluent quality on a selective basis, and monthly evaluation of the licensees' self-monitoring reports. Discharge licenses also require immediate reporting of any major malfunctions, bypasses or exceedences of license limits to DEP inspectors.

Highlight for 2004 - 2005

A new compliance initiative in 2004 and 2005 is the intensified focus on laboratory procedures at regulated facilities to ensure high quality compliance data is being provided to the Department. The Department developed a detailed QA/QC manual and provided training for the regulated community and has placed more emphasis on this aspect during facility inspections.

Enforcement of Water Quality Laws

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

The general philosophy of the DEP, BLWQ is to gain compliance and resolve problems at the least formal level that is appropriate, and to maximize the spirit of cooperation between the DEP and the regulated community. By fostering 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 become necessary 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 the DEP.

Highlight for 2004 - 2005

A total of 20 water discharge enforcement cases were settled in 2004 and 2005. In addition to the penalties collected that provide a deterrent to violation of water quality laws and recover any economic benefit that may have been gained, the enforcement actions also included a variety of corrective actions that will improve water quality such as: upgrades to wastewater treatment facilities, elimination of discharges, environmental remediation, and a variety of Supplemental Environmental Projects.

NATURE & EXTENT OF NONPOINT SOURCES OF POLLUTANTS AND PROGRAM RECOMMENDATIONS

THE MAINE NPS WATER POLLUTION CONTROL PROGRAM

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Related Website: www.maine.gov/dep/blwq/docwatershed/npscontrol.htm

Maine's Nonpoint Source (NPS) Water Pollution Management Program (38 M.R.S.A. §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 administers the NPS program in coordination with state, federal, and local governments as well as non-government organizations. State agencies conduct programs that: (1) implement enforceable authorities - state laws, rules and municipal ordinances governing specific land use activities that require people to comply with performance standards that protect water quality; and (2) promote voluntary usage of BMPs.

DEP delivers services to help protect or improve Maine's lakes, streams, rivers and coastal waters. Under the 319 Grant Program, DEP helps watershed groups assess water quality problems and take action to reduce or remove pollution sources. During 2004-2005 there were more than 120 active NPS projects, each with a local project sponsor providing local matching contributions. These projects are working to protect watersheds and reduce pollutant loading into surface waters. DEP funds a number of programs that are designed to reduce NPS water pollution problems. The Department also provides technical assistance to local watershed groups and delivers outreach programs to target audiences (developers, contractors, engineers, municipal officials, teachers, etc.) as well as to the general public. DEP supports assessment work through the Volunteer Lake Monitoring Program, StreamTeams, stream benthic macro-invertebrate sampling, and development of TMDL assessment reports for NPS impaired waters.

NPS work has contributed to improvement and restoration of water quality in many waterbodies. Water quality restorations reported (For more information, please refer to the "Category Listing Change Summary: 2004 to 2006" in the Lakes Section of Appendix 3 in this report.), include several lake watersheds that received considerable sustained NPS abatement work in preceding years. Water quality improvement coincides with NPS work within watersheds for lakes including, but not limited to, Cobbosseecontee, Mousam and Highland lakes.

The 2004 NPS Management Program Annual Report (68 pages, published 3/31/05) and The 2005 NPS Management Program Annual Report (89 pages, published 4/03/05) summarizes accomplishments of DEP's Nonpoint Source Program activities. Both reports are available at the following URL:

www.state.me.us/dep/blwq/docgrant/319_files/reports/index.htm

As an additional, related resource, BMP guidance manuals are available online here:

www.maine.gov/dep/blwq/training/index.htm

(Traditional hardcopies of many of these BMP guidance manuals are available from the Nonpoint Source Training and Resource Center. Contact Bill Laflamme at (207) 287-7726 or at William.N.Laflamme@SPAM-ZAPmaine.gov to learn more about requesting publications.)

Priority Waterbodies

The Department will focus resources in the Nonpoint Source Program upon "priority waterbodies" for marine waters, rivers/streams and lakes, which are presented below in Tables 3-5 through 3-7 (respectively). These lists were last amended in 1998; however updated lists will be included in the 2008 Integrated Report. Priority waters are selected based on NPS impairment or threat status, value of the waters and feasibility for success of restoration or protection efforts. The NPS Management Plan and these lists provide a basis for structuring 319 implementation projects and other NPS projects that help turn BMP planning and development ideas into effective on-the-ground pollution controls.

Table 3-5 Maine NPS Priority Waters List - Marine Waters

(17 total; listed geographically, west to east)

Piscataqua estuary	Royal River estuary	St. George River estuary
Spruce Creek	Cousins River estuary	Weskeag River
York River	Harraseeket River estuary	Rockland Harbor
Ogunquit River estuary	Maquoit Bay	Union River estuary
Webhannet River estuary	New Meadows River estuary	Machias River estuary
Scarborough River estuary	Medomak River estuary	

Note: The above list is duplicated in the Estuarine / Ocean Section (4.6) of this chapter, under the subsection title of: "Coastal Nonpoint Source Priority Watersheds". That section also includes a list of salmon river watersheds that are given a priority status under the Clean Water Act, Section 319-funded Nonpoint Source Program and the Shore Stewards Program.

Table 3-6 Maine NPS Priority Waters List – Rivers and Streams

(55 total; listed alphabetically by waterway and county; boldfaced entries are highest priority)

Allagash River, Aroostook	**Fish Brook, Somerset**	**Piscataqua River, Cumberland**
Bond Brook, Kennebec	**Frost Gully Stream, Cumberland**	Pleasant River, Cumberland
Branch Brook, York*	**Great Works River, York**	**Pleasant River, Washington**
Capisic Brook, Cumberland	**Kenduskeag Stream, Penobscot**	**Presque Isle Stream. (includes North Brook), Aroostook***
Caribou Stream, Aroostook	Kennebunk River, York	**Prestile Stream, Aroostook**
Carrabassett River, Franklin	Limestone Stream, Aroostook*	**Presumpscot River, Cumberland**
Chandler Brook, Cumberland	Little Androscoggin River, Oxford	Royal River, Cumberland
Chapman Brook, Oxford*	Little Ossipee River, York	Salmon Brook, Aroostook
Cobbosseecontee Stream, Kennebec	**Little Madawaska River, Aroostook***	Salmon Falls River, York*
Cold River, Oxford	**Long Creek, Cumberland**	**Sebasticook River, Somerset**
Collyer Brook, Cumberland	**Machias River, Washington**	**Sheepscot River (includes West Branch), Lincoln**
Crooked River, Oxford	Medomak River, Lincoln	Soudabscook Stream, Penobscot
Daigle Brook, Aroostook	**Meduxnekeag River, Aroostook**	St. George River, Knox
Denny's River, Washington	Mousam River, York	Stroudwater River, Cumberland
Dickey Brook, Aroostook	**Narraguagus River, Washington**	**Sunday River, Oxford**
Ducktrap River, Waldo	Nezinscot River, Oxford	Togus Stream, Kennebec
East Machias River, Washington	Nonesuch River, Cumberland	Union River, Hancock
East Branch Piscataqua River, Cumberland	Ossipee River, Cumberland	**Wesserunsett Stream, Somerset**
	Perley Brook, Aroostook	

* denotes community public drinking water supply

Table 3-7 Maine NPS Priority Waters List - Lakes

(181 total; listed alphabetically; boldfaced entries are highest priority;
town names are included only to identify general pond locations)

Adams Pond, Boothbay*	Halls Pond, Hebron*	Peabody Pond, Sebago
Alamoosook Lake, Orland	Hancock Pond, Embden*	Pemaquid Pond, Waldoboro
Alford Lake, Hope	Hancock Pond, Denmark	**Pennesseewassee Lake, Norway**
Allen Pond, Greene	Hermon Pond, Hermon	Phillips Lake, Dedham
Anasagunticook Lake, Canton*	Highland Lake, Windham	Pleasant Lake, Otisfield
Androscoggin Lake, Leeds	Highland Lake, Bridgton	**Pleasant Pond, Richmond**
Annabessacook Lake, Winthrop	Hogan Pond, Oxford	Pleasant Pond, Turner
Bauneg Beg Pond, Sanford	Holland Pond, Limerick	Pleasant Pond, T4 R3 WELS
Bay of Naples, Naples	Horne Pond, Limington	Pocasset Lake, Wayne
Beach Hill Pond, Otis	Hosmer Pond, Camden	**Pushaw Lake, Orono**
Bear Pond, Hartford	Ingalls Pond, Bridgton	Quimby Pond, Rangeley
Bear Pond, Waterford	Island Pond, Waterford	Raymond Pond, Raymond
Beaver Pond, Bridgton	Kennebunk Pond, Lyman	Roberts Wadley Pond, Lyman
Berry Pond, Winthrop	Keoka Lake, Waterford	Round Pond (Little), Lincoln
Big Indian Pond, St. Albans	Knickerbocker Pond, Boothbay	**Sabattus Pond, Sabattus**
Big Wood Pond, Jackman*	Lake Auburn, Auburn*	**Sabbathday L, New Gloucester**
Biscay Pond, Damariscotta	Little Cobbosseecontee Lake Winthrop	Saint Froid Lake, Eagle Lake*
Bonny Eagle Lake, Buxton	Little Ossipee, Waterboro	Saint George Lake, Liberty
Boulter Pond, York*	Little Pennesseewassee, Norway	Salmon Lake, Belgrade
Branch Lake, Ellsworth*	Little Pond, Damariscotta*	Salmon Pond, Dover-Foxcroft*
Branch Pond, China	Little Sebago, Windham	Sand Pond, Monmouth
Brettuns Pond, Livermore	Little Wilson Pond, Turner	Sand Pond, Denmark
Buker Pond, Litchfield	Long Lake, Bridgton	**Sebago Lake, Sebago***
Bunganut Pond, Lyman	Long Lake, T17 R4 WELS	**Sebasticook Lake, Newport**
Caribou, Egg, Long Pd, Lincoln	Long Pond, Belgrade & Rome	Sennebec Pond, Union
Carlton Pond, Winthrop*	Long Pond, Bucksport	Seven Tree Pond, Warren
Center Pond, Lincoln	Long Pond, Southwest Harbor*	Shaker Pond, Alfred
Chases Pond, York*	Long Pond, Waterford	Silver Lake, Bucksport*
Chickawaukie Pond, Rockport	Lovejoy Pond, Wayne	South Pond, Warren
China Lake, China*	Lower Narrows Pond, Winthrop	Spectacle Pond, Vassalboro
Clary Lake, Whitefield	**Lower Range Pond, Poland**	Square Pond, Acton
Cobbosseecontee Lake, Winthrop*	**Madawaska Lake, Westmanland**	Starbird Pond, Hartland*
Cochnewagon Lake, Monmouth	**Maranacook Lake, Winthrop**	**Swan Lake, Swanville**
Coffee Pond, Casco	Mattanawcook Pond, Lincoln	Swan Pond, Lyman
Cold Stream Pond, Enfield Coleman	McGrath Pond, Oakland	**Taylor Pond, Auburn**
Pond, Lincolnville	Meduxnekeag Lake, Oakfield	Thomas Pond, Casco
Crawford Pond, Warren	**Megunticook Lake, Lincolnville**	**Thompson Lake, Oxford**
Crescent Pond, Raymond	**Messalonskee Lake, Sidney**	Threecornered Pond, Augusta
Crooked Pond, Lincoln	Middle Pond, Kittery*	**Threemile Pond, Windsor**
Cross Lake, T17R5	**Middle Range Pond, Poland**	Togus Pond, Augusta
Crystal Lake, Gray	Mirror Lake, Rockport*	Torsey Pond, Mt. Vernon &
Damariscotta Lake, Jefferson*	Moose Hill Pd., Livermore Falls*	Readfield
Dexter Pond, Winthrop	Moose Pond, Sweden	**Trickey Pond, Naples**
Dodge Pond, Rangeley	Mount Blue Pond, Avon*	Tripp Pond, Poland
Duckpuddle Pond, Waldoboro	**Mousam Lake, Shapleigh**	**Unity Pond, Unity**
Dyer Long Pond, Jefferson	**Nequasset Lake, Woolwich***	**Upper Narrows Pd, Winthrop***
East Pond, Smithfield	Nokomis Pond, Newport*	**Upper Range Pond, Poland**
Echo Lake, Presque Isle	No Name Pond, Lewiston	Varnum Pond, Wilton*
Echo Lake, Readfield	North Pond, Norway	Ward Pond, Sidney
Ellis Pond, Roxbury	North Pond, Smithfield	Wassookeag Lake, Dexter*
Estes Lake, Sanford	North Pond, Sumner*	Watchic Pond, Standish
Flying Pond, Vienna	North Pond, Warren	**Webber Pond, Vassalboro**
Folly Pond, Kittery*	Norton Pond, Lincolnville	West Harbor Pond, Boothbay Harbor
Folly Pond, Vinalhaven*	Notched Pond, Raymond	Whitney Pond, Oxford
Forest Lake, Windham	Otter Pond, Bridgton	Wilson Lake, Acton
Fresh Pond, North Haven*	Panther Pond, Raymond	Wilson Pond, Wilton
Grassy Pond, Rockport*	Paradise Pond, Damariscotta	Wilson Pond, Wayne
Great Moose Lake, Hartland	Parker Pond, Casco	Wood Pond, Bridgton
Great Pond, Belgrade	Parker Pond, Vienna	Woodbury Pond, Monmouth
Green Lake, Ellsworth	Parker Pond, Jay*	Young Lake, Mars Hill*
Haley Pond, Rangeley	Pattee Pond, Winslow	

* denotes a community public drinking water supply

Coastal Nonpoint Source Priority Watersheds

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One approach the State of Maine is using to attain or maintain water quality standards is through designating nonpoint source priority watersheds for preferential treatment by state agencies. The 319 program awards grants based on the priority watersheds, Salmon River Watersheds (Table 3-9) and those waters scheduled for a TMDL (Total Maximum Daily Load) analysis. Listed waterbodies have both significant value from a regional or statewide perspective, and water quality that is either impaired, or threatened to some degree due to nonpoint source water pollution from land use activities in the watershed. Table 3-8 gives the water quality problem or threat as was determined by a Maine Watershed Management Committee in the early 1990's; while Table 3-9 lists watersheds of salmon rivers that are given a priority and/or special treatment with regard to projects conducted within their boundaries. Volunteer monitoring groups have formed in many of these watersheds to monitor and assess the condition of these estuaries.

Table 3-8 Priority Coastal Waters with Threatened or Impaired Water Quality from Nonpoint Source Pollution

Coastal Water *	Water Quality Problem or Threat		
	Bacteria	Dissolved Oxygen	Toxic Contamination
Piscataqua River estuary			X
Spruce Creek	X	X	X
York River estuary		X	
Ogunquit River estuary	X	X	
Webhannet River estuary	X	X	
Scarborough River estuary	X		X
Royal River estuary	X		
Cousins River estuary	X		
Harraseeket River estuary	X		
Maquoit Bay	X		
New Meadows River estuary	X	X	X
Medomak River estuary	X	X	
St. George River estuary	X	X	
Weskeag River	X	X	
Rockland Harbor	X		X
Union River estuary	X		
Machias River estuary	X		

*some of these estuaries are on the 2000 Non-attainment List (see Appendix)

Table 3-9 Salmon River Watersheds

Salmon River Watersheds	
Denny's River	Machias River
East Machias River	Narraguagus River
Pleasant River	Ducktrap River
Sheepscot River	Cove Brook *

* not included as a priority in the 319 program because it was added as a salmon river after the 319 list was developed

WATERSHED MANAGEMENT FOR STORMWATER PROGRAMS

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Related Website: www.maine.gov/dep/blwq/docstand/stormwater/index.htm

Stormwater Standards for Development and Construction

Maine's approach to managing impacts to water quality due to stormwater runoff underwent significant change in 2005. Revisions to Chapters 500 and 502 were approved by the Maine Legislature and went into effect on November 16, 2005. These changes substantially increase the level of water quality protection afforded to all Maine waters, and in particular increase the treatment standards for urban impaired stream watersheds.

The highlights of the rule changes include:

- A change in the threshold for needing a permit. Previously the threshold was set at 20,000 square feet or 1 acre of impervious area, depending on whether or not the watershed was designated either "most at risk" or "sensitive or threatened," or 5 acres of disturbed land. If not designated in either of those categories, a development project was not required to meet water quality standards. Under the new program, the threshold in all instances is 1 acre of disturbance, which is the same as the threshold under the Construction General Permit, also administered by the Maine DEP as part of the MEPDES Stormwater Program.
- Stormwater standards for development projects now apply in all watersheds of the state. Under the old rules, only those watersheds designated as "most at risk" or "sensitive or threatened" had any stormwater standards.
- New BMP standards replace the former 80% TSS removal standard for all size projects, and replace the peak flow standard for smaller projects. New BMPs focus on stream channel protection through treatment of total runoff volume for smaller storm events.
- A new standard has been created to provide additional treatment requirements for larger projects in the watershed of an "urban impaired stream." Urban impaired streams have been identified as those not meeting water quality classifications primarily due to impacts from urban runoff. Thirty-two streams have been designated as "urban impaired" in Chapter 502.
- Municipalities have been given an incentive to address existing sources of stormwater pollution through development of watershed management plans. If approved by Maine DEP, these plans can substitute for the state stormwater permit program.
- The Maine Stormwater Law has been revised to allow the state to regulate existing stormwater sources in impaired watersheds where those sources are identified through the TMDL process.
- A re-certification requirement every five years has been added for projects to ensure that BMPs are being properly maintained. Lack of maintenance has been a major issue with respect to BMP performance in existing developments.

The revisions to the rules also allow the state to combine permit requirements for construction activities that need coverage under the MEPDES stormwater program with those of the Maine Stormwater Law.

For more information about the Maine Stormwater Management Law and Rules, including a brochure that has further information about the changes to the rules, go to the DEP website listed above.

Stormwater Standards for Municipal Separate Storm Sewer Systems (MS4s) and Industrial Stormwater Discharges

Maine DEP issued a general permit for 28 municipalities and 7 other state or federal facilities with regulated MS4s in 2003. The MS4s have organized into 4 regional groups and have achieved significant progress in meeting goals in their permits through collaboration. In particular, public education has been accomplished through state wide media campaigns funded through a combination of local contributions and nonpoint source grants.

Maine DEP issued a multi-sector general permit for industrial stormwater discharges in October 2005. Maine's general permit largely mirrors the previous EPA general permit with respect to requirements for Stormwater Pollution Prevention Plans at the site of regulated activities. As of March 2006, nearly 600 facilities had filed for multi-sector permit coverage, and another 590 had certified that they have "no exposure" of pollutants to stormwater.

LAND USE AND GROWTH MANAGEMENT

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Related Websites: Site Law www.maine.gov/dep/blwq/docstand/sitelawpage.htm

NRPA www.maine.gov/dep/blwq/docstand/nrpapage.htm

Shoreland Zoning Act www.maine.gov/dep/blwq/docstand/szpage.htm

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 the Department of Environmental Protection before beginning construction. Under the Natural Resources Protection Act (NRPA), a permit from the DEP is required for any activity in, on or adjacent to a protected natural resource, including rivers, streams, brooks, great ponds, coastal wetlands, freshwater wetlands, sand dunes and fragile mountain areas.

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 for this program 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/blwq/education.htm

Since much of the degradation to the environment comes from individual actions, public education is vital to the mission of the Maine DEP. The Department has a responsibility to educate the public about the environment, requirements of environmental laws, and how to protect Maine's natural resources. To accomplish these goals, the DEP must encourage behaviors and social norms that reduce human impact on water quality. In short, the Department must help to foster and encourage greater stewardship. In order to affect the behavior changes we need from our citizens, some programs are adopting social marketing principles including: determining target audiences and message, gathering research data on target audiences, determining effective outreach tools, and assessing the effectiveness of campaigns.

Target Audiences:

1) Youth and Teachers

The DEP conducts 50 - 70 classroom visits (over 1,500 students), Envirothon, field days (over 1,200 students), Bug Mania and Earth Science Day (both with about 2,000 students). In addition DEP funds 5 watershed grants per year to students and their teachers who partner with local organizations to protect a local water resource. The DEP also sponsors and organizes Water Festivals for 800 students and their teachers in the southern part of the state each year and every other year in northern Maine. The DEP conducts teacher training, both pre-service and in-service training. Each year the DEP hires AmeriCorps interns to assist with these programs.

2) General Public

The DEP divides the public into categories based on the message of the campaign: homeowners for yard care practices, businesses for better commercial practices, etc. For example, the MS4 (Municipal Separate Storm Sewer System) communities will be conducting pilot projects in the next year to encourage targeted BMPS (i.e., yard care in some communities and pet waste pick-up in others) in targeted neighborhoods with evaluation as part of their permits. In addition the DEP is partnering with the MS4s and other NGOs on a mass media campaign, “ThinkBlue; Clean Water Starts with You”. Assessment shows that the campaign has been very effective. Statewide phone surveys in the past 2 years found that the public remembered our radio and TV message without prompting 14% in 2004 and 24% in 2005, even 2 months after the end of the radio and TV ads. With prompts, 72% remembered the ads. Although the campaign was not designed to urge people to particular actions, 26% in 2005 and 35% in 2006 said they had or would take a specific action to protect water quality. So we know this is a valid expenditure of our (EPA, DEP, MS4s, NGOs) monies.

LakeSmart is another example of reaching out to a subsection of the public. LakeSmart is an educational program that offers free opportunities for lakeshore homeowners to learn how to manage their home and yard to protect the water quality of their lake. The goal of LakeSmart is to change the increasingly common suburban landscaping practices around lakes to more natural, lake-friendly environments. LakeSmart is active on 10 lakes around the state. As additional outreach activity, DEP displays interactive booths to the target audiences that attend state flower shows, river events, state and local fairs, Earth Day Expos, etc.

3) Contractors, Municipal Officials, and Other Targeted Groups

Through the NonPoint Source Training Center, the DEP reaches out to contractors, landscapers, and code enforcement officers to bring technical assistance, certification, and new training. DEP staff also train wastewater treatment plant operators, planning boards, realtors, CEO code enforcement and other audiences as needed.

Partnering:

The department is focused on partnering with other agencies and organizations wherever possible to create synergy through combined efforts towards accomplishing a common goal and to make resources go further.

Assessment:

We are including assessment in our projects to a much greater degree than in the past in order to be sure we are putting our time and resources where we have measurable results. Our evaluation no longer just looks at program evaluation – the number of workshops held or number of brochures handed out. We also consider impact - what did we accomplish on the ground (or in the water) and context – who is doing what and why. For example, the LakeSmart program assessed their first 2 years and found that the number of workshops/participants was lower than the original goal. However, 73% of participants had learned something new, 37% had a LakeSmart property evaluation done, and 83% of those took action (BMPs) to protect water quality. As a result of this evaluation we created a list "Elements for a Successful Outreach Program" that we will use to determine where we focus our efforts in the future. Some elements on the list are working with a local spark plug, obtaining a 2 year commitment,, offering incentives…) This assessment makes us more effective and efficient and we know whether we are making concrete changes on the ground. Assessing whether our programs actually impact water quality will be the next step.

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

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Assessment of the many types of costs and benefits associated with water quality changes is usually a very difficult task. Although they are often complex, calculating the direct economic cost of environmental regulation is possible by determining financial outlays spent to run programs and then using those figures as a "cost-proxy." Conversely, benefits gained from water quality programs are even more difficult to quantify because it is not possible to calculate approximate figures via proxies. While it is usually possible to determine that an improvement in water quality has been gained and to indicate some quantitative sense of the benefits observed; usually there is no easy way to directly asign dollar figure values to the changes and then communicate this information in terms of human health or the environment.

When the indirect economic and social costs/benefits of water quality protection, such as jobs lost or gained, positive or negative effects on competitiveness, worker productivity and satisfaction, etc., are considered and included in an analysis, the layers of complexity that they bring to the calculations can be overwhelming. If they are addressed, these indirect costs and benefits of environmental improvements are often based on assumptions, subjective evaluations and qualitative data that are not easily distinguishable from other economic and social costs / benefits.

The different classes and categories of benefits of water quality protection are often difficult to compare with economic costs and are essentially impossible to compare with the extremely vague category of social costs. Figures in dollar values cannot be assigned to many of the benefits, so water quality and the environment would nearly always end up on the losing side of the equation if the cost versus benefit comparison were limited to only economic factors and the social aspects were ignored.

Despite the fact that calculating benefits is a difficult task, waterbodies that were once heavily and visibly polluted are now supporting their designated uses of swimming, fishing, wildlife habitat, and recreation. One common example of a direct benefit that has been cited in the past, are the results from construction of wastewater treatment plants for industrial and municipal facilities. In this example, these benefits are not exclusively economic or social; they are both. This inseparability of economic and social costs and benefits is probably true in most cases, although in some scenarios one type of benefit may be clearly dominant. In another example, more and more Maine towns are currently collecting premium tax revenues for riverfront properties that, only 25 years ago, no one wanted to own. Again, this example provides both economic benefits from an increased tax base along with the many social benefits associated with clean rivers because everyone may use and enjoy them.

For many of the reasons stated above, the economic tools that would be useful in helping to estimate the costs and benefits of improvement in water quality have never been fully developed. As future environmental problems grow in complexity (and in cost) and as public budgets tighten into the foreseeable future, justifying the expense or demonstrating the true benefit of water quality related programs are likely to be one of the main causes for delay of support for continued improvement of water resources. The era to begin developing basic economic tools for measuring environmental projects has already passed; the time when more sophisticated economic methods will be an essential part of "doing business" is rapidly approaching.

COSTS OF THE STATE WATER QUALITY PROGRAM

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Due to recent changes in the financial / accounting organization and related staff assignments at the DEP, the Department is unable to provide a detailed cost analysis and summary in the 2006 305(b) Report. The Department hopes to be positioned to once again supply overall budgetary information with an appropriate level of detail by the 2008 reporting cycle. A quick summary of previously-reported, overall budgetary figures will be provided instead of new budget figures. The first of these figures if for the year 2000, when it was reported "In 2000, the cost to administer water-related programs [in the Department's Bureau of Land and Water Quality (DEP BLWQ)] was approximately 11.1 million dollars." During the 2004 reporting cycle, the Bureau reported program costs for state fiscal years (which run from July 1st to June 30th) 2001 through 2003. The briefest possible summary of DEP BLWQ program administration costs is the following; in 2001 these costs were approximately 10.8 million dollars, in 2002; approximately 13.5 million dollars and in 2003; approximately 16.4 million dollars.

Changes in Cost-Benefits Reporting

When compared to the 2004 305(b) Report this section is also shorter because of an overall effort to reduce the size of these reports. A step that was taken this year in the effort to shrink the report's size was to provide financial figures for the following programs in with the "highlights" of these programs in Section 3-2 "Effectiveness of Point Source Pollution Control Programs" rather than reporting them separately in Section 3-5. The affected program areas are as follows: 1) Construction of Wastewater Treatment Facilities / State Revolving Fund, 2) Maine Combined Sewer Overflow Program, 3) Small Community Facilities Program and 4) Overboard Discharge Grant Program. Please refer back to Section 3-2 to find financial information related to these programs.

NONPOINT SOURCE MANAGEMENT

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Related Website: www.maine.gov/dep/blwq/docwatershed/npscontrol.htm

Table 3-10 summarizes costs for NPS (non-point source) pollution programs involving Federal grants under section 319 of the Clean Water Act in addition to non-federal matching funds. This summary does not include other State agency funding of personnel or programs conducting NPS control activities. Table 3-10 is a summary of Section 319(h) Clean Water Act Grant Awards to Maine DEP for Federal Fiscal Years (FFY) 2003 to 2005.

Table 3-10 Section 319(h) Clean Water Act Grant Awards to Maine

Grant Year (FFY)	Federal 319 Award	Base	Incremental	Non-Federal Match	Total
2003	$2,740,732	$1,572,554	$1,168,178	$1,827,155	$4,567,887
2004	$2,670,204	$1,502,081	$1,168,123	$1,780,890	$4,451,094
2005	$2,318,844	$1,151,519	$1,167,325	$1,546,669	$3,856,513

POLLUTION PREVENTION AND COST BENEFIT INFORMATION

The Pollution Prevention (P2) Program:

This program is one of the three major program areas that fall under the Department's Office of Innovation and Assistance (OIA). The two other main programs in the OIA are the Small Business Technical Assistance Program (SBTAP) and the Toxics and Hazardous Waste Reduction Program (THWRP). Table 3-11 summarizes the various ways that the Office tracks its level of service to customers and indicates that the OIA is a program area that finds itself interacting with a great many businesses and individual citizens.

Table 3-11 Office of Innovation and Assistance – Technical Assistance Efforts

Service Tracking Category	2003	2004	2005
Hotline Calls / e-mail Inquiries	17,846	10,513	6,544
Staff Onsite Visits	513	10,298	1,007
Training Activity Participants	830 *	757 *	N/A *
Workshop Participants	830 *	757 *	N/A *
Individual Pieces of Mail Sent	4,855	48,704	2,000
OIA Home Page Visits	14,536	N/T	N/T
Teleconference (attendees)	6,346	4,362	1,646
Permits Issued	237	221	351

* Unlike 2001 – 2002 data, training activity and workshop participants were counted the same
N/A means "Not Available" and N/T means "Not Tracked"

It must be noted that the above figures are totals from all program areas that make up the OIA, and that since these programs often work in close concert with each other, it can be difficult to separate out the actual contribution made by an individual program. However, to the extent possible, the balance of this section will focus on the P2 Program as a separate entity.

The Pollution Prevention (P2) Program is based on the practical notion that it is far more protective of the environment (in addition to being far more cost-effective) to eliminate or reduce pollution at its source rather than to clean up pollution that has already been released into an ecosystem. The P2 Program engages in a proactive approach that utilizes the common ideals of increased efficiency, conservation of resources, reduced waste (and costs), etc. to identify those points in a process that generate pollution. Once identified, the P2 Program also utilizes many approaches like forming good habits, purchasing new products and implementing new technologies to analyze, zero in on and help to correct those portions of a process that generate preventable pollution. Then the Program uses some or all of these tools to reduce or eliminate that source of pollution.

The P2 Program has two distinct areas where it directs its outreach efforts and consequently, has two areas where it conducts the majority of its business: these areas are "Household and Citizen Assistance" and "Business and Industry Assistance." Although significant resources and help is available for and utilized by households and citizens, due to the potential for sheer number of individual contacts, the P2 Program is really best able to attempt to track the potential economic impact of its efforts in the area of assisting business and industry. Documenting how the Program has helped other businesses in the past is a crucial part of building future relationships by being able to demonstrate how assistance from the program could benefit a business' budget in addition to it's compliance with environmental regulations. This means that gathering basic cost-benefit data is more likely to be considered a priority and to occur within the P2 Program when compared to other areas of the DEP.

Given these circumstances, along with repeated exposure to how much value is thought to be placed upon the bottom line by private business, one might expect to find a high incidence of figures indicating benefits of past projects. Analyzing only the

P2 Program's 10 published case studies from 2003 (1 entry), and 2004 (9 entries) shows the following statistics:

- In 8 of the 10 case studies (80%), project expenses were not estimated or not reported by the business.
- Of the 2 remaining cases, 1 reported "real dollar amounts", while the other case reported an estimated cost of “approximately two hundred thousand dollars.”
- In 5 of the 10 case studies (50%), benefits of the project were not estimated (or not reported to P2 Program staff).
- Of the 5 remaining cases, two failed to estimate a fairly concrete figure for the project’s benefit, but they did provide a reason – variations in fuel costs would affect the total value of savings.
- As far as non-monetary benefits are concerned, none of the 10 case studies failed to either estimate or describe benefits in quantifiable terms of either a % reduction or a reduction in amount / time (e.g. lbs/year) of a pollutant, waste stream, etc.

(See Table 3-12 for a complete list of summary information on the case studies used to generate these figures)

The above figures seem to support the idea that even under the best of circumstances (i.e. government agency and private business working cooperatively together); water quality programs are not likely (or sometimes able) to collect information on the benefits that they are providing to society. Once one considers other factors, for example, the occasionally contentious relationships that exist between agency and business, the chances for successfully engaging all parties and exchanging information on true costs and benefits of improving waters are reduced significantly. As far as the private sector influence is concerned on the above statistics, even the same business with different projects in different years produced variations – a business might calculate a cost and not the benefits with the opposite categories being calculated on another project. No one factor seemed to be driving consistency in reporting results.

Clearly moving the process of estimating cost and benefits from a single program up in scale to an agency, department or an entire state with multiple departments involved, non-government organizations, volunteer groups, non-profits, etc. would add layers of complexity to any proposed method of calculation. The question to answer is a seemingly very basic one “what benefits are all of these organization’s activities adding to improving the environment?” The question that must be addressed first is “what tools can these organizations use to figure out and estimate the environment benefits that their activities create?” Both questions are important – neither has an easy answer.

For more information on the Maine Department of Environmental Protection P2 Program:

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Related Website: www.maine.gov/dep/oia/p2/index.htm

Table 3-12 Summary Information on P2 Program Case Studies

Year	Name	Estimated Expense ($)	Estimated Benefit ($)	Estimated Resource Savings
2003	Washboard Laundry	N/E	N/E	Laundromat installed restrooms for patrons, but now uses more efficient washing machines so the facility now uses 26% less water annually, reduced electricity costs by 39% annually and instituted various innovative programs
2004	Bath Iron Works	N/E	$70,000	Lean manufacturing program results in 10% of solid wastes and 16% of hazardous wastes eliminated
2004	International Paper - Androscoggin	~ $200,000	~ $14,000 / day	Particulate emissions were cut from 46 to 38 lbs / hour and fuel oil use was cut from 3-8 to 1-2 gallons / minute while the steaming rate was increased by 50% or about 100,000 lbs / hour
2004	International Paper - Bucksport	N/E	Variable	Completed four separate boiler optimization projects that resulted in a total savings of approximately 80,000 barrels of #6 oil on an annual basis and a reduction in related air emissions
2004	International Paper - Bucksport	N/E	N/E	IP now sends an average of 4,500 wet tons per year of fly ash to Dragon Products Thomaston (Cement) Plant, which reduces the amount of virgin material utilized by Dragon and saves IP valuable landfill space
2004	NorDx Laboratories	N/E	Variable	By beginning to switch its fleet of automobiles to more fuel efficient models, NorDx was able to reduce it associated CO2 emissions by 18% and reduce fuel consumption by 30%
2004	The Colony Hotel	N/E	N/E	The hotel instituted a number of new conservation-orientated policies; alone, the new recycling program provided the following results: 7,745 lbs of paper recycled, 1,458 lbs of metal recycled, 1,503 lbs of plastic recycled and 686 pounds of glass recycled
2004	Bath Iron Works	N/E	$70,000	Lean manufacturing program results in 10% of solid wastes and 16% of hazardous wastes eliminated
2004	International Paper - Androscoggin	~ $200,000	~ $14,000 / day	Particulate emissions were cut from 46 to 38 lbs / hour and fuel oil use was cut from 3-8 to 1-2 gallons / minute while the steaming rate was increased by 50% or about 100,000 lbs / hour

N/E means "Not Estimated"

Chapter 4 Surface Water Monitoring & Assessments

Assessment Methodology

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Listing Methodology for the 2006 305b / 303d Integrated Report List

Determination of attainment is based on a water meeting all standards and criteria established for its assigned classification (38 MRSA Section 465, 465-A, 465-B). Waters are listed by Assessment Unit (HUC) and/or waterbody segment in one of five categories of attainment (see category descriptions below). The listing does not consider fish consumption advisories due solely to mercury (Note: All freshwaters are listed by narrative in Category 5-C **"**Impairment caused by atmospheric deposition of mercury" as well as in one other category. All marine waters are listed by narrative in Category 5-D "Legacy Pollutants" as well as in one other category, see Marine explanation below[†]). Each listing provides the Assessment Unit, Waterbody Number, Name, Size, Classification, Monitored Date, and depending on assessment determination, information on impairment, notes on previous listings, or other information. Listings for all surface waters are found in Appendices II-IV.

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 assessment unit attains all applicable standards. Assessment is based on combined evaluation of the following information.

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

2. Old data (greater than five years) 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

† 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. This Integrated Water Quality Monitoring and Assessment Report does not consider this statewide advisory in establishing other category listings.

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 per square mile according to U.S. Census data obtained in 2000 and watershed conditions as described in item 4, above. For lakes, determinations are based on census data at the town level and consider all towns in the direct drainage of larger (referred to in previous 305(b) reports as "significant") 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 Department of Inland Fisheries and Wildlife 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) 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) for some standards indicating attainment, and no change in associated conditions.

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

4. (For lakes) Probabilistic-based monitoring that 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. Monitoring schedules are assigned to these waters.

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.

3. Old data, with:

   a. low reliability, no repeat measurements (e.g. one-time synoptic data),

   b. a change of conditions without subsequent re-measurement; or

c. no evidence of human causes or sources of pollution to account for observed water quality condition (natural conditions that do not attain water quality standards are allowed by 38 M.R.S.A. Section 464.4.C).

4. (For lakes) Current data indicates a return to (or a trend towards) attainment standards over the past few years but requires confirmation; or conversely, that trophic or dissolved oxygen profile evaluation suggests deteriorating conditions requiring further study and verification. (Since lakes respond over a longer period of time and can be highly influenced by weather attributes, it is appropriate to recommend additional monitoring before attainment is determined.)

Category 4:

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

A water body is listed in category 4 when impairment is not caused by a pollutant; or, if impairment is caused by a pollutant, where a TMDL has already been completed or other enforceable controls are in place. An impaired waterbody will 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-lists 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 also where enforceable management changes are expected to correct the condition,

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

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

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

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 that attainment has been achieved. (Enforceable controls may include: new wastewater discharge licenses issued without preparation of a TMDL, other regulatory orders, contracts for nonpoint source implementation projects, regulatory orders or contracts for hazardous waste remediation projects).

4-C: Impairment is not caused by a pollutant. Waters impaired by habitat modification. Waters that show impairment due to natural phenomena are listed in Categories 1 through 3 (natural conditions that do not attain water quality standards and criteria are allowed by 38 M.R.S.A. Section 464.4.C).

Category 5:

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

Waters are listed in one of the Category 5 sub-lists when:

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

3. Those waters have been 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 are assigned based on the value of a particular water (considering size, public use, proximity to population centers, 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 for TMDL completion are included in Chapter 8 Tables 8-4, 8-5 and 8-6 as well as in the Appendices.

5-B: Impairment is 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, 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). Certain small streams that are impaired solely by bacteria contamination but where recreation (swimming) is impractical because of their small size are listed in 5-B. Relative to other, more ecologically detrimental causes of impairment these waters are considered a lower priority for TMDL completion. A projected schedule of TMDL completion is included where applicable. Waterbodies impaired only by Combined Sewer Overflows, 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 and a regional scale TMDL is required. Maine has a fish consumption advisory for fish taken from all freshwaters due to mercury. Many waters, and many fish from any given water, do not exceed the action level for mercury. However, because it is impossible for someone consuming a fish to know whether the mercury level exceeds the action level, the Maine Department of Health and Human Services decided to establish a statewide advisory for all freshwater fish that recommends limits on consumption. Maine has already instituted statewide programs for removal and reduction of mercury sources. The State of Maine is participating in the development of regional scale TMDLs for the control of mercury.

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

1. waters impaired only by PCBs, dioxins, DDT, or other substances already banned from production or use. It includes 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 (hepato-pancreas organ) of lobsters due to the presence of persistent bioaccumulating toxics found in that organ. This is a low priority for TMDL development since there is no identifiable and controllable load.

Delisting from an Impaired to an Unimpaired Category.

Because there are a number of listing options available in the integrated list, some waterbodies may be removed from the previous 303(d) list, however, only 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. Acceptable reasons for not listing previously listed waters as provided in 40 CFR 130.7(b) may include situations where:

- The assessment and interpretation of more recent or more accurate data demonstrates that the applicable water quality standard(s) is being met (list in Category 1, 2, (3 for lakes).
- The results of more refined water quality modeling 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 3).
- It can be documented that there are changes in the conditions or criteria that originally caused the water to be impaired and therefore originally led to the listing. For example, new control equipment has been installed, a discharge has been eliminated, or new criteria adopted (list in Category 1, 2, 3, or 4-B).
- The State has demonstrated pursuant to 40 CFR 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 Clean Water Act, 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 CFR 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 Section 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).

Tables 8-1, 8-2 and 8-3 in Chapter 8 present waters that have been delisted from Maine's 2004 impaired waters (303d) list.

Assessment Criteria

The following tables provide the designated use categories and the criteria (with references) used to assess a water's attainment of the use. A determination of non-attainment is only made when there is documented evidence (e.g. monitoring data) indicating that one or more criteria are not attained. Such data are also weighed against evidence that there are plausible human-caused factors that may contribute to the violation of criteria (38 MRSA Section 464.4.C).

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

Rivers and Streams

Designated Use	Criteria for Attainment
Drinking water supply after disinfection / treatment	• Ambient Water Quality Criteria (Maine DEP Chapter 530.5) • General provisions: floating/settleable solids, pH, radioactive substances, (38 MRSA Section 464.4.A)
Aquatic life use support	• Biomonitoring numeric criteria (Maine DEP Rule Chapter 579) • Habitat suitability (38 MRSA Section 464.13, 465.1-4) • Dissolved oxygen (38 MRSA Section 464.13, 465.1-4) • Ambient Water Quality Criteria (Maine DEP Chapter 530.5) • Support of indigenous species • Wetted habitat (Maine DEP Chapter 581) • General provisions: floating/settleable solids, pH, radioactive substances, (38 MRSA Section 464.4.A)
Fishing/Fish Consumption	• Support of indigenous fish species • Absence of fish consumption advisory (instituted by Maine DHHS) • General provisions: floating/settleable solids, pH, radioactive substances, (38 MRSA Section 464.4.A)
Recreation in and on the water	• *E. coli* bacteria (38 MRSA Section 465, geometric mean) • Water color (38 MRSA Section 414-C) • General provisions: floating/settleable solids, pH, radioactive substances, (38 MRSA Section 464.4.A)
Navigation, hydropower, agriculture / industrial supply	• General provisions: floating/settleable solids, pH, radioactive substances, (38 MRSA Section 464.4.A)

Table 4-2 Maine Designated Uses and Criteria for Lakes and Ponds

LAKES AND PONDS

Designated Use	Criteria for Attainment
Drinking water supply after disinfection / treatment	• Ambient Water Quality Criteria (Maine DEP Rule Chapter 530.5) • General provisions: floating/settleable solids, pH, radioactive substances, (38 MRSA Section 464.4.A)
Aquatic life use support	• Trophic state (38 MRSA Section 465-A, DEP Chapter 581) • Ambient Water Quality Criteria (Maine DEP Chapter 530.5) • Aquatic life (38 MRSA Section 465-A, 464.9); • General provisions: floating/settleable solids, pH, radioactive substances, (38 MRSA Section 464.4.A)
Fishing	• Support of indigenous fish species • No fish consumption advisory (instituted by Maine DHHS) • General provisions: floating/settleable solids, pH, radioactive substances, (38 MRSA Section 464.4.A)
Recreation in and on the water	• *E. coli* bacteria (38 MRSA Section 465-A, geometric mean) • Trophic state (38 MRSA Section 465-A, DEP Rule Chapter 581) • General provisions: floating/settleable solids, pH, radioactive substances, (38 MRSA Section 464.4.A)
Navigation, hydropower, agriculture / industrial supply	• General provisions: floating/settleable solids, pH, radioactive substances, (38 MRSA Section 464.4.A)

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

ESTUARINE AND MARINE WATERS

Designated Use	Criteria for Attainment
Marine life use support	• Ambient Water Quality Criteria (Maine DEP Chapter 530.5) • Dissolved oxygen (38 MRSA Section 465-B) • Narrative biological standards (38 MRSA Section 465-B) • General provisions: floating/settleable solids, pH, radioactive substances, (38 MRSA Section 464.4.A)
Shellfish propagation and harvest	• National Shellfish Sanitation Program (as assessed by DMR) • No shellfish consumption advisory (instituted by Maine DHHS) • General provisions: floating/settleable solids, pH, radioactive substances, (38 MRSA Section 464.4.A)
Aquaculture	• General provisions: floating/settleable solids, pH, radioactive substances, (38 MRSA Section 464.4.A)
Fishing	• Support of indigenous fish species • No fish consumption advisory (instituted by Maine DHHS) • General provisions: floating/settleable solids, pH, radioactive substances, (38 MRSA Section 464.4.A)
Recreation in and on the water	• Enterococcus bacteria (38 MRSA Section 465-B, geometric mean) • General provisions: floating/settleable solids, pH, radioactive substances, (38 MRSA Section 464.4.A)
Navigation, hydropower, industrial supply	• General provisions: floating/settleable solids, pH, radioactive substances, (38 MRSA Section 464.4.A)

DATA INTERPRETATION

It is not common to have complete and consistent water quality data; therefore, some interpretation of data is required in making a final assessment. Data from unique events such as a spill, an accident, a short-duration license exceedence, or a drought or flood are not used in an assessment determination. The following general principles for each criteria type are used in making an assessment:

Biomonitoring Criteria: For samples collected in accordance with the Biomonitoring Program Quality Assurance Project Plan, assessments are based on probability results of the numeric biocriteria models for tiered aquatic life Classes AA/A, Class B and Class C Criteria (Maine DEP Rule Chapter 579: Classification Attainment Evaluation Using Biological Criteria for Rivers and Streams). Aquatic life criteria are deemed to be attained when the applicable biocriterion is met with probability greater that 60%. Final determination of attainment may in some cases be made by professional judgment, applied in accordance with the procedures described in Maine DEP Chapter 579.

Lake Trophic State: Assessment is based on measures of transparency, chlorophyll a, total phosphorus and color (Table 4-4). When lakes lack this information, a trophic determination made by DIF&W is used, if available. Their determination is more subjective and generally applies to the lake system as a whole including adjacent wetlands and fisheries productivity. Trophic determination is tracked by source (DEP or DIF&W) in the assessment database.

Table 4-4 Lake Trophic State Parameters and Guidelines

Numerical Guidelines for Evaluation of Trophic Status in Maine *			
(Note: Dystrophy is not often evaluated as a trophic category separately from categories below.)			
	Trophic Status		
Parameter[1]	**Oligotrophic**	**Mesotrophic[2]**	**Eutrophic**
SDT[3]	> 8 meters	4-8 meters	< 4 meters
CHL 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] SDT, CHL a, and Total Phosphorus based on long-term means.
[2] No repeated nuisance algal blooms.
[3] If color is > 30 Standard Platinum Units (SPU) or not known, chlorophyll a concentration (CHL a), dissolved oxygen and best professional judgment used to assign trophic category.
[4] TSI = Trophic State Indices are calculated when adequate data exists and color is at or below 30 SPU.
* This table is a duplicate of Table 4-26 in the Lakes Section of this Chapter (appears twice for convenience).

Support of Indigenous Species: Assessment based on the known absence of a species that previously was 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 necessary to support indigenous species.

Dissolved Oxygen: Assessment of dissolved oxygen is based on the results of repeated measurements, collected over time. Single excursions of the criterion or excursions within the range of sampling or instrument error (as established in a Quality Assurance Project Plan) may not be used in every case unless there is corroborating evidence of reasonable potential for impairment of a use. Assessment may also be based on the use of water quality models (e.g. QUAL2E) based on present or expected loadings. New legislation provides that dissolved oxygen in the thermocline and deeper waters of a riverine impoundment will not be used for measurement of water quality attainment.

Ambient Water Quality Criteria: Assessment is based on measured exceedance of Statewide Water Quality Criteria (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. Single excursions of the criterion or excursions within the range of sampling or instrument error (as established in a Quality Assurance Project Plan) may not be used in every case unless there is corroborating evidence of reasonable potential for impairment of a use. 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: Non-numeric listing criteria for this cause of Aquatic Life Use impairment consist of documentation of abnormal biological findings that indicate nutrient enrichment in rivers and streams. Excess nutrients impair Aquatic Life Use through alteration of habitat from excessive growths of plants and algae, changes in dissolved gases like oxygen, caused by excess algal growth, resulting in diurnal dissolved oxygen sags, and alteration of benthic macroinvertebrate assemblage structure.

Bacteria: Assessment is based on repeated measurements to establish an annual geometric mean. Instantaneous (single sample) criteria are not used for water quality assessment due to the high variability associated with a single measurement. There must be a plausible human or domestic animal source of the bacteria for an impairment determination to be made (38 M.R.S.A Section 465, 465-A, 465-B)

Water Color: Assessment based on repeated measurements of discharge performance data (pulp and paper discharges only).

General Provisions: pH based on repeated measurement (between 6.0 and 8.5 for freshwaters; 7.0 and 8.5 for marine waters), however, certain naturally occurring waterbody types (e.g. bogs, aquifer lakes, high elevation lakes) or events may naturally have low pH and affect downstream waters. Use impairment from solids is subjectively determined. Radioactivity in surface water is not presently monitored.

INTEGRATED REPORT LISTS OF CATEGORIES 1 THROUGH 5

Table 4-5 Summary of State Waters Attaining and Not Attaining Standards

Waterbody Type	Total Assessed for Attaining of WQ Standards – Assessed for Designated Uses	Total with Insufficient Data for Assessment – Not Assessed for Any Designated Uses (Category 3)	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 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‡	31,229	296.6	4,338.3	25,380.1	467.6	746.1 **
Number of Lakes/Ponds	5,784 *	11	2,857	2,880 *	27	9 **
Lake & Pond Acres	986,952 *	18,164	295,443	596,087 *	72,288	4,970 **
Estuarine/Ocean Square Miles	2,846.0	4.4	0.0	2,685.2	0.0	156.4 °
Estuarine/Ocean (Acres)	1,821,433.6	2,835.0	0.0	1,718,509.1	0.0	100,089.5 °
Freshwater/Tidal Wetland Acres	N/A [1]	N/A [1]	N/A [1]	N/A [1]	N/A [1]	N/A [1]

‡River and Stream mile summaries for each reporting category were generated by the EPA Assessment Database for Maine (ADB)
* Includes 6 Category 2 lakes (22 acres) on coastal islands, all 6 lakes are not assigned to mainland HUCs.
** These figures do not include those waters listed under Category 5C for atmospheric deposition of Mercury.
° All estuarine and marine waters (2,846 square miles) are affected by a shellfish (lobster tomalley) consumption advisory due to the presence of PCBs and dioxins. These Category 5 totals do not include coastal waters under the statewide consumption advisory.
[1] "N/A" means "Not Assessed".

Table 4-6 Individual Use Support Summary for Maine Rivers and Streams *

USE	Total Size	Size Assessed	Size Fully Supporting	Size Fully Supporting and Threatened	Size Not Supporting	Size with Insufficient Info
Drinking Water Supply After Disinfection	20,083.27	4,399.55	4,399.55	0	0	15,683.72
Drinking Water Supply After Treatment	10,953.98	973.56	970.34	0	3.22	9,980.42
Fish and Other Aquatic Life	31,044.9	30,728.56	30,124.36	0	606.55	313.99
Fish Consumption **	31,225.30	5,554.66	4,903.94	0	650.72	25,670.64
Fishing	31,038.55	5,355.73	5,355.73	0	0	25,682.82
Hydroelectric Power Generation	20,826.02	1,568.38	1,568.38	0	0	19,257.64
Industrial Process and Cooling Water Supply	20,826.02	1,568.38	1,568.38	0	0	19,257.64
Navigation	31,038.55	5,346.11	5,341.87	0	4.24	25,692.44
Primary Contact Recreation	31,038.55	5,355.74	5,157.68	0	198.06	25,682.81
Secondary Contact Recreation	31,038.55	5,355.74	5,157.68	0	198.06	25,682.81

*River and stream mile summaries were generated by the EPA Assessment Database for Maine (ADB)
** All freshwaters are listed for a fish consumption advisory due to mercury (Category 5C). The fish consumption (other) listing is for additional consumption advisories beyond than that caused by mercury (these waters also have a mercury advisory).

Table 4-7 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	909,690	77,262	9,160
Protect & Enhance Public Health	Fish Consumption (Hg) Swimming Secondary Contact Drinking Water Source Water	0 962,588 986,952 986,952	986,952 24,364 0 0	
Social & Economic	Agricultural Industrial Cultural or Ceremonial State Defined: 1. Hydropower & Navigation	986,952 986,952 986,952 986,952	0 0 0 0	

Table 4-8 Individual Designated Use Support Summary for Estuarine and Marine Waters

CWA Goals	Designated Use	Size Fully Supporting – Attaining WQ Standards (square miles)	Size Not Supporting – Not Attaining WQ Standards (square miles)	Size Not Attainable – UAA Performed (square miles)
Protect & Enhance Ecosystems	Aquatic Life	2,842.83	3.16	0
Protect & Enhance Public Health	Fish Consumption[1] Shellfish Consumption[2] (excluding lobster tomalley) Shellfish Consumption[3] (lobster tomalley) Swimming (primary and secondary contact)	0 2,692.44 0 2,845.97	2,845.99 153.55 2,845.99 0.02	0 0 0 0
Social & Economic	Aquaculture Navigation Industrial supply water Hydropower	2,845.99 2,845.99 2,845.99 2,845.99	0 0 0 0	0 0 0 0

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

[2] Does not include statewide advisories for PCBs or dioxin in lobster tomalley.

[3] Based on a statewide consumption advisory for lobster tomalley.

Table 4-9 Total Sizes of Category 4 and 5 Impaired Rivers and Streams by Listing Causes/Stressors *

Cause/Stressor Type	Size Impaired (square miles)
Bacteria	196.06
Bacteria (CSO-source)	Variable
Dissolved Oxygen	399.7
Toxics (Total)	677
Toxic Organics	7.73
Pesticides (DDT)	214.21
Dioxins/PCBs	395.51
Toxic Inorganics (metals)	29.85
Ammonia (un-ionized)	29.41
pH	1.0
Nutrients	181.66
Aquatic Life Criteria (integrated effects)	249.63
Habitat	70.74
Flow Alteration	31.16
Other	42

* River and stream mile summaries were generated by the EPA Assessment Database (ADB)

Table 4-10 Total Sizes of Category 4 and 5 Lakes Impaired by Listing Causes/Stressors

Cause/Stressor Type	Size Impaired (acres)
Habitat Assessment (Lakes)	48,964
Methylmercury	986,952
Oxygen, Dissolved	634
Phosphorus (Total)	28,294
Secchi Disk Transparency	27,660
Turbidity	7,865

Table 4-11 Total Sizes of Category 4 and 5 Lakes Impaired by Listing Causes/Stressors

Listing Category	Cause/Stressor Type	Size Impaired (acres)
4A	Oxygen, Dissolved	634
	Phosphorus (Total)	23,324
	Secchi disk transparency	22,690
4C	Habitat Assessment (Lakes)	48,964
	Turbidity	7,865
5A	Secchi disk transparency	4,970
	Phosphorus (Total)	4,970
5C	Methylmercury	986,952

Table 4-12 Total Sizes of Category 4 and 5 Impaired Estuarine and Marine Waters by Causes/Stressors

Cause/Stressor Type	Size Impaired (square miles)
Bacteria	153.55
Bacteria (CSOs)	Variable
Dissolved Oxygen	0.3
Sediment Oxygen Demand	0.3
Toxics	-
Metals-copper	0.9
PAHs	0.5
PCBs	2,845.99
Dioxins	2,845.99
Aquatic Life	3.16

Table 4-13 Total Sizes of Category 4 and 5 Waters Impaired by Source for Rivers and Streams

Source Category	Size Impaired (miles)
Industrial Permitted Discharges	119.7
Municipal Permitted discharges	201.4
Stormwater and permitted discharges	218
Combined Sewer Overflows	Variable
Aquaculture (Permitted)	19.2
Eutrophic (impaired) lake source	37
Nonpoint Sources and Hazardous Waste (Total NPS)	578.4
Urban-related Runoff and Stormwater	132.4
Agriculture NPS	342.7
General development NPS	63.7
Spills and Unpermitted discharges	22.07
Military Bases	4.9
Hazardous waste (Superfund sites, etc.)	12.2
Impacts from abandoned mine lands	3
Land Application Waste sites (solid waste)	34.1
Habitat alterations (not directly related to hydromodifications)	50.7
Hydromodification	94.2
Flow modification/withdrawal	49.6
Atmospheric Deposition (mercury deposition)	(31,227)
Other or Unknown Source	422

Table 4-14 Total Sizes of Waters Impaired by Sources for Maine Lakes

Source Category	Size Impaired (acres)
Atmospheric Deposition – Toxics	986,952
Crop Production (Crop Land or Dry Land)	7,491
Flow Alterations from Water Diversions	30
Impacts from Hydrostructure Flow Regulation/modification	48,964
Industrial Land Treatment	1,820
Internal Nutrient Recycling	11,490
Landfills	29
Livestock (Grazing or Feeding Operations)	5,093
Natural Sources	10,195
Non-irrigated Crop Production	10,532
Residential Districts	5,119
Rural (Residential Areas)	22,580
Unspecified Unpaved Road or Trail	3,296
Unspecified Urban Stormwater	3,296
Upstream/Dowstream Source	83

Table 4-15 Total Sizes of Waters Impaired by Sources for Maine Lakes by Listing Category

Listing Category	Source	Size Impaired (acres)
4A	Crop Production (Crop Land or Dry Land)	6,300
	Flow Alterations from Water Diversions	30
	Industrial Land Treatment	1,420
	Internal Nutrient Recycling	11,490
	Landfills	29
	Livestock (Grazing or Feeding Operations)	5,093
	Natural Sources	1,869
	Non-irrigated Crop Production	10,532
	Residential Districts	1,823
	Rural (Residential Areas)	21,389
4C	Impacts from Hydrostructure Flow Regulation/modification	48,964
	Natural Sources	7,865
5A	Crop Production (Crop Land or Dry Land)	1,191
	Industrial Land Treatment	400
	Natural Sources	461
	Non-irrigated Crop Production	0
	Residential Districts	3,296
	Rural (Residential Areas)	1,191
	Unspecified Unpaved Road or Trail	3,296
	Unspecified Urban Stormwater	3,296
	Upstream/Dowstream Source	83
5C	Atmospheric Deposition – Toxics	986,952

Table 4-16 Total Sizes of Waters Impaired by Sources for Estuarine and Marine Waters

Source Category (examples)	Size Impaired (square miles)
Legacy Pollutants	2,845.99
Municipal Point Sources / Overboard Discharge	143.95
Combined Sewer Overflows	Variable
Urban Runoff/Storm Sewers	51.70
Sediment Oxygen Demand	0.30
Nonpoint Source	153.55

RIVERS / STREAMS

WATER CLASSIFICATION PROGRAM

Contact: Susan P. Davies, DEP BLWQ, Division of Environmental Assessment (DEA)

Tel: 207-287-3901 email: Susan.P.Davies@SPAM-ZAPmaine.gov

Related Website: www.maine.gov/dep/blwq/docmonitoring/classification/index.htm

Maine has four water quality classes of rivers and streams: AA, A, B, and C (38 M.R.S.A. Section 465). Each classification assigns designated uses and water quality criteria (narrative and numeric), and may place specific restrictions on certain activities (Table 4-1 and 4-17) such 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.A. Section 466.

Class AA waters are managed for their outstanding natural ecological, recreational, social, and scenic qualities. Direct discharge of wastewater, dams, and other significant human disturbances are prohibited. Tiered aquatic life use goals direct that the biological condition of this classification be approximately Tier 1-2 on the Biological Condition Gradient (Figure 4-2, Davies and Jackson 2006; USEPA 2005)[‡]

Class A waters are managed for high quality with limited human disturbance allowed; aquatic life use goal approximately Tier 1-2 on the Biological Condition Gradient. Direct discharges are allowed but highly restricted.

Class B waters are general-purpose waters and are managed to attain good quality water; aquatic life use goal approximately Tier 3 on the Biological Condition Gradient. Well-treated discharges with ample dilution are allowed.

Class C waters are managed to attain at least the swimmable-fishable goals of the federal Clean Water Act and to maintain the structure and function of the biological community; aquatic life use goal approximately Tier 4 on the Biological Condition Gradient.

‡ Davies, S. P. and S.K. Jackson. 2006. The Biological Condition Gradient: A descriptive model for interpreting change in aquatic ecosystems. Ecological Applications and Ecological Archives 16:1251–1266 (including digital appendices).

U.S Environmental Protection Agency (USEPA). 2005. Use of Biological Information to Better Define Designated Aquatic Life Uses in State and Tribal Water Quality Standards: Tiered Aquatic Life Uses. EPA-822-R-05-001. U.S. Environmental Protection Agency, Washington, D.C.

Table 4-17 Maine Water Quality Criteria for Classification of Fresh Surface Waters (38 MRSA §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	Free flowing and natural	No direct discharge of pollutants; ***as naturally occurs*** **
Class A	7 ppm; 75% saturation	as naturally occurs	Natural	***as naturally occurs*** **
Class B	7 ppm; 75% saturation	64/100 ml (g.m.*) or 236/100 ml (inst.*)	Unimpaired	Discharges ***shall not cause adverse impact*** to aquatic life in that the receiving waters shall be of sufficient quality to ***support all aquatic species indigenous to the receiving water without detrimental changes to the resident biological community***. **
Class C	5 ppm; 60% saturation 6.5 ppm (monthly average) at 22° and 24°F	126/100 ml (g.m.*) or 236/100 ml (inst.*)	Habitat for fish and other aquatic life	Discharges ***may cause some changes*** to aquatic life, provided that the receiving waters shall be of sufficient quality to ***support all species of fish indigenous to the receiving waters and maintain the structure and function of the resident biological community***. **

* "g.m." means geometric mean and "inst." means instantaneous level

** Chapter 579, Classification Attainment Evaluation Using Biological Criteria for Rivers and Streams

Maine law requires that at least once every three years, the Department review the classification system and make recommendations to the Board of Environmental Protection for changes. The last triennial review occurred in 2002-03 when the Department conducted statewide workshops to obtain public input and proposals to change the management classification assigned to specific waterbodies. The Board held hearings that resulted in recommendations to the Maine Legislature for the upgrade of part or all of 75 rivers and streams. Sixty one segment upgrades were passed by the 2003 Legislature (P.L. 2003 Chapter 317) and the 14 remaining segments were passed in the next session. The 2006 review of water quality classifications has been deferred to the next regular session of the Legislature and will be conducted in 2008. The current distribution of waters assigned to these four water quality classes is summarized in Table 4-18:

Table 4-18 Percent Distribution of River/Stream Water Classes

Class	Percent of Major* Mainstem River Miles	Percent of Total River and Stream Miles
AA	27.5 %	5.8 %
A	22.3 %	44.1 %
B	29.6 %	47.9 %
C	20.6 %	2.2 %

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

SUMMARY OF STATEWIDE RIVER AND STREAM ATTAINMENT STATUS

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The Integrated Assessment report to Congress requires the assignment of each Assessment Unit into one of five categories (Section 4-1, Assessment Methodology).

A water is determined to be impaired if one or more of the uses assigned by its classification in not attained, as determined by the criteria assigned to that water class. An overall use attainment summary is provided in Tables 4-6 and 4-19. The 2006 use attainment assessment reports on assessment units amounting to 31,227 miles of rivers and streams that are tracked in the ADB (Section 3-1, State Atlas and Water Quality Standards and Section 9-2, Assessment Database). Information on the status of individual assessment units may be found in Listings on Individual Waters, Appendix II, Categories 1-5.

Table 4-19 Summary of Changes to Surface Water Assessment Categories – 2004 to 2006

Rivers and Streams						
Total Miles Assessed in 2004 = 31,199 **Total Miles Assessed in 2006 = 31,2299**						
	2004 Miles in Category	**% of Total 2004 Assessed Miles**	**2006 Miles in Category**	**% of Total 2006 Assessed Miles**	**% Change '04 - '06**	**Change in Miles '04 - '06**
Category 1	4,328	13.87	4,338	13.89	+0.02	+10
Category 2	25,414	81.46	25,380	81.31	-0.15	-34
Category 3	269	0.86	297	0.95	+0.09	+27
Category 4	440	1.41	468	1.5	+0.1	+28
Category 5	737	2.36	746	2.4	+0.04	+9

Category 1 (*Appendix II Category 1*). The 2006 assessment assigned 4,338 miles (13.9%) of rivers and streams to Category 1 (fully attaining all uses other than statewide mercury advisory as explained in Category 5C below). This is an increase of 10 miles from the 2004 assessment. The Department has determined through monitoring and evaluation that large areas of the state should be included in this category where there is significant protection afforded by either state or private conservation efforts. Maine is fortunate to have entire Assessment Units where there is 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 (*Appendix II Category 2*). The 2006 assessment assigned 25,380 (81%) miles of rivers and streams to Category 2 (fully attaining all uses other than statewide mercury advisory as explained in Category 5C below). This is a decrease of 34 miles from the 2004 assessment. Three segments, previously listed as impaired (Category 4 or 5) are now found to be in attainment and have been assigned to Category 2. Additionally, 5 of the segments listed in Category 2 have received permits that protect them from a specific risk of impairment (e.g., newly permitted fish hatcheries).

Category 3 (*Appendix II Category 3*). The 2006 assessment assigned 297 (0.9%) miles of rivers and streams to Category 3 (attainment undetermined except for statewide mercury advisory as explained in Category 5C below). This is an increase of 27 miles and 9 segments as compared to the 2004 report. Most of these segments have been assigned to Category 3 because of inconclusive or conflicting monitoring data and the rest are in Category 3 because an initial evaluation of non-attainment requires re-sampling to confirm.

Category 4 *(Appendix II Category 4*). The 2006 assessment assigned 468 (1.5%) miles of rivers and streams to Category 4 (impaired for one or more uses as well as statewide mercury advisory as explained in Category 5C below). This is an increase of 28 miles from the 2004 assessment. Waters in Category 4 are placed into one of three subcategories:

- 4-A for waters that already have a TMDL that has been approved by EPA
  - 5 new segments have been added to 4-A from 2004 Category 5,
- 4-B for waters where there is an enforceable mechanism in place to bring the water into attainment (e.g. new hatchery wastewater discharge license)
  - 8 causes of impairment, in 6 segments have been moved into Category 4-B from 2004 Category 5 waters ,
- 4-C for waters where there is no pollutant involved in the impairment problem
  - 1 segment has been added to 4-C since 2004

Category 4 impaired waters do not require the development of a Total Maximum Daily Load (TMDL).

Category 5 (*Appendix II Category 5*)**.** Impaired waters that require the development of a Total Maximum Daily Load (TMDL) determination. The 2006 assessment assigned 746 miles (2.4%) of rivers and streams to Category 5 (impaired for one or more uses as well as statewide mercury advisory as explained in Category 5C below). This is a net increase of 9 miles in Category 5.

Waters in Category 5 are placed into one of four subcategories:

- 5-A - waters impaired by pollutants; a priority for TMDL development,
  - 11 causes of impairment listing, occurring in 6 segments (9 miles) have been added since the 2004 reporting cycle
  - 12-30 final draft TMDLs for impaired segments are scheduled to be submitted to EPA in fiscal year 2007
- 5-B- waters impaired by no causes other than bacteria from Combined Sewer Overflows or other sources (except statewide mercury advisory as explained in Category 5C below); a lower priority for TMDL development,
- **5-C**- waters impaired by atmospheric deposition of mercury.
  - All freshwaters in Maine have an advisory for the consumption of fish due to the presence of mercury presumed to be from atmospheric deposition.
  - This Integrated Water Quality Monitoring and Assessment 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 USEPA). 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 may be impossible for someone eating a fish to be able to tell where the fish originated and whether or not it has a high level of mercury. TMDL development may require regional or national cooperative efforts.
- 5-D for waters impaired by the residuals of “legacy” activities.
  - 21 segments have been added to Category 5-D, mainly due to legacy PCB and dioxin contamination in mainstem river segments (previously listed in 4-B but where all present sources have been removed) causing impairment of Fish Consumption use.

Number of Segments that have been Delisted.

Fifteen river and stream segments (with a combined total of 29 impairment causes) have been removed from 2004 Impaired Waters List in this reporting cycle (see Table 8-1).

As with any assessment of this kind, the identification of impaired 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. While new and expanded monitoring has identified additional miles of impaired waters, this should not be interpreted as an indication that Maine's waters are under some new or increasing threat. Rather, the State has been better able to assess its waters with improved monitoring tools and increased participation from cooperators. All of the new impaired listings appear to be due to conditions that have probably been in place for many years.

LISTING CAUSES, STRESSORS AND SOURCES OF IMPAIRMENT

Cause and stress information for rivers and streams is provided in Table 4-9. Sources of impairment are provided in Table 4-13. The way that DEP groups Cause/Stressor Types in the 2006 report is slightly different from 2004 due to the migration of data into the EPA Assessment Database. These differences by themselves do not reflect actual changes to causes, stressors or sources affecting Maine waters. The ADB should eventually enable increasingly accurate and consistent tracking of causes, stressors and sources as the data is captured and stored in subsequent years.

Causes (Table 4-9): The greatest number of impaired miles (677) is still due to toxics such as pesticides and PCBs (see section below on Dioxin Monitoring and Surface Water Ambient Toxics programs). For most mainstem river segments that are affected by pulp and paper mill discharges, dioxins were listed in Category 4B in 2004. However, those same segments are now listed in Category 5D for legacy PCB and dioxin contamination of fish tissue. The sources of dioxin from the paper mills have been removed.

Sources (Table 4-13): In the present report combined non-point sources are the largest contributing source category with 578 miles. General agricultural NPS is the largest specific source with 343 miles recorded as affected. This is more a reflection of differences in summing procedures than an indication of an actual increase in agricultural impacts as compared to 2004. It is important to understand that miles attributed to causes and sources in Tables 4-9 and 4-13 may be listed more than once if a waterbody is subjected to several different types of disturbance.

MAIN STEMS OF MAJOR RIVERS

Most of the mainstem rivers are in good condition and are attaining their classification (mostly Class B or C quality, although significant segments of the St. John, Allagash, East and West Branches of the Penobscot, St. Croix, and Kennebec Rivers are Class AA and A). The primary impairment issue on the larger rivers 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 or Category 5. Tissue monitoring studies have found legacy PCB and dioxin contamination in mainstem rivers (see the Dioxin Monitoring Program and SWAT Program sections below). Attainment of biological criteria on the lower Presumpscot River has resulted from dam removal. Abatement of the impacts of Combined Sewer Overflows (CSO) is progressing well in the 40 Maine communities affected by CSOs. Needed monitoring has had to be re-scheduled for some mainstem river segments due to lack of appropriate flow levels required for water quality modeling (e.g., Sandy River)

SMALL STREAMS

All but one of the new listings in Category 5A are small urban streams. This preponderance is due to increased emphasis on the monitoring of these waters as well as to actually increasing pressures (Table 3-7 NPS Priority Waters). Most of the river and stream TMDL activity in Maine is now directed toward smaller waters with identified non-point source problems, primarily caused by the complex pressures of urbanization. Maine DEP's understanding of the stressors and biological responses in these urbanizing streams was greatly increased due to a pilot TMDL approach in 2003-2005 that utilized EPA's Stressor Identification Protocol to determine causes of biological impairment. See the Urban Stream TMDL Project Summary below for details. The issuance of new fish hatchery wastewater discharge permits has afforded protection to several important small stream resources that support fish hatcheries.

TOXICS

Dioxin Monitoring Program

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

In 1997 the Maine legislature enacted LD 1633 "An Act to Make Fish in Maine Rivers Safe to Eat and Reduce Color Pollution", the Dioxin/Color law [38 MRSA section 420(2)(I)]. The key requirement is that a (bleach kraft pulp) mill may not discharge dioxin into its receiving waters after December 31, 2002. To determine compliance, there are interim tests and a final test. Two interim tests of effluent from the bleach plant, require that 1) TCDD (2378-tetrachlorodibenzo-p-dioxin, the most toxic of the 17 toxic dioxins and furans) must be below 10 ppq, parts per quadrillion or picograms per gram, pg/g by July 31, 1998 and 2) TCDF (2378-tetrachlorodibenzofuran) must be below the same detection limit by December 31, 1999. All of the mills passed both interim tests by the respective deadlines.

As the final test to confirm that there is no discharge by December 31, 2002, fish (or surrogate) below a bleached kraft pulp mill must have no more dioxin than fish (or surrogate) above the mill, the so-called "above/below (A/B) fish test". Since the development of the "Above/Below" (A/B) test began in 1997, the Department conducted more than 78 tests of different matrices, species, tissues, and sample types. No one test has been consistently the most sensitive, but in general, tests with fish filets were as sensitive or more so, than the other tests. In a report to the Maine legislature entitled 'Monitoring Dioxin in Maine, Overview, Update, Next Steps, dated March 31, 2003, DEP established that the A/B test would be done with bass and suckers for 2003. Above and below 2 mills, additional tests with caged mussels and semi-permeable membrane devices (SPMDs) were continued to determine their utility.

After evaluation of the 2003 results, DEP amended the A/B test in 2004 as follows:

- The test will utilize 3 separate tests: a) bass, b) suckers, and c) caged mussels.

- A preponderance of evidence (POE) approach will be used where passage of 2 of the 3 tests will be used to indicate no discharge.
- Because none of the tests are very sensitive, a mill must show no evidence of a discharge for 2 consecutive years before being deemed in compliance. Periodic testing is subsequent years will also be necessary to assure continued compliance.

Additional details may be found in at the website identified above.

Findings of the 2004 and 2005 Dioxin Monitoring Program and A/B tests:

- Results of the 2004 Dioxin Monitoring Program and A/B test documented that all but one of the mills, which was closed and therefore not monitored, passed the A/B test, were in compliance with the 1997 dioxin law and were no longer discharging significant amounts of dioxin.
- The closed mill reopened and was tested in 2005, passed the A/B test in compliance with the 1997 dioxin law and and was found not to be discharging significant amounts of dioxin.
- Annual continued compliance with the no discharge (of dioxin) provision of the 1997 Dioxin and Color Law (38 MRSA section (420(2)(I)(3) may be demonstrated by 1) a combination of monitoring of bleach plant effluent and certification that the performance of the bleach plant and other pertinent processes has not lowered since 2003 and 2004 when the A/B test indicated compliance or 2) repeating the A/B fish test.
- Concentrations of dioxin remain elevated at some river locations due to the legacy of historical discharges resulting in continued fish consumption advisories.
- Continued monitoring is warranted as long as the fish consumption advisories remain.
- The Dioxin Monitoring Program sunsets in 2007 and may need to be renewed in some form, depending on the results of 2006 and 2007 testing.

Surface Water Ambient Toxics (SWAT) Monitoring Program

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Related Website: www.maine.gov/dep/blwq/docmonitoring/swat/index.htm

Maine's Surface Water Ambient Toxics (SWAT) monitoring program was established by the Maine legislature in 1994 (38 MRSA 420-B) "in order to determine the nature, scope and severity of toxic contamination in the surface waters and fisheries of the State". Advised by a Technical Advisory Group, DEP must prepare 5-year plans and annual work plans for implementation of the program.

The first 5-year plan, from 1994-1998, consisted of a screening survey of all major watersheds in the state. The results were a finding of significant contamination in fish, shellfish, macroinvertebrates and sediments from many parts of the state. One consequence of the survey was the expansion of the statewide fish consumption advisory for lakes (due to mercury), to all freshwaters in the state.

The second 5-year plan, from 1999-2003, focused on providing more definitive studies of issues identified in the initial statewide survey, along with exploration of newly emerging issues. One result was confirmation of residual high levels of DDE in fish from Aroostook County and subsequent fish consumption advisories. Some other studies include mercury in rainfall, and fish, development of a wildlife criterion value for mercury based on loons and fish-eating mammals, PCBs in wild and hatchery fish, endocrine disruption in blueberry sprays, contaminants in marine mussels and fish and seals, antibiotics in lobsters, and continued studies of freshwater macroinvertebrates. In 2003, due to state budget shortfalls, the program's total budget was reduced by 20%.

The third 5-year plan was developed in 2004 by DEP in consultation with the Technical Advisory Group and other state agencies. The plan sets the framework for continued data collection to further refine the statewide mercury fish consumption advisory and river specific advisories. New contaminants, such as PBDEs, are being monitored. Endocrine disruptor effects-based studies are continued on the major rivers. Studies to document trends and sources of pollutants are being conducted. Baseline conditions are being monitored to be used in future trends studies. Biomonitoring continues on a rotating watershed schedule. Methods for new problems are being refined. The marine module has become coordinated with EPA's National Coastal Assessment.

Funding has diminished steadily each biennium to about 30% of the original amount; a development that seriously hampers the functionality of the SWAT program.

AQUATIC LIFE MONITORING

Biological Monitoring of Rivers, Streams and Brooks

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The Biological Monitoring Program

In the 1980's, the Maine Legislature passed the Water Classification Law and assigned each river and stream reach in the state to one of four established classes (AA, A, B, and C). To date, the DEP primarily samples aquatic macroinvertebrates in rivers and streams to determine if rivers and streams are attaining aquatic life criteria associated with their assigned classes. In 2003, MDEP adopted numeric biocriteria in rule which describes the process used to make aquatic life decisions. In addition to sampling aquatic macroinvertebrates, the DEP is developing biological assessment methods for stream algal communities and wetland algal and macroinvertebrate communities (the wetland sampling is described in the Wetland Assessment Section). The Unit sampled macroinvertebrates in 57 and 56 river and stream locations in 2003 and 2004 respectively. The Unit sampled algae in 55 and 60 river and stream locations in 2003 and 2004 respectively (Figure 4-1).

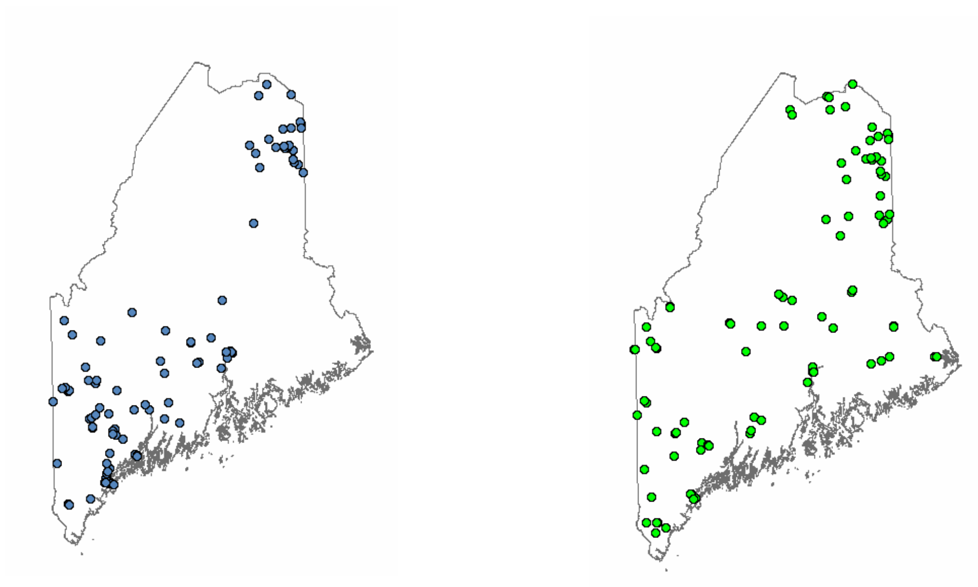

Figure 4-1 2003 and 2004 Stream and River Samples – Macroinvertebrates (left) and Algae (right)

Maine's Tiered Aquatic Life Uses and the Biological Condition Gradient

The U.S. EPA has developed guidance for states on establishing Tiered Aquatic Life Uses (TALU) (EPA 2005). The TALU guidance includes the Biological Condition Gradient (BCG), which relates the condition of biological communities to stressor gradients and establishes six tiers of biological condition. Figure 4-2 shows how Maine's water classification system relates to the BCG tiers. Tiers 1 and 2 roughly correspond with Class AA/A, Tier 3 corresponds with Class B, Tier 4 corresponds with Class C, and Tiers 5 and 6 represent communities that do not meet minimum aquatic life criteria.

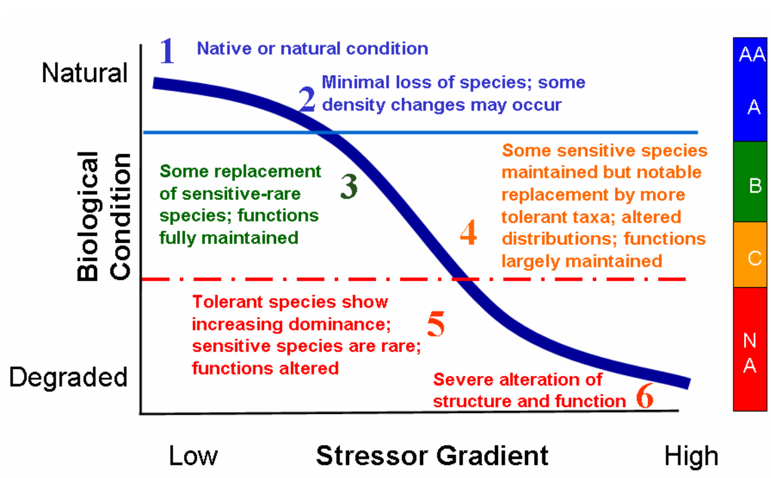

Figure 4-2 Position of Maine's tiered aquatic life uses on the Biological Condition Gradient

REPORTS OF FISH KILLS

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The Department of Environmental Protection documents all pollution-caused fish kills. For this 2004-2005 reporting period, there were no documented fish kills attributable to water quality conditions. In July 2004, biologists from the Penobscot Indian Nation and Department of Inland Fisheries and Wildlife investigated a die-off of white suckers on the Penobscot River near Mattamiscontis and Birch Streams. The mortality was attributed to parasite infestation and secondary bacterial infection.

MAINE AQUATIC BIODIVERSITY PROJECT

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Related Website: www.pearl.spatial.maine.edu

The Department of Environmental Protection has conducted a collaborative project with the Department of Inland Fisheries and Wildlife and The Nature Conservancy to document existing information on freshwater biodiversity, assess the information base including identification of key gaps, develop an ecological synthesis of the data (such as the examination of regional patterns and risks) and to disseminate this information to researchers, resource managers or other interested groups. This project has compiled information on the occurrence of aquatic organisms, reports and related data sources that are available. The database is accessible through the PEARL website. A final report that will summarize the biodiversity of Maine's fresh waters, threats, needs for conservation and protection will be published in 2006 and on the PEARL website.

ACHIEVING COMPREHENSIVE ASSESSMENT OF ALL STREAMS: PROBABILITY-BASED DESIGN MONITORING

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Since 2004 the Department of Environmental Protection has been a cooperating partner with US EPA Region 1 in two probability-based design stream monitoring projects: the New England Wadeable Streams (NEWS) monitoring project and the National Wadable Streams Assessment (WSA). EPA NEWS project staff sampled about 61 sites in and Maine DEP staff conducted biological sampling at 3 NEWS project sites. EPA or EPA contractors for the WSA project sampled an additional 19 (approximate) randomly selected sites in Maine with MDEP staff conducting biological monitoring at 11 WSA project sites. In addition, DEP staff participated in data analysis activities to enhance the relevance of the NEWS project assessment results to meet state information needs. The results of the NEWS project are described in a draft report, “The New England Wadeable Stream Survey (NEWS): Development of Common Assessments in the Framework of the Biological Condition Gradient” November 2006, US EPA, Region 1, draft document. Analysis of the second year of WSA-project data for New England is currently underway. Results from probability-based design surveys are useful because they statistically assess 100% of waters in the state based on the random sample of stream segments that is drawn. Assessment results from these 2 EPA surveys may be used to report assessment endpoints in the next cycle.

URBAN STREAM TMDL PROJECT SUMMARY

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Related Websites:

(EPA Approved TMDLs) www.maine.gov/dep/blwq/docmonitoring/tmdl2.htm

(Public Comment on Draft TMDLs) www.maine.gov/dep/blwq/comment.htm#tmdl

Urban Stream TMDL Project

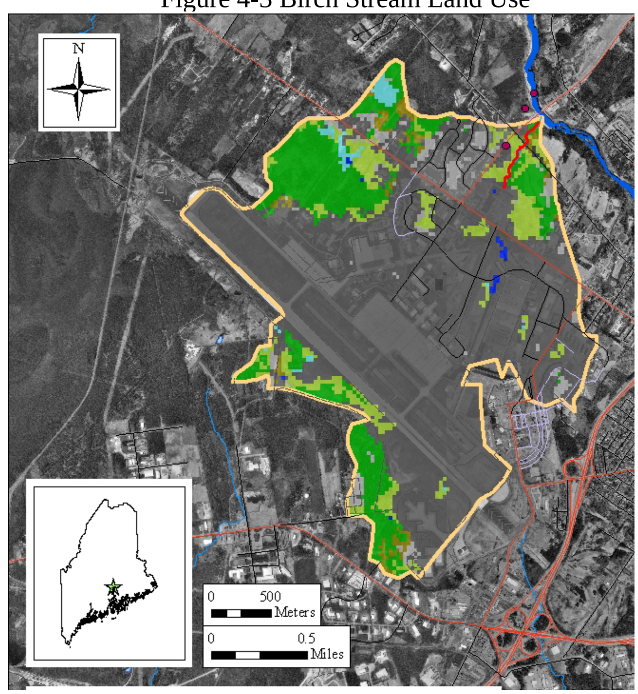

Figure 4-3 Birch Stream Land Use

The Urban Streams Project was initiated to answer outstanding questions on the causes of biological impairments and how to develop a TMDL that addresses the problems. The 303d listed waters covered in this project are small urban streams, including: Birch Stream (Bangor, Figure 4-3), Capisic Stream (Portland), Trout Stream and Barberry Creek (South Portland). Urban streams have multiple water quality problems and the project’s challenge was to uncover the causal agent or mechanism responsible for observed impairments. This was accomplished through intense field assessment and data analysis using EPA’s ‘Stressor Identification Guidance’. The results of the Stressor Identification process were then used to develop a TMDL that describes the cause of the impairment and identifies the restoration measures needed to attain water quality standards.

Sampling Results & Stressor Identification

Sampling data collected from the mid 1990’s through 2004 and includes monitoring of the aquatic insect (macroinvertebrate) communities, physical habitat measurements and water chemistry. Sampling results and other existing data were compiled into a comprehensive report on Birch Stream entitled *'Urban Streams Nonpoint Source Assessments in Maine'* which is located at the following URL:

www.maine.gov/dep/blwq/docmonitoring/stream/urban/index.htm

Table 4-20 Sampling Results for Birch Stream Example

Parameter	Years	Sampling	Results
Macroinvertebrates	1997-2004	6 events	Never attained Class B, three samples met Class C
Dissolved Oxygen	2003	~20 days	>50% of samples did not meet 7mg/l standard
10 Different Metals	2003	4 events	Only exceeded aluminum Criteria in stormwater
Nutrients	2003	4 events	No WQ Criteria, but nitrogen and phosphorus were high compared to other Class B streams.
Deicer- Propylene Glycol	2002-2004	5 days	Air National Guard samples, No WQ Criteria, detected in two samples, high BOD indicate problems
Habitat Assessment	2003	Survey	Geomorphology identified problems with riparian buffer, entrenchment, channelization and bank stability (erosion).

These results describe the impairments but do not necessarily indicate the source or reason for the problems (Table 4-20). MDEP undertook the Stressor Identification (SI) process determine the cause of the observed problems and guide the TMDL model selection. The SI was a collaborative effort of Maine's water quality professionals in which urban stormwater emerged as the underlying cause of impairment. As summarized in Table 4-21, increased flow off of impervious surfaces; carries toxics and nutrients, destabilizes the stream channel, alters habitat suitability and elevates water temperatures. Streams with greater than 10% impervious cover in the watersheds (Birch has >30%) have documented biological impairments (including loss of trout) in Maine and throughout the country. These impacts are attributed to changes in the stream environment due to the increased flow volume associated with stormwater runoff.

Table 4-21 Stressor Identification Results for Birch Stream

Stressor	Rating	Stormwater Sources	Other Likely Sources
Toxics, and Propylene Glycol	High	• De-Icer from Airport Complex • Impervious Surfaces Runoff • Winter Road Sand/Road Dirt	• Documented Spills • Sewage System Leaks • Natural Sources
Habitat Alteration / High Peak Flows	Medium	• Impervious Surfaces Runoff • Stormwater Drain Outfalls	• Channel Alteration
Elevated Water Temperature	Medium	• Impervious Surfaces • Detention Ponds	• Reduced Riparian Buffer
Elevated Nutrients	Medium	• Roads & Parking Lot Runoff • Pets & Wildlife Waste • Lawn/Landscaping Runoff • Detention Ponds	• Reduced Riparian Buffer • Sewage System Leaks • Atmospheric Deposition

TMDL Model Selection

The % Impervious Cover Method was selected because it: connects stormwater runoff to instream effects, links TMDL targets to instream reductions, uses relatively easy calculation methods, and ties to engineered BMP solutions.

Required TMDL Elements and Impervious Cover Modeling Results

The % Impervious Cover model sets up targets and reductions for the runoff from existing impervious surfaces (Table 4-22). The target will be achieved, not through removal of pavement, but through the application of BMP's to create runoff conditions that resemble the characteristics of an 8% impervious area. Regardless of the target, the ultimate goal is attainment of water quality standards, and the target provides technical guidance to initiate a strategy for BMP implementation. The TMDL goal will be met once the existing stormwater pollution has been adequately addressed and the biological community is restored.

Table 4-22 Required TMDL Elements & Impervious Cover Modeling Results

Element	CWA Definitions	Birch Stream Findings
Goal	Achieve water quality consistent with Maine's Class B standards	A biological community consistent with Maine's Class B standards
Target	Loading capacity of pollutants that cause observed impairments	A watershed that resembles the characteristics of a watershed with 8% Impervious Cover (%IC)
Margin of Safety (MOS)	A safety factor to increase the likelihood of attainment	Maine's Biomonitoring data indicate that 10% IC would achieve the goal, therefore a 1% reduction was added to insure a MOS
Pollutant Loads	Estimate of the existing pollutant loads	33% IC and the associated components of stormwater runoff
Load Allocation & Waste Load Allocations	Reductions in the pollutant loads that are required to achieve the water quality target	65% reduction in volume and stormwater constituents are needed to achieve the target
Implementation	Actions or engineered BMP solutions that will achieve the reductions and ultimately restore the stream	Reductions guided by a Watershed Management Plan to determines the best approach to solutions

LAKES / PONDS

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Related Website: www.maine.gov/dep/blwq/lake.htm

PHYSICAL EXTENT

The total area of Maine's 5,784 Lakes and Ponds that have been assigned an identification number is estimated as 986,952 acres or approximately 5% of the state's surface area.[1] These totals have decreased since the previous assessment due to disintegration of the dam on 216-acre Sherman Lake in Edgecomb and return of the associated environs to the marine realm. The Bureau of Land and Water Quality is in the process of making final a GIS-based spatial dataset of all Maine waters. Spatial features were originally digitized as displayed on USGS 7.5-minute topographic maps; some features have been added or updated based on aerial photography in the form of USGS digital ortho quadrangles (DOQs). Lake and pond features were placed in a

[1] Number and surface area obtained from Maine Department of Inland Fisheries and Wildlife's Lake Index file, which is being converted to a GIS dataset. Entire surface of border waters is included. The Maine DEP believes that the DIFW Lake Index file (determined from 15' USGS topographic maps; 1:62,500 scale) provides a more accurate estimate of lake numbers and acres than the USEPA RF3/DLG estimates (based on maps having 1:100,000 scale).

layer containing 33,065 polygons (1,000,526 acres). Lake identification numbers have been entered into the attribute table for approximately 6,000 of these polygons (971,884 acres). The total acreage of the 27,038 pond polygons without lake identification numbers is 28,642 acres, thus most are less than 1 acre in area. Some larger impoundments that are assigned a lake identification number are not included in this layer because they occur in the 'rivers' polygon layer. There are also waters that may be misclassified as lakes or ponds that are in reality are marine waters or brackish transition waters. Presently Sherman Lake remains classified as a lake in the GIS layer. These are examples of issues that need to be resolved before deriving statistics for lakes from this GIS system. Nevertheless, we have a high degree of confidence that the lakes defined in past assessments as 'significant' will continue to be defined as such in future assessments.

For more information on the GIS lakes data development project:

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LAKE CLASSIFICATION AND DESIGNATED USE ATTAINMENT STATUS

Statutory Classification

Maine statute (38 M.R.S.A. Section 465-A) has designated one standard (GPA) for the classification of great ponds and natural lakes less than 10 acres in size. Specifically, Class GPA waters:

A.) Class GPA waters shall be of such quality that they are suitable for the designated uses of drinking water after disinfection, recreation in and on the water, fishing, industrial process and cooling water supply, hydroelectric power generation and navigation and as habitat for fish and other aquatic life. The habitat shall be characterized as natural.

B.) Class GPA waters shall 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 shall have a stable or decreasing trophic state, subject only to natural fluctuations and shall be free of culturally induced algal blooms which impair their use and enjoyment. The number of Escherichia coli bacteria of human origin in these waters may not exceed a geometric mean of 29 per 100 milliliters or an instantaneous level of 194 per 100 milliliters.

C.) There may be no new direct discharge of pollutants into Class GPA waters. Aquatic pesticide treatments or chemical treatments for the purpose of restoring water quality approved by the department and storm water discharges that are in compliance with state and local requirements are exempt from the no discharge provision. Discharges into these waters licensed prior to January 1, 1986, are allowed to continue only until practical alternatives exist. No materials may be placed on or removed from the shores or banks of a Class GPA water body in such a manner that materials may fall or be washed into the water or that contaminated drainage therefrom may flow or leach into those waters, except as permitted pursuant to section 480-C. No change of land use in the watershed of a Class GPA water body may, by itself or in combination with other activities, cause water quality degradation that would *impair the characteristics and designated uses of downstream GPA waters or cause an increase in the trophic state of those GPA waters.*

Attainment of Classification

Maine lakes exhibit a great amount of diversity, as does the state's topography and population. Maine's 5,784 lakes that are listed on DIFWs (Department of Inland Fisheries and Wildlife) Lake Index span a range in size of 1 acre to 74,890 acres (Moosehead Lake). Of these, 804 lakes are currently listed as 1 acre in size and only 11 are greater than 10,000 acres. Similarly, Maine lakes range from approximately 1 foot in depth to 316 feet deep (Sebago Lake). However, these 5,784 listed lakes include many waters that are small and/or shallow and are therefore not at all representative of a true Maine lake but are more representative of transition waters or open water in a wetland. With respect to designated uses, Class GPA does not expect more from a small, shallow lake than it can be reasonably expected to attain, given its physical limitations.

The Department is highly confident that some of the GPA designated uses are attained by all lake waters in Maine. This high level of confidence is based on a classification approach that includes realistically attainable uses. These uses include industrial process and cooling water supply, hydroelectric power generation, and navigation. There is no credible reason to believe that these uses are impaired in any of Maine's lake waters. Thus, these uses are not designated as 'assessed' uses in the same manner as the more critical uses: drinking water, fish consumption, recreation in/on (primary contact or swimming), and aquatic life support.

Municipal populations range from 1 to approximately 65,000 persons according to the 2000 U.S. Census data (~422 municipalities) with an additional 383 unorganized townships having no population. Municipalities having the highest populations are generally located along the larger rivers or in coastal areas. Development corridors typically fall around the major roadways in the state (e.g., Interstate 95). Much of Maine's land area has considerable relief (change in elevation) or is considered remote (having no distributed utilities such as electricity or phone lines). Such a wide range in lake water types and geographic settings make it necessary to focus lake assessment efforts in areas most likely to have lake waters that do not attain Class GPA.

For management purposes, the state designated a subset of the total population of lake as 'Significant Lakes' as requested by EPA under Section 314 in the early 1990s. Significant Lakes are defined as publicly owned lakes for which bathymetric / morphometric surveys exist, vulnerability modeling has been performed, or for which some trophic data has been gathered. These are generally the lakes that the state is most actively engaged in managing or assessing. Lakes that are not considered 'significant' generally are tiny and/or shallow waters that are not managed like 'typical' lakes. Table 4-23 summarizes information on both the lakes ('all lakes') that are listed in DIFWs Lake Index and on State designated 'significant lakes'.

Table 4-23 "All" and "Significant" Lake Category Information

Maine Lake Population Summary		
	Number	**Acres**
All Lakes	5,784 (100%)	986,952 (100%)
Significant Lakes	2,313 (40%)	958,977 (97%)

Attainment Evaluation Criteria

This section includes specific guidelines for determining whether or not a lake is in attainment of each designated use.

Designated Use: Aquatic Life Support

Attainment: *Lakes exhibiting stable or decreasing (improving) trends in trophic state, natural water-level fluctuations and consistency in dominant species composition.*

Non-attainment: *Lakes that experience a deteriorating trend, extreme artificial water level fluctuations, severe turbidity, or shift in dominant species composition.*

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, 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 the 'blue-green' species typical of lakes that experience regular, nuisance algal blooms.

Designated Use: Fish Consumption

Attainment: *No fish consumption advisories in effect.*

Non-attainment: *"Restricted Consumption" fish advisory or ban in effect during the reporting period for the general population or a subpopulation that could be at potentially greater risk (e.g., pregnant women, children).* Restricted consumption is defined as limits on the number of fish of one or more species consumed per unit time. The limit on number consumed often varies with fish size. All Maine lakes are considered to be in non-attainment of fish consumption due to mercury contamination from atmospheric sources.

Designated Use: Recreation In / On (Swimming)

Attainment: *Lakes that do not exhibit regular, nuisance algal blooms during the summer (high use) period.*

Non-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.* Bloom conditions are defined as Secchi Disk Transparency measurements of less than 2 meters in lakes having color less than 30 Standard Platinum Units (SPU). Lakes having color of 30 SPU or greater are considered impaired if other trophic data or professional judgment indicates that transparency is restricted due to high algal productivity and that the elevated productivity is due to anthropogenic alterations.

Designated Use: Drinking Water Supply (After Disinfection / Treatment)

Attainment: *Lakes for which information / data suggests that the water is suitable for drinking after reasonable treatment.*

Non-attainment: *Lakes designated as a water supply, for which information / data suggests that the water is no longer suitable for drinking with reasonable treatment using current technology.*

Attainment Status and Listing Categories

The 2006 Integrated Report presents the Maine DEP's evaluation of lake attainment status according to guidelines established for the 2002 Integrated Report. EPA established Listing Categories 1 through 5 in which lake waters are placed depending on the Department's confidence in whether the water is 'In Attainment' or is 'Impaired'. Lakes falling into Category 1 are lakes that 'Fully Attain All Designated Uses'. Category 5 lakes are at the opposite end of the spectrum or are in 'Non-attainment' (impaired) status and thus require the development of a TMDL. Lakes in Category 3 have insufficient data or information to make attainment determinations. Lakes within this category are considered high priority for monitoring; because of this Maine loosely refers to this category of lakes as being on our 'watch list'. Table 4-24 summarizes specific categories and subcategories used in the 2006 assessment of Maine lakes.

Table 4-24 Summary of Listing Categories and Subcategories used in the 2006 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
4a	TMDL complete
4b	Expected to meet standards
4c	Not impaired by a pollutant
5a	TMDL needed
5c	Regional TMDL needed due to airborne Hg deposition

It is important to recognize that the use of the term 'Threatened' has changed since the 2000 assessment. EPA guidelines issued in 2002 restricted use of this designation to waters expected to be in non-attainment by the next assessment cycle. In past assessments, the term 'Threatened' was applied to lakes predicted to have a change in trophic state over a 25-50 year period using water quality modeling, and/or to lakes from which data indicated that one algal bloom had occurred in the recent past. No lakes were listed as 'Threatened' in the 2002 or 2004 assessments nor are any listed in the 2006.

Probability-based Design: Statistical Evaluation of Assessment Effectiveness

The 'recreation in' (swimming) and 'aquatic life support' uses are functionally linked with the subsequent GPA requirement that lakes 'shall be free of culturally induced algal blooms'. Of this list, 'recreation in' would be one use for which some question might arise if it were not for a probability-based study the results of which suggest that most of the lakes in non-attainment due to nuisance algal blooms have been identified. Specifically, the REMAP (Regional Environmental Monitoring and Assessment Program) Fish Tissue Contamination in Maine Lakes study results from the mid-1990s revealed that 4% of that lake sub-population (2.5% of the lake acreage) was in non-attainment due to algal blooms. Those statistics can be used as a 'yardstick' to evaluate how successful Maine's lake assessment program has been at identifying specific lakes that support nuisance algal blooms. Examination of assessment information from the overall population from which the REMAP lakes were selected revealed that 25 of 1,903 lakes or 1.26% support nuisance blooms (30,253 of 926,092 acres or 3.27 % of lake surface area). The percentages compare quite closely to what one might expect given predictions based on the REMAP data results.

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. Four of these exceptions are listed in category 4c, in non-attainment of the Aquatic Life Use (habitat) due to non-pollutant (hydrologic modification).

Direct watershed populations were determined using the 2000 Census data for Maine municipalities and a database containing the areas of various towns that occur in over 2,700 lake direct drainages. These 2,700 or so lakes are the largest, most significant lake waters in the state. Towns associated with the lake in Inland Fisheries and Wildlife's Lake Index, were used to determine populations in direct watersheds of the remaining smaller lake waters (less likely to have watersheds spanning multiple towns). Since non-attainment of Class GPA focuses on lakes that deviate from natural conditions particularly, conditions induced by human activity, lakes having no population in their direct watershed have a very high degree of certainty of attaining all standards. The number of lakes listed in Category 1 is 2,857, totaling 295,443 acres. Of these, 1,019 (280,970 acres) are considered 'Significant' and 1,838 (14,473 acres) are not. Waters are summarized by the 10-digit HUC (Hydrologic Unit Code) within which they are located (Appendix III, Category 1). Lakes having population density estimates greater than 0.00 persons per square mile are listed in one of the other categories. Three lakes have been moved to Category 1 from Category 4C (Impaired due to non-pollutant) for the 2006 assessment: Canada Falls Lake, Caucomgomoc Lake and Ragged Lake. New water level agreements have been established for these waters thus the designated use of Aquatic Life Support is considered in attainment.

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 / treatment), recreation in/on the water, fishing (excluding fish consumption), and as habitat for fish and other aquatic life. Category 2 contains 2,880 lakes or 596,087 lake acres. Of these, 1,251 (582,585 acres) are considered 'Significant' and 1,629 (13,502 acres) are not. Waters are summarized by the 10-digit HUC within which they are located (Appendix III, Category 2). Water quality deterioration caused two lakes to move to Category 3 and one to Category 5A for this assessment. Verification of water quality status or improvements to water quality allowed 19 lakes to move into Category 2 (from Categories 3, 4A, 4C and 5A).

Appendix III, "Summary of 2006 Category Changes" itemizes such changes. Cobbosseecontee Lake is an example of a waterbody being moved from non-attainment into attainment staus after decades of restoration efforts. Evaluation of data indicates that these lakes are currently in attainment of their classified uses of Primary Contact and Aquatic Life Support.

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).

There are currently 11 lakes covering 18,164 acres listed in Category 3 (Appendix III, Category 3) all of which are designated as 'Significant'. These lakes may or may not be in attainment of 'aquatic life' and/or 'primary contact' criteria. The Department has data suggesting that these waters are meeting some designated use criteria but has evidence that suggests the lakes are 'borderline' with respect to another use. These lakes are the highest priority for data collection over the next few years.

Thirteen lakes were removed from the Category 3 list since the 2004 assessment. Long Pond was moved to Category 5a (TMDL needed). Twelve were moved to Category 2 because new data revealed that all assessed uses were currently (or presumed to be) in attainment. Lake specific changes are included in Chapter 8, "Summary of 2006 Category Changes".

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 25 lakes covering 72,288 acres listed in Category 4, all designated as 'Significant'. These lakes fall into two subcategories: waters on which TMDLs have been completed (4A) and waters with impairments not caused by a pollutant (4C).

Category 4A contains 18 lakes totaling 23,324 acres. This represents the removal of 4 lakes that exhibit water quality improvement and the addition of 10 lakes for which TMDLs have been completed since the 2004 Integrated Report. Completed TMDL documents for these waters are posted on the DEP website at the following URL: www.maine.gov/dep/blwq/docmonitoring/tmdl2.htm

Five lakes (48,964 acres) are listed in Category 4C, lake water impairment not caused by a pollutant. All of these lakes are in non-attainment of aquatic life (habitat) standards due to hydromodification (drawdown). Four lakes have been moved to either Category 1 or 2 since 2004; new water level agreements have been established for these waters thus the designated use of Aquatic Life Support is considered in attainment. A Use Attainability Analysis was completed on two of the four lakes (Ragged and Seboomook) which has modified their Aquatic Life Use standard. The Department is actively reviewing all water supply source lakes to determine if they should be added to Category 4C due to drawdown. Full results of this review will be reported in 2008.

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

Four sub categories have been designated under Category 5; however lakes have been listed in only two. All Maine lakes are listed in Category 5C; lakes impaired by atmospheric deposition of mercury resulting in a statewide fish consumption advisory (see discussion in listing Methodology section).

Category 5A includes 9 lakes (4,970 acres) all of which are designated as 'Significant' (lakes impaired by pollutants, and require a TMDL to be conducted by the State of

Maine). These totals reflect the movement of 10 lakes to Category 4A and the addition of three impaired lakes from Categories 2 and 3. Appendix III, Category 5A lists these lakes, indicates target dates for TMDL completion and indicates development priority. Table 4-25 summarizes individual use support for lakes in Category 5A.

Table 4-25 Individual Use Support Summary for Lakes & Ponds (acres) in Category 5a (TMDL Needed)

Designated Use	Non-Attainment	Attainment
Drinking Water Supply (after disinfection/treatment)	0	4,970
Aquatic Life use Support	4,970	0
Fishing	0	4,970
Recreation In / On	1,674	3,296 *
Navigation, Hydropower, Agriculture & Industrial Supply	0	4,970

* Long & Wilson Ponds do not yet support nuisance algal blooms

Causes or Stressors resulting in non-attainment and Sources are summarized for all impaired waters in Tables 4-10 and 4-14 in Section 4-3 of this document. Tables 4-11 and 4-15 provide Causes / Sources organized by Listing Category.

For more information on Lake TMDL projects:

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Related Website: www.maine.gov/dep/blwq/docmonitoring/tmdl2.htm

Criteria Used to Change Listing Status (Delist)

The 2006 assessment has provided an opportunity for lakes to be moved out of more 'Impaired' categories to categories where assessed used attainment has been verified than previous assessments. The simplest of these are the movement of Category 4C lakes into Categories 1 or 2. Category 4C lakes are impaired due to a non-pollutant. All Maine lakes included in this category were considered as having impaired aquatic life use support due to extreme water level fluctuations related to hydropower generation. When water levels are stabilized as a result of new license conditions, these lakes are considered to be in attainment. Their movement into Category 1 or 2 is dependant on if there is any population in their watersheds according to the most recent Census results.

Three lakes were moved from Category 5A and three others from Category 4A to Category 2. Examination of data for each of these six revealed that all trophic parameters indicated a persistent, improvement and/or stabilization of water quality. In some cases, a lake may have been originally listed in the mid-1990s based on limited data; in other cases data suggests that a cyclical water quality pattern; in other cases, the improvement or stabilization suggested by the trophic data looks real and sustained over at least the past 10 years.

Twelve lakes were moved from Category 3 to Category 2. The additional trophic data acquired over the past 2-4 years confirm that assessed uses are in attainment.

Information Requested Under CWA Section 314:

Trophic Status of Significant Publicly Owned Lakes

Lakes can be classified in many ways. For example, they may be classified according to their depth, size, conductivity, hardness, or according to the type of fish assemblages they support. The classification of a lake according to its productivity is known as *trophic* classification. Trophic status can be directly related to water column nutrient levels, algal populations and the resulting transparency.

A lake is considered productive or ***eutrophic*** when nutrient levels are high enough to support high levels of algal growth. Conversely, an unproductive or ***oligotrophic*** lake is low in nutrients and thus does not support high algal populations. Algal populations interfere with the transparency of the water, so eutrophic lakes generally have lower transparencies than oligotrophic lakes. Lakes with intermediate levels of nutrients and algae are considered ***mesotrophic***. ***Hypereutrophic*** lakes are characterized by an overabundance of nutrients and may support nuisance algal blooms during most of the open-water season. Lakes having a color resembling weak tea are stained with humic acids and can also be classified as ***dystrophic***. In this report, many dystrophic lakes fall under one of the other classifications (eutrophic, mesotrophic or oligotrophic).

The Maine Department of Environmental Protection determines the trophic state of a lake by using a combination of Secchi Disk Transparency (SDT), Chlorophyll a (CHL a), Total Phosphorus concentrations and best professional judgment. When adequate data exists, Trophic State Indices (TSIs) calculated from each of the previously mentioned parameters will range from 1 to approximately 120. An overall TSI, calculated from the average of 2-3 parameter TSIs, provides the most reliable trophic estimate. Relatively few lakes, however, have enough data to allow this calculation. Table 4-26 illustrates how TSI values compare to trophic parameters in the determination of trophic state. Note: because no Maine lakes support nuisance algal blooms during the entire open-water season, hypereutrophic status is not included in this table.

Table 4-26 Lake Trophic State Parameters and Guidelines

Numerical Guidelines for Evaluation of Trophic Status in Maine *			
(Note: Dystrophy is not often evaluated as a trophic category separately from categories below.)			
	Trophic Status		
Parameter[1]	Oligotrophic	Mesotrophic[2]	Eutrophic
SDT[3]	> 8 meters	4-8 meters	< 4 meters
CHL 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] SDT, CHL a, and Total Phosphorus based on long-term means.
[2] No repeated nuisance algal blooms.
[3] If color is > 30 Standard Platinum Units (SPU) or not known, chlorophyll a concentration (CHL a), dissolved oxygen and best professional judgment used to assign trophic category.
[4] TSI = Trophic State Indices are calculated when adequate data exists and color is at or below 30 SPU.
* This table is a duplicate of Table 4-4 in the Assessment Methodology Section of this report (appears twice for the reader's convenience).

Section 314 requires a summary of trophic classification for Maine's 'Significant' lakes. This summary is compiled using the numerical criteria in Table 4-26. When little or no standard trophic data are available, a trophic assignment is made using the best professional judgment of Maine Department of Inland Fisheries and Wildlife (DIFW) fisheries biologists. DIFW trophic assignments are used with the understanding that they reflect the productivity of the whole ecosystem rather than just the water. Table 4-27 summarizes the trophic status of Maine lakes. Few lakes have been assigned to the "dystrophic" category; dystrophy is defined as color >50 Standard Platinum Units (SPU) due to humic acids, often accompanied by depressed dissolved oxygen levels, a definition not truly exclusive of other trophic categories. For example, Threecornered Pond in Augusta is classified in this report as eutrophic but could also be classified as dystrophic.

Table 4-27 Trophic Status of Maine Lakes

Trophic Category	Significant Lakes		All Lakes	
	Number	Acres	Number	Acres
Assessed	1,739	926,954	1,910	928,275
Dystrophic	2	34	2	34
Eutrophic	590	150,922	660	151,354
Mesotrophic	1,022	664,498	1,119	665,340
Oligotrophic	125	111,500	129	111,547
Unknown	574	32,023	3,871	58,681

Lake Rehabilitation Techniques

Section 314 of the Clean Water Act required states to present information related to Section 314 Phase I, II and III Lake Restoration Grants. Section 314 has not been funded for more than a decade thus no additional projects have been added to the list presented in the 2000 Water Quality Assessment Report. Some comparable projects have been implemented under the Section 319, Nonpoint Source Program, which addresses nonpoint sources in watersheds for all water types. However, no central system is in place to track specific techniques employed in lake watersheds using 319 funds. This information can be gleaned from the 319 final reports that are on file at the DEP office in Augusta, Maine (Contacts: Norm Marcotte or Tony St. Peter, (207) 287-3901) or on file with Sandy Fancieullo at EPA Region 1 headquarters in Boston, Massachusetts (617) 918-1566).

Lake watershed implementation projects conducted under the 319 program in Maine generally fall into one of three categories. Nonpoint source staff estimates that the majority (65-75%) of such projects are installation of Best Management Practices (BMPs) to address siltation and sedimentation associated with eroding sources along public and private roadways. Shoreline stabilization projects are the second most common types of BMPs implemented. Such BMP implementations primarily focus on mitigating the effects of stormwater runoff. An educational component is also often included in 319 projects since changing the behavior of people is most likely to provide long-term solutions for the prevention of nonpoint source pollution. Table 4-28 summarizes these techniques.

Table 4-28 Lake Rehabilitation Technique Summary (Section 319 Projects)

Rehabilitation Technique
Watershed Treatments BMPs associated with Public & Private Road Management BMPs associated with Shoreline Erosion Control / Bank Stabilization
Other Lake Protection/Restoration Controls Public Information/Education Program/Activities

Qualifying projects in non-attainment lake watersheds, either having a completed TMDL (Category 4a) or on the TMDL list (Category 5a) are given preference in the 319 grant selection process. Section 319 lake projects generally fall into one of three categories: Watershed Surveys, Watershed Management Plans or Watershed Implementation Projects. In addition, a biomanipulation feasibility study is currently being funded for East Pond (Category 4a, TMDL completed in 2001) to investigate the possibility that a 'trophic cascade' has occurred that is contributing to the now persistent nuisance summer algal blooms. Fish removal may be considered if results indicate an imbalance among trophic levels.

Acid Effects on Lakes

Although all monitored Maine surface waters are inferred to have elevated non-marine sulfate concentrations resulting from acidic deposition over the past 50 to 100 years, only a portion of known acidic lakes can be considered as having been predominantly affected by atmospheric deposition. Since the late 1970s, the effects of acidic deposition have been the focus of numerous projects conducted by EPA, DEP and the University of Maine. The 1984 EPA Eastern Lake Survey (ELS) population (225 lakes) was chosen such that statistical inferences about the extent of acidic deposition effects could be made for lakes throughout the state. ELS projected that between 8 and 21 Great Ponds were acidic in the State of Maine. Estimates place the number of non-dystrophic Maine lakes, which are currently acidic (Acid Neutralizing Capacity or ANC < 0 micro equivalents/L) at around 100.

Researchers at the University of Maine have evaluated lake populations potentially susceptible to the effects of acidic precipitation in conjunction with DEP. Approximately 90 high elevation lakes in chemically resistant bedrock were assessed in the High Elevation Lakes Monitoring (HELM) projects during 1986-1987 and 1997-2003. A population of 150 seepage lakes in or associated with mapped aquifers was assessed in the Aquifer Lakes Pilot Survey (ALPS) projects during 1986-1987 and 1998-2002. Data have also been collected quarterly since 1982 from the EPA Regional Long Term Monitoring (RLTM) sites in Maine. Additional data also exist from numerous University of Maine projects. In addition, the DEP has evaluated alkalinity data on over 761 lakes as part of routine sampling to assess trophic status. The Department has not made any effort to enumerate lakes vulnerable to acidity other than focusing the HELM and ALPS studies on lake populations at high risk. It is likely; however, that all lakes situated in areas of bedrock and surficial geology having low to no acid neutralizing capacity would be categorized as being vulnerable to acidity.

Approximately 1,150 lakes (797,000 acres - approximately 80% of lake surface area) have been assessed for acidity, predominantly by using measures of pH and ANC. There are about 65 acidic lakes (ANC < 0) comprising a total surface area of approximately 750 acres (1.0% of the lakes and 0.08% of the lake surface area). Approximately 20 of the roughly 65 acidic lakes are ten acres or greater in size and considered 'significant'; the remainder are at least 1 acre in size. Extrapolation of Eastern Lake Survey results predicts that there are probably only a few unidentified acidic lakes greater than ten acres in size. There are likely some (probably less than 50) additional non-dystrophic acidic drainage and seepage lakes in the 1 to 10 acre size range. Table 4-29 provides a summary of acidity assessment efforts in Maine lakes.

Table 4-29 Acid Effects on Maine Lakes

	Number of Lakes *	Acreage of Lakes *	%Acreage *
Assessed for Acidity	~1,150	~797,000	~80%
Impacted by High Acidity	~65	~750	~0.08%
Vulnerable to Acidity	Unknown	Unknown	Unknown

*Totals include all lakes in the state, not only 'significant' lakes

Sources of acidity include acidic deposition, naturally occurring organic acids and a combination thereof, as determined by an assessment of dissolved organic carbon (DOC) and non-marine sulfate concentrations. Acidic low-DOC (< 5 mg/L) drainage and seepage lakes are acidic largely due to acidic deposition. Acidic high-DOC drainage lakes are acidic due to a combination of naturally occurring organic acids and acidic deposition. Acidic high-DOC seepage lakes are acidic primarily due to naturally occurring organic acids. No low-DOC lakes are known to have a pH less than 4.9; this suggests that organic acidity is necessary to depress pH to values less than 5.0. Table 4-30 summarizes source estimates for high acidity in Maine lakes.

Table 4-30 General Sources of Acidity in Acidic Maine Lakes

Source of Acidity	Percent of Acidic Lakes	Percent of All Maine Lakes*
Acid Deposition	60%	0.62%
Natural Sources	30%	0.31%
Combination of Acid Deposition and Natural Sources	10%	0.1%
Total	**100%**	**1.3%**

* Includes all lakes in the state, not only 'significant' lakes

Historical data on fisheries are limited for all but a handful of the acidic lakes. Temporal shifts in fish populations have been observed in some lakes, but there is no clear association between these shifts and acidic deposition. Although a number of these acidic lakes are fishless, none have been shown to have lost their fish due to acidification. Thus all are considered to be fully supporting their designated uses. However, it should be noted that many of the fishless lakes are small and isolated, or exist at high elevations and contain poor breeding habitat.

The extent of aluminum mobilization due to increased acidity is dependent on the presence or absence of substances which bind aluminum such as DOC and fluorine. Greatest aluminum toxicity has been observed between a pH of 5 and 6; however only a few of the numerous ionic species are biologically toxic. Table 4-31 presents the general distribution of lakes among four ranges of aluminum concentration. No consideration is given to the form of aluminum, thus a significantly lesser amount would be considered biologically available. Since 40% of the acidic lakes have high levels of DOC, it can be inferred that biologically available aluminum is less likely to attain toxic levels in those lakes. Recent data from long term studies (HELM and RLTM) indicate that toxic aluminum concentrations have decreased in some of these lakes.

Table 4-31 Aluminum Distribution in Acidic Lakes in Maine

Total Aluminum (ug/l)	Approximate Percent Acidic Lakes
< 100	~ 67 %
100 – 200	~ 7 %
200 – 300	~ 9 %
> 300	~ 17 %

No attempt has been made to mitigate the effects of acidic deposition or potential toxic mobilization in lakes for the following reasons:

1) only a small percentage of surface water has been acidified by acidic deposition,

2) lakes affected by acidic deposition are typically small in surface area,

3) paleolimnological evidence suggests that those lakes with depressed pH attributable to acidic deposition were historically low in pH (and Ca) as a result of inherent watershed characteristics,

4) no alteration of fish populations in lakes can be attributed to acidic deposition at this time, and

5) since a significant number of the acidic lakes are dominated by organic acidity, alteration of the buffering system (e.g., by the addition of lime) would drastically change the natural ecosystem.

Evaluation of long-term pollution reductions reveals that sulfate concentrations in Maine lakes have declined by 12-22% since 1982. It was expected that trends in acidity would exhibit a parallel reduction however, the data reveal otherwise. A simultaneous decline in base cation concentration (calcium and magnesium, important for reduction in acidity) accounts for the lack of recovery. A number of interacting factors may be influencing the latter including continued high levels of nitrogen deposition, a lag in response time, and/or climatic influences on watershed response.

The Senator George C. Mitchell Center for Environmental and Watershed Research at the University of Maine, Orono, continues to be the leader in atmospheric deposition research in Maine. Researchers at the Center are currently studying a set of lakes from Maine to Pennsylvania, first sampled by the U.S. Environmental Protection Agency (EPA) in 1984, to evaluate 20-year changes in lake chemistry for the purposes of understanding changes due to acid rain, and potential recovery in biological populations. Additional information on related research can be obtained through their website, located at the following URL: www.umaine.edu/WaterResearch

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Related Website: www.maine.gov/dhs/ehu/fish/

Fish, water and sediment samples were collected from 125 Maine lakes and ponds (108,423 acres) in 1993 and 1994 as part of the EPA funded Regional Environmental Monitoring and Assessment Program (REMAP). The study lakes were selected from a population of about 1,800 surveyed lakes and ponds having significant sport fisheries using EPA's National EMAP (Environmental Monitoring and Assessment Program) protocol. Significant levels of mercury were found in both warm and cold water fish. The average concentration was 0.45 ppm. Fish from several lakes exceeded the 1994 Federal action level of 1.0 ppm and 65% of the lakes yielded fish that exceeded the 1994 State action level of 0.43 ppm. Since that time, Maine's level of concern has since been reduced from 0.43 ppm to 0.2 ppm.

In 1994, the Maine Department of Health and Human Service issued Maine's first mercury advisory. Further refinements were made to the advisory in 1997 and again in 2000. The advisory currently says:

"Warning: Mercury in Maine freshwater fish may harm the babies of pregnant and nursing mothers, and young children. Pregnant and nursing women, women who may get pregnant and children under age 8 should 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."

In the past, statistical trend analysis has been conducted using a long-term transparency dataset that DEP has actively acquired and administered since 1970. Data had been analyzed using the non-parametric Kendall-Tau test in SYSTAT. This analysis has not been repeated since the 2000 assessment because of the elimination of one lake assessment staff position at DEP.

Some general insight into water quality has been gained in recent years, as a result of Maine experiencing either drought conditions or periods of heavy precipitation. Many lakes have achieved the deepest transparency readings ever during drought years. For example, in dry 2003, 64% of lakes monitored by DEP and volunteers in the Maine Volunteer Lake Monitoring Program had an average transparency greater than their long term average, 14% had an average transparency the same as their long term average, and only 21% had an average transparency less than their long term average. Lakes with better transparencies are likely to be those most sensitive to phosphorus inputs due to stormwater runoff. Lakes with worse transparencies appear to be those that already have high internal phosphorus loads. Additional information on recent lake transparency trends may be found in the Maine Volunteer Lake Monitoring Program's (VLMP) 2002 - 2005 Annual Reports. VLMP annual reports may be accessed through the "Publications" link on their website at this URL: www.mainevolunteerlakemonitors.org/publications/

INVASIVE AQUATIC PLANTS

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Related Website: www.maine.gov/dep/blwq/topic/invasives/index.htm

Invasive aquatic plants are cited by lake biologists as one of today's leading threats to the quality of New England's inland surface waters. This problem also translates into social and economic burdens associated with lost recreation, degraded real estate values and escalating vegetation "control" costs. These "control" costs amount to millions of dollars spent in Maine's neighboring states that collectively face at least five established, aggressive, nuisance plant species.

The mission of the DEP Invasive Species Program is to reduce risks of introduction and further spread of these species in Maine's 6,000-plus ponds and lakes. Now entering the sixth year of these efforts, the program has sustained a high degree of public awareness of this issue and continues to enlist significant numbers of volunteer efforts to monitor lakes, inspect boats and offer local outreach.

Two legislative mandates charge the DEP in this program area: "An Act to Prevent the Spread of Invasive Aquatic Plants" (Chapter 722) and "An Act to Prevent Infestation of Invasive Aquatic Plants and to Control Other Invasive Species" (Chapter 434).

Chapter 722, enacted in 2000, prohibits the transport of 11 invasive aquatic plants and entrusts the DEP with education / outreach efforts and authorizes staff to investigate and document detection of invasive plants and control their spread, if feasible.

Chapter 434 was enacted the following year and provided more sweeping authorities while stipulating additional program and planning requirements. Among these requirements are:

- a boat sticker program to raise funds and public awareness for the prevention, detection and control of invasive species,
- an inspection and education program, and
- emergency authority to regulate surface use in plant-infested waters

In addition, the law directed the governor to appoint an interagency task force on invasive aquatic plants and nuisance species to oversee efforts and offer recommendations for comprehensive planning and management of all invasive aquatic plants and nuisance species in the state.

As of this writing, 26 inland waters out of Maine's entire lake population are contending with four aquatic invaders—variable-leaf water milfoil (*Myriophyllum hetrophyllum*), Hydrilla (*Hydrilla verticillata*), Curly-leaf pondweed (*Potamogeton crispus*) and Eurasian milfoil (*Myriophyllum spicatum*). Twenty three ponds or lakes have documented infestations of Variable milfoil while fortunately only one infested site exists in Maine for each of the three other pest plants, Hydrilla, Curly-leaf pondweed and Eurasian milfoil. Single pond infestations of Curly-leaf pondweed and Eurasian milfoil were confirmed in 2004. No lakes are listed as impaired due to invasive plants, since all uses are still attained.

In response to these infestations, about 855 cubic feet of Curly-leaf pondweed was hand removed by SCUBA divers contracted by DEP in 2005. That same year, DEP also began a control program for Eurasian milfoil using herbicide. A survey of neighboring ponds found no other infestation of Eurasian milfoil. The third year of an herbicide-based control program for Hydrilla resulted in no Hydrilla found at season's end but tubers remain in sediments. Numerous hand-removal efforts, benthic barrier installations and a prototype suction device for faster hand removal were deployed to control Maine's most common invasive aquatic plant problem, Variable milfoil.

Prevention remains a primary objective of the Program. As shown in the following illustration, the combined efforts of inspections, monitoring and education/outreach account for approximately 75 per cent of all expenditures in 2005. Among these activities were 40,015 Courtesy Boat Inspections, up from 30,000 conducted in 2004. These voluntary inspections on boat ramps of Maine lakes and ponds provide tangible results, intercepting infestations of species not yet documented in Maine.

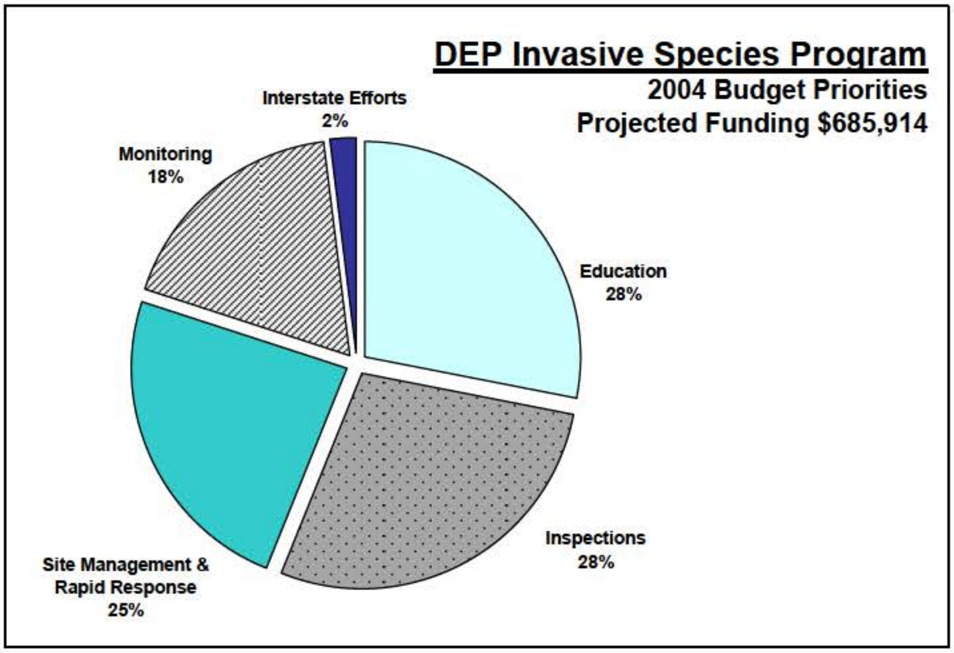
Monitoring efforts include 350 new Invasive Plant Patrollers that now make a cadre of 1,500 citizen scientists able to identify native and invasive plants. These trained eyes survey vulnerable areas such as boat ramps and other high impact areas and are the first line of defense/rapid response in the event of a new infestation.

Outreach in the form of signage, collateral productions/distribution, media coverage and public speaking opportunities account for the substantial public recognition of invasive species issues in Maine.

The Program staff reports that the above efforts have delivered substantial results. Since inception of the Program, one or more aquatic plant infestations have been documented annually—either an incipient infestation or a well-established infestation that had not yet been documented in the Pine Tree State. Maine DEP officials report **no new infestations have been documented for 2005 in Maine**.

Lastly, Maine Departments of Environmental Protection and Inland Fisheries and Wildlife have agreed upon a statewide Rapid Response Program early in 2006 to streamline interagency collaboration in the event new invasive plant or fish detections.

Dedicated monies from the aforementioned Boat Sticker Program fund were applied in 2004 and 2005 as shown in Figure 4-4:



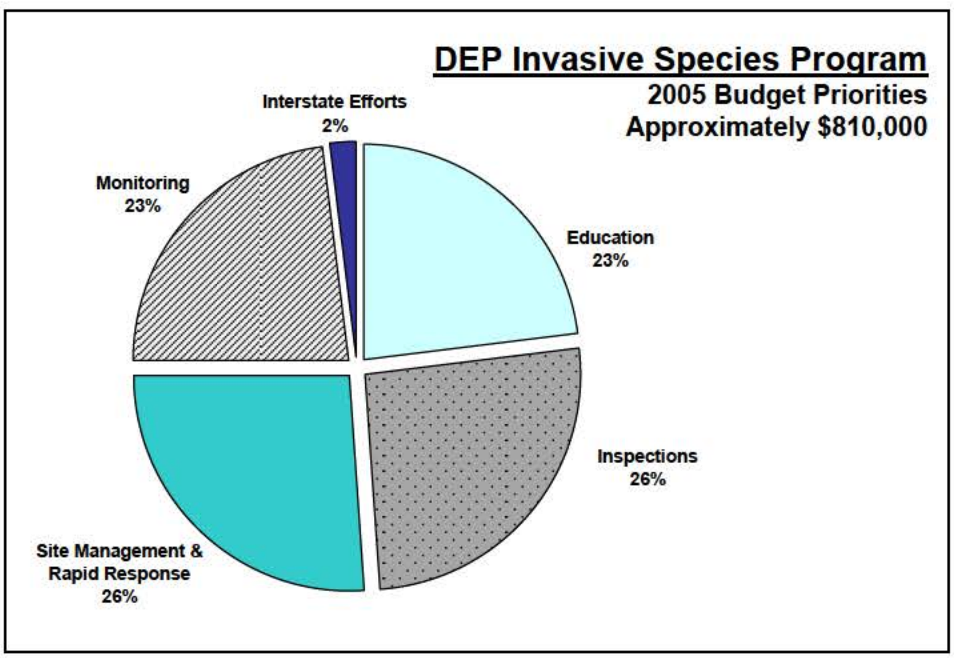


Figure 4-4 Invasive Plant Program - 2004 and 2005 Budget Expenditures & Priorities.

The Invasive Species Program continues to meet the needs outlined above, while addressing new issues. Among them are increased requests from residents and users of lakes seeking assistance in managing established invasive plant problems. While providing increased support to respond to these requests, it is incumbent upon DEP to also apply proportionately greater resources to prevent plant invasions--an option far more cost effective in the long term than mitigating established invasions.

ECONOMIC CONTRIBUTION

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Related Website: www.maine.gov/dep/blwq/doclake/research.htm

In addition to providing valuable natural habitat for fish and wildlife communities, Maine lakes are an integral part of Maine's economy. Lake-related uses contribute more than $2.3 billion into the State's economy each year. In fact, lakes support over 52,000 jobs statewide. The total net economic value of Maine's Great Ponds (lakes and ponds 10 or more acres in surface area) is at least $8.5 billion dollars annually (1996 research updated to 2005 dollars). Surveys show that water clarity, quality of swimming, and scenic beauty are important to most people when they choose which lake to visit or where to buy property. A noticeable gain or loss in water quality could change statewide use rates by up to 13% (1.6 million user-days) each year. If water clarity declines, the potential loss in property value could be as much as $30,000 per property based on mid-1990s property values. These dramatic estimates make lake protection a priority for the entire state.

ESTUARIES / OCEAN

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BACKGROUND

Maine has three classes for the management of estuarine and marine waters: SA, SB, and SC. SA waters are managed for high water quality with limited human interference allowed. No direct discharges of pollutants, including those from finfish aquaculture, are allowed in SA waters. SB waters are general-purpose waters and are managed to attain good quality water. Well-treated discharges of pollutants that have ample dilution are allowed. SC waters are managed for the lowest water quality, but they must be fishable and swimmable as well as 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 dissolved oxygen, bacteria and aquatic life standards (see Table 4-32 below).

Table 4-32 Maine's Estuarine and Coastal Waters Classification Standards

Class	Designated Use	Dissolved Oxygen	Bacteria	Aquatic Life
SA	Habitat for fish and estuarine and marine life Recreation in and on the water Fishing Aquaculture (not finfish) Propagation and harvesting shellfish Navigation	As naturally occurs	As naturally occurs	As naturally occurs
SB	Habitat for fish and estuarine and marine life Recreation in and on the water Fishing Aquaculture Propagation and harvesting shellfish Navigation Industrial process and cooling water supply Hydroelectric power generation	Not less than 85% of saturation	Enterococcus not higher than geometric mean 8/100ml or instantaneous of 54/100ml from 5/15 to 9/30 Not 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	Habitat for fish and estuarine and marine life Recreation in and on the water Fishing Aquaculture Propagation and restricted shellfish harvesting Navigation Industrial process and cooling water supply Hydroelectric power generation	Not less than 70% of saturation	Enterococcus not higher than geometric mean 14/100ml or instantaneous of 94/100ml from 5/15 to 9/30 Not exceed criteria of National Shellfish Sanitation Program for restricted shellfish harvesting	Maintain structure and function of the resident biological community

The aerial distribution of the three marine classes is shown in Table 4-33 and Figure 4-5 below:

Table 4-33 Area and Percentage of Marine and Estuarine Waters in Each Classification

Class	Square Miles	Percentage
SA	211	7.41 %
SB	2,606	91.58 %
SC	29	1.01 %
Total	2,846	100.00 %

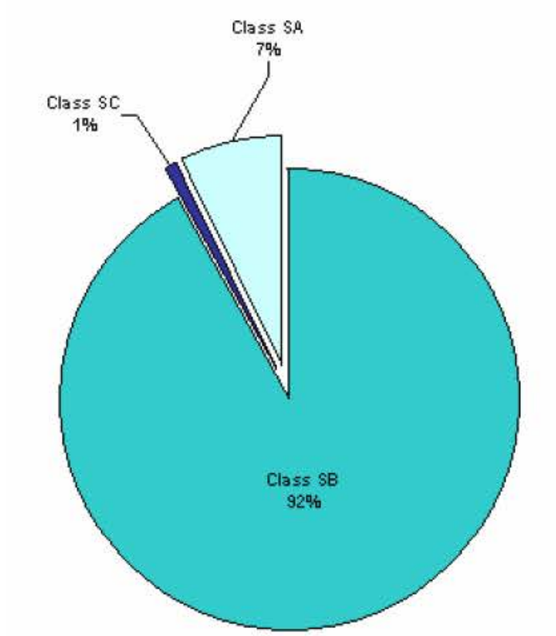

Figure 4-5 Percentage of Estuarine and Marine Waters in Each Classification

This chapter provides an assessment of the degree to which water quality supports the designated use 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.

SOURCES OF MONITORING DATA

The Maine Department of Environmental Protection (DEP), the National Coastal Assessment/University of Southern Maine, the Department of Marine Resources (DMR), the Casco Bay Estuary Project (CBEP), and a variety of volunteer monitoring groups such as the Spruce Creek Association monitor Maine's coastal waters.

DMR monitors for indicators of human pathogens (e.g., fecal coliforms) and biotoxins (e.g., Paralytic Shellfish Poisoning). The purpose of DMR monitoring is to protect human health by managing shellfish harvest areas (see Chapter 7 of this report).

DEP monitors toxic contaminants in tissues and assesses water quality using data collected by DEP and other organizations. DEP also participates in the Gulf of Maine Council's Gulfwatch Project that surveys toxic contamination in mussel tissue in the Gulf of Maine.

The Maine State Planning Office Coastal Program and University of Maine Cooperative Extension/Sea Grant are responsible for managing and coordinating the Maine Healthy Beaches Program (see Chapter 7 of this report).

The Casco Bay Estuary Project (CBEP), funded by EPA's National Estuary Program, monitors and also supports other monitoring efforts in the Bay, through Friends of Casco Bay (FOCB) and other entities and coordinates the National Coastal Assessment for the entire Maine coast with the assistance of Maine DEP.

The GoMOOS (Gulf of Maine Ocean Observation System) program provides data on the gulf that is collected from buoys, satellites and radar. Since all the buoys are located in offshore waters at present, the data are not used for this assessment. The data are useful in determining the signals coming from the Gulf rather than land. DEP would benefit from the placement of some new buoys closer to land in order to better monitor and understand near shore waters and land/water interactions. Bowdoin College plans to place a buoy in coastal waters in 2006.

Results from these various monitoring sources provide the basis for determining attainment of classification and designated uses. One of the biggest challenges ahead is to get all the data that is collected into a central location and into useable, universally-translatable formats.

SUMMARY OF STATEWIDE STATUS

This Integrated Assessment report requires the assignment of each Assessment Unit into one of five categories (see Methodology). Specific waters are determined to be impaired if they do not attain one or more of the uses assigned by their classification (as determined by the criteria assigned to that classification). Overall use attainment summary is provided in Table 4-8.

Category 1: The 2006 assessment assigned no estuarine and marine waters to Category 1 because there were no waters where all Classification Standards were monitored adequately in a waterbody segment to determine if standards were being met.

Category 2: The 2006 assessment assigned 2,685.17 (94.35%) square miles of estuarine and marine waters to Category 2 (fully attaining*). This is a decrease of 5.58 square miles from the 2004 assessment.

Category 3: The 2006 assessment assigned 4.43 (0.16%) square miles of estuarine and marine waters to Category 3 (attainment undetermined*). This is a decrease of 1.80 square miles from the 2004 assessment. More information was provided by DMR to determine if the designated uses were being attained in most cases. The segments were moved to Categories 2 and 5.

Category 4: The 2006 assessment assigned no estuarine and marine waters to Category 4 (impaired for one or more uses*). This is a decrease of 1.09 square miles from the 2004 assessment. These waters are now included in Category 5-B-1 because of shellfish closures.

Category 5: The 2006 assessment assigned 156.39 (5.50%) square miles of estuarine or marine waters to Category 5 (impaired for one or more uses*). This is an increase of 8.47 square miles from the 2004 assessment. This Integrated Water Quality Monitoring and Assessment Report does not consider the statewide lobster tomalley consumption advisory that is in place due to the potential presence of PCBs and dioxin in all 2,845.99 square miles of Maine's coastal waters. Category 5 impaired waters require the development of a Total Maximum Daily Load (TMDL) determination. Waters are placed in one of four subcategories: 5-A for waters impaired by pollutants, 5-B-1 for waters impaired only by bacteria, 5-B-2 for waters affected only by Combined Sewer Overflows (CSO), 5-D for waters impaired by the residuals of “legacy” activities.

* 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. 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.

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 other cooperating contributors. While new and expanded monitoring has identified many additional square miles of impaired waters this should not be interpreted as an indication that Maine’s waters are under some new or increasing threat. Rather, the State has been better able to assess its waters with improved monitoring tools and increased participation from cooperators.

CAUSES AND SOURCES OF IMPAIRMENT IN CATEGORIES 4 AND 5

Cause and stress type information is provided in Table 4-12, while information on sources of impairment is provided in Table 4-16.

The general category of "toxics" is by far the cause/stressor that impairs the largest area of marine and estuarine waters in the State. In fact, the "toxics" subcategories of

PCBs and dioxins impaired all 2,845.99 square miles of marine/estuarine waters that were assessed in 2006 due to the statewide lobster tomalley consumption advisory described in the previous section. (See the section on Toxics later in this Estuarine and Marine Waters section). After toxics, the second greatest impaired area (153.55 square miles) of estuarine/marine waters is due to bacterial contamination. By comparison, each of the other remaining general causes is responsible for impairing areas of a few square miles or less.

Industrial point sources were the largest contributing source category for dioxin but have recently been eliminated. 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 all of the shellfish (lobster tomalley) consumption listed waters where dioxins remain the primary contaminant.

National Coastal Assessment: Probability-Based Monitoring

Related Website: www.epa.gov/emap/nca/

The purpose of the National Coastal Assessment (NCA) is to estimate the current status of the condition of the nation's coastal resources on a regional and national basis using ecological indicators. The National Coastal Assessment is based on a probability-based, stratified sampling design. Stations were selected randomly to represent strata (regions) of similar characteristics e.g., Casco Bay, Long Island Sound, etc. Conclusions based on data from such programs are statistically valid for the strata, but are not necessarily representative of conditions at a particular station. Also, stations were sampled once during the summer index period. Since water column conditions change constantly, the sampling only reflects a single snapshot of a three-month index sampling period. Another weakness in sediment sampling is the lack of replication. As is often the case, the cost limits replication.

Sampling schemes by year are described in the Table 4-34. The desired 3-year rotation had to be modified in 2005 because of lack of funding. Approximately fifty stations were sampled in years 2000 through 2004 and approximately 25 stations were sampled in 2005.

Table 4-34 Changes in Estuarine Sampling Intensity since 2000

Year	Area	Increased Sampling Intensity
2000	Whole coast	Casco, Penobscot, Blue Hill and Cobscook Bays
2001	Whole coast	Casco, Penobscot, Blue Hill and Cobscook Bays
2002	Downeast	Blue Hill and Cobscook Bay
2003	Midcoast	Penobscot Bay
2004	Southern coast	Casco Bay
2005	Eastern half of coast	None

The "core" indicators monitored for the National Coastal Assessment are included in Table 4-35:

Table 4-35 Core Indicators for the National Coastal Assessment

Water Quality	Sediment Quality	Biota
Dissolved oxygen	Grain size	Benthic community structure
Salinity, temperature, depth, light attenuation, pH	Total organic carbon	Lobster meat and tomalley tissue analysis (started in 2004)
Nutrients	Benthic Community Structure	
Chlorophyll	Sediment toxicity	

These indicators will be measured using methods developed by EMAP during the past 10 years. The protocols for sampling are described in the following documents:

The Coastal 2000 Field Operations Manual, Northeast Component www.epa.gov/emap/nca/html/docs/c2knefm.html prepared by Charles J. Strobel of the Atlantic Ecology Division, U.S. EPA, Narragansett, RI

The National Coastal Assessment Field Manual www.epa.gov/emap/nca/html/docs/c2kfm.html

The National Costal Assessment Coastal 2000, Quality Assurance Project Plan – 2000 www.epa.gov/emap/nca/html/docs/qaprojplan.htm

The National Coastal Assessment, Northeast Coastal Condition Report II (2005) is based on data from samples taken from July through September in 2000 for coastal states from Maine to Virginia. The U.S. Environmental Protection Agency's (EPA) assessment estimates that ecological conditions in the Northeast are poor, with 27% of estuarine area being rated as impaired for aquatic life (poor condition) and 49% as impaired for human use. The Northeast is the most densely populated coastal region of the United States and includes the coastal waters from Maine to Virginia. However, Maine is the least densely populated coastal region of these states.

The Atlantic Ecology Division, U.S. EPA, Narragansett, RI recently summarized data for Maine. The results were graphed and are presented below.

National Coastal Assessment in Maine

The overall rating for Maine's waters including Casco Bay is good.

The condition of Maine's waters was assessed using indicators from the National Coastal Assessment (NCA) monitoring program. Data analyzed to date are for Casco Bay 2000-01, Coastwide 2000-01 (including Casco Bay), and Coastwide 2000-03 (including Casco Bay). In Figures 4-6 through 4-16 the "Coast of Maine 2000-03" column represents a weighted estimate to reflect changes in sampling design and coverage.

Water Quality Index

Water quality condition for Maine including Casco Bay is good based on data from the NCA survey. The water quality index was developed based on information using five water quality indicators: dissolved nitrogen, dissolved phosphorus, chlorophyll a, water clarity and dissolved oxygen.

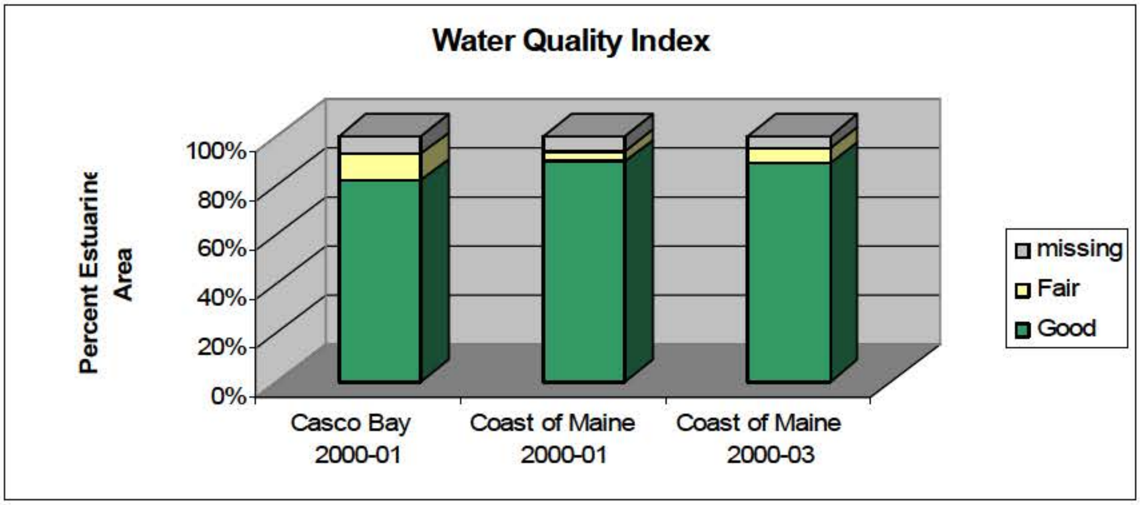

Figure 4-6 Comparison of Water Quality Index Results

Table 4-36 Comparison of Water Quality Index Results

Water Quality Index	Casco Bay 2000-01	Coast of Maine 2000-01	Coast of Maine 2000-03
Good	82	89	89
Fair	11	4	6
Missing	7	6	5

Dissolved Nitrogen

Dissolved inorganic nitrogen (DIN) is rated good for Casco Bay and the coast of Maine. DIN concentrations were less than 0.1 mg/L (good) at greater than 84% of the assessed sites. Ten percent (10%) or less of the assessed sites were rated fair (0.1 to 0.5 mg/L). No areas were found to have a DIN greater than 0.5 mg/L (poor). Data were unavailable for 5 to 7% of the sites on the Coast of Maine and in Casco Bay.

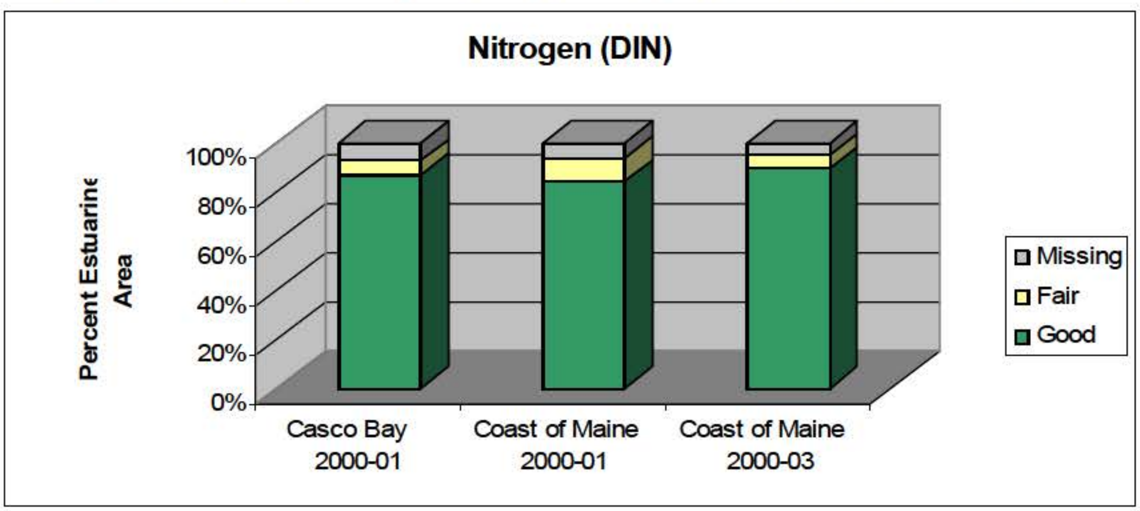

Figure 4-7 Comparison of Nitrogen Results

Table 4-37 Comparison of Nitrogen Results

Nitrogen (DIN)	Casco Bay 2000-01	Coast of Maine 2000-01	Coast of Maine 2000-03
Good	87	84	90
Fair	6	10	5
Missing	7	6	5

Dissolved Phosphorus

Dissolved inorganic phosphorus (DIP) is rated good (less than 0.01 mg/L) at 54% of the sites assessed in Casco Bay. Forty five percent (45%) and 38% of the sites assessed on the coast of Maine in 2000-01 and 2000-03 respectively were rated as good. Thirty nine percent (39%) of the assessed sites in Casco Bay were rated fair (0.01 to 0.05 mg/L). In 2000-01, 49% of the assessed sited were rated as fair and in 2000-03, 57% of the areas were rated fair. No areas were found to have a DIP greater than 0.05 mg/L (poor). Data were unavailable for 5 to 7% of the sites on the Coast of Maine and in Casco Bay. In high salinity Maine coastal waters, nitrogen is generally the limiting nutrient and therefore a more important indicator of the potential for eutrophication.

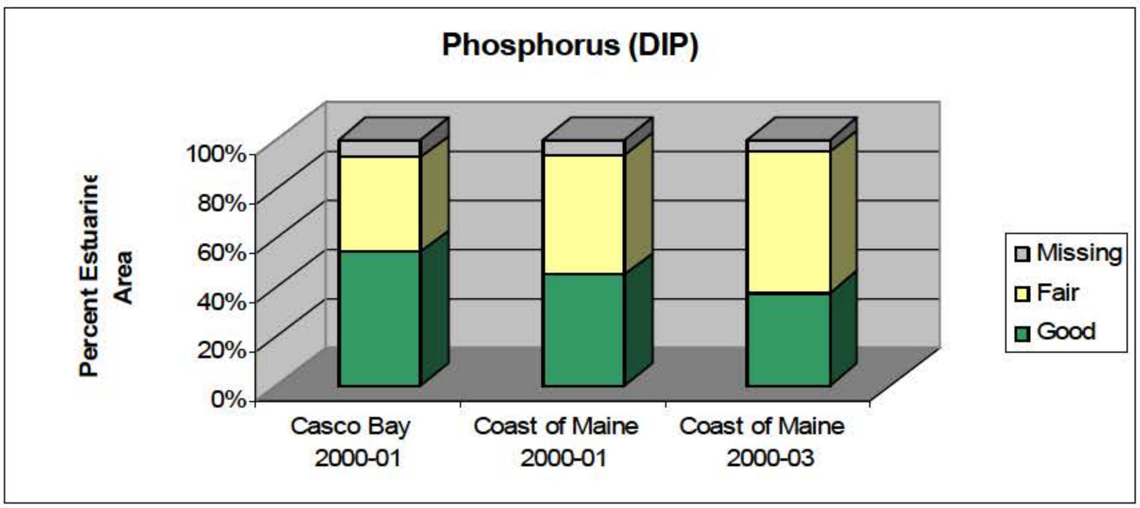

Figure 4-8 Comparison of Phosphorus Results

Table 4-38 Comparison of Phosphorus Results

Phosphorus (DIP)	Casco Bay 2000-01	Coast of Maine 2000-01	Coast of Maine 2000-03
Good	54	45	38
Fair	39	49	57
Missing	7	6	5

Chlorophyll a

Chlorophyll a concentrations in Casco Bay and the Coast of Maine are rated good. Of the assessed sites 86% and 92% in Casco Bay and the Coast of Maine respectively were rated good (less than 5 ug/L). Four percent (4%) or less of the assessed sites were rated fair (5 to 20 ug/L). No areas were found to have chlorophyll a greater than 20 ug/L (poor). Data were unavailable for 5 to 10% of the sites on the Coast of Maine and in Casco Bay.

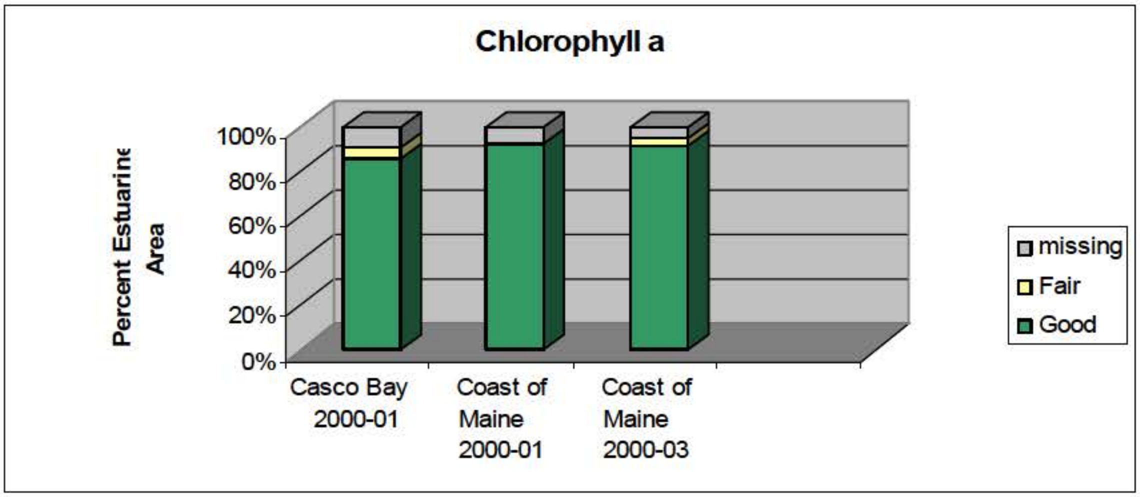

Figure 4-9 Comparison of Chlorophyll *a* Results

Table 4-39 Comparison of Chlorophyll *a* Results

Chlorophyll a	Casco Bay 2000-01	Coast of Maine 2000-01	Coast of Maine 2000-03
Good	86	92	92
Fair	4	0	3
Missing	10	8	5

Water Clarity

Water clarity in Casco Bay and the Coast of Maine is rated good. Water clarity was rated poor if light penetration at 1 meter was less than 10% of surface illumination. No sites in Maine rated poor in 2000-01. Data were unavailable for 12% of the sites in Casco Bay and 1% of the sites on the Coast of Maine 2000-03.

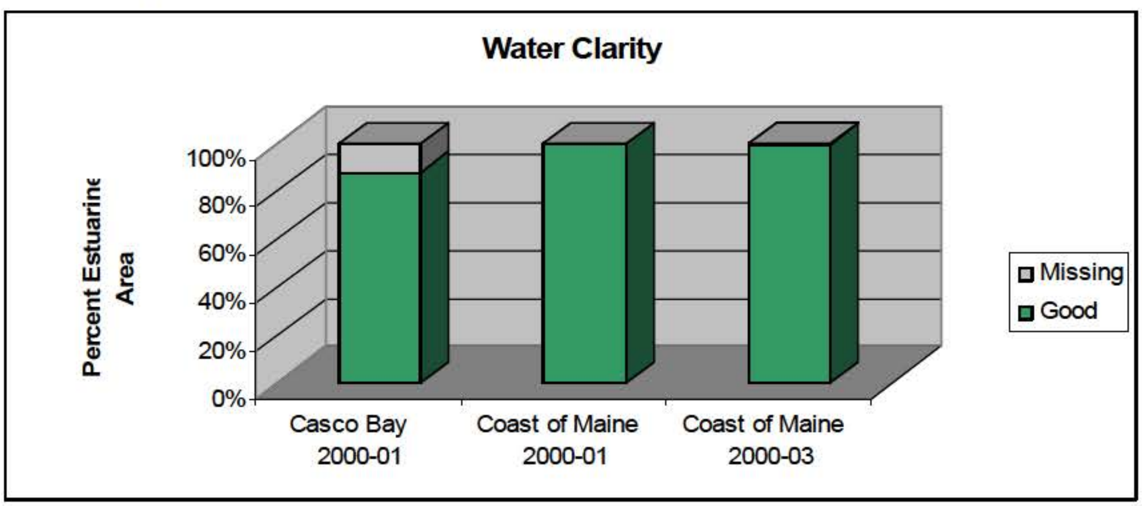

Figure 4-10 Comparison of Water Clarity Results

Table 4-40 Comparison of Water Clarity Results

Water Clarity	Casco Bay 2000-01	Coast of Maine 2000-01	Coast of Maine 2000-03
Good	88	100	99
Missing	12	0	1

Dissolved Oxygen

Dissolved oxygen concentrations in Casco Bay and the Coast of Maine are rated good. Ninety three (93%) of the sites assessed in Casco Bay and 97% of sites on the Coast of Maine had dissolved oxygen levels greater than 5 mg/L (good by NCA rating). There were no areas with dissolved oxygen concentrations less than 2 mg/L (NCA rating poor). Data were unavailable for 7% of the sites in Casco Bay and 3% of the sites on the Coast of Maine. Maine does have different dissolved oxygen criteria based on water classification; please refer to Table 4-32 for more information.

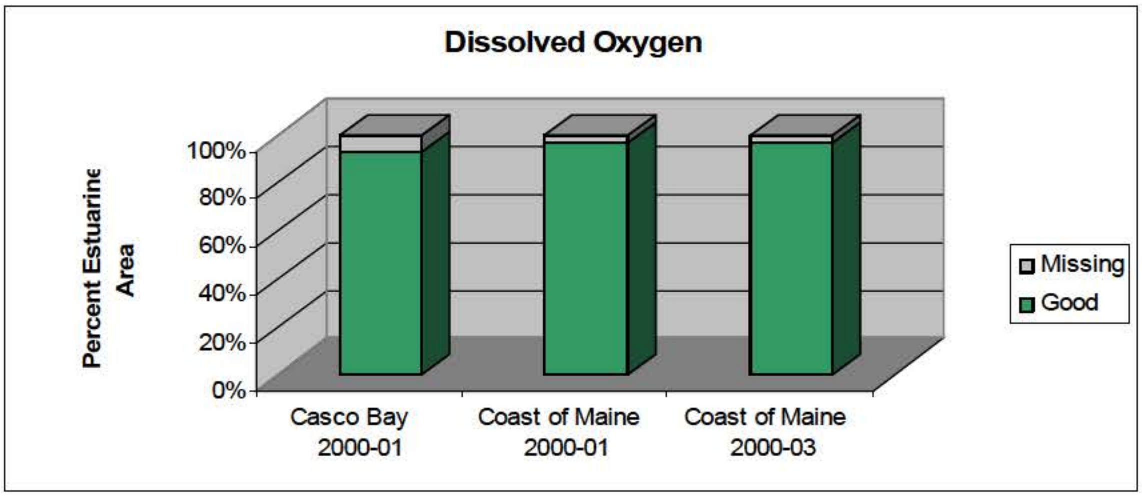

Figure 4-11 Comparison of Dissolved Oxygen Results

Table 4-41 Comparison of Dissolved Oxygen Results

Dissolved Oxygen	Casco Bay 2000-01	Coast of Maine 2000-01	Coast of Maine 2000-03
Good	93	97	97
Missing	7	3	3

Sediment Quality Index

Sediment quality condition for Casco Bay is good (based on NCA regional rating) with 3% of the assessed area classified as poor for sediment quality and 39% was classified as fair. Seventy five percent (75%) and 80% of the Coast of Maine in 2000-01 and 2000-03 respectively was classified as good when rated by site. In comparison, forty four percent (44%) of the sites assessed in Casco Bay were rated as good. The Sediment Quality Index was developed based on information using three sediment quality indicators: sediment toxicity, sediment contamination and total organic carbon.

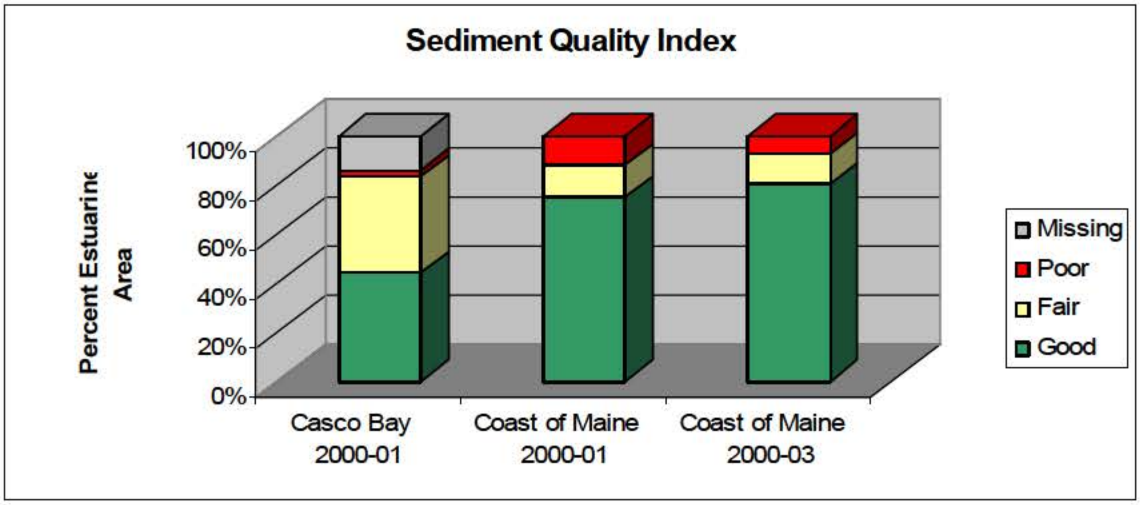

Figure 4-12 Comparison of Sediment Quality Index Results

Table 4-42 Comparison of Sediment Quality Index Results

Sediment Quality Index	Casco Bay 2000-01	Coast of Maine 2000-01	Coast of Maine 2000-03
Good	44	75	80
Fair	39	13	12
Poor	3	12	7
Missing	14	0	0

Sediment Toxicity

Sediment toxicity for Casco Bay is rated good. Toxicity was determined by using a static 10-day acute toxicity test with the amphipod *Ampelisca abdita*. Sediment was considered to be toxic if amphipods had less than an 80% control-corrected survival rate. No areas of Casco Bay had sediments that were toxic to amphipods, although data were not available for 14% of the sites assessed. While sediment toxicity by site on the Coast of Maine is good, sediment was toxic (poor rating) to amphipods at 9 and 5% of the sites assessed in 2000-01 and 2000-03 respectively. Data were not available at 3 and 4% of the sites.

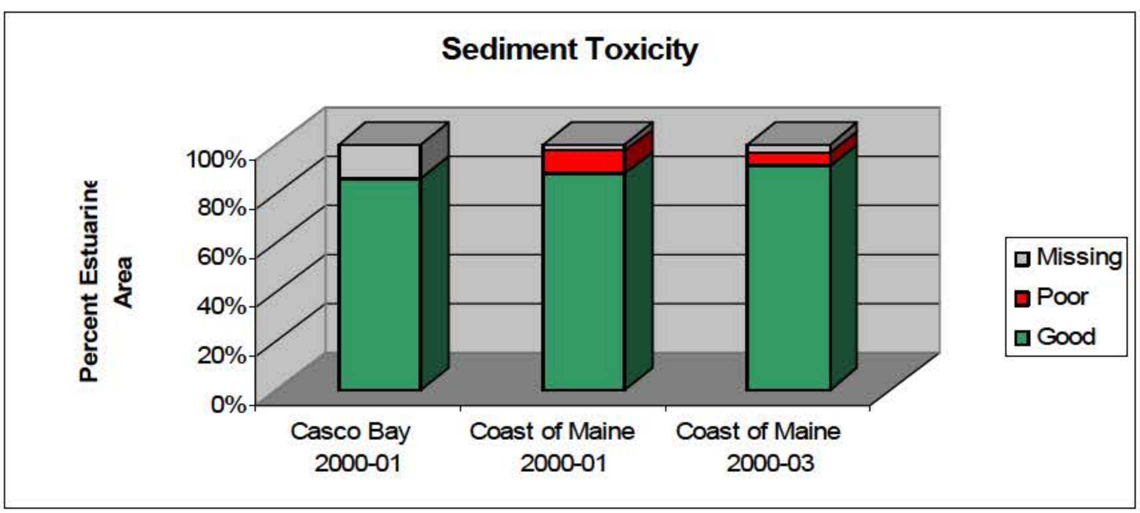

Figure 4-13 Comparison of Sediment Toxicity Results

Table 4-43 Comparison of Sediment Toxicity Results

Sediment Toxicity	Casco Bay 2000-01	Coast of Maine 2000-01	Coast of Maine 2000-03
Good	86	88	91
Poor	0	9	5
Missing	14	3	4

Sediment Contamination

Sediment contamination for Casco Bay and the Coast of Maine is rated good.* In order to assess the degree of sediment contamination, sediment contamination concentrations were compared to both the ERM and ERL values (Long et al, 1995). Sites with values exceeding an ERM for any pollutant were classified as having poor condition. Sites exceeding five or more ERL concentrations were rated fair. Casco Bay had a higher percentage of sites (39%) rated fair than the 13% and 12% with fair ratings on Coast of Maine in 2000-01 and 2000-03 respectively. Data were not available for 14% of the sites in Casco Bay.

*Less than 5% of estuarine sediments were in poor condition (regional rating)

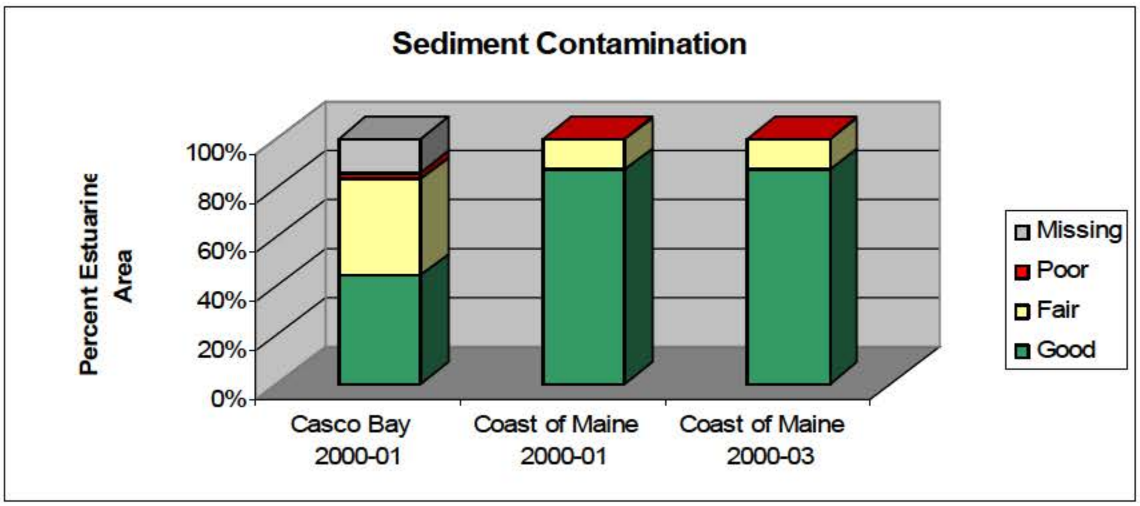

Figure 4-14 Comparison of Sediment Contamination Results

Table 4-44 Comparison of Sediment Contamination Results

Sediment Contamination	Casco Bay 2000-01	Coast of Maine 2000-01	Coast of Maine 2000-03
Good	44	87	87
Fair	39	13	12
Poor	3	0	1
Missing	14	0	0

Total Organic Carbon

Total organic carbon for Casco Bay and the Coast of Maine is rated good (regional NCA assessment). Most of the assessed sites were either assessed good (<2% TOC) or fair (2-5% TOC). Casco Bay had a slightly higher percentage (36%) of fair sites than the Coast of Maine (41%). However, the Coast of Maine had 3 and 2% of areas assessed poor in 2000-01 and 2000-03 respectively while Casco Bay had no areas ranked poor. Data were not available for 14% of the sites in Casco Bay.

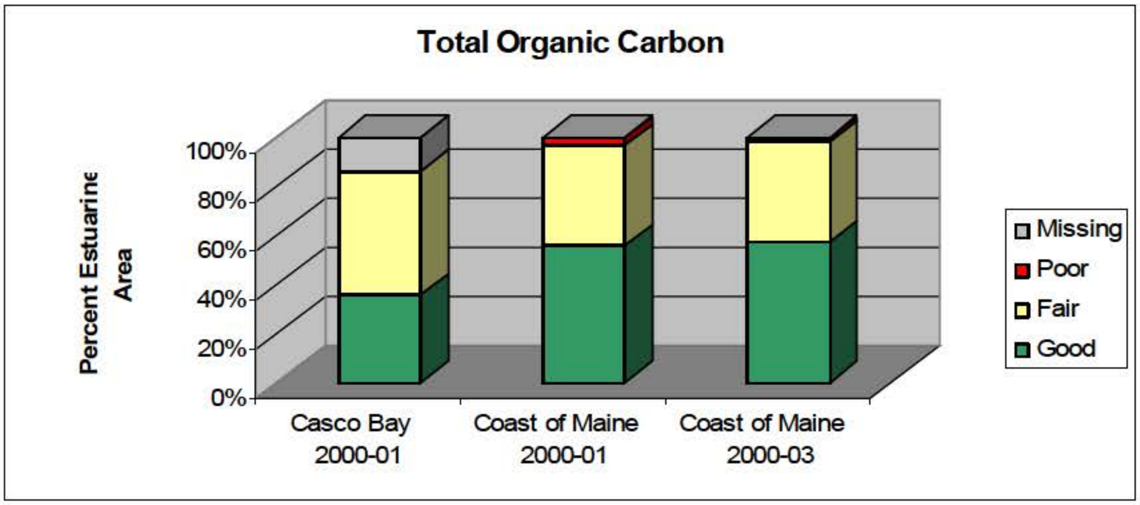

Figure 4-15 Comparison of Total Organic Carbon Results

Table 4-45 Comparison of Total Organic Carbon Results

Total Organic Carbon	Casco Bay 2000-01	Coast of Maine 2000-01	Coast of Maine 2000-03
Good	36	56	58
Fair	50	41	41
Poor	0	3	2
Missing	14	0	0

Benthic Index

The Acadian Province benthic index for Casco Bay and the Coast of Maine is rated good. The index is based on the animals (benthic macroinvertebrates) that inhabit the bottom sediments. The index uses the Shannon-Wiener diversity index, a Capitellid metric and an abundance frequency distribution metric. The index is in final developmental stages and may change slightly.

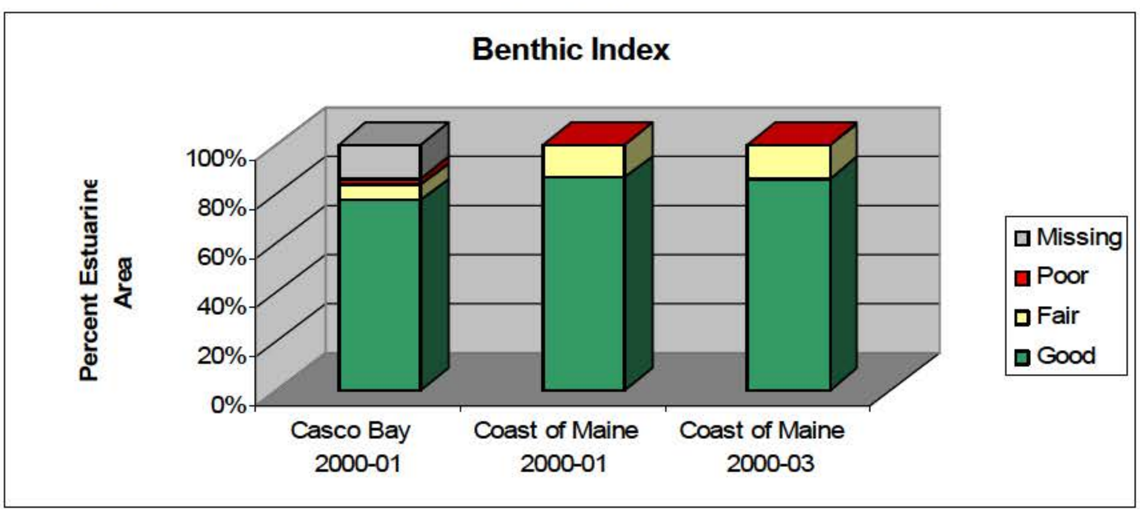

Figure 4-16 Comparison of Benthic Index Results

Table 4-46 Comparison of Benthic Index Results

Benthic Index	Casco Bay 2000-01	Coast of Maine 2000-01	Coast of Maine 2000-03
Good	77	87	86
Fair	6	13	13
Poor	3	0	0
Missing	14	0	0

PROTECTION OF AQUATIC LIFE

(Designated use: Habitat for fish and estuarine / marine life)

Attainment of Dissolved Oxygen Standards

The Mousam River estuary is on the 2006 Category 5 impaired waters list because sections of this estuary do not meet state standards for dissolved oxygen. The reasons for non-attainment are varied and include natural factors such as benthic respiration and physical circulation factors. The draft Royal River Waste Load Allocation Study recommends delisting the estuary for dissolved oxygen. The estuary will remain in Category 5 because of bacteria. The Piscataqua River estuary has a completed TMDL, but its implementation has not begun. The upper New Meadows estuary and "Lake" (estuarine salinities) also do not meet standards for dissolved oxygen. The assumed primary cause of non-attainment at this location is the partial impoundment on Old Route 1 at the Brunswick-West Bath town line. A modeling study of the impoundment is being conducted to better understand the cause(s) and assist in finding solutions.

Generally, data from various studies and volunteer monitoring groups show oxygen levels along the Maine coast are adequate for the protection of aquatic life. Although some estuaries contain oxygen levels that do not meet the dissolved oxygen standards of their assigned classification, it was concluded that many of the lower levels measured were a result of natural processes.

Casco Bay Estuary Project – State of the Bay 2005

Contact: Karen Young, Director, Casco Bay Estuary Project (CBEP)

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Related Website: www.cascobay.usm.maine.edu

The Casco Bay Estuary Project work focuses in five priority areas: habitat protection, toxic pollution, stewardship, clam flat and swimming beach health, and stormwater pollution. The following sections are from the 2005 Casco Bay Estuary Partnership's State of the Bay Report, located here: www.cascobay.usm.maine.edu/SOTB.html

Friends of Casco Bay (FOCB), with support from CBEP, has conducted the Citizens Water Quality Monitoring Program in the bay for the past twelve years. More than 100 citizen volunteers sample surface waters at 80 shore-based stations. They also assist FOCB professional staff with sampling at 10 profile stations located throughout Casco Bay. Measurements include temperature, salinity, pH, water clarity, and dissolved oxygen. In the last 4 years, the program was expanded to include measurements for chlorophyll fluorescence and dissolved inorganic nutrient concentrations.

Evaluations of the twelve years of water quality data (1993 to 2004) indicate that overall water quality in Casco Bay is generally good. Dissolved oxygen (DO) is usually well above State standards and not close to levels that would impair biological processes. DO concentrations in coastal waters are a dynamic property that varies spatially and temporally depending on physical, seasonal, biotic, and anthropogenic influences. A few areas of concern were found in waters near the urbanized areas of Portland Harbor, the Royal River, the Presumpscot River, and the Harraseeket River and also in waters where restricted circulation may exacerbate DO conditions (New Meadows River and Quahog Bay). Nevertheless, low DO events tend to be exceptions rather than the rule in Casco Bay waters.

Summary statistics for all Casco Bay surface data are presented in Table 4-47. The minimum and maximum values for each of the parameters demonstrate the variability between sites, across the bay, and over time.

Table 4-47 Summary Statistics for All Estuarine Surface Data

	Water Depth (m)	Temp (°C)	Salinity (ppt)	DO (mg/l)	DO (% saturation)	pH	Secchi Depth* (m)
Mean	7.25	12.95	29.03	9.20	103.5	7.94	2.98
SD	7.68	5.36	4.48	1.48	12.1	0.19	1.42
Minimum	0.1	-3.0	0.0	2.6	33.9	6.0	0.2
Maximum	55.0	30.0	34.0	14.9	177.5	8.6	15.3
Count	7022	8408	8329	8214	8126	7966	3808

*Secchi depth is a measure of water clarity. For Secchi depth, summary statistics were calculated from 40 selected sites.

Chlorophyll and Nutrients

Fluorescence of chlorophyll and dissolved inorganic nutrient measurements were added to the FOCB monitoring program in 2001. Chlorophyll fluorescence is a measure of chlorophyll concentrations and an indirect estimate of the amount of phytoplankton in the water column. Dissolved inorganic nutrients are crucial ingredients in the biogeochemical functioning of an estuarine system. However, excessive nutrient inputs related to human activities, could drive the system towards excessive growth of phytoplankton (eutrophication) which can lower bottom water dissolved oxygen levels. The mean nutrient concentrations for nitrate plus nitrite (NO_3+NO_2), ammonia (NH_4), silicate (SiO_4), and phosphate (PO_4) are typical of northeastern coastal waters, but the highest values measured suggest anthropogenic and riverine inputs.

Casco Bay Health Index

The twelve years of monitoring data have been used to develop the Casco Bay Water Quality Health Index (Figure 4-17). The index combines several of the water quality parameters to provide an uncomplicated indicator of the bay's overall quality. The index is calculated based on DO percent saturation and the clarity of the water. Both of these parameters are strong measures of water quality and the impacts of eutrophication. For each monitoring site, the summer means of these two parameters are scored based on their relative position between conservative low and high thresholds (65 to 95% and 0.5 to 3.5 m). The mean of these two values is the final index score. By summarizing these environmental parameters into one score, sites can be ranked, areas of concern identified, and trends in water quality may become more apparent over time.

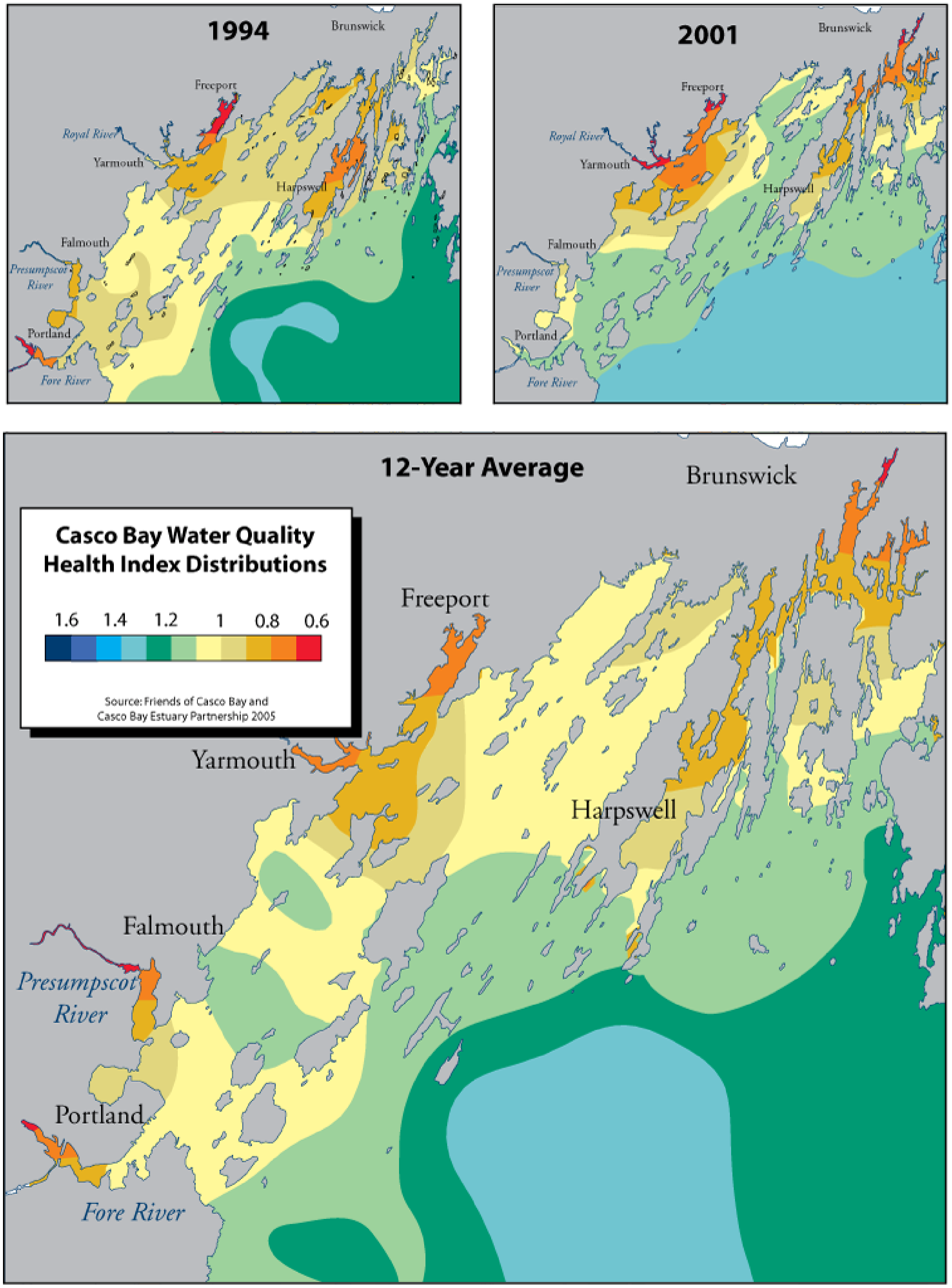

Figure 4-17 Casco Bay Water Quality Health Index Distribution

Casco Bay Water Quality Health Index Distribution

The poorest water quality is indicated by a score of 0.6 (orange), the best by a score of 1.6 (blue). On average, the lowest scores are found in Portland Harbor, in the vicinity of the Presumpscot and Royal Rivers, and in the restricted embayments in Northeastern Casco Bay. There is a clear inshore to offshore increase in the index with the highest scored consistently calculated for the site near Halfway Rock. This is due to both higher DO levels and greater water clarity the further removed from anthropogenic and riverine inputs. Year-to-year variability is evident in the distribution of the index as indicated by the plots for 1994 and 2001. In 1994, low DO concentrations were observed at numerous sites along the northeastern coastline and is depicted here as lower scores being seen further offshore. In 2001, water quality was better throughout much of Casco Bay, though low scores were still seen at a few of the areas of concern. Note that most of the sites score ≥1 indicating that even when using relatively conservative low and high thresholds, water quality appears to be good throughout most of Casco Bay (FOCB and CBEP 2005).

Toxic Contamination

Several programs monitor toxic contaminants along Maine's coast including: the National Coastal Assessment (NCA) program, the Surface Water Ambient Toxics (SWAT) Monitoring Program, the Gulfwatch Program of the Gulf of Maine Council, and the Casco Bay Estuary Project. Toxic contaminants were monitored both in surficial sediments and in blue mussel tissue. In 2004-05, lobster tissues and tomalley were collected as part of the NCA/SWAT programs.

Most of the recent analyzed data that follows are from the Casco Bay Estuary Partnership's (CBEP) State of the Bay Report:
www.cascobay.usm.maine.edu/SOTB.html

Sediments

Generally, fine-grained sediments are found in waters that are downstream/down current of areas with high human densities, such as the mouths of major rivers and ports, and contain higher levels of toxic contaminants. Polycyclic aromatic hydrocarbons (PAHs) are especially high in areas where petroleum is routinely burned or handled, such as: marine terminals, marinas, and in urban areas. Polychlorinated biphenyls (PCBs), and DDT, though not sold for 20 years, continue to be present in sediments along the whole coast, although they are more pronounced near centers of commerce and industry.

In 1991, CBEP commissioned a baseline study to assess sediment contamination levels at 65 sites in the Bay. The samples were analyzed for heavy metals, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs) and pesticides (Kennicutt *et al*. 1992). In 1994, 28 of the original sites and 5 new sites were analyzed for butyltins, dioxins/furans and coplanar PCBs (Wade *et al*. 1995). In 2000 and 2001, in partnership with EPA's National Coastal Assessment, CBEP resampled the sediments at the original locations (Figure 4-18 to 4-21). Scientists from Texas A & M University compared the results of the 1991/1994 sampling to the 2000/2001 studies. They concluded that most toxic chemicals have decreased or stayed the same over time, indicating that pollution control strategies are working in Casco Bay.

Change in Concentration of Toxic Chemicals From 1991/1994 to 2000/2001 in Casco Bay Sediments

Decreased	Increased	No Overall Change
Cadmium	Silver	Arsenic
Chromium		Copper
Mercury		Lead
Nickel		Zinc
Selenium		
Total pesticides, 4,4-DDE, 4-4-DDD and total DDTs		
Tributyl Tin and Total Butyl Tin		
Total PCBs		
Planar PCB 126		Planar PCB 77
		Dioxins/Furans
Low Molecular Weight PAHs	High Molecular Weight PAHs	Total PAHs

Source: Wade and Sweet 2005

Figure 4-18 Toxic Chemicals in Casco Bay Sediments

TBT is an ingredient in marine anti-fouling paints. The overall decline of TBT concentrations in the Bay's sediments reflects the effectiveness of the federal and Maine laws which now ban the use of paints with TBT for all uses except for vessels longer than 25 meters or those having aluminum hulls (Maine DEP 1999). The continued use of TBT paints on large commercial vessels may explain the presence of elevated concentrations of TBT in the sediments of inner bay sites (Port of Portland).

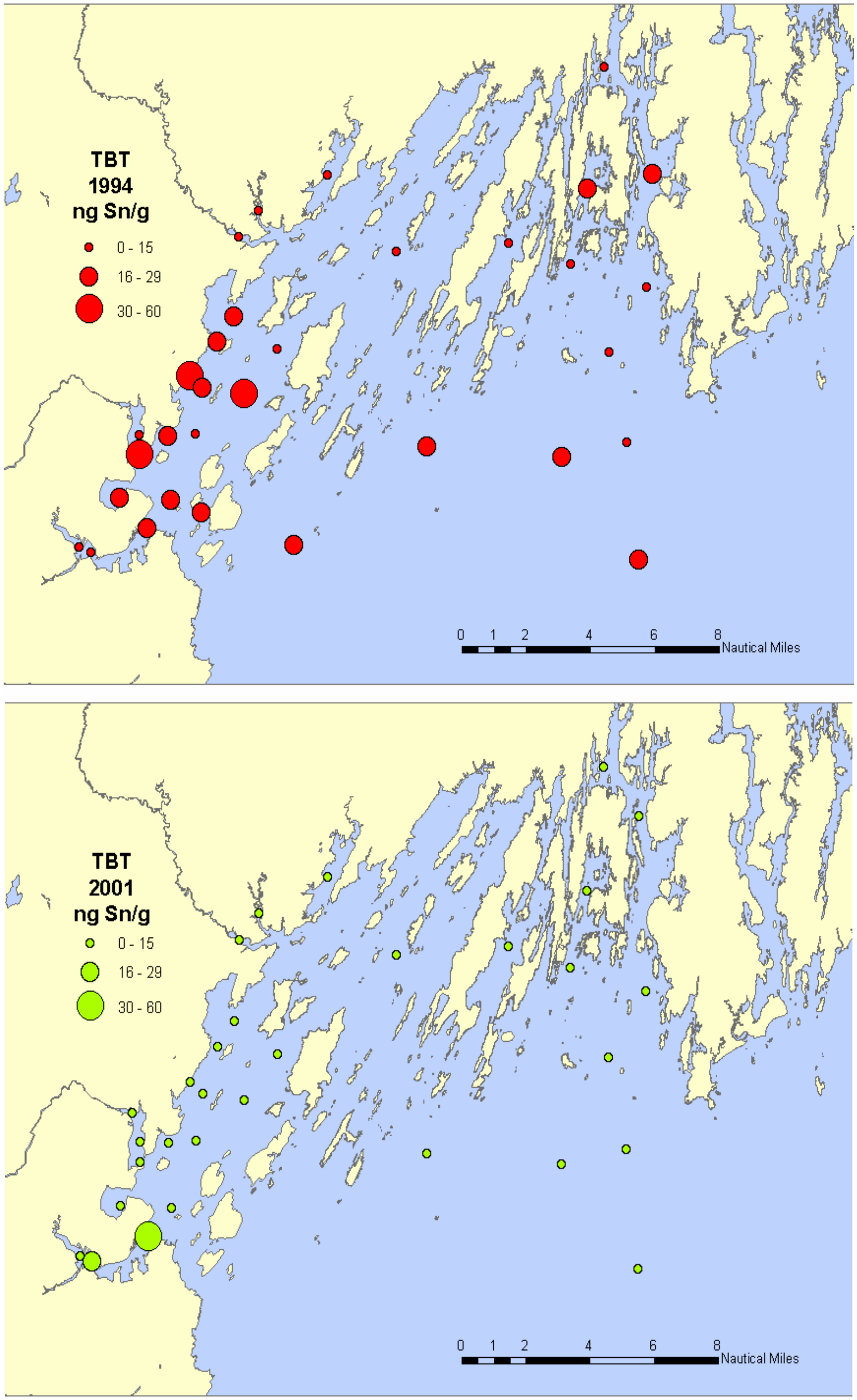

Figure 4-19 TBT in Casco Bay, 1994 versus 2001

Overall the total concentration of PAHs in the sediments has remained unchanged. This suggests that increased use of fossil fuels is balanced by environmental controls that lower the PAH inputs to the Bay (Wade and Sweet, 2005).

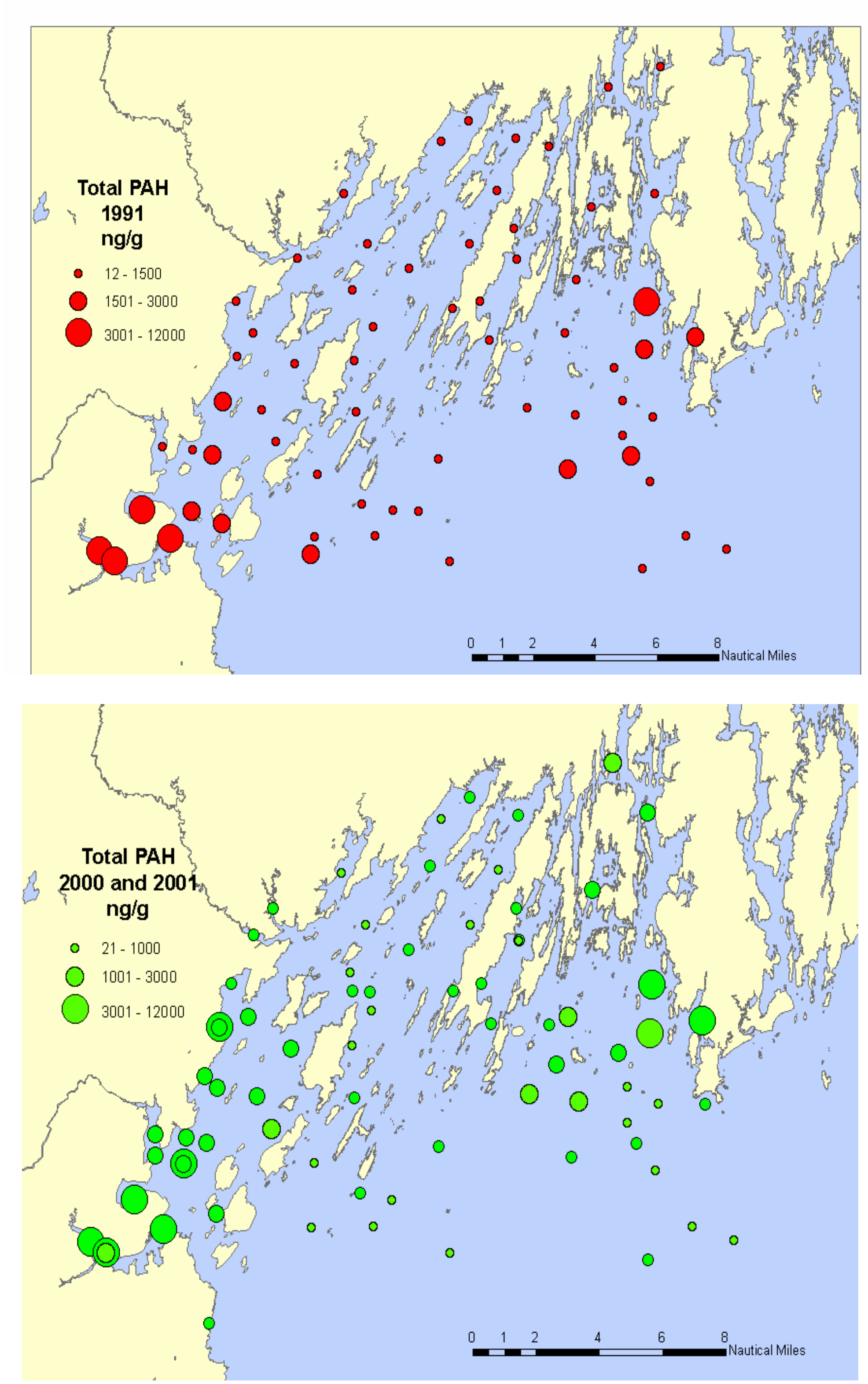

Figure 4-20 Total PAH in Casco Bay, 1991 versus 2001

Dioxins/furans showed no overall increase or decrease. The principal sources of dioxin entering the no longer exist so improvements are expected in the future.

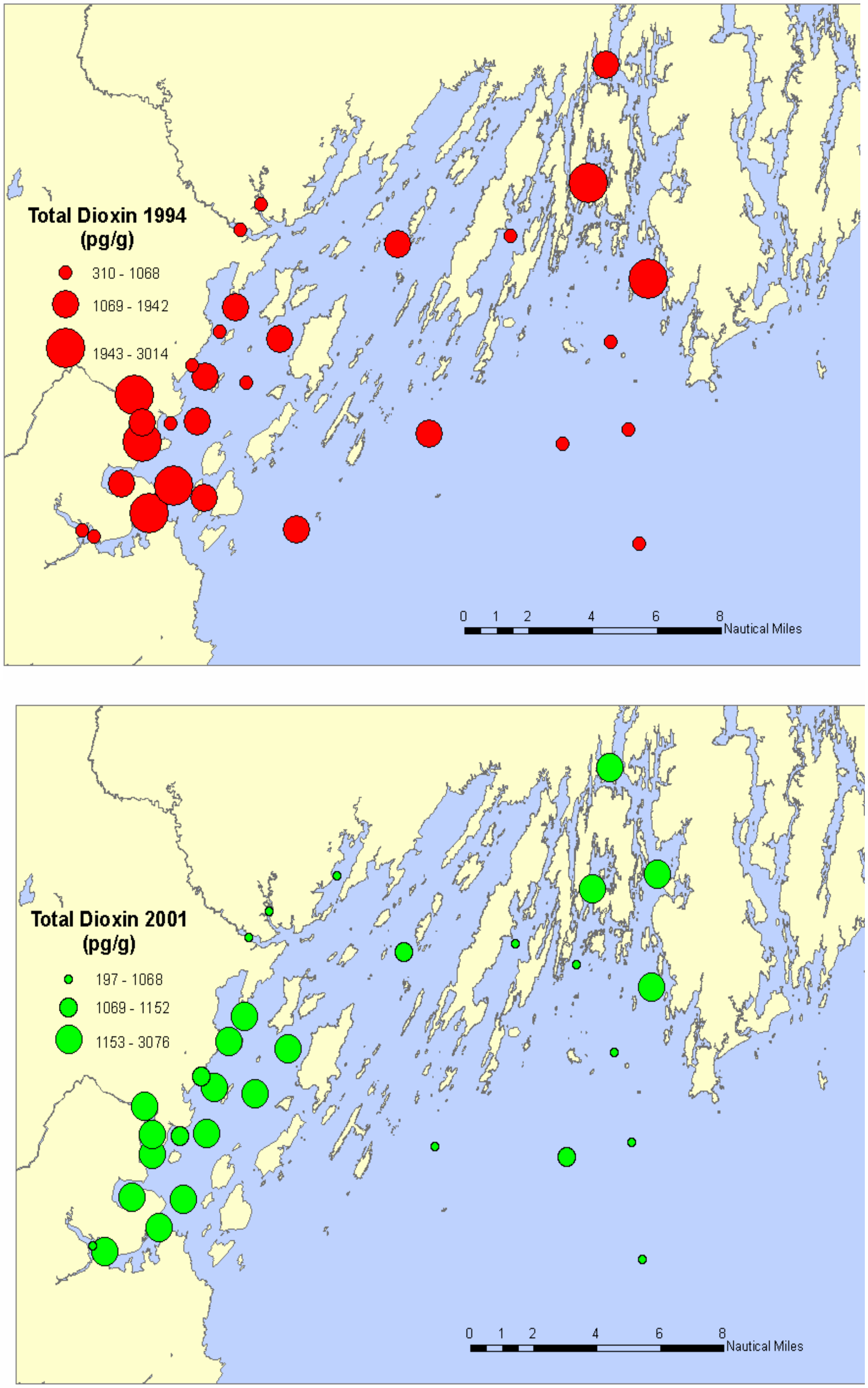

Figure 4-21 Total Dioxins in Casco Bay, 1994 versus 2001

The concentrations of metals in Casco Bay are lower than levels known to cause harmful effects to organisms. Even the elevated levels of metals seen in Casco Bay are lower than the highly contaminated sediments in urban areas like Long Island

Sound and Boston Harbor. While highly elevated above natural background levels, the PAH concentrations seen in the sediments of the inner part of the Bay were between the levels identified by the National Status and Trends Program as Effects Range Low (possible biological effects) and Effects Range Median (probable biological effects) (Long *et al.*1995). The majority of PAHs detected in the Bay are of high molecular weight, related to combustion and found to be sequestered in fine particles, all factors which may reduce their toxicity. PCB concentrations at almost all sites were below the toxic response threshold. Concentrations of pesticides were low compared to concentrations considered toxic. Butyltins, dioxins/furans, and coplanar PCBs were not present at toxic concentrations. In general, the highest concentrations of toxic chemicals were found near known sources. For example, elevated butyltin concentrations (a constituent of marine anti-fouling paints) were found near boat anchorages and marinas, while dioxins and furans were found in elevated concentrations downstream of paper mills (Wade and Sweet 2005).

In 2004, sediments at 20 sites in Portland Harbor/Fore River were sampled by FOCB for toxic chemicals (supported by a Natural Resource Damage Assessment grant and funds from the CBEP). Sites were selected based on the need for future dredging as well as past history, including the *Julie N* oil spill, industrial uses, proximity to combined sewer overflows (CSOs), and drainage from the Jetport and Maine Mall. Total PAH concentrations at all but one of the sites were elevated beyond the Effects Range Low concentration (possible biological effects), while the Gas Works/China Clay Docks (just upstream of the Casco Bay Bridge in Portland), and two sites near large CSOs, the Maine State Pier and the Casco Bay Ferry Terminal, exceeded the Effects Range Median concentration (probable biological effects) established by the NOAA Status and Trends program (Long *et al.* 1995) (FOCB, 2005) (Figure 4-22). Part of this section of the Fore River is listed as Category 5 because of impacts to the benthic community. Mollusks, small crustaceans and other expected benthic species were absent during a 1989 sampling. Some of the worms that were present had oil on their “feet’ (parapodia), probably from petroleum-related contaminants (Doggett 2005).

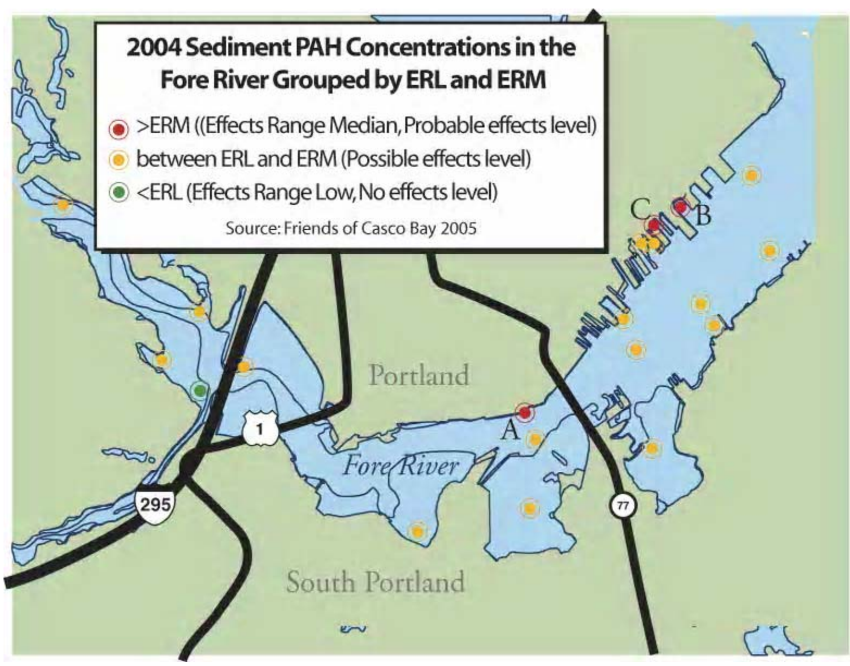

Figure 4-22 Sediment PAH in the Fore River

Mussels

In 1987, Maine Department of Environmental Protection (DEP) began a major long-term monitoring program to assess the levels and locations of toxic contaminants along the coast, using the common blue mussel *Mytilus edulis* as the indicator species. The goals of DEP's blue mussel sampling program included defining background or baseline levels of toxic chemicals in Maine mussels (based on "reference sites" thought to be relatively free of pollution) and determining what levels pose a health risk to humans and/or marine life. Blue mussel soft tissue has now been analyzed from approximately 65 sites along the Maine coast over the past 18 years. Since 1996, the CBEP has supplemented the DEP blue mussel monitoring program by periodically collecting samples at additional sites in Casco Bay. Selection of sites for testing takes into consideration the results of sediment contamination studies, the intensity of local land use, and past history of pollution, focusing on areas where the mussels might be exposed to elevated concentrations of toxics.

DEP and the CBEP have sampled blue mussels for aluminum (Al), Arsenic (As), cadmium (Cd), copper (Cu), iron (Fe), nickel (Ni), lead (Pb), zinc (Zn), silver (Ag) and mercury (Hg) as well as pesticides, dioxins and furans, PAHs and PCBs at multiple sites in Casco Bay. Figure 4-23 provides an overview of the results of lead sampling at sites in the bay.

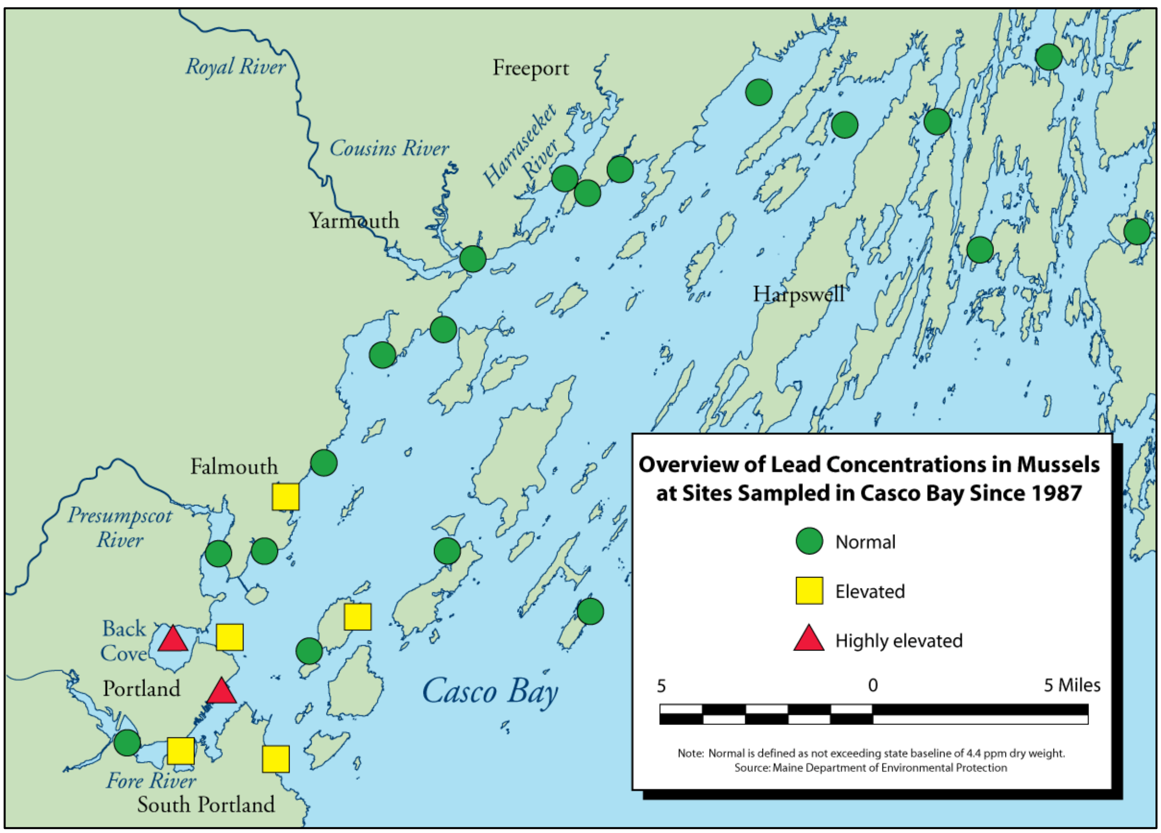

Figure 4-23 Lead in Mussels in Casco Bay

Higher lead levels at Inner Fore R., Mill Creek and East End Beach are likely related to:

- increased development and
- greater acreage of impervious surface

CBEP sampling in 1996 and 1998 indicated elevated toxic chemicals at the following sites:

- lead levels were elevated in Back Cove mussels while dioxins and furans were elevated at sites in Freeport, New Meadows, Jewell Island, Back Cove and the Harraseeket River;
- total PCBs were elevated in samples from Back Cove, Quahog Bay and somewhat elevated in samples from Falmouth;
- arsenic was elevated at Falmouth and Jewell Island.

For samples collected by CBEP and DEP from 2001 to 2003, Table 4-48 indicates sites where metals were elevated above the state norm. For other toxic chemicals, areas where elevated levels were detected are summarized as follows:

- PAHs were at baseline levels or below at all sites except the inner Fore River where they were highly elevated.
- PCBs and pesticides were at baseline or below at all other sites except the inner Fore River site, where PCBs were approaching elevated.

Table 4-48 Metals Elevated Above Maine Normal Baseline Values Found in Mussels from Sampling Sites in Casco Bay 2001-2003

	Al	Cd	Cr	Cu	Ni	Pb	Zn	Ag	Hg
Great Diamond Island (Cocktail Cove)	X					X		X	
Long Island					X				
Mare Brook	X								
Inner Fore River						X	X		X
Maquoit Bay	X								
East End Beach						X	X		
Spring Point						X	X		
Mill Creek						X			
Outer Fore River						X			

(Please note: Aluminum is naturally occurring in Maine sediments and is used to indicate the amount of sediment in the gut of the mussel)

Humans who eat seafood contaminated by toxic chemicals can also be at risk. For example, the presence of dioxins in Maine coastal waters, largely a byproduct of paper mills, has resulted in elevated concentrations in the liver (tomalley) of lobsters. A public health advisory against eating lobster tomalley has been in effect in Maine since 1992 (Maine DEP 2004). The Maine Department of Health and Human Services has also issued guidelines for the consumption of saltwater fish species contaminated by mercury and organic chemicals.

Friends of Casco Bay. 2005. *Sediment PAH Concentrations from the 2004 Study of Portland Harbor.*

Kennicutt, II, M. C., T. L. Wade, and B. J. Presley. 1992. Texas A & M University. *Assessment of Sediment Contamination in Casco Bay*. Casco Bay Estuary Project.

Long, E. R., D. D. MacDonald, S. L. Smith, and F. D. Calder. 1995. Incidence of adverse biological effects within ranges of chemical concentrations in marine and estuarine sediments. *Environmental Management* 19(1): 81-97.

Wade, T. L., T. J. Jackson, L. Chambers, and P. Gardinali. 1995. Texas A & M University. *Assessment of Contaminants in Sediments from Casco Bay*. Casco Bay Estuary Project.

Wade, T. L. and S.T. Sweet. 2005. Texas A & M University. *Assessment of Sediment Contamination in Casco Bay*. Casco Bay Estuary Project.

Friends of Casco Bay and Casco Bay Estuary Partnership. 2005. *Twelve-Year Water Quality Data Analysis for Casco Bay: 1993 – 2004*.

Chapter 5 WETLANDS

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Related Website: www.maine.gov/dep/blwq/wetlands/index.htm

BACKGROUND

FEDERAL REGULATORY FRAMEWORK

EPA Contact: Jeanne Voorhees, EPA Region I, Office of Ecosystem Protection

Tel: (617) 918-1686 email: voorhees.jeanne@SPAM-ZAPepa.gov

Related Website: (EPA) www.epa.gov/owow/wetlands/regs/

ACE Contact: Ruth Ladd, ACE New England Region, Regulatory Division

Tel: (978) 318-8818 email: ruth.m.ladd@SPAM-ZAPusace.army.mil

Related Website: (ACE) www.usace.army.mil/inet/functions/cw/cecwo/reg/index.htm

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

Under the Clean Water Act, wetlands are regulated as surface waters. The Clean Water Act provides for wetland protection and regulation through a number of federal programs, most of which are administered by EPA. The Section 404 regulatory program is jointly administered by EPA and the U.S. Army Corps of Engineers. The following sections of the Clean Water Act encompass key elements of the federal wetland protection framework:

- Section 303: Requires states to adopt water quality standards for all waters of the U.S. within their boundaries, including wetlands.
- Section 305: Requires States to assess the condition of all waters of the U.S. within their boundaries, including wetlands, and to report to EPA every two years regarding attainment of State water quality standards.
- Section 319: Establishes a non-regulatory federal program that provides funding to states and tribes for the development and implementation of programs to reduce nonpoint sources of pollution, including nonpoint sources impacting wetlands.
- Section 401: Requires that prior to issuing a license or permit, federal agencies must obtain a written certification that an activity will not violate applicable State water quality standards, including wetland standards.
- Section 402: Establishes the National Pollutant Discharge Elimination System (NPDES) program that regulates point source discharges to waters of the U.S. including wetlands.
- Section 404: Authorizes a program to regulate the placement of dredged or fill materials into wetlands and other waters of the U.S. The 404 permit program is administered jointly by EPA and the U.S. Army Corps of Engineers. The Corps is responsible for issuing permits and for jurisdictional determinations. The Corps and EPA have shared responsibility for compliance and enforcement, and both may issue guidelines and policies.

WETLANDS REGULATORY PROGRAM IN ORGANIZED TOWNS

Contact: Jeff Madore, DEP BLWQ, Division of Land Resource Regulation (DLRR)

Tel: (207) 287-7848 email: Jeff.G.Madore@SPAM-ZAPmaine.gov

Related Website: (NRPA) www.maine.gov/dep/blwq/docstand/nrpapage.htm

Maine DEP regulates wetland alterations in the organized townships under the Natural Resources Protection Act 38 M.R.S.A., Section 480-A et seq. (NRPA) and Chapter 310 Wetlands and Waterbodies Protection Rules. The NRPA applies to regulated activities in, on or over any protected natural resource, including wetlands, and activities performed adjacent to certain resources which may cause soil or other material to wash into them. Under Section 480-C(2), activities requiring a permit include dredging, bulldozing, removing or displacing soil or vegetation, draining or dewatering, filling, and construction, repair or alteration of any permanent structure. The Department uses a 3 tiered review process to assess applications for wetland alterations, based on the size of the proposed alteration and type of wetland involved.

WETLANDS REGULATORY PROGRAM IN UNORGANIZED TERRITORIES

Contact: Marcia Spencer-Famous, Senior Planner, DOC LURC, Planning & Administration Division

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The Maine Land Use Regulation Commission (LURC) uses a land use planning approach to regulate wetlands in unorganized portions of the State, in accordance with the provisions of Title 12, Sections 681-689 (Use Regulation) and Chapter 10 of LURC rules (Land Use Districts and Standards). Wetland alterations are often handled within the context of a building, development, shoreland alterations, or other type of permit. All areas within the jurisdiction are zoned as management, development or protection sub-districts. The Wetlands Protection Sub-district (P-WL) is used to regulate activities within wetlands. Section 10.16(K)(3) of Chapter 10 rules details the uses that require a permit. Similar to the Natural Resources Protection Act, permitting is based on a three-tiered level review based on wetland type and size of the proposed impact.

DEVELOPMENT OF WETLAND WATER QUALITY STANDARDS

Contact: Jeanne DiFranco, DEP BLWQ, Division of Environmental Assessment (DEA)

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Related Websites: (EPA)

(Wetland Water Quality) www.epa.gov/owow/wetlands/regs/quality.html

(General Water Quality Standards) www.epa.gov/ost/standards/

Under the Clean Water Act, States are required to develop water quality standards for all "waters of the U.S.", including wetlands, [2] that addresses the following elements:

[2] U.S. EPA. 1990. Water Quality Standards for Wetlands: National Guidance. Office of Water, Regulations and Standards, U.S. Environmental Protection Agency, Washington D.C. EPA 440/S-90-011.

- Include wetlands in the definition of "State Waters";
- Designate uses for all wetlands that protect wetland structure and function;
- Adopt aesthetic narrative criteria and numeric criteria to protect wetland designated uses;
- Adopt narrative biological criteria for wetlands;
- Apply the State's anti-degradation policy and implementation methods to wetlands.

In Maine, wetlands are included in the definition of "Waters of the State" contained in the Protection and Improvement of Waters Act, 38 M.R.S.A. Section 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 Law, including designated uses, narrative biological criteria and the State's anti-degradation policy. The Maine DEP Biological Monitoring Program is currently developing wetland-specific biological criteria to further refine the State's capability to evaluate wetland condition.

INTEGRITY OF WETLAND RESOURCES

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WETLAND MONITORING AND ASSESSMENT

Related Website: www.maine.gov/dep/blwq/wetlands/monitoring.htm

Wetland monitoring and assessment is performed by the DEPs Biological Monitoring Program. The Biomonitoring Program is responsible for implementing core wetland program elements related to monitoring and assessment and water quality standards required under the Clean Water Act. The program addresses State priorities in the Maine Wetland Conservation Plan and DEP Performance Partnership Agreement with the U.S. EPA. Biological monitoring for wetlands, rivers and streams is coordinated to a 5-year rotating basin schedule, with the goal of developing a holistic watershed assessment approach. Maine DEP recently completed a 10 year comprehensive monitoring and assessment strategy for all State waters, including wetlands.

In 2004 and 2005, DEP monitored wetland stations in northern Maine (St. John River basin, Aroostook county) and southern Maine (Presumpscot, Saco and Piscataqua basins), respectively. Monitoring for 2006 will focus on the Penobscot River basin and Downeast coastal watersheds. Wetland biological assessments include sampling for aquatic macroinvertebrates, epiphytic algae and phytoplankton. Associated physical and chemical data are obtained through field measurements and analysis of water samples. Habitat descriptions, Cowardin classification, hydrogeomorphic setting, substrate, dominant plant species/community type and human disturbances in the watershed are also documented.

Current Biomonitoring Program priorities related to wetlands include ambient monitoring, development of biological criteria, technical and review support to other programs, updating wetlands web pages, and various education and outreach activities. DEP biomonitoring staff also participates in a number of wetland policy and technical working groups. A major initiative for 2006 is the planned implementation of the Biomonitoring Internet Mapping Project (BioIMP). BioIMP is a web-based tool to allow public access to biological monitoring data for wetlands, rivers and streams through an interactive GIS platform. The BioIMP website will be available at www.state.me.us/dep/blwq/docmonitoring/biomonitoring/biomaps/index.htm .

DEP is also reviewing State water quality standards to ensure that they are applied appropriately to wetlands, and is beginning development of wetland-specific biological criteria based on tiered aquatic life uses. In contrast to criteria based on a single attainment threshold, tiered uses and criteria allow the State to define incremental levels of ecological impairment due to human disturbances such as nutrient enrichment, sedimentation, toxic contaminants and habitat alteration. Tiered criteria provide greater protection for high quality wetlands, and may be applied for integrated watershed assessments to compare biological integrity among different water body and community types. Figure 4-2 depicts the Tiered Aquatic Life Use model based on incremental changes in biological community structure with increasing human-induced environmental stressors (US EPA 2005; Davies and Jackson 2006)[‡].

‡Davies, S. P. and S.K. Jackson. 2006. The Biological Condition Gradient: A descriptive model for interpreting change in aquatic ecosystems. Ecological Applications and Ecological Archives 16:1251–1266 (including digital appendices).

U.S Environmental Protection Agency (USEPA). 2005. Use of Biological Information to Better Define Designated Aquatic Life Uses in State and Tribal Water Quality Standards: Tiered Aquatic Life Uses. EPA-822-R-05-001. U.S. Environmental Protection Agency, Washington, D.C.

EXTENT OF WETLAND RESOURCES

WETLAND LOSS TRACKING IN MAINE'S ORGANIZED TOWNS

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Related Website: www.maine.gov/dep/blwq/wetlands/threats.htm

With the implementation of the changes to the Natural Resources Protection Act (NRPA), Maine DEP is now tracking permitted wetland losses and mitigation in the organized townships through an application tracking system. When applications for any wetland alterations are logged in, the amount of fill or area to be altered is also entered by wetland type and geographical location. This system will enable the Department to monitor and report on annual wetland losses. Wetland mitigation and DEP permitted impacts for 2004 and 2005 are summarized in Tables 5-1 and 5-2 below.

Table 5-1 Wetland Mitigation Totals in the Organized Towns

Source: Maine DEP Wetland Loss Tracking System

Area of Mitigation (Acres) – 2004 (1/1/2004-12/31/2004)					
Wetland Type	**Creation**	**Enhancement**	**Preservation**	**Restoration**	**Total**
Forested	3.65	0	60.17	1.63	**65.45**
Other/Mixed	0.84	0	33.12	0.77	**34.73**
Emergent	0	0	1.71	0	**1.71**
Scrub-shrub	4.52	3.95	12.9	0.37	**21.74**
Open water	0.28	0	2.12	0.02	**2.42**
Riverine	0	0	5.77	0.83	**6.6**
Wet Meadow	0	0.8	0	0	**0.8**
Upland	0	0	14.33	0	**14.33**
Inter-tidal (other)	0	0	0	0	**0**
Subtidal (other)	0	0	0	0	**0**
Total	**9.29**	**4.75**	**130.12**	**3.62**	**147.78**

Area of Mitigation (Acres) – 2005 (1/1/2005-12/31/2005)					
Wetland Type	**Creation**	**Enhancement**	**Preservation**	**Restoration**	**Total**
Forested	0.69	0	482.54	0.79	**484.02**
Other/Mixed	0	1.73	23.0	0	**24.73**
Emergent	0.34	0	75.0	0.31	**75.65**
Scrub-shrub	0.66	1.45	109.71	0.55	**112.37**
Open water	0	0	0	0	**0**
Riverine	0.6	2.18	0	1.05	**3.83**
Wet Meadow	0	0	5.68	2.87	**8.55**
Upland	0	1.56	450.0	0.15	**451.71**
Inter-tidal (other)	0	0	0	0	**0**
Subtidal (other)	0	0	0	0	**0**
Total	**2.29**	**6.92**	**1145.93**	**5.72**	**1,160.86**

Table 5-2 Permitted Wetland Impacts in the Organized Towns

Source: Maine DEP Wetland Loss Tracking System

Area Impacted (Acres) – 2004 (1/1/2004-12/31/2004)										
Wetland Type	**Cranberry Permit**		**Full NRPA Permit**		**Tier I**		**Tier II**		**Total**	
	Filled	**Altered**	**Filled**	**Altered**	**Filled**	**Altered**	**Filled**	**Altered**	**Filled**	**Altered**
Emergent	0	0	2.12	0.06	0.07	0	0	0	**2.19**	**0.06**
Forested	0	0	3.73	9.67	17.7	0.66	7.2	0	**28.63**	**10.33**
Great Pond	X	X	0	0	X	X	X	X	**0**	**0**
Inter-tidal (mudflat)	X	X	0.03	0.67	X	X	X	X	**0.03**	**0.67**
Inter-tidal (other)	X	X	0.63	0.14	X	X	X	X	**0.63**	**0.14**
Inter-tidal (vegetated)	X	X	0.06	0.36	X	X	X	X	**0.06**	**0.36**
Open Water	0	0	0	1.76	0	0	0	0	**0**	**1.76**
Other/Mixed	0	0	1.02	0	1.46	0	1.62	0.44	**4.1**	**0.44**
Peatland	0	0	0	0	0	0	0	0	**0**	**0**
Riverine	X	X	0.58	1.42	0	0	0.22	0	**0.8**	**1.42**
Scrub-shrub	0	0	3.54	1.94	3.35	0.26	2.4	0.28	**9.29**	**2.48**
Subtidal (aquatic bed)	X	X	0	0.97	X	X	X	X	**0**	**0.97**
Subtidal (other)	X	X	0.36	1.93	X	X	X	X	**0.36**	**1.93**
Wet Meadow	0	0	0	0	2.55	0.17	1.53	0	**4.08**	**0.17**
Upland	0	0	0.25	0.01	0	0	0	0	**0.25**	**0.01**
Total	**0**	**0**	**12.32**	**18.93**	**25.13**	**1.09**	**12.97**	**0.72**	**50.42**	**20.74**

Area Impacted (Acres) – 2005 (1/1/2005-12/31/2005)										
Wetland Type	**Cranberry permit**		**Full NRPA permit**		**Tier I**		**Tier II**		**Total**	
	Filled	**Altered**	**Filled**	**Altered**	**Filled**	**Altered**	**Filled**	**Altered**	**Filled**	**Altered**
Emergent	0	0	0.39	0	0.03	0	0.38	0	**0.8**	**0**
Forested	0	0	8.16	0	15.8	0.06	11.1	0.64	**35.06**	**0.7**
Great Pond	X	X	0	0	X	X	X	X	**0**	**0**
Inter-tidal (mudflat)	X	X	0.01	0	X	X	X	X	**0.01**	**0**
Inter-tidal (other)	X	X	0.09	0.11	X	X	X	X	**0.09**	**0.11**
Inter-tidal (vegetated)	X	X	0.01	0	X	X	X	X	**0.01**	**0**
Open water	0	0	0	0	0.06	0	0	0	**0.06**	**0**
Other/Mixed	0	0	0	0.08	1.51	0	1.12	0	**2.63**	**0.08**
Riverine	X	X	0.15	20.31	0	0	0	0	**0.15**	**20.31**
Scrub-shrub	0	0	0.85	0	2.42	0	1.85	0	**5.12**	**0**
Subtidal (aquatic bed)	X	X	0	0.02	X	X	X	X	**0**	**0.02**
Subtidal (other)	X	X	0.01	0.02	X	X	X	X	**0.01**	**0.02**
Wet Meadow	0	0	1.38	0	0.8	0.25	2.95	0	**5.13**	**0.25**
Upland	0	0	0.01	0	0	0	0	0	**0.01**	**0**
Total	**0**	**0**	**11.06**	**20.54**	**20.62**	**0.31**	**17.4**	**0.64**	**49.08**	**21.49**

X = Tier review not available for projects located in these resources
* area impacted by dredge spoils disposal

WETLAND LOSS TRACKING IN MAINE'S UNORGANIZED TERRITORIES

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The Maine Land Use Regulation Commission's (LURC) Geographically Oriented Action Tracker (GOAT) system incorporates the wetlands loss tracking database into LURC's overall permit tracking system. Previously, wetland loss data were kept in a separate database. In addition to the wetlands loss data such as wetland type, size of area lost, etc, GOAT allows wetland loss to be tied to the tax lot using GIS. Because of staff and budget cuts, wetlands loss tracking up until now has been inconsistent, making reporting of losses less than complete. LURC anticipates in coming years to be able to generate realistic reports on wetland losses in the unorganized townships and territories.

WETLAND PROGRAM COORDINATION

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Maine DEP is the coordinating agency for wetland protection activities in the State. DEP's Bureau of Land and Water Quality dedicates a portion of an Environmental Specialist IV position to assist in coordinating in-house and inter-agency wetland policy and planning issues. This position facilitates the Maine Wetland Interagency Team (WIT) and serves as a liaison between DEP and other resource agencies involved in wetland protection. A major focus for 2006 will be coordinating revisions and updates to the Maine Wetland Conservation Plan. Maine's Wetlands Conservation Plan serves as the State's comprehensive wetland protection strategy, and establishes State priorities for wetland protection. Major elements of the plan include wetland regulation, monitoring and assessment, restoration and protection, outreach and education, data and research needs and interagency coordination

Chapter 6 GROUND WATER MONITORING & ASSESSMENTS

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OVERVIEW

Public interest in ground water focuses primarily on its use as a drinking water supply for humans and livestock and as a source of process water for industry. Ground water is the source of approximately 90% of all the water used by households with individual supplies. In addition, nearly 75% of the water needed for Maine livestock is provided by ground water. Over 80% of the ground water withdrawn from aquifers in the state is used for private or public drinking water. In contrast, ground water used for industrial purposes is only 11% of the total volume withdrawn for all purposes. Federal requirements for surface water treatment are a driving force behind the shift to ground water use for public water supplies.

Maine's groundwater may be threatened by contamination, particularly in unforested areas, which 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 with spilled hazardous materials or by previously unregulated activities.

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

Ground water 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 (less than about 10% of the state). The largest ground water withdrawals were in the Lower Kennebec, Lower Penobscot, Presumpscot, and Lower Androscoggin River basins (USGS 1995 figures). These areas contain major sand and gravel aquifers, and water demand is high due to the heaviest concentration of people and businesses. Discontinuous bedrock aquifers underlie the entire state and are used for domestic, commercial, industrial and agricultural purposes, and for small public supplies 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.

BACKGROUND

The protection of Maine ground water is an issue of concern at the local, regional, state and federal levels. Serious ground water pollution problems that have occurred throughout the State and elsewhere have heightened the need for protecting ground water supplies. A few municipalities and regional planning agencies have conducted ground water quality assessment studies, but programs for effective assessment of the quality of ground water resources are needed in many areas of the State. Maine's ground water protection programs (Table 6-1) emphasizes three areas of effort:

1. State interagency coordination of ground water programs;

2. Assessment of ground water protection problems, including enhancement of the Environmental Groundwater Assessment Database; and

3. Statutory changes and building upon implemented state ground water protection programs to increase ground water protection and risk reduction.

Table 6-1 Summary of State Ground Water Protection Programs

Programs or Activities	Check (X)	Implementation Status	Responsible State Agency
Active SARA Title III Program		Authority not delegated	
Ambient ground water monitoring system	x	Continuing efforts	MGS, USGS
Aquifer vulnerability assessment	x	Continuing efforts	DHHS
Aquifer mapping	x	Stratified drift in progress	MGS
Aquifer characterization	x	Stratified drift in progress	MGS
Comprehensive data management system	x	Under development	DEP, MGS, DHHS
EPA-endorsed Core Comprehensive State Ground Water Protection Program (CSGWPP)	x	Under development	DEP
Ground water discharge permits	x	Continuing efforts	DEP
Ground water Best Management Practices	x	Continuing efforts	DHHS
Ground water legislation	x	Continuing efforts	DHHS
Ground water classification	x	Fully established	DEP
Ground water quality standards	x	Continuing efforts	DHHS
Interagency coordination for ground water protection initiatives	x	Continuing efforts	DEP, DHHS, MGS, DOT, DOA
Nonpoint source controls	x	Under development	DEP
Pesticide State Management Plan	x	Generic plan completed, revised in 1998	BPC
Pollution Prevention Program	x	Fully established	DEP
Resource Conservation and Recovery Act (RCRA) Primacy	x	Fully established	DEP
State Superfund	x	Fully established	DEP
State RCRA Program incorporating more stringent requirements than RCRA Primacy	N/A		
State septic system regulations	x	Fully established	DHHS
Underground storage tank installation requirements	x	Fully established	DEP
Underground Storage Tank Remediation Fund	x	Fully established	DEP
Underground Storage Tank Permit Program	x	Fully established	DEP
Underground Injection Control Program	x	Fully established	DEP
Vulnerability assessment for drinking water/wellhead protection	x	Continuing efforts	DHHS
Well abandonment regulations	N/A		
Wellhead Protection Program (EPA-approved)	x	Fully established	DHHS
Well installation regulations	x	Fully established	DHHS, MGS

N/A means "Not Applicable"

ASSESSMENT OF GROUND WATER QUALITY

In Maine, ground water is classified by its suitability for drinking water purposes. Under the Maine Water Classification Program, ground water is classified as either potable (GW-A) or unpotable (GW-B). Water is 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). Although there are many localities where ground water is unpotable and highly contaminated, no ground water is currently classified GW-B. The state is not currently attempting to designate non-attainment areas.

GROUND WATER MONITORING

Responsibility for groundwater resource assessment and protection is shared among the Department of Environmental Protection, the Department of Health and Human Services' Division of Environmental Health, and the Maine Geological Survey in the Department of Conservation. Several other agencies, particularly the Department of Transportation, Department of Agriculture, and State Planning Office may investigate groundwater contamination problems in certain areas and they also contribute to groundwater protection through development of ordinances and management practices.

Monitoring of ground water in Maine is either site-specific or generalized. Monitoring at a particular site is typically done to gather data on water quality impacts of particular activities, and may or may not be research-related. Most of the ground water data collected in Maine is the result of permit conditions, enforcement agreements or impact assessments. Sources of this information are scattered in a number of state agencies including: the DEP, the Department of Transportation (DOT), the Department of Health and Human Services (DHHS), and the Department of Agriculture (DOA). Other information is collected by the Department of Conservation, the Maine Geological Survey (MGS) and the U. S. Geological Survey (USGS). With the advent of the Environmental Groundwater Analysis Database (EGAD) at the DEP, many of these data which are potentially useful for research purposes are now readily made available to the public or other agencies in report or map form. With the creation of the new EGAD front end and backend, it is possible to link Site information to associated water test results. This effort enhances the ability of the DEP to communicate and report groundwater data to the EPA and other state or federal agencies.

Ambient monitoring refers to large area, long-term monitoring conducted to obtain trend information on ground water quality or quantity. The MGS and the USGS carry out these types of monitoring projects under several cooperative agreements. The USGS and MGS maintain a statewide network of ground water observation wells to track changes in water quality and quantity. For the purpose of this report, data derived from the DHHS Public Water Supply Monitoring Program are used as ambient ground water quality data. These water tests are from single-source untreated public water supply wells.

Within the DEP, site-specific ground water monitoring data are obtained either by Department staff, permit-holders, or as a result of enforcement agreements. The Bureau of Land and Water Quality requires ground water monitoring at project sites that are subject to its jurisdiction when an existing or proposed activity either poses a risk to ground water quality or quantity or an adverse impact has already occurred.

Activities that are considered a risk to ground water quality or quantity include: quarries, borrow pits, metallic mineral mines, fuel storage/handling areas (both wood wastes and petroleum), golf courses, infiltration basins and wastewater treatment lagoon/spray irrigation areas. Also of concern are subdivisions utilizing large-volume or community subsurface wastewater disposal systems, or nitrate-reduction systems. Areas with shallow-to-bedrock soils that are within sensitive lake watersheds are also generally required to monitor ground water. Development of a database including analyte data from these and other facilities is ongoing, and discussed further in the section on the EGAD database.

AQUIFER CHARACTERIZATION ACTIVITIES

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Related Websites: Aquifer Fact Sheet

www.maine.gov/doc/nrimc/mgs/explore/water/facts/aquifer.htm

Aquifer Mapping

www.maine.gov/doc/nrimc/mgs/pubs/series/descrip-aq.htm

The 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 ground water resource evaluation projects and contamination sites), complete physical pictures of most aquifer systems do not exist. Hard data on the exact natural chemical processes controlling ground water 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 has developed a program to collect ambient bedrock ground water samples for background quality from different geographic and geologic settings in the state; Camden, Rockland, Rockport area (2000), northeastern Maine in the Presque Isle area (2001), and west central Maine in the Weld area (2002). This program was suspended in 2003, but it was continued in 2004 on the east side of Penobscot Bay, since then the program has been suspended indefinitely. Ongoing studies of arsenic in Maine ground water wells are being conducted through cooperative efforts between MGS, the University of Maine, and the USGS. A program to collect basic data on bedrock aquifer characteristics from well drillers is ongoing. Since 2004 MGS has been in a cooperative with the USGS as part of its National Geochemical Survey to produce a national geochemical data set based primarily on stream sediments. Finally, the stratified drift aquifer mapping program is continuing, with an effort to complete mapping of such aquifers at a 1:24,000 scale. Since 2004 this mapping program has been focused on studies in northwestern Maine.

Sand and gravel aquifers are geologic settings that are particularly susceptible to adverse ground water impacts and they are significant sources of drinking water. MGS sand and gravel aquifer maps are useful in defining aquifer boundaries. Since these boundaries are mapped in a geographic information system, they can be combined with the DHHS water supply data and the contaminant site and land use data available in DEP databases. This type of spatial analysis allows current and future threats to the ground water contained in aquifers to be better understood.

Overview of Ground Water Contamination Sources

Most ground water contamination in Maine originates from nonpoint source pollution rather than point source pollution. The following discussion focuses primarily on nonpoint contamination sources that appear to be responsible for most ground water contamination in the State: agriculture, hazardous substance sites, spill sites, landfills, leaking underground and above-ground storage tanks, road-salt storage and application, septic systems, shallow well injection, saltwater intrusion, and waste lagoons. Please refer to the 2004 report for additional background information on nitrates and septic systems, pesticides, and the above ground storage tank program.

Petroleum Storage Tanks and Product Spills

Underground Tanks

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Related Websites:

(General Information) www.maine.gov/dep/rwm/ust/

(Rules for UST Facilities) www.maine.gov/sos/cec/rules/06/096/096c691.doc

Study Leads to New Rules

The main objective of the Dispenser and Submersible Pump Study, October 2003 was to quantify the frequency and estimate the severity of leakage from motor fuel dispensers and submersible pumps associated with USTs. The full report can be viewed at: www.maine.gov/dep/rwm/ustast/pdf/sumpstudyreport.pdf including a list of the changes in UST rules implemented as a result of this study.

Leaking Underground Tanks and Drinking Water Wells

The Leaking Underground Storage Tank (LUST) Remediation Priority List tracks clean-up sites and provides an objective scoring system to determine which sites receive scarce clean-up dollars. Table 6-2 shows the number of sites placed on this Priority List and the change since the previous 305b report.

Table 6-2 LUST Remediation Priority Sites – Number of Sites as of Feb 2006 and changes since 2004

Total Number of Sites Since 1994	Number of Sites Closed	Number of Active Sites
1,356	1,059	297
Numerical Change and Percent Change (from the 2004 305b report)		
123 / 10% increase	217 / 26% increase	-68 / 19% decrease

The sites on the priority list are limited to those contaminated by petroleum products (as opposed to all hazardous chemicals and all hazardous wastes). Table 6-3 shows the number of private water wells and public water supplies contaminated by petroleum products or threatened with contamination by petroleum products as of

February 2006. Note that one active site can contaminate or threaten more than one well. Also note that while 191 threatened wells were added in the reporting period, some of the threatened wells from previous years may have been reclassified as contaminated wells or are now not threatened (possibly due to removal of the contamination source). The UST program has not undertaken to calculate the number of wells that changed status from those listed as threatened in the previous reporting period.

Table 6-3 Current (February 2006) LUST Remediation Priority Sites – Contamination Summary

Number of Contaminated Wells*	Number of Contaminated Public Water Supplies	Number of Threatened Wells*	Number of Threatened Public Water Supplies
306	33	459	36
Numerical Change and Percent Change from 2 years ago (previous 305b report)			
-42 / 12% decrease	10 / 43% increase	191 / 71% increase	1 / 3% increase

* Does not include public water supplies.

Tanks in the Ground in Maine

Maine's UST registration program began in 1985. Since then, over 37,000 tanks have been removed or cleaned and "abandoned in place". As of February 2006, the DEP's TANKS database shows 5,045 active, registered USTs at 2,947 sites. The total storage capacity of these active USTs amounts to 39 million gallons with over half of the volume registered to store gasoline. Details of the UST products and volume figures are provided in Table 6-4 below.

Table 6-4 Information on Active, Registered USTs as of February 2006

Product Stored	Volume (millions of gallons)	Percentage
Gasoline (no Aviation Fuel)	20.60	52.7%
Heating Oil (#1 and #2)	10.04	25.7%
Diesel	6.57	16.8%
Other (includes petroleum and non-petroleum products)	1.86	4.8%
Total	39.07	100%

Above Ground Storage Tanks

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Related Website: www.maine.gov/dep/rwm/abovegroundtanks

Above Ground Storage Tank Spill Information

Maine averages over one heating oil spill per day from ASTs at single family residences (See Figure 6-1). One reason for this statistic is that ASTs are commonly used in Maine. The 2000 U.S. Census figures show that 80% of Maine households are heated with oil. The vast majority of these households have 275 gallon ASTs located either in the basement or outside the residence. The Maine DEP's continues a program of replacing approximately 1000 home heating oil tanks a year - free of charge - to low income homeowners and certain homes within wellhead protection areas. Changes in this program for 2004 and 2005 include the introduction of double wall tanks that have a plastic tank on the inside and are surrounded by sheet metal outer tank. Approximately 70 of these tanks have been installed in the basements of houses within wellhead protection areas.

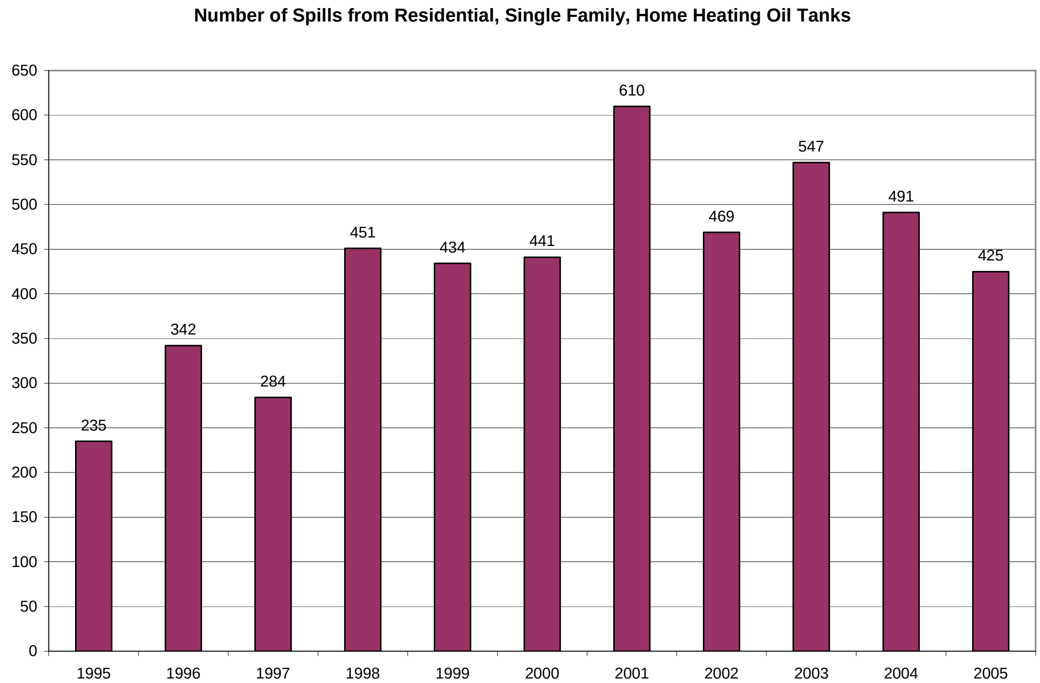

Figure 6-1 Spills from Residential Heating Oil Tanks

Note that data for 2005 is not yet complete

Spill Prevention, Control & Countermeasures Program for Above Ground Tanks

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Related Website: www.maine.gov/dep/rwm/spcc/

Extension of Maine's SPCC Program

In 2002, the Maine Legislature adopted legislation granting the DEP jurisdiction to enforce the federal Spill Prevention Control and Countermeasures (SPCC) regulations (40 CFR Part 112) for facilities that "market and distribute oil to others." The state SPCC program's jurisdiction is comprised primarily of retail gas stations and bulk plants, with a smaller component of airports and marinas. The State SPCC statute also mandated that the DEP provide education and outreach to affected facility owners to encourage their compliance with the federal SPCC rules. In 2005, the Legislature enacted legislation to remove the sunset date, making Maine's SPCC program permanent.

Technical Assistance Site Visits

A large component of the SPCC program is conducting technical assistance site visits to individual facilities to facilitate compliance with the SPCC requirements, and also the DEP's requirements for underground piping where applicable. DEP staff conducted 47 site visits in 2004 and 55 site visits in 2005. DEP staff found that only about half (53%) of the facilities visited during the 2004 - 05 seasons had an SPCC plan in place.

Proposed Legislation re: Underground Piping at AST Facilities

In general, underground piping at AST facilities must meet all the requirements of underground piping at UST facilities, but a statutory loophole currently allows underground piping systems installed at AST facilities prior to June 24, 1991 to remain in use without secondary containment or leak detection. The DEP has proposed legislation to remove this loophole. The proposed legislation requires underground piping at AST facilities to be registered with the DEP. The proposed legislation also requires AST facility owners to submit annual inspection reports of their underground piping systems. If enacted, the law would require AST motor fuel facilities having underground piping installed prior to June 24, 1991 be brought into full compliance with the DEP's UST rules by January 1, 2011.

Oil Spill Reporting

Maine statute currently prohibits the discharge of oil, regardless of the amount or the location of the discharge. A definitive requirement to report a discharge does not exist in Maine statute. However, Maine law is unique among states in that it exempts a person responsible for a discharge from civil enforcement penalties if in return the discharge is reported within 2 hours upon discovery to the Department and is promptly cleaned up to DEP requirements.

In 2005 the Maine Legislature's Committee on Natural Resources asked the Maine DEP to evaluate the state's current oil spill reporting requirements and make recommendations regarding any changes to the state's existing requirements. The DEP's study included surveying other states and the EPA regarding their oil spill requirements, convening a stakeholders' group to discuss issues and make suggestions related to oil discharge reporting, and reporting back to the committee. The Department plans to submit its report to the Natural Resources Committee during the Second Session of the 122nd Maine Legislature.

Spills

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Related Websites: (Database Reports) www.maine.gov/dep/rwm/data/index.htm

(2002 Spill Report) www.maine.gov/dep/rwm/publications/pdf/2002statisticalreport.pdf

The Department's BRWM responded to approximately 5,608 reports of oil or hazardous material spills between January of 2004 and December of 2005. Of these 5,608 spills, 408 do not have completed reports and, therefore, are not included in this discussion. Over 64% of these responses involved discharges of petroleum products to soil and/or groundwater. Between 2004 and 2005, response services personnel discovered over 87 wells that had been contaminated from these spills. Table 6-5 provides information on the 5,200 spills that had completed spill reports.

Table 6-5 Oil and Hazardous Materials Spills – January 2004 to December 2005

Spill Location Type	Percent of Total Spills	Number of Spills	Number of Wells Impacted
Business	21.25%	1,105	4
Government	6.00%	312	1
Residential	28.08%	1,460	59
School	1.33%	69	0
Terminal	14.25%	741	21
Transportation System	15.50%	806	0
Utility	8.81%	458	0
Other	4.79%	249	2
Total	**100%**	**5,136**	**114**

Agriculture

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In 1992, the total estimated cropland and pastureland in Maine was greater than 566,000 acres. The agricultural community uses chemicals for pest control and weed eradication; in addition, many farmers apply chemical fertilizers and manure to their agricultural lands. These are all major, potential sources of ground water contamination. Farmers apply over 58,000 tons of chemical fertilizers and 2.1 million tons of manure to agricultural land in Maine each year. In 1992, the Department of Agriculture estimated that chemical fertilizers were spread on over 250,000 acres. The major areas of chemical application include potato fields in Aroostook County, blueberry barrens in Hancock and Washington Counties, and apple orchards and forage cropland in Central Maine. Pesticides and nitrates are the main category of agricultural ground water contaminants.

Maine's Nutrient Management Law

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Related Website:

www.maine.gov/agriculture/ahi/naturalresources/nutrientmanagement.html

In 1998, the Maine Legislature enacted legislation entitled: "An Act Regarding Nutrient Management."

Requirements of the Law: There are two central components of the Nutrient Management Law:

- A manure spreading ban between December 1st and March 15th and,
- A requirement of all farms that confine and feed 50 animal units (au – where 1 au = 1,000 lbs of live animal body weight) or more at any one time to develop and implement a Nutrient Management Plan (NMP).

The law also states that NMPs must be prepared by a certified nutrient management planner. An NMP provides details on how farm nutrients will be stored, managed and utilized. The NMP also includes plans for intended manure uses as well as actual data that are recorded to document actions taken with regard to the planned usage. Nutrient management plans for most farms had to be completed and approved by January 1, 2001 but they need not be fully implemented until October 1, 2007.

There are now 575 nutrient management plans in place covering 137,177 acres. There are 171 certified planners in Maine qualified to write these plans. MDA has conducted 11 training workshops so that these planners could obtain recertification credits during 2004-2005. Sessions have already been held in 2006 and more are planned.

Impacts of the Law: The implementation of this law has had a number of impacts. These include increased building of manure storage facilities, a significant reduction in winter spreading, and more efficient use of manure and other nutrients for crop production. As farmers develop NMPs, they become more aware of the value of the manure they generate and how it is best utilized. By basing manure application rates on soil tests and crop needs, and not proximity to the barn or feedlot, fields receive appropriate amounts of manure. Those fields needing additional nutrients to meet crop needs are identified.

Implementing nutrient management on farms can better protect ground and surface water. By applying manure and other nutrients only in the amounts needed for crop production and in a way that will consider nearby sensitive resources, fewer nutrients will leave the site and impact water quality. Studies of Maine farms where nutrient management practices have been implemented show that water quality within a watershed can be significantly improved.

The implementation of nutrient management plans, which must contain Best Management Practices (BMPs) for insect and odor control, should result in fewer nuisances, in fewer conflicts with neighbors, and consequently in fewer associated complaints to the Department of Agriculture. As the program evolves and all the components are put in place, more BMPs will be implemented on Maine's farms, thereby providing an additional benefit of improved water quality.

Pesticides

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Related Website: www.maine.gov/agriculture/pesticides/water/index.htm

Pesticides can infiltrate soils and reach aquifers as a result of applications to croplands, forests, rights of way, home lawns, etc., and also from accidental spills, leaks, or improper disposal. In Maine, increased concern about pesticides in ground water began in 1980 when the agricultural pesticide, aldicarb (trade name Temik) was found in private drinking water wells located near potato fields. Since then, a variety of monitoring projects have been conducted in Maine to find out if the use of pesticides has impacted the quality of ground water. For example, Maine's statewide pesticide and ground water monitoring program is repeated every 5-7 years by BPC. Samples are collected from private drinking water wells within ¼ mile down gradient of a pesticide use site. Results from three statewide surveys are shown below in Table 6-6.

In all three surveys hexazinone was the most commonly found active ingredient in sampled drinking water wells. The results of the surveys indicate that pesticide contamination of drinking water sometimes occurs below established health advisory levels in areas near active pesticide use sites but that frequency of detections is low.

Table 6-6 Maine Pesticides and Ground Water Monitoring Sampling Program

Sampling Year	1994	1999	2005
Total Number of Samples Collected	129	194	127
Number of Positive Detections	31	17	14
Percentage with Positive Detections	24%	9%	11%

Ground water monitoring as described in Maine's Hexazinone State Management Plan is being continued in 2006. Approximately 50 private drinking water wells within ¼ mile of blueberry fields are currently being sampled. In a few months new data will be added to Table 6-7, below:

Table 6-7 Hexazinone Monitoring - 1994 through 2002

Sampling Results	Spring 1994	Spring 1998	Spring 2002
Total Number of Samples Collected	20	42	49
Number of Positive Detections	15	18	29
Percentage with Positive Detections	75%	42.8%	59.2%
Mean Concentration*(ppb)	1.08	0.41	1.45
Median Concentration (ppb)	0.31	ND	0.43
Highest Reading (ppb)	5.97	2.15	11.41

*For statistical purposes only, mean concentration was calculated assuming that non detections (ND) were equal to half of the limit of quantification (LOQ). LOQ = 0.1 ppb for 2002 samples.

Studies have detected pesticides in some of Maine's ground water. With the exception of a few sites where spills might create point sources of contamination, the levels of pesticides detected do not present a health threat to the citizens of Maine when compared to the health-based standards established by the USEPA and the Maine Bureau of Health. The use of BMPs, lower application rates in many situations, and increased awareness of ground water issues should have positive impacts on the quality of Maine's ground water.

Landfills

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Related Website: www.maine.gov/dep/rwm/solidwaste/index.htm

The Maine Department of Environmental Protection is directed by statute to regulate the location, establishment, construction, expansion and operation of all solid waste facilities in the state, including landfills.

In 2003, Maine residents, businesses and visitors generated 2,019,998 tons of municipal solid waste, a 9% increase from 1,884,059 tons generated in 2001. 32% of the MSW was landfilled. In addition 446,958 tons of MSW generated outside of Maine were landfilled or incinerated in Maine in 2003. Approximately 35.5% of the MSW stream was recycled, down from 40.4% in 1999.

Of particular significance as related to ground water protection, the Department and the Maine Legislature have focused significant effort over the past two years toward developing legislation and programs to ensure that certain hazardous constituents are removed from the waste stream prior to landfilling or incineration:

- The Department has implemented Maine's E-Waste Law. This law prohibits the disposal of cathode ray tubes and establishes a system for manufacturers to pay for the recycling of household televisions and computer monitors.
- Maine's Hazardous Waste law requires businesses to recycle all Universal Wastes, including cathode ray tubes, mercury-added products and PCB ballasts from lighting fixtures.
- A statutory ban on the disposal of household mercury-added products, such as mercury switches, thermostats, thermometers and fluorescent lamps, took effect on January 1, 2005.
- The Department has worked to increase the collection and recycling rate of mercury thermostats, including the distribution of collection boxes to all wholesalers and the development of a plan to establish a bounty payment for receipt of thermostats at collection sites.
- Mercury switches that are components of motor vehicles are required by law to be removed from the vehicles before they are sent to a scrap recycling facility, and end-of-life vehicle handlers are paid a bounty for each mercury auto switch they turn in for recycling.
- The Department has provided grants and technical assistance to schools to clean out and properly dispose of hazardous chemicals.
- The Department has provided technical assistance for pilot pharmaceutical collections and for policy development in hopes of establishing a statewide program for the collection of unused pharmaceuticals.

Active Landfills

Related Website: www.maine.gov/dep/rwm/data/landfillactive.htm

There are currently 50 active, licensed landfills in the state of Maine (Figure 6-2). Of these, seven are licensed exclusively for MSW disposal. Seventeen (17) are licensed to accept "special waste" (several of these are also licensed for MSW and demolition debris disposal). Twenty-six (26) are licensed for the acceptance of wood waste and construction/demolition debris.

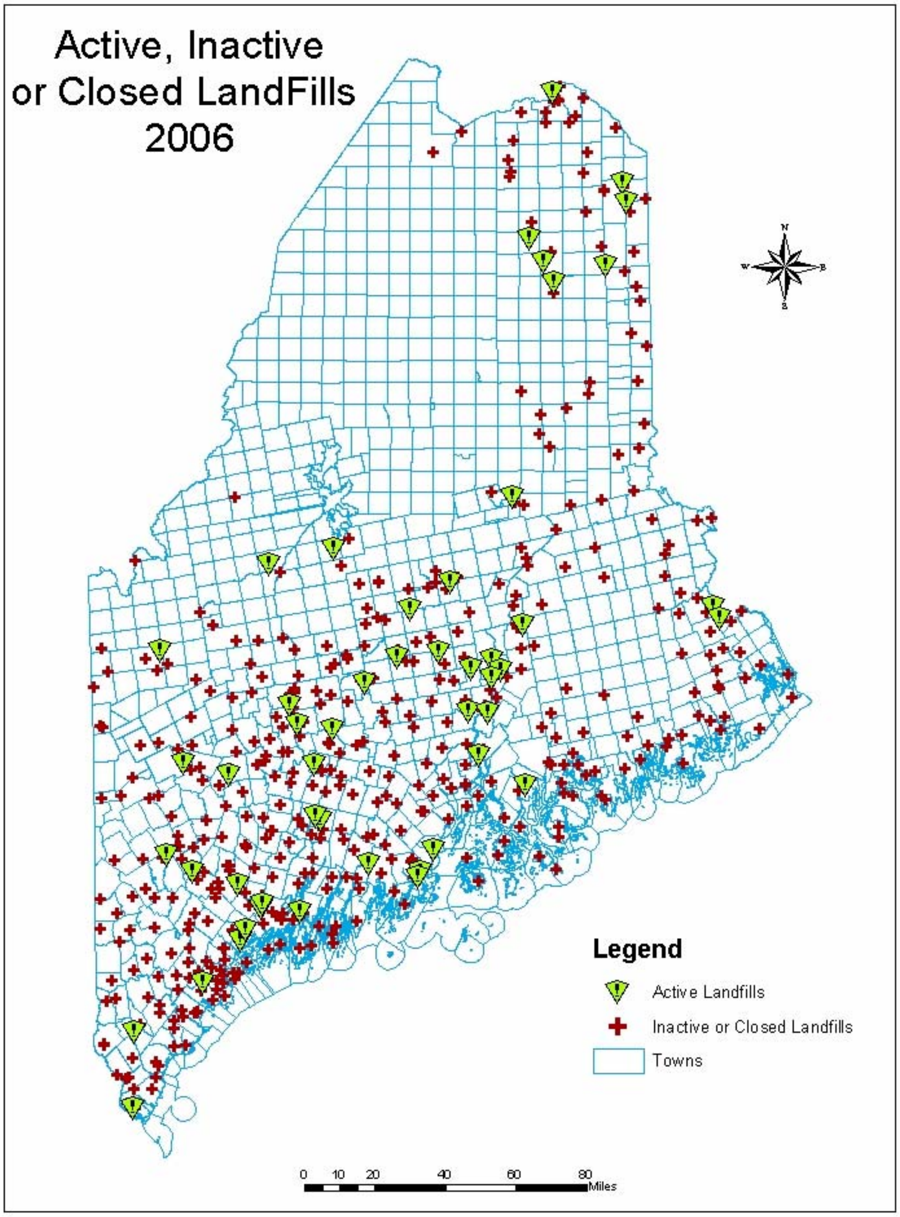

Figure 6-2 Active and Inactive Landfills in Maine

Inactive Landfills

A total of 414 municipal landfills have been identified in the state. As of July 2005, 388 of these landfills have been closed and capped (Figure 6-2). Twenty-six remain to be closed. These include 15 currently active sites and 11 inactive sites, which are no longer receiving solid waste. In all:

- 184 landfill sites are on sand and gravel aquifers and ground water contamination has been documented at 46 of these sites,
- Sixty other sites have contaminated surface water and/or ground water and are considered to be substandard; 37 of these 60 sites have serious ground water contamination,
- Hazardous substances in ground water are confirmed or suspected at 41 municipal landfills. Public or private water supplies are potentially threatened at 8 of these sites. Additional investigations have determined that 3 public water supplies previously considered at risk have been determined to be safe,
- 135 sites have no reported or documented problems with surface water or ground water,
- 13 of these inactive sites appear to be accepting demolition debris, and
- There are at least 65 sites where open burning occurred.

The state is continuing with a cost share program on remedial actions that occur at closed municipal landfills where a threat exists to human health or the environment. Bond funds are being utilized for remedial development of replacement water supplies for residents in five of the eight towns where private water supplies are threatened. Maine is experiencing increased residential development in locations outside central city and town areas, especially in southern and coastal areas. Continued uncontrolled development may potentially place future residential areas at risk if private supply wells are placed in areas impacted by closed municipal landfill sites. The DEP is currently working with a number of towns to identify at-risk property and to assist with the purchase of this property or to limit ground water use through other mechanisms.

Residual Land Applications

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Related Website: www.maine.gov/dep/rwm/residuals/index.htm

Currently, residuals are processed and utilized at approximately 536 licensed land application and composting sites in Maine (Table 6-8). There are also many more locations where residuals are legally used for agricultural purposes without a site-specific license. The Department has not typically required ground water monitoring at residuals utilization or composting sites. Therefore, actual impacts to ground water from these types of sites have not been widely determined. Ground water monitoring has detected impacts at some sites.

Table 6-8 Licensed Facilities by Utilization Activity

Type of Utilization Activity	Number of Licensed Facilities
Septage Land Application & Storage	76
Sewage Sludge Land Application & Storage (Class B)	220
Wood-ash & Bio-ash Land Application	~100
Other Residual Land Application	75
Composting Facilities	74

Road Salt

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Related Website: (Rules – Chapter 574) www.maine.gov/dep/blwq/574final.pdf

(Sand and Salt Piles) www.maine.gov/dep/blwq/docstand/sandsalt/index.htm

During the winter, more than 100,000 tons of salt are spread on Maine roads for deicing purposes. Today the salt or sand-salt mixes are stored in over 750 registered sand-salt storage piles, two thirds of which are uncovered, a vast improvement over storage just twenty years ago. Leaching of sodium and chloride from uncovered sand-salt storage has caused substantial ground water degradation in Maine. DEP field investigations have documented over 150 drinking water wells in the State that have become unpotable (chloride in excess of 250 mg/L) as a result of contamination from sand-salt storage. Elevated sodium concentrations may pose a health risk for people on sodium-restricted diets, e.g., people with hypertension. For a majority of the population, water will taste salty and household water pumps, hot water heaters, and plumbing fixtures will rust at an accelerated rate if the chloride concentration exceeds the State 250 mg/L secondary (aesthetic) standard.

DEP is actively involved with siting of new sand-salt buildings and piles and continues to investigate contamination from sand-salt piles on a case-by-case basis in response to complaints. DEP's Sand-Salt Storage Area Rule (Chapter 574) prohibits siting of new sand-salt storage areas on significant sand and gravel aquifers, within source water protection areas of public water supplies and within 300 feet of a private domestic well. MDOT continues to handle complaints related to sand-salt piles, which they operate, and roads, which they maintain.

Federal Facilities, Superfund and Hazardous Substance Sites

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Related Websites: (Maine DEP Information) www.maine.gov/dep/rwm/rem/index.htm

(Federal EPA Information) www.epa.gov/ebtpages/cleasuperfund.html

There are numerous sites in Maine where hazardous substances have allegedly been discharged into the environment. As of June 2005, the Uncontrolled Hazardous Substance Sites Program (USP) and the Superfund Program together had 94 active uncontrolled hazardous substance/Superfund sites under investigation, with 42 of these sites currently in the Operations and Maintenance stage. Nine additional locations require further investigation to determine whether they should be listed as uncontrolled sites. The definition of an "uncontrolled hazardous substance site" or "uncontrolled site" is an area or location, whether or not licensed, at which hazardous substances are or were handled or otherwise came to be located. The term includes all contiguous land under the same ownership or control and includes without limitation all structures, appurtenances, improvements, equipment, machinery, containers, tanks and conveyances on the site.

Since 1983, 495 sites have been reported to the Uncontrolled Hazardous Substance Sites Program. Of these, 136 are active (this number includes Pre-Remedial sites and Department of Defense Sites, in addition to USP/Superfund sites), 248 are inactive, 81 are resolved and 30 have been removed from the USP List.

Thirteen sites are listed on the National Priority List of Superfund Sites, including the Brunswick Naval Air Station, the McKin Disposal Site, O'Connor Salvage, the Pinette Salvage Yard, the Union Chemical Site, the Winthrop Landfill, the former Loring Air Force Base, the Portsmouth Naval Shipyard - West Site, How's Corner in the town of Plymouth, the Eastern Surplus Site, the Eastland Mill, and the Saco Municipal Landfill. Recent changes to the list include: the addition of the Callahan Mine Site in the town of Brooksville. In November 2005 the Brunswick Naval Air Station was selected for closure by the BRAC Commission. Target date for closure is 2011.

For the Uncontrolled Sites Program (including Superfund and Federal Facilities) at least 157 drinking water wells have been contaminated near or above the BRWM's "action level" (one-half the MCLs or MEGs) at 46 uncontrolled sites and at least 312 other wells are at risk. The database for listing wells contaminated at uncontrolled sites, and the source of the above figures, was updated in June of 2005.

Resource Conservation and Recovery Act Sites

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Related Website: www.maine.gov/dep/rwm/hazardouswaste/index.htm

The BRWM lists approximately 450 large quantity hazardous waste generators (defined as producing greater than 100 kilograms per month) that are currently active in the State of Maine. Additionally, there are about 680 inactive large quantity generators listed. Our records also show approximately 6,600 small quantity (less than 100 kilograms per month) generators in the state.

The DEP currently lists approximately 85 sites with non-interim Resource Conservation & Recovery Act (RCRA) licenses and 60 sites with interim licenses. Over 80 sites are under investigation for possible ground water or surface water contamination. Forty sites listed under RCRA have ground or surface waters that have been contaminated by discharges of hazardous substances. Twenty-one of these 40 facilities have ongoing, active remediation.

Septic Systems

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Related Website: www.maine.gov/dhhs/eng/plumb/index.htm

Maine is a predominantly rural state, and relies heavily on decentralized sewage facilities for the disposal of human wastes. In June of 1974, the state of Maine adopted a comprehensive set of rules covering the design, siting, permitting, and construction of septic systems, or subsurface wastewater disposal systems. These rules established criteria for site suitability, replaced the percolation test with a soils-based site evaluation, recognized various system components and construction techniques, required the use of a standard design form (HHE-200), and strengthened the system of permitting and inspecting systems at the local level. The rules have evolved over time.

The Department of Health and Human Services, Maine Center for Disease Control and Prevention, has regulated onsite sewage disposal since 1926. This responsibility rests with DHHS because the treatment and disposal of human sanitary waste has been historically considered a public health issue. The Subsurface Wastewater Program within the Division of Environmental Health promulgates and administers the Subsurface Wastewater Disposal Rules. The Program also maintains microfiche copies of all plumbing and subsurface wastewater permits that have been issued statewide from 1974 to the present. During the 2004 fiscal year, the Program processed 13,000 internal plumbing and 12,000 subsurface wastewater permits.

U.S. census data from 1990 indicate that there are in excess of 301,000 septic systems in Maine. Given an 11% increase in the number of households in Maine according to the 2000 census, the number of septic systems has increased to more than 334,100. Of all the sources with the potential to contribute to ground water contamination, in aggregate, septic systems discharge the largest volume of water to the subsurface environment.

The major contaminants of concern found in septic system effluent are nitrate, bacteria, and viruses. High concentrations of nitrate may cause methemoglobinemia ("blue-baby syndrome") in infants. Correlation has also been shown between the incidence of stomach cancer and the concentration of nitrate in drinking water. The potential for disease transmission by the surface discharge of bacteria and viruses from malfunctioning septic systems is a significant public health concern.

Nitrates and Septic Systems

Major factors that affect the potential of septic systems to contaminate drinking water are (1) the density of the systems per unit area, (2) hydrogeological conditions and, (3) water well construction and location. Areas with a high septic system density may experience substantial ground water quality degradation partly because of the inability of the systems to adequately treat nitrates. Representative septic system effluent nitrate concentrations vary considerably according to the household lifestyle, diet, and water consumption. Studies have shown that the septic effluent reaching ground water contains approximately 40-80 mg/L nitrate-N. In Maine, estimates of the nitrate concentration from septic systems range from 30-40 mg/L.

The Health and Environmental Testing Laboratory (HETL) database contains the results of water tests done on private wells. These tests are requested by homeowners or state or local officials on behalf of homeowners. This database provides the largest sample of private well nitrate concentrations in the state and includes sites impacted by a variety of nitrate sources including septic systems and agricultural activities. Assuming that the HETL database for nitrate-N represents Maine ground water quality, data from January 2004 to May 2005 indicate approximately 97% of wells sampled have concentrations below 5 mg/L, well below the 10 mg/L drinking water standard for nitrate-N (Table 6-9). This percentage has remained steady for the past few reporting cycles.

Table 6-9 Nitrate-N Frequency Distributions

Nitrate-N (mg/L)	HETL Database[1] (percent)	HETL Database[2] (percent)
0.00 to 2.50	91.9	92
2.51 to 5.00	5.6	6.0
5.01 to 7.50	2.0	2.0
7.51 to 10.00	0.5	0.4
Greater than 10.0	0.0	0.6
Number of Analyses	**2,197**	**3,638**

[1]HETL database for private well analyses between 1/1/04 and 5/31/05.
[2]HETL database for private well analyses between 1/1/02 and 12/31/03.

Bacteria

Private well testing for presence of bacteria identifies a greater contamination potential from bacteria than from nitrate. In public and private drinking water supplies, coliform bacteria are used as the indicator of microbial contamination. The Primary Drinking Water Standard for total coliform bacteria is 0 colonies per 100 ml.

HETL data for wells tested between 1960 and 1990 showed approximately 31% of the wells tested for total coliform exceeded the drinking water standard. Data for the period January 2004 to May 2005 indicates that 32% of the 3,706 well samples analyzed for total coliform tested positive. During the same time period, the HETL database indicates 2.5% of the 3,864 wells that were tested for E. coli bacteria tested positive.

Fecal coliform bacteria (and specifically E. coli) originate inside the intestinal tract of mammals. The fecal coliform test is a better indicator of septic system contamination than total coliform because the total coliform test results may be affected by input from non-mammalian sources such as decaying vegetation. Surface water infiltration around poorly sealed well casings, especially dug well casings, may contribute to the disparity between detection of total coliform and fecal coliform. Table 6-10 shows that larger percentages of dug wells test positive for bacteria than drilled wells. This lends support to the belief that dug wells are more susceptible to bacterial contamination than drilled wells.

Table 6-10 Wells testing positive for E. coli or total coliform

Well Type	HETL Database 1960-1990	HETL Database 1/04-5/05
	% wells positive for total Coliform or E. Coli	% wells positive for total Coliform or E. Coli
Dug	52%	32%
Drilled	24%	14%

Shallow Well Injection and the Underground Injection Control (UIC) Program

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Related Website: www.maine.gov/dep/blwq/docstand/uic/index.htm

The underground discharge of pollutants by shallow well injection has been illegal in Maine since 1983 when the State adopted the Federal Underground Injection Control (UIC) regulations. Shallow injection wells in Maine are usually gravity feed, low-technology systems which include dry wells under floor drains, cesspools, septic systems, and infiltration beds. Wastes discharged via injection wells include snow melt and wash water, petroleum products, cleaning solvents and degreasers, storm water runoff, non-contact cooling water, and a variety of other industrial, commercial, and household wastes.

By emphasizing education, technical assistance and the importance of a business's image within the community, 97% of businesses in violation have come into compliance within one year of having the violation identified (Tables 6-11 and 6-12).

Table 6-11 Underground Injection Control Program Inspection Information

Federal Fiscal Year	General Area Covered	Towns Included	Surveys Mailed	Businesses Inspected	Businesses in Violation	Businesses Returned to Compliance
FFY98	Kennebec	25	**	152	39	37
FFY99	Kennebec & Androscoggin	86	**	368	76	74
FFY00	Presumpscot & Androscoggin	57	605	313	95	94
FFY01	St. John	54	152	168	83	78
FFY02	Saco & Piscataqua	35	259	185	89	88
FFY03	Mid-Coastal	45	111	172	71	71
FFY04	Penobscot	58	342	210	60	60
FFY05	Penobscot	58	0	214	41	41
Totals		**360**	**1,469**	**1,806**	**563**	**549**
Statistics:					**23.5%**	**97.5%**

** No surveys were mailed these years.

Table 6-12 Underground Injection Control Inspection Descriptions

Federal Fiscal Year	UIC Inspections by Type			
	Routine	Complaint	Follow-up	Total
FFY98	146	6	0	152
FFY99	357	11	97	465
FFY00	307	6	53	366
FFY01	160	8	129	297
FFY02	178	7	62	247
FFY03	169	3	116	288
FFY04	204	6	60	270
FFY05	206	8	41	255
Totals	**1,727**	**55**	**558**	**2,340**

Stormwater Infiltration

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Infiltration of stormwater runoff has been practiced in Maine for many years, principally as a means of providing runoff quality control, particularly for phosphorous control from residential developments in lake watersheds. Infiltration has been a preferred option for stormwater control at sand and gravel mines, in order to minimize the risk of sediment discharge from those operations. With increasing requirements for quality treatment in a variety of watersheds, more developments are considering infiltration as a stormwater treatment option. In addition to the need to provide treatment for runoff quality and quantity, there are concerns regarding the impacts of developments with large impervious areas on recharge and baseflow, particularly in small watersheds and watersheds of headwater streams. Low-impact development methods encourage infiltration; however, many of those techniques were developed in areas with extensive sandy soils. Because soil types vary throughout Maine, widespread application of these methods in the state is questionable. The Department is continuing to assess monitoring data from several large developments, and the adverse effects observed to date are consistent with those found in other states.

The revised stormwater management rules are intended to encourage infiltration and use of buffer areas for treatment of runoff quality and quantity from low-intensity developments such as residential subdivisions. The rules also prohibit certain activities in areas draining to infiltration facilities, and define criteria, generally related to land use, depth to seasonal high groundwater, and separation from bedrock, under which groundwater monitoring and Wastewater Discharge Licenses would be required for operation of an infiltration system. Rules and the licensing requirements apply to both Class V Injection Wells and all other types of infiltration measures, such as infiltration basins and swales, but specifically exclude buffers, provided that the buffer is appropriately sized for the volume of water received.

Salt-Water Intrusion

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In coastal areas, excessive ground water withdrawals and/or well placements that are too close to the shoreline may lead to saltwater intrusion. This is significant considering that Maine has approximately 3,500 miles of coastline and there are immense development pressures along most of the coast. Saltwater intrusion is particularly common on coastal peninsulas and off-shore islands that rely primarily on private drilled bedrock wells for drinking water. As development pressure along the Maine coast continues, the incidence of saltwater intrusion is expected to increase.

Metallic Mining

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Related Website: www.maine.gov/dep/blwq/docstand/miningpage.htm

Maine does not have any operating metallic mines at this time. In August of 1991, metallic mining rules were adopted by the State of Maine to be administered by the DEP. The purpose of these rules is to protect land and water quality while allowing for metallic mineral exploration and property development. Currently, no new permit applications are pending.

Historical metallic mining sites such as the Callahan Mine site in Brooksville and the Kerramerican Mine in Blue Hill are known to degrade surface water quality by acid rock drainage from tailings ponds. Both of these sites were mined for copper and zinc, however there are other metals that are found at elevated levels onsite and in the nearby surface water bodies.

Gravel Pits

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Related Website: www.maine.gov/dep/blwq/docstand/miningpage.htm

Six hundred ninety six gravel pits 5 acres or greater in size have been licensed by the Maine DEP. The number of unlicensed (illegal) pits that cover 5 or more areas and the number of gravel pits falling below the licensing thresholds are unknown. Recent changes to performance standards now include a variance provision for excavation into ground water. Previously, a separation distance of one to five feet was required between the base of the excavation and the seasonal high water table (SHWT). In general, prior to issuing any variance to excavate gravel from below the SHWT, the Department investigates the dewatering potential for adjacent wells and protected natural resources. The DEP has issued approximately 30 variances to excavate gravel from below the water table. These sites are extensively monitored for both ground water levels and quality. To date, the Department has not observed the direct dewatering of any protected natural resource due to mining from below the water table at these sites.

Impacts to ground water from gravel pit operations include contamination by spillage or spraying of petroleum products in or near the pits, and dewatering of local surficial aquifers. Improper use, storage, or handling of petroleum products is known to have caused ground water contamination in three gravel pits. Another threat to ground water indirectly related to gravel pits is dumping into pits that do not adequately restrict unauthorized access. Unreclaimed sand and gravel pits are too often the sites of illegal dumping. At the present time, 16 abandoned gravel pits are listed as uncontrolled hazardous waste sites. Ground water in the area of these pits contains a variety of pollutants such as solvents and PCBs.

Radioactive Waste Storage and Disposal Sites

Contact: Tom Hillman, DHHS Maine CDC, Division of Environmental Health, Radiation Control Program

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Related Website: www.maine.gov/dhhs/eng/rad/hp_waste.htm

Maine has one high-level radioactive waste generator, Portsmouth Naval Shipyard in Kittery. The naval shipyard currently ships spent nuclear fuel to interim storage at the Idaho National Engineering Laboratory and its low-level waste to facilities in South Carolina or Utah for burial.

Maine Yankee Atomic Power Company, a former generator located in Wiscasset, completed decommissioning in late 2005. The decommissioning of Maine Yankee resulted in approximately 400 million pounds of waste being removed from the site to sites in Utah and South Carolina. Maine Yankee stores its high level waste (HLW) on-site and will continue to do so until the U.S. Department of Energy can take possession (a national disposal facility is expected to be operational in 2010). This installation houses 60 spent fuel casks and 4 casks of Greater Than Class C Waste (GTCC) generated during Maine Yankee's operation.

The Maine Department of Health and Human Service's Radiation Control Program has a groundwater monitoring program in place at the Maine Yankee site. Sampling started in September 2005 and will continue for five years. Twelve wells are sampled periodically.

The Radiation Control Program monitors the other generators of low level radioactive waste (LLW) and also inspects their facilities and shipments. Maine's low-level waste generators consist of university and college research facilities, hospitals, research and vendors in the medical field, and a few manufacturing facilities.

A continuing concern of the State's Radiation Control Program is the appearance of LLW at scrap metal recycling yards. Newly installed radiation detection meters have revealed material that makes its way into the waste stream. Typically, these items are consumer items, such as smoke detectors, refuse from nuclear medicine patients and improperly disposed of or naturally occurring radioactive materials that have been inadvertently concentrated through other processes.

Maine has one confirmed low-level radioactive waste site in Greenbush. Other sites may exist, but they have not been located. Ground water monitoring wells have been installed at the Greenbush site and on adjacent property. No contamination has been detected in the monitoring wells. At this time, threats from chemical contamination are of greater concern than radiological contamination.

SUMMARY OF GROUND WATER QUALITY

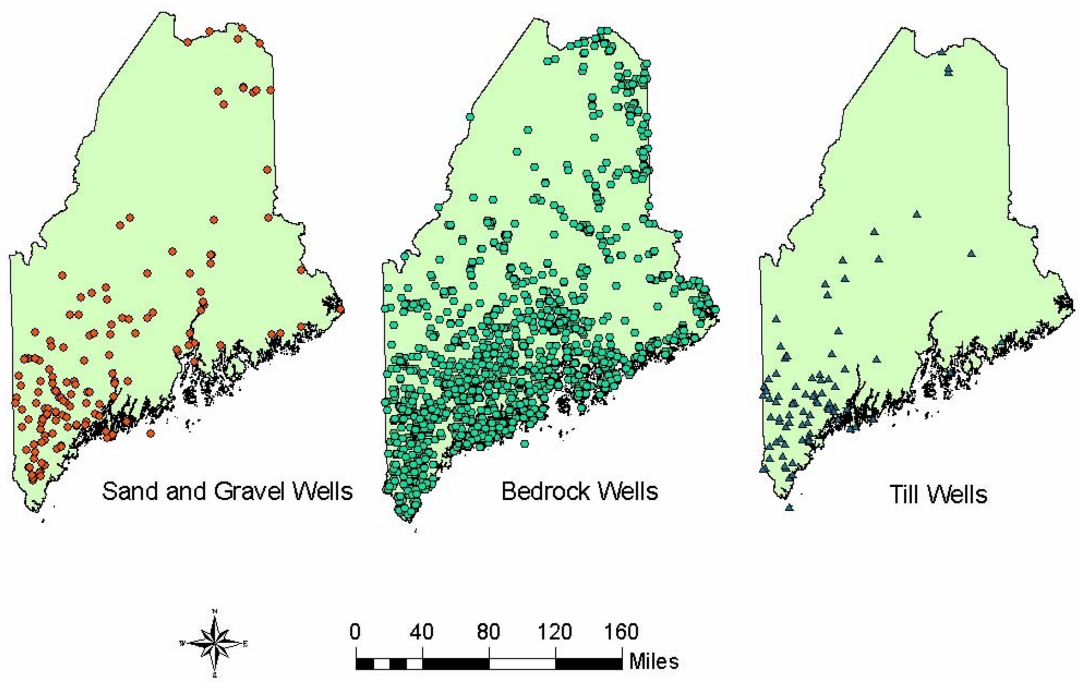

Figure 6-3 Distribution of Sole Source Public Water Supply Wells for the Ambient Water Quality Montioring Network by Aquifer Type.

For 2006 the ambient ground water quality monitoring network consists of 2,778 public water supplies. A total of 1,309 supplies were used for this analysis. Each of the selected public water supplies is provided by only one source of water: either a drilled well in bedrock; a dug well in glacial till; a drilled well, well point, or dug well in glacial outwash sand and gravel or recent sandy alluvium (Figure 6-3). Some of the wells are large community water supplies; some are non-transient, non-community water supplies. Analytical results for periodic, routine sampling of raw water were provided by the DWP. Not all the well samples were analyzed for the all the same chemical constituents every time they were obtained: frequency depends on the type of water supply and the population served. Nevertheless, the DEP believes that the selection represents ambient ground water quality in the three major geologic settings that provide ground water in Maine. Sand and gravel aquifers are often high yield water sources and are often found in developed areas, and are therefore vulnerable to contamination. Bedrock aquifers, though not usually hydrologically connected, underlie the whole state and are mostly used as private water supplies, as are glacial till aquifers. The locations of the wells used to indicate ambient water quality are shown in Figure 6-4 and a summary of the ambient water quality data is in Table 6-13. Figure 6-4 shows the distribution of these wells by aquifer type.

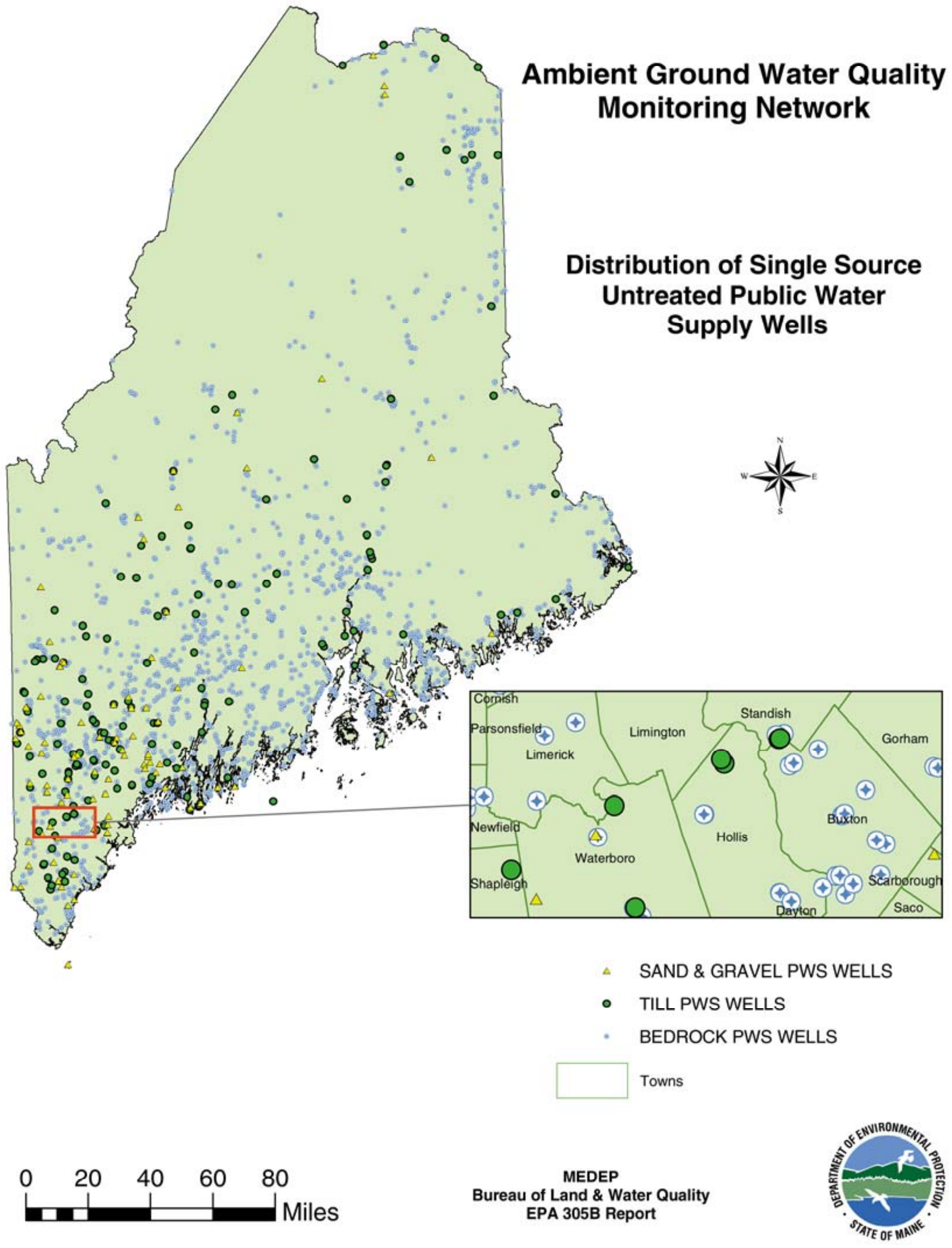

Figure 6-4 Ambient Water Quality Monitoring Network Well Location Map

Table 6-13 Ambient Aquifer Monitoring Data*

Ambient Ground Water Quality Monitoring Well Data

Aquifer Description: Till Statewide

Data Reporting Period: Jan. 2004-Dec. 2005

Monitoring data type [1]	Total number of wells used in assessment	Parameter groups	No detections of parameters above MDLs or background levels	No detections of parameters above MDLs or background levels and nitrate concentrations range from background levels to ≤5 mg/l	Parameters are detected at concentrations exceeding the MDL, but are less than or equal to MCLs and/or nitrate ranges from >5 to ≤10 mg/l	>10m/l	Parameters are detected at concentrations exceeding MCL's
Ambient (raw)	31	VOC	258	0	1	0	0
water quality		SOC	no tests	no tests	no tests	na	na
data from public	# of Tests:	NO3	39	26	3	0	0
water supply	445	Other	83	0	35	0	0
wells							

Ambient Ground Water Quality Monitoring Well Data

Aquifer Description: Bedrock Statewide

Data Reporting Period: Jan. 2004-Dec. 2005

Monitoring data type [1]	Total number of wells used in assessment	Parameter groups	No detections of parameters above MDLs or background levels	No detections of parameters above MDLs or background levels and nitrate concentrations range from background levels to ≤5 mg/l	Parameters are detected at concentrations exceeding the MDL, but are less than or equal to MCLs and/or nitrate ranges from >5 to ≤10 mg/l	.10m/l	Parameters are detected at concentrations exceeding MCL's
Ambient (raw)	1196	VOC	24893	0	106	0	0
water quality		SOC	1968	0	14	0	2
data from public	# of Tests:	NO3	1727	1199	59	0	0
water supply	38,581	Other	4865	0	3750	0	50
wells							

Major uses of aquifers or hydrologic units: X Public water supply ___ Irrigation ___ Commercial ___ Mining ___ Baseflow
X Private water supply ___ Thermoelectric ___ Livestock ___ Industrial ___ Maintenance

Uses affected by water quality problems: X Public water supply ___ Irrigation ___ Commercial ___ Mining ___ Baseflow
X Private water supply ___ Thermoelectric ___ Livestock ___ Industrial ___ Maintenance

* Data supplied by DHHS/BOH/DHE/Drinking Water Program, analysis by DEP/BLWQ/DEA/Environmental Geology Unit

Table 6-13 Aquifer Monitoring Data (Continued)

Ambient Ground Water Quality Monitoring Well Data

Aquifer Description: Stratified Drift **Statewide** **Data Reporting Period:** Jan. 2004-Dec. 2005

Monitoring data type [1]	Total number of wells used in assessment	Parameter groups	No detections of parameters above MDLs or background levels	No detections of parameters above MDLs or background levels and nitrate concentrations range from background levels to ≤5 mg/l	Parameters are detected at concentrations exceeding the MDL, but are less than or equal to MCLs and/or nitrate ranges from >5 to ≤10 mg/l	.10m/l	Parameters are detected at concentrations exceeding MCL's
Ambient (raw) water quality data from public water supply wells	82 # of Tests: 3454	VOC	1961	0	4	0	0
		SOC	388	0	2	0	0
		NO3	54	88	1	0	0
		Other	522	0	434	0	4

Major uses of aquifer or hydrologic unit: X Public water supply___ Irrigation___ Commercial___ Mining___ Baseflow X Private water supply ___ Thermoelectric __ Livestock ___ Industrial___ Maintenance

Uses affected by water quality problems: X Public water supply___ Irrigation___ Commercial___ Mining___ Baseflow X Private water supply ___ Thermoelectric ___ Livestock ___ Industrial___ Maintenance

* Data supplied by DHHS /BOH/DHE/Drinking Water Program, analysis by DEP/BLWQ/DEA/Environmental Geology Unit

GROUND WATER PRIORITIZATION AND VULNERABILITY ASSESSMENT

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The DEP and the Maine Geological Survey (MGS) have been developing a model to regionally assess the intrinsic risk to ground water in bedrock aquifers. Work has been concentrated in the highly developed watersheds of the Presumpscot, Fore, and Royal Rivers and a surrounding 0.5 kilometer buffer area outside of the combined-watershed boundary.

This model was tested using nitrate data from monitored public water supplies within the study area, and by comparison to a statewide study of housing developments with on-site wastewater disposal. It is understood that this procedure self-selects for water quality at sites where nitrate sources may be relatively low, particularly in the case of public water supplies. Consequently, even though the vulnerability at a site might be high, low or non-detect results for nitrate would be expected. Results did show significant correlation between overburden thickness (or casing length, essentially a surrogate for overburden thickness) and nitrate concentration, but not significant correlation between calculated vulnerability rankings and nitrate concentration. Statistically significant correlation was found between low vulnerability rankings at sites with non-detect results and higher vulnerability ratings at those sites with detectable concentrations of nitrate. This may indicate that it is not practical to correlate the contamination risk at a particular point with the calculated vulnerability at that point, but that there is a broad correlation between larger areas of vulnerability and the likelihood of contamination in bedrock. Consequently, there is general validity to the approach, although, as indicated above, confidence in the accuracy of the vulnerability value at any specific cell of a grid is low.

The agencies are continuing to seek support for refinement of the method and development of a user-friendly application, and for evaluation of other possibly significant factors, such as assessment of recharge - discharge locations in transport of pollutants to and from the bedrock system. Work is also ongoing on uses of the model to evaluate cumulative risk to groundwater quality from specific known sources identified in the EGAD database, and non-specified nonpoint sources, for which surrogates such as population density, percent impervious area, and road miles in a watershed can be used.

ENVIRONMENTAL GROUNDWATER ANALYSIS DATABASE (EGAD)

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Related Website: www.state.me.us/dep/rwm/egad/

The Environmental Groundwater Analysis Database (EGAD) is a database that links site characteristics and ground water quality information to a spatial database. DEP has been using EGAD for the last several years. Work to expand the database includes identification and location of various activities and known contamination sites, which may affect ground water quality and populations served by public and private water supply wells. This effort is part of a coordinated statewide GIS-linked ground water database project which is used to: (1) achieve understanding of the spatial interrelationships between natural resources and population as they relate to potential or known pollution sources; (2) design clean-up strategies in areas of known contamination; (3) plan development to provide for the protection of public health and safety; (4) assist in prioritizing protection of sensitive ground water and surface water bodies, wetlands, and other environmental resources; and, (5) assess the flow and transport interrelationships between surface and ground water quality, in order to evaluate ground water impacts on surface water bodies, and ground water dependent habitat. Please refer to the 2004 305b report for a list of the individual site types.

During 2004-2005, EGAD has been used to report to other State agencies (DOT, DOA, DHHS DWP) and Non-profits (MRWA, Atlantic Salmon Commission) and consultants, as well as Divisions within the DEP. EGAD is also being used to satisfy requests for water quality data, review applications for safety and practicability submitted under the state's environmental laws, and to evaluate cumulative impact.

Some developments and activities include:

- The addition of one more Site Type- Medium Quantity Hazardous Waste Generators.
- New Research and Reporting and Upload Tools were developed by DEP staff.
- Most DEP RCRA staffers are now trained to enter their data into EGAD.
- At the end of 2005, there were 13,499 records in 37 categories. During 2004-2005, 2,986 sites were added. Many pre-existing sites were updated or corrected. Some duplicate sites were deleted.
- A new EGAD “front end” became operational in October 2004. The spatial location of the site and sample point data is linked from the Oracle database to the ArcMap Spatial Database Engine (SDE) so that all EGAD sites can be seen in ArcMap.

Site Name and Location data as well as Regulatory information (Licenses, Permits, Spill Numbers, etc.) are derived from file and field research. Spatial (GIS) data is obtained either by screen digitizing or by using a GPS device in the field. Geological data, narrative info, and ownership data is included as available. Additional site-specific information includes well design and construction information, and sampling and analytical data. These Site Data are used in mapping relationships, electronically viewed, between mapping different data “layers” including location of water supply wells, wastewater treatment plants and outfalls, monitoring wells etc. Maps can be quickly generated to satisfy the needs of a particular line of inquiry.

There are now over 1,300,000 analyte records in EGAD. In the period 2002-2003, an Electronic Data Deliverable (EDD) format was developed for formatting all analyte data coming from laboratories to the DEP. The common format of the EDD permits quality control of large amounts of analyte data and associated metadata.

Some special focal points of the Site research efforts have included the following:

- In 2002-2005, another special project to locate and enter into EGAD Small, Medium, and Large Quantity Hazardous Waste Generators. 1864 sites were added in this time period, bringing the total to 2223. All Active Sites have been added, but there are 2500 additional inactive Small Quantity Generators Sites that are not on EGAD and that could have a legacy of contamination.
- In September 2005, a special project was started to locate all junkyards in Maine. Approximately 450 junkyards need to be located. As of January 2006 there were 304 on EGAD.

GROUND WATER QUALITY TRENDS

Maine's complex hydrogeologic setting makes representative ground water quality sampling difficult. The hilly topography, complex geology, and generally shallow water table have created numerous localized ground water flow basins, "ground watersheds", which are similar to and often coincide with surface watersheds. As a result, water quality data obtained from monitoring wells indicate only the water quality at a specific location and depth in an aquifer. These data reflect the ground water quality in the immediate vicinity of the monitoring well, but they are not indicators of ground water quality elsewhere, either inside or outside a particular "ground watershed". Current information about State ground water contamination problems may not describe the actual situation as much as it reflects the reason for the investigation and the manner in which it is conducted, i.e., the contaminants tested for, where the monitoring occurred, and how it was performed.

New occurrences of ground water contamination are documented in Maine each year. Although discovery of existing contamination is expected to continue, future reports of contamination are expected to decline substantially as the State's ground water protection initiatives continue to be implemented. These programs stress contamination prevention rather than remediation. Key aspects of these programs include:

1. Stricter underground storage tank installation and monitoring standards, removal of old and substandard tanks, and registration of all active and abandoned tanks should continue to reduce discharges from underground storage tanks.

2. In light of the increasing number of AST-related ground water threats, better tank standards and a statewide spill protection program have been developed to protect ground water; also, continuing outreach is needed to make the public aware of the threats from weather and overhead dangers to home heating oil ASTs.

3. Continued development and implementation of strategies to protect ground water from agricultural chemicals will diminish the impact of pesticides and fertilizers on ground water quality.

4. Implementation of manure application guidelines reflecting agronomic nutrient utilization rates will decrease the adverse impact of poultry and dairy farms on ground water quality.

5. Storing sand-salt mixtures for road maintenance in watertight storage buildings will prevent highly concentrated salty leachate from contaminating ground water. However, this solution is still years away from full implementation. Elevated concentrations of sodium and chloride will increase in the ground water adjacent to roadsides due to a shift away from sand-salt mixtures until an economical and environmentally suitable substitute for sodium chloride can be found.

6. The emphasis of the UIC Program on inventory and elimination or control of shallow injection wells will undoubtedly aid ground water protection efforts. Although the extent of contamination from shallow well injection in Maine is unknown, studies in other states indicate serious ground water quality impacts resulting from routine and accidental discharges of toxic and hazardous substances.

7. The Maine Nonpoint Source Pollution Program will have the greatest impact in reducing ground water contamination. The program develops best management practices (BMPs) for activities contributing to nonpoint source pollution. The

deleterious ground water quality impacts from many of the activities are well documented, and studies are underway to fill the existing data gaps. Development of BMPs for those activities can proceed concurrently with ground water monitoring. Developing public awareness of BMPs is one of the most important aspects of the Nonpoint Source Pollution Program.

8. Recent changes to Site Location of Development Act strengthen erosion and sedimentation control and stormwater management, and place emphasis on defining and protecting sensitive watersheds. These changes may help protect drinking water quality in developed areas of the State.

9. The Environmental Groundwater Analysis Database (EGAD), is an ongoing program to geographically locate and provide a database of potential threats to ground water quality. EGAD is being used to satisfy requests for water quality data, review applications submitted under the state's environmental laws for safety and practicability, and to evaluate cumulative impacts to ground water. It is also useful for source water protection in both the public and private sectors. EGAD is also useful in planning future development and in protecting vital natural resources. By continuing to support expansion of this database, the large amounts of data generated in remediating and investigating ground water contamination incidents will be made more widely accessible and useful.

Major impediments to effective ground water protection in Maine include; the absence of a complete ground water quality database to assess the extent of degradation, the lack of data to quantify the impact of some nonpoint pollution sources, and general public unfamiliarity with key ground water concepts and issues. Public misconception about ground water is probably the major factor contributing to degradation of this resource.

Overview of State Ground Water Protection Programs

Proposed Statutory Changes

NPDES Phase II Stormwater Requirements and the Underground Injection Control Program

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Related Website: Note – after clicking on the URL, scroll down to Appendix D

www.maine.gov/sos/cec/rules/06/096/096c500.doc

NPDES Phase II stormwater requirements and the Underground Injection Control Program (UIC) have been linked with Maine's Stormwater Management Program through new rules defining *de minimus* discharges to groundwater. Provided that the standards in Appendix D of the revised Stormwater Management rules are met, a discharge to groundwater from a stormwater infiltration system is considered a *de minimus* discharge for the purposes of the Waste Discharge Licensing Program, and does not require a waste discharge license. These rules do not, however, limit the department's ability to protect groundwater quality through its existing licensing or enforcement authority (See 38 M.R.S.A. Articles 4-A (Water Classification Program) and 6 (Site Location of Development).

Stormwater infiltration systems not meeting the standards described in Appendix D may require a waste discharge permit. An infiltration system serving a development regulated under the Site Location of Development Act may be required to meet additional standards. For definitions and provisions associated with the Waste Discharge program, see 38 M.R.S.A. §§ 413 *et seq.*, and department Rules chapters 520 *et seq*. All drywells and subsurface fluid distribution systems must be registered with and meet all other requirements of the department's UIC Program.

GROUND WATER - SURFACE WATER INTERACTION

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Related Website: www.maine.gov/doc/nrimc/mgs/explore/water/regs/withdraw.htm

As noted elsewhere in this report, stormwater infiltration is sometimes considered as part of an effort to mitigate the effects of construction of large developments on recharge volumes. However, assuming that the major impact on recharge is due mainly to a relatively small number of large developments in a watershed may ignore more significant changes in recharge throughout the watershed that are the result of shifts in land-use. These may include alteration of wetlands, change in land cover type, compaction of soils, and topographic changes. To date, the DEP has not performed a systematic assessment of patterns of recharge in large watersheds to determine the relative significance of various land-use patterns. The need for such an assessment, in at least some areas of the state, is anticipated in the relatively near future. DEP staff are currently studying methods of estimating recharge and evaluating sustainable yield that are used in other areas, as part of possible future development and implementation of a similar method for Maine.

Recent legislation required the formation of a workgroup to assess existing regulation of large-scale groundwater withdrawals and their impacts on surface waters, wetlands, and other resources. This group will also consider whether any changes to existing law are necessary to improve regulation and management of groundwater withdrawal at the state level.

Chapter 7 PUBLIC HEALTH – RELATED ASSESSMENTS

BEACH PROGRAM MONITORING & ASSESSMENTS

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MAINE COASTAL BEACH MONITORING PROGRAM

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Esperanza Stancioff, University of Maine Cooperative Extension and Sea Grant (Program Coordinator)

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Related Websites: (Maine Specific) www.mainehealthybeaches.org/

(Federal) www.epa.gov/ost/beaches

There is growing public interest in monitoring ocean beaches in order to provide protection of swimmer health. The Maine Department of Environmental Protection (DEP) has focused on ensuring that areas influenced by licensed discharges are not a threat to swimmer health. All participants in the Maine Healthy Beaches Program (MHBP), including some State Parks, monitor beaches on a weekly basis from Memorial Day through Labor Day. Private beach owners are responsible for their own monitoring programs and often do not conduct any monitoring at all. In Maine, the monitoring of town beaches and providing public notification is the jurisdiction of the municipality.

Maine Healthy Beaches Program

Related Website www.mainehealthybeaches.org/

What is the Maine Healthy Beaches Program?

The U.S. Environmental Protection Agency (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. The Maine Healthy Beaches Program (MHBP) is a voluntary program and includes two main components: a public education program and a water quality assessment program. The assessment program includes measurement of critical factors that affect the health of the beach environment as well as the health of people who visit them (for participating beaches only). Table 7-1 shows participating Maine beaches.

Table 7-1 Beaches Participating in the MHBP

Beach Name	
Bay View (Saco)	Kinney Shores (Saco)
Biddeford Pool (Ocean-side)	Lagoon Beach (Georgetown)
Camden Yacht Club	Laite Beach (Camden)
Cape Neddick Beach	Libby Cove Beach (Kennebunk)
Colony Beach (Kennebunkport)	Lincolnville Beach Area
Crescent Beach (Cape Elizabeth)	Long Sands Beach (York)
Crescent Beach (Kittery)	Middle Beach (Biddeford)
Drakes Island Beach (Wells)	Middle Beach (Kennebunk)
East Beach (Georgetown)	Mile Beach (Georgetown)
East End Beach (Portland)	Ogunquit Beach
Emery Cove Beach (Bar Harbor)	Old Orchard Beach
Ferry Beach (Saco)	Parson's Beach (Kennebunk)
Ferry Beach (Scarborough)	Pemaquid Beach (Bristol)
Fort Foster (Kittery)	Pine Point (Scarborough)
Fortunes Rocks Beach (Biddeford)	Popham Beach (Phippsburg)
Gooches Beach (Kennebunk)	Riverside (Ogunquit)
Goose Rock (Kennebunkport)	Sea Point Beach (Kittery)
Half Mile Beach (Georgetown)	Seal Harbor (Mount Desert)
Higgins Beach (Scarborough)	Short Sands Beach (York)
Hills Beach (Biddeford)	Wells Beach
Kennebunk Beach	Willard Beach (South Portland)

Swimming Beach Closures

Contact: Esperanza Stancioff, University of Maine Cooperative Extension and Sea Grant (Program Coordinator)

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Related Website: www.mainehealthybeaches.org/

Under Clean Water Act (CWA) guidelines, the designated use of swimming beaches is for "Recreation in and on the Water." The beaches listed in Table 7-2 had advisories or closures for the number of days noted. Beaches can be *closed* or *posted* to warn of health risks; both methods use some form of risk analysis.

Beach advisories are posted according to:

- Results obtained from bacteria water quality samples exceeding State and Federal standards.
- Conditions at sample site indicating the possible presence of disease-causing organisms.

These advisories are recommendations to the public to avoid water contact activities at the beach until further analyses reveal safe conditions.

A beach closure closes the beach to water contact. Closures are based on a number of factors (Risk-Based Assessment Matrix): bacterial count, bather numbers, time of last rainfall, and history of known problems. This is a coordinated decision between the Beach Manager, Program Coordinator, and State Epidemiologist.

A copy of the Risk Assessment Matrix may be viewed and downloaded by visiting this URL: www.mainehealthybeaches.org/assets/pdfs/matrix.pdf

Table 7-2 2005 Beach Closure or Advisory Information

Beach Name and Event	Total Days in 2005
Camden Yacht Club - Advisory	10
Colony Beach (Kennebunkport) - Advisory	2
East End Beach (Portland) - Advisory	1
Gooches Beach (Kennebunk) - Advisory	14
Goose Rock (Kennebunkport) - Advisory	29
Kennebunk Beach - Advisory	3
Libby Cove Beach (Kennebunk) - Advisory	2
Lincolnville Beach Area - Advisory	12
Middle Beach (Kennebunk) - Advisory	2
Old Orchard Beach - Advisory	6
Parson's Beach (Kennebunk) - Advisory	1
Seal Harbor (Mount Desert) - Advisory	2
Seal Harbor (Mount Desert) - Closed	3
Wells Beach - Closed	3
Willard Beach (South Portland) - Advisory	1
Sandy Beach (Rockland) – Permanent Closure	Closed Entire Season

SHELLFISH PROGRAM MONITORING & ASSESSMENTS

SHELLFISH HARVEST AREA CLOSURES

Contact: Amy Fitzpatrick, Director, DMR BRM, Public Health Division, Shellfish Sanitation Program

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Related Website: www.maine.gov/dmr/rm/public_health/publichealth.html

The Department of Marine Resources (DMR) assesses information on shellfish growing areas to ensure that shellfish harvested are safe for consumption. A goal of the Clean Water Act (CWA) is to have these areas meet their designated use of "Propagation and Harvest of Shellfish." Shellfish areas are closed by DMR if the area is found to have elevated levels of bacteria or if the area is determined as threatened by potential sewage pollution problems. Water samples are collected and tested for fecal coliform bacteria at least six (6) times annually from each of the more than 2,000 established sampling sites that are located along the entire Maine coast. The shoreline survey includes a visual inspection of the shoreline to determine the location and magnitude of potential sewage pollution and toxic contamination problems.

Table 7-3 presents both the percentage and the total area in acres under each classification. Current calculations estimate that Maine has a total of 1,821,434 acres of tidal flats and coastal waters in this classification system. This number has varied some over the past few 305b reporting cycles because of changes in the underlying data sets that Geographic Information Systems (GIS) use to calculate areas and because of the way DMR designates its shellfish harvesting areas. These changes have made it difficult to accurately determine how much progress has been made in the opening up of additional shellfish harvesting areas since 1998. It appears, however, that approximately 20,000 fewer acres are closed than 2 years ago.

Table 7-3 Classification of Shellfish Harvesting Areas

Classification	Percentage	Acres	Square Miles
Supporting (approved)	90.8 %	1,654,408	2,585
Partially Supporting (conditional or restricted)	1.4 %	24,648	38.5
Not supporting (prohibited)	7.8 %	142,378	222.5
Total	**100.00 %**	**1,821,434**	**2,846**

RED TIDE

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Related Website: www.maine.gov/dmr/rm/public_health/redtide.htm

"Red Tide" is used to refer to rapid increases in numbers of microscopic marine algae that contain potentially lethal toxins. The toxin is transferred to humans by the ingestion of shellfish that have filtered the organisms into their systems. The toxin affects humans by paralyzing the central nervous system and, in high doses, may cause death.

How is Red Tide monitored?

DMR's Biotoxin Monitoring Program monitors levels of PSP (Paralytic Shellfish Poisoning or "Red Tide") and other marine biotoxins in the shellfish and waters of Maine. Shellfish samples are collected statewide between April and October and evaluated at the Biotoxin laboratories in West Boothbay Harbor and Lamoine. When toxin is found approaching quarantine levels, closures of shellfish harvest areas are implemented. Maine has historically had high levels of PSP during the warmer periods of the year. While red tide is a water quality issue, it is not caused (at least directly) by pollutants from humans. Closures, therefore, are not reported as violations of water quality standards.

For information on closures, call DMR's hot line 1-800-232-4733 or 207-633-9571or visit the web at

www.maine.gov/dmr/rm/public_health/closures/shellfishhotline.htm

The DMR also has an Internet Mapping Site that contains information on Red Tide - the link to that site is here: http://megisims.state.me.us/dmr_redtide/

OCEAN FISH AND SHELLFISH CONSUMPTION ADVISORIES

Contact Andrew Smith, DHHS Maine CDC, Environmental and Occupational Health Program

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Related Website: www.maine.gov/dhhs/eohp/fish/

Waters do not attain their "Clean Water Act-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 due to high levels of toxic contaminants. However, no evidence of elevated levels of these contaminants was found in lobster meat. The advisory was expanded to include bluefish and striped bass in 1996, also due to detection of elevated levels of toxic contaminants in their flesh. The entire Maine coast is only in partial support of its designated use for fishing due to these consumption advisories. Toxic contamination found in lobster tomally is presumed to originate in Maine waters, which leads to their listing in Category 5-D for non-attainmnet due to legacy pollutants. Toxic contaminaints found in migratory or pelusic finfish are presumed to have been acquired largely outside of Maine waters where the fish spend most of their lives. Thus advisories for marine finfish are not listed as causes of non-attainment.

ADVISORY OVERVIEW

Current information, with a last revision date of February 20, 2001, on ocean fish and shellfish advisories as adapted from the Maine CDC is as follows:

WARNING About Eating Saltwater Fish and Lobster Tomalley

Warning: Chemicals in some Maine saltwater fish and lobster tomalley may harm people who eat them. Women who are or may become pregnant and children should carefully follow the Safe Eating Guidelines.

It's hard to believe fish that looks, smells, and tastes fine may not be safe to eat. But the truth is that some saltwater fish have mercury, PCBs and Dioxins in them.

All these chemicals settle into the ocean from the air. PCBs and Dioxins also flow into the ocean through our rivers. These chemicals then build up in fish.

Small amounts of mercury can damage a brain starting to form or grow. That's why babies in the womb, nursing babies, and young children are at most risk. Mercury can also harm older children and adults, but it takes larger amounts.

PCBs and Dioxins can cause cancer and other health problems if too much builds up in your body. Since some saltwater fish contain several chemicals, we ask that all consumers of the following saltwater species follow the safe eating guidelines.

SPECIFIC OCEAN FISH CONSUMPTION ADVISORIES

Safe Eating Guidelines

Striped Bass and Bluefish: Recommended to eat no more than 2 meals per month.

Shark, Swordfish, King Mackerel, and Tilefish: Pregnant and nursing women, women who may get pregnant and children under 8 years of age are advised to not eat any swordfish or shark. All other individuals should eat no more than 2 meals per month.

Canned Tuna: Pregnant and nursing women, women who may get pregnant and children under 8 years of age should eat no more than 1 can of "white" tuna or 2 cans of "light" tuna per week.

All other ocean fish and shellfish, including canned fish and shellfish: Pregnant and nursing women, women who may get pregnant and children under 8 years of age should eat no more than 2 meals per week.

LOBSTER MEAT AND TOMALLEY CONSUMPTION ADVISORIES

Lobster Meat: Consumption advisories do not exist for lobster meat.

Lobster Tomalley: Recommended to completely avoid consumption of lobster tomalley. While there is 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.

For more information, including warnings on freshwater fish call (866) 292-3474 or visit the related web site at: www.maine.gov/dhhs/eohp

FRESHWATER FISH CONSUMPTION MONITORING, ASSESSMENTS AND ADVISORIES

Contact: Barry Mower, DEP BLWQ, Division of Environmental Assessment (DEA)

Tel: (207) 287-3901 email: Barry.F.Mower@SPAM-ZAPmaine.gov

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

In addition to marine fish and shellfish, DEP monitors freshwater fish in its Dioxin Monitoring Program and Surface Waters Ambient Toxics (SWAT) monitoring program for contaminants that may present a risk for human consumption. The results are forwarded to the MCDC who is responsible for recommending the warnings on eating fish based on the presence of chemicals (MSRA 22 ß 1696 I) . MCDC does so in the form of Fish Consumption Advisories, which can be seen with additional information at http://www.maine.gov/dhhs/eohp/fish/ . There is a statewide Fish Consumption Advisory for all freshwaters because of mercury and additional advisories for specific waters because of other contaminants.

MERCURY STATEWIDE FISH CONSUMPTION ADVISORY

Based on monitoring of mercury concentrations in freshwater fish from all over Maine, the Maine Bureau of Health (now MCDC) issued a statewide advisory for all Maine lakes and ponds in 1994 and expanded it to include all freshwaters in 1997 as follows:

Pregnant and nursing women, women who may get pregnant, and children under age 8 SHOULD 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.

DIOXIN

Dioxin levels in fish from Maine rivers continue to decline, approaching background at some locations but still exceeding background at others.

An evaluation of the health implications of dioxin/furan concentrations in fish in Maine Rivers requires a comparison to a health benchmark. The Bureau of Health uses a health benchmark that is expressed as a specific fish tissue concentration of dioxins and furans, referred to as a "Fish Tissue Action Level" or FTAL. For the present report, the Bureau compares the most recent data on contaminant levels in fish tissue to its current FTALs for dioxins and furans of 1.5 parts per trillion (ppt) for protection of cancer-related effects and 1.8 parts per ppt for protection of non cancer-related effects. The Bureau additionally compares sampling data to a lower FTAL of 0.4 ppt, which is under consideration as a potential revision to current FTALs to account for background dietary exposure to dioxins and furans.

In 2005, sampling locations on the Penobscot and Kennebec Rivers had average dioxin and furan levels in smallmouth bass and brown trout that were well below the current FTAL of 1.5 ppt, and below a potential lower FTAL of 0.4 ppt. Levels in white suckers were below the current FTAL of 1.5 ppt, but exceeded the potential lower FTAL of 0.4 ppt in some locations.

In the latest study (2004 or 2005, depending on station), with the exception of the Rumford Point station on the Androscoggin River, all other down river sampling locations had average dioxin and furan concentrations in bass tissue that were below the current FTAL of 1.5 ppt. However, all stations had average levels of dioxins and furans that were above the potential lower FTAL of 0.4 ppt. Levels in suckers were above the current FTAL for most sampling locations.

The most recent sampling data (2002) for bass and suckers on the Presumpscot and Salmon Falls Rivers indicate dioxin and furan levels below both current FTALs and the potential lower FTAL of 0.4 ppt. The most recent data for the West Branch of the Sebasticook River indicates dioxin and furans levels above the potential lower FTAL of 0.4 ppt.

The Dead River connects the Androscoggin Lake to the Androscoggin River. Androscoggin River water enters into Androscoggin Lake whenever floodwaters overtop a floodgate on the Dead River. Average dioxin and furan levels have yet to be above the current FTAL of 1.5 ppt. However, with the exception of the 2000 sampling season, all other sampling seasons have yielded average levels in fish tissue approaching or exceeding the potential lower-bound FTAL of 0.4 ppt.

These most recent data on dioxin and furan concentrations in bass and trout from the Kennebec and Penobscot Rivers indicate that the concentrations of dioxins and furansis are approaching levels that may not contribute to the need for additional consumption advisories beyond the statewide mercury advisory. Additional advisories may continue to be needed for suckers.

The prognosis for consumption advisories on the Androscoggin River due to dioxins and furans is less clear. Levels generally remain elevated for suckers, and for bass at some locations.

RIVER AND STREAM SPECIFIC FISH CONSUMPTION ADVISEORIES

The dominant causes for the following fish consumption advisories are identified as dioxin/furans/coplanar PCBs, total PCBs, and total DDTs (DDD + DDE + DDT).

Department of Health and Human Services Guidelines about Eating Freshwater Fish

***Warning:* Mercury in Maine freshwater fish may harm the babies of pregnant and nursing mothers, and young children.**

SAFE EATING GUIDELINES

Pregnant and nursing women, women who may get pregnant, and children under age 8 SHOULD 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.
It's hard to believe that fish that looks, smells, and tastes fine may not be safe to eat. But the truth is that fish in Maine lakes, ponds, and rivers have mercury in them. Other states have this problem too. Mercury in the air settles into the waters. It then builds up in fish. For this reason, older fish have higher levels of mercury than younger fish. Fish (like pickerel and bass) that eat other fish have the highest mercury levels.

Small amounts of mercury can harm a brain starting to form or grow. That is why unborn and nursing babies and young children are most at risk. Too much mercury can affect behavior and learning. Mercury can harm older children and adults, but it takes larger amounts. It may cause numbness in hands and feet or changes in vision. The Safe Eating Guidelines identify limits to protect everyone.

Warning: Some Maine waters are polluted, requiring additional limits to eating fish.

Fish caught in some Maine waters have high levels of PCBs, Dioxins or DDT in them. These chemicals can cause cancer and other health effects. The Bureau of Health recommends additional fish consumption limits on the waters listed below. Remember to check the mercury guidelines. If the water you are fishing is listed below, check the mercury guideline above and follow the most limiting guidelines.

Androscoggin River Gilead to Merrymeeting Bay:--------------------------- 6-12 fish meals a year.
Dennys River Meddybemps Lake to Dead Stream:------------------------ 1-2 fish meals a month.
Green Pond, Chapman Pit, & Greenlaw Brook
(Limestone):---**Do not eat any fish from these waters**.
Little Madawaska River & tributaries
(Madawaska 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:--------- 5 trout meals a year, 1-2 bass meals a month.
Madison to Fairfield: --- 1-2 fish meals a month.
Meduxnekeag River: --- 2 fish meals a month.
North Branch Presque Isle River--- 2 fish meals a month.
Penobscot River below Lincoln:-- 1-2 fish meals a month
Prestile Stream:--- 1 fish meal a month.
Red Brook in Scarborough: -- 6 fish meals a year.
Salmon Falls River below Berwick: -- 6-12 fish meals a year.
Sebasticook River (East Branch, West Branch & Main Stem)
(Corinna/Hartland to Winslow):---2 fish meals a month.

DRINKING WATER PROGRAM MONITORING & ASSESSMENTS

PUBLIC WATER SUPPLIES

Wellhead Protection Program

Contact: David Braley, DHHS Maine CDC, Division of Environmental Health, Drinking Water Program

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Related Website:

www.maine.gov/dhhs/eng/water/Templates/Sections/Source%20Water%20Protection/sourcewaterprotection.htm or www.state.me.us/dhhs/eng/water/

The State of Maine Drinking Water Program (DWP), located in the Department of Health and Human Services, 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 (WHPP) and have completed a waiver application.

The DWP has completed an assessment (Source Water Assessment Program or SWAP report) of the vulnerability of each public drinking water source in the state. SWAP reports for all of the non-transient non-community, transient non-community and community systems have been provided to every public water supplier, municipality and other interested parties in Maine. Using the results of these reports, the DWP will work with community and non-transient non-community systems to draft comprehensive source management plans, and for larger systems the DWP will help draft contingency plans. This three to four year project should complete Maine's initial wellhead protection efforts as required in the 1986 amendments to the federal Safe Drinking Water Act. The 2008 Integrated Report should include new wellhead protection data and information.

Source Water Assessment Program

Contact: Andrews L. Tolman, DHHS Maine CDC, Division of Environmental Health, Drinking Water Program

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Related Websites:

www.maine.gov/dhhs/eng/water/Templates/Sections/Source%20Water%20Protection/sourcewaterprotection.htm or

www.maine.gov/dhhs/eng/water/forms/Sections/Resolve029finalrpt.htm

Resolve 029: Report to the Maine Legislature

Water supply protection is the first line of defense in protecting public health. Protecting a water supply source 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 Maine Drinking Water Program's (DWP) recently completed five year assessment 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, and few water suppliers are prepared to deal with these risks. Public Water Systems (PWS) have a very limited suite of tools for source protection: they can purchase land, inspect existing activities, and ask local government to enact (and enforce) protective ordinances. Only one in five of Maine's community water systems have effective source protection plans in place after more than fifteen years of encouragement and incentives.

The effectiveness of water supply protection depends on numerous state and local government decisions and activities. Most of the programs that influence source protection exist for another purpose, and usually do not consider water supply protection in their decision making. PWS operators have few resources to intervene in local and state decision making, so their concerns are often not heard. To protect Public Health, state and local authorities should include water supply protection as a required part of their decision making criteria, and state agencies should adopt a consistent policy favoring source protection. Based on our review of existing statutes and practices, and in light of the current threat of development in source protection areas, we offer the following recommendations:

Recommendation 1: Establish consistent policies among all State agencies to enhance source protection in all state decision making, development, and practices.

Recommendation 2: Create an effective program to maintain agricultural and forestry land uses in source protection areas.

2.1 Existing programs to maintain environmentally responsible agricultural and forestry uses should be provided with resources and given a focus to work in source protection areas to encourage land conservation.

2.2 Provide resources and direction to Agricultural and Forestry programs including nutrient management, sustainable forestry, and right to farm to work with landowners in source protection areas to minimize the impact of their activities.

Recommendation 3: Mitigate the effects of existing and new development on drinking water quality through the use of education, incentives and enforcement.

3.1: Encourage active management (BMP's) of existing potentially threatening uses in source protection areas through municipal, PWS and state inspection of activities.

3.2 Develop a plan to target enforcement of existing environmental laws in source protection areas.

3.3 Add proximity to public water supplies as a review criterion for Environmental review programs, particularly NRPA and Site Location.

3.4 Set minimum standards for local source protection ordinances.

3.5 Amend PL 761 to require that a PWS's written response to notification of proposed changes in land use activities in source protection areas be required prior to approval of a local permit.

Our review shows that the second phase of Resolve 029, a public discussion of source protection options, refinement of these recommendations, and a report to the 123rd Legislature, is appropriate and necessary. The protection of water supply sources is a crucial part of Maine's economy, public health, and environment. We have the opportunity to build this understanding into existing state and local programs and make them more effective. As more land is developed in source protection areas, it becomes increasingly difficult and expensive to provide safe and adequate supplies of drinking water. Maine has been blessed with abundant, clean water. Unless we consider our actions carefully, we will lose that advantage.

Finished Waters

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Related Website:

www.maine.gov/dhhs/eng/water/Templates/Sections/Compliance/Compliance.htm

The Drinking Water Program (DWP) is the front line enforcement agent of the U.S. Environmental Protection Agency (EPA) for the rules and regulations set forth in the Safe Drinking Water Act (SDWA). The requirements of SDWA apply to the approximately 2,000 public drinking water systems in Maine. There are 80 water systems that use surface water as their primary source and these all have water treatment systems and watershed protection programs. Of the approximately 1,920 ground water systems, 661 have some form of treatment on-line while the remaining systems have no treatment and serve raw water. Water testing on finished water is the primary means for assessing public water system compliance while verifying the quality of water that is reaching consumers. The presence of contaminants is an indication that there are problems within the water system such as water treatment failure, structural failure, source water contamination or other breakdowns. Along with being in violation with SDWA for having contaminated water, there could be infractions for improper operation and maintenance of the system by the operators. Water testing requirements are specified in SDWA and are based on the public water system classification, the size of the population served, and the type of water source.

Tests for other parameters are required for special situations. Examples of these are tests for disinfectant by-products required for systems that chlorinate, fluoride tests in the distribution system for systems that add fluoride, and tests for uranium and radium 226 when the test for gross alpha exceed the trigger level. The frequency of water testing is also outlined in SDWA. In addition, the DWP has policies for more frequent sampling following contamination episodes, as part of the new well approval process, and for non-compliant facilities. The frequency of sampling for most tests is reduced after an initial period of intense testing demonstrates that the contaminants have not been present. Tests for pesticides, herbicides, and PCBs can be waived after an initial test is clean and if the facility operator certifies that these chemicals are not in use in the watershed of their surface water system or within ½ mile of their well(s). Waivers apply to 3-year compliance periods and require the system operator reapply with updated information triennially.

PRIVATE WELLS

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Related Website: www.maine.gov/dhhs/eohp/wells/

Executive Summary: A Report to the Maine Legislature

The State of 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's 2003 Behavioral Risk Factors Surveillance Survey (BRFSS), 52 percent of the state's population relies on private domestic wells for their drinking water. Despite the fact that the majority of Maine residents obtain their drinking water from private household wells, the State does not have an environmental health services program focused on meeting the needs of private well owners.

Maine has a variety of significant environmental health issues associated with private well water. For example, analyses of private well water data from either random sampling studies or self-testing data obtained through the State Public Health & Environmental Testing Laboratory indicate the following:

a) 11 percent of wells have arsenic levels above the Maximum Contaminated Level (MCL) of 10 ppb;

b) 32 percent of wells have radon levels above the proposed MCL of 4000 pCi/L and 10 percent of wells have radon levels above the State guideline of 20,000 pCi/L, and

c) 4 percent of private wells have uranium 238 levels above the MCL of 30 ppb.

What even these statistics fail to convey is that some domestic wells can have very high concentrations of these naturally occurring toxicants. Arsenic levels as high as 5000 ppb have been detected in Maine, with levels above 100 ppb not uncommon. Similarly, uranium-238 levels as high as 6000 ppb have been reported and levels above 100 ppb are not uncommon. With radon, preliminary analyses of self-testing data indicate that 1 out of every 50 homes that test for radon has water levels above 100,000 pCi/L. The public health burden of these naturally occurring contaminants in well water are largely unknown. Arsenic is a known human carcinogen (skin, bladder, lung). Radon is a known human lung carcinogen. Uranium 238 is both a carcinogen and is toxic to the kidney.

Currently, there are a number of state agencies that provide varying services to private well owners:

- The Bureau of Health's Environmental Health Unit has been involved in conducting random surveys of contaminants in private well water (e.g., arsenic and uranium 238), responding to specific clusters of wells high in contaminants (e.g., arsenic, and cadmium), undertaking exposure-related studies (e.g., childhood exposure to arsenic from bathing in high arsenic water), development of educational materials (e.g., brochures on arsenic in well water, uranium 238 in well water, and a general well water testing brochure is currently under development), and providing consults to the public on well water contaminant issues through a toll-free line.
- The Bureau of Health's Drinking Water Program has been involved in responding to calls from the public with questions about treatment technologies for mitigating various well water contaminant issues (e.g., bacteria, nitrate, lead, arsenic, uranium 238, radium). The

Radon Control Section of the Bureau of Health's Radiation Program has rules that require the reporting of radon indoor air and water levels to the State. They additional provide targeted health and treatment information to households with radon water levels > 100,000 pCi/L, and similar information to other households on request.

- The Bureau of Health's Public Health & Environmental Testing Laboratory performs thousands of private well water tests per year. Its staff often responds to calls from recipients of test results with questions about the next steps when water is reported to be unsatisfactory.
- The Department of Conservation's Maine Geological Survey (MGS) operates the Ambient Bedrock Water Quality Program, which is designed as a long-term, comprehensive groundwater quality-monitoring program for the State of Maine. Over the past 3 years, the MGS has sampled and analyzed groundwater from approximately 170 bedrock wells in four drainage basins throughout the State, selected for their geological variety and geographic distribution.
- The Department of Environmental Protection has provided services as a regulatory agency responding to wells contaminated by petroleum related spills, hazardous waste sites, or landfills. The DEP has additionally been a source for some public education materials developed jointly with the University of Maine Cooperative Extension Service (e.g. Safe Homes Project).

It has been the work of these agencies collectively over the past 10 – 15 years that have brought us to the current state of knowledge about ground water issues in Maine, and the current degree of awareness of these issues amongst the public.

Nevertheless, the need for an enhanced, integrated, and coordinated environmental health services program for private wells remains strong. As one indicator of such a need, survey data from a random sample of Maine households with wells found that 1-in-4 (25%) of respondents reported never testing their well water at their current residence. Of those respondents that had tested their well water, half (53 %) reported that they had not tested their water for arsenic. There is no reason to expect higher testing results for other water contaminants such as radon and uranium 238. Another indicator of the need for coordinated services has been calls to the Bureau of Health's Environmental Health Unit's (BOH/EHU) toll-free line by well-owners who have just received their water test results. EHU responds to over 1500 calls per year. Over the years, we have noted that callers often have difficulty interpreting their water test results. For example, the practice of testing laboratories to report arsenic levels in parts-per-million rather than parts per billion causes unnecessary confusion because the public's difficult comprehending decimal figures. Of greater concern is the degree of confusion we confront because conflicting information callers receive from the various state agencies, testing laboratories, water treatment companies, and real estate agents that can become involved in responding to well water test results. We have additionally encountered confusion over when it is appropriate to seek clinical care (e.g., urine or blood test for arsenic or uranium). Callers can be unnecessarily alarmed about the magnitude of the health hazard or the important routes of exposure. A common occurrence is that callers are often interested in treatment systems for the entire home rather when a less-expensive point-of-use treatment system would provide appropriate reduction in exposure.

We believe that Maine is in need of an enhanced comprehensive environmental health services program to address the needs of private well owners in Maine. Such a program would be built on the framework of the Ten Essential Public Health Services and Ten Essential Environmental Services. To this end, the following activities should be undertaken but need funding:

- Increase testing of private well water for major arsenic, uranium 238, radon, bacteria, nitrates and lead through the distribution of a new “plain language” brochure developed using focus group techniques;
- Develop new test result reporting forms for use by the State Health & Environmental Testing Laboratory using “plain language” health literacy techniques and focus group testing;
- Develop educational materials for each contaminant using “easy-to-read” health literacy techniques and focus group testing, and develop a new state website dedicated to providing information for private well water owners;
- Develop an automated electronic alert system for notifying toxicologist of high water test results so that the toxicologist makes the first call to the household;
- Formalize the arsenic cluster response system by stakeholder involvement in a planning process, involving laboratories, state agency, and local government officials;
- Achieve improved integration and coordination of delivery of services to private well owners through the organization of a planning consortium consisting representatives from state government, federal government, local government, university, water treatment companies, well drillers, health care providers, and private well owners;
- Further develop and support partnerships with academic institutions to assist and support relevant well water related research;

Develop and implement and evaluation plan consisting of logic models with associated indicators for programmatic work, and state BRFSS testing modules to assess increase awareness and testing of well water.

GROUND WATER AND PUBLIC HEALTH CONCERNS

PUBIC HEALTH AND ENVIRONMENTAL CONCERNS

Contaminants found in ground water have numerous adverse human health and environmental impacts. Public health concerns arise because some of the contaminants are individually linked to numerous 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 the health impacts of many contaminants found in ground water.

Because of uncertainties in the relationships 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 a risk assessment for combinations of contaminants that are commonly found in ground water is difficult because there are no generally accepted protocols for testing the effects of contaminant interactions. 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 ground water sources (bathing, food preparation, industrial processes, etc.)

Because ground water 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 and recreation. In some areas of the State there are probably links between low-level, long-term ground water quality degradation and the water quality of streams and brooks during low-flow conditions.

MTBE

Contacts: DEP BRWM 207-287-2651; DHHS Maine CDC 207-287-3201; DOC Maine Geological Survey 207-287-2801; or the U.S. Geological Survey, 207-622-8201

Related Websites: (General Information) www.maine.gov/dep/mtbe.htm

(Questions and Answers) www.maine.gov/dep/rwm/publications/mtbeqa.htm

MTBE or methyl tert-butyl ether is an additive used in gasoline since the late 1970's to replace lead. It makes up about 3% of regular unleaded gasoline and 11% of reformulated gas (RFG). To meet federal clean air requirements, Maine began using RFG in November of 1994. There has been evidence of MTBE in ground water since before 1985. However, no widespread contamination was noted until 1998, when a series of gasoline contamination incidents and concurrent public concern caused the State of Maine to conduct a study of private and public water supply wells. Of the 951 private wells and 793 public water supply wells tested:

- 93% showed either no MTBE or trace levels (below 1ppb).
- 16% showed detectable levels of MTBE, while other gasoline constituents were rarely found.
- While no public water supplies in the study showed MTBE levels above the MCL; 1% of the private wells sampled did show levels above the MCL of 35 ppb.

The DEP's 1998 investigations of the wells with MTBE levels over the MCL indicated an association with relatively small gasoline spills that one might categorize as a "backyard" type of spill – e.g. small, accidental spills that occur while filling the gas tanks of an ATV, snowmobile, garden tractor, etc.

Legislation was approved on Apr. 14, 2004 to prohibit the sale of Gasoline containing MTBE. The prohibition reads "Beginning January 1, 2007 a person may not sell, offer for sale, distribute or blend in this State gasoline that contains more than 1/2 of 1% by volume MTBE that is intended for sale to ultimate consumers in this State." We are still cleaning up sites, but the amount of MTBE we are finding in groundwater is not as much as we had when using RFG.

RADON

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Related Website: www.maine.gov/dhhs/eng/rad/hp_radon.htm

Not all public health concerns that involve ground water are caused by pollution released from human activities. The presence of naturally occurring radioactive radon gas in ground water drawn from granite bedrock aquifers and overlying soils has long been recognized as a problem in Maine. Based on studies of miners and more recently on people living in homes with high radon concentrations, medical researchers have shown that high radon levels in air are associated with increased incidence of lung cancer. Radon in water supplies is a concern because radon is readily released into the air from water. Therefore the health concerns stems more from inhalation of the radon rather than drinking the water. A large number of Maine wells have radon concentrations that through normal household water use, release concentrations of radon into the air that are as high or higher than the concentrations associated with an increased incidence of lung cancer.

Proposed federal standards for radon have raised concerns regarding ground water that had previously been regarded as acceptable. The average concentration of radon in public or private water supplies in Maine ranges from 5,000 to 10,000 picocuries/Liter (pci/L). Current Maine guidelines limit radon in water to 20,000 pci/L. The proposed federal standard would create a Maximum Contaminant Level (MCL) for radon in water of 300 pci/L with an Alternate MCL (AMCL) of 4,000 pci/L if a radon multimedia mitigation program is developed and instituted by the State or the community water suppliers. This multimedia mitigation plan would require reducing risks from radon in indoor air, which is estimated to cause 14,000 to 32,000 deaths annually in the U.S., compared to radon in drinking water which is estimated to cause 68 deaths annually. The AMCL of 4,000 pci/L was chosen because it is the amount of radon in drinking water that causes a risk equal to the risk from radon found in outdoor air. Statutory authority for the MCL, AMCL and multimedia mitigation plans were set in the Federal Safe Drinking Water Act Amendments of 1996. The 2008 Integrated Report should include updated radon information.

ARSENIC

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or David Braley, DHHS, Maine CDC, Division of Environmental Health, Drinking Water Program

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Related Website: www.maine.gov/dhhs/eohp/wells/asbrouchure.shtml

Several types of cancer including skin and bladder cancer, along with other health problems have been linked to the occurrence of arsenic in drinking water. The current Maximum Contaminant Level (MCL) for arsenic is 50 ppb (parts per billion); however the EPA has recently proposed lowering the MCL to 10 ppb in drinking water. The Maine Bureau of Health has set a maximum exposure guideline (MEG) for arsenic in domestic well water at 0.01 milligrams of arsenic per liter of water (which is equal to 10 ppb). This is also the same amount that the World Health Organization currently recommends. A 1994 – 1995 study of about 600 randomly selected wells indicates that, statewide, about 1 to 2 percent have arsenic levels greater than 50 ppb. However, about 10 percent have arsenic levels above the MEG of 10 ppb.

Currently a source or sources for all arsenic detected in well water has not been determined. However, preliminary work by the MGS, University of Maine Department of Geological Sciences, DEP, and DHHS indicate that the problem is of statewide significance and that the arsenic concentration in ground water is most likely the result of both natural processes and human activity.

Chapter 8 SUMMARY OF IMPAIRED WATERS

Table 8-1 presents specific *Causes* of impairment that have been removed from the 2004 and 2002 list of Impaired Waters (the"303d List") for the specified river and stream segments. Refer to the "Delisting" section on page 53 for an explanation of the delisting process. It is important to note that segments may appear multiple times, if they have multiple causes that have been delisted. This list has been presented in this format in keeping with the manner in which the EPA Assessment Database (ADB) stores and reports this information.

Table 8-1 Status of Category 5a / TMDL Rivers and Streams: 2002 through 2006

Category by Report Year									
5	**4A**	**4B**	**3**	**2**	**ADB Assessment Unit #**	**Water Name**	**Cause**	**Delisting Reason / Date**	**Comments**
'02 '04	**'06**				ME0101000303_124R 01	Dickey Brook	Nutrient/Eutrophic ation Biological Indicators	TMDL approved by EPA Category 4A) 9/15/2006	Submitted with Daigle Pond/Cross Pond TMDL in September 2006. EPA approved TMDL 9/28/06
'02 '04	**'06**				ME0101000303_124R 01	Dickey Brook	Oxygen, Dissolved	TMDL approved by EPA Category 4A) 9/15/2006	Submitted with Daigle Pond/Cross Pond TMDL in September 2006. EPA approved TMDL 9/28/06
'02 '04	**'06**				ME0101000303_124R 02	Daigle Brook	Nutrient/Eutrophic ation Biological Indicators	TMDL approved by EPA Category 4A) 9/15/2006	Submitted with Daigle Pond/Cross Pond TMDL in September 2006. EPA approved TMDL 9/28/06
'02 '04	**'06**				ME0101000303_124R 02	Daigle Brook	Oxygen, Dissolved	TMDL approved by EPA Category 4A) 9/15/2006	Submitted with Daigle Pond/Cross Pond TMDL in September 2006. EPA approved TMDL 9/28/06
'02		'04		**'06**	ME0101000412_140R 01	No. Br. Presque Isle Stream between Mapleton and Presque Isle	Dissolved oxygen	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 D.O. criteria at Station 11, 0.2 km downstream of Mapleton POTW
'02 '04			**'06**		ME0101000413_142R 01	Caribou Stream	Benthic-Macroinvertebrate Bioassessments (Streams)	Flaws in original listing (Category 3) 10/2006	Administrative error, conflicting data Biocriteria non-attainment is inconsistent; segment was 5A for nonattainment of biocriteria in 1994 only. Subsequent samples showed attainment; requires re-sampling

Table 8-1 Status of Category 5a / TMDL Rivers and Streams: 2002 through 2006

Category by Report Year									
5	4A	4B	3	2	ADB Assessment Unit #	Water Name	Cause	Delisting Reason / Date	Comments
		'02 '04 '06			ME0101000413_145R 01	Little Madawaska River and tributaries	Benthic-Macroinvertebrate Bioassessments (Streams)	Other point source or nonpoint source controls are expected to meet water quality standards (Category 4B) 3/15/2004	Haz waste remediation project is complete (Superfund)--expected to attain standards
		'02 '04 '06			ME0101000413_145R 01	Little Madawaska River and tributaries	Polychlorinated biphenyls	Other point source or nonpoint source controls are expected to meet water quality standards (Category 4B) 3/15/2004	Haz waste remediation project is complete (Superfund)--expected to attain standards by 2010
		'02 '04 '06			ME0101000413_145R 02	Greenlaw Stream	Polychlorinated biphenyls	Other point source or nonpoint source controls are expected to meet water quality standards (Category 4B) 2002	Haz waste remediation project (Superfund)--expected to attain standards
			(4C) '02 '04	**'06**	ME0102000103_201R 02	West Branch of Penobscot R below Seboomook Lake	Benthic-Macroinvertebrate Bioassessments (Streams)	State Determines water quality standard is being met (Category 2)	New water level agreement reached, water quality certification has been issued and UAA approved by EPA on April 5, 2005 (FERC# 2634, expiration date 11/31/2064). Meets applicable water quality standards.
'04				'02 **'06**	ME0102000502_220R _01	Mattanawcook Stream (Lincoln)	E. coli	State Determines water quality standard is being met for this cause (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.

Table 8-1 Status of Category 5a / TMDL Rivers and Streams: 2002 through 2006

Category by Report Year									
5	4A	4B	3	2	ADB Assessment Unit #	Water Name	Cause	Delisting Reason / Date	Comments
'04				'02 **'06**	ME0102000502_220R_01	Mattanawcook Stream (Lincoln)	Oxygen, dissolved	State Determines water quality standard is being met for this cause (Category 2)	CSO has been removed. Data from multiple sampling events collected by the Penobscot Indian Nation during summer 2004 for Mattanawcook Stream confirms attainment of numeric criteria for dissolved oxygen and bacteria. Segment is also Category 3 listed for sediment contamination; possible fish consumption impairment.
'02 '04				**'06**	ME0102000502_231R	Penobscot R, main stem, from Cambolasse Str to Piscataquis R	Benthic-Macroinvertebrate Bioassessments (Streams)	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**			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.
'04		**'06**		'02	ME0102000503_221R 01	Cold Stream (Enfield) downstream of hatchery	Benthic-Macroinvertebrate Bioassessments (Streams)	Other point source or nonpoint source controls are expected to meet water quality standards (Category 4B) 6/20/2006	Final hatchery permit issued 3/31/06 ; other pollution controls are in place, attainment expected by 2009;
'02 '04		**'06**			ME0103000304_313R 01	Mill Stream (Embden)	Benthic-Macroinvertebrate Bioassessments (Streams)	Other point source or nonpoint source controls are expected to meet water quality standards (Category 4B) 6/20/2006	Hatchery permit issued 1/30/2006; exp. Date 1/30/2011; other pollution controls are in place, attainment expected by 2009;
'04		**'06**		'02	ME0103000305_315R_02	Unnamed Stream trib to Sandy R (Avon-Dunham Hatchery)	Benthic-Macroinvertebrate Bioassessments (Streams)	Other point source or nonpoint source controls are expected to meet water quality standards (Category 4B) 6/20/2006	Hatchery permit issued 10/18/2005; expiration date 10/18/10; hatchery is now closed; other pollution controls are in place, attainment expected by 2008;

Table 8-1 Status of Category 5a / TMDL Rivers and Streams: 2002 through 2006

Category by Report Year									
5	**4A**	**4B**	**3**	**2**	**ADB Assessment Unit #**	**Water Name**	**Cause**	**Delisting Reason / Date**	**Comments**
		'02 '04 '06			ME0103000308_325R 01	East Branch Sebasticook River Corundel Pd to Sebasticook L (Corinna)	Benthic-Macroinvertebrate Bioassessments (Streams)	Other point source or nonpoint source controls are expected to meet water quality standards (Category 4B) 3/15/2004	Haz waste remediation project (Superfund). CSO removal. New wastewater permit, removal to land treatment in 2004. Segment attains aquatic life criteria (2003 data). Expected to attain by 2008.
		'02 '04 '06			ME0103000308_325R 01	East Branch Sebasticook River, Corundel Pd to Sebasticook L (Corinna)	Benzene	Other point source or nonpoint source controls are expected to meet water quality standards (Category 4B) 3/15/2004	Haz waste remediation project (Superfund). CSO removal. New wastewater permit, removal to land treatment in 2004. Segment attains aquatic life criteria (2003 data). Expected to attain by 2008.
		'06			ME0103000308_331R 01	Martin Stream (Dixmont)	Ammonia (Un-ionized)	Other point source or nonpoint source controls are expected to meet water quality standards (Category 4B) 7/13/2006	CAFO permit issued 8/15/06; other pollution controls in place, expected to attain stds by August 2007
		'06			ME0103000308_331R 01	Martin Stream (Dixmont)	Benthic-Macroinvertebrate Bioassessments (Streams) 7/13/2006	Other point source or nonpoint source controls are expected to meet water quality standards (Category 4B) 7/13/2006	CAFO permit issued 8/15/06, other pollution controls in place, expected to attain stds by 2007
'02 '04	**'06**				ME0103000310_322R 01	Fish Brook (Fairfield)	Benthic-Macroinvertebrate Bioassessments (Streams)	EPA approval of TMDL (Category 4A) 8/30/2005	EPA approved TMDL 8/30/2005
'02 '04	**'06**				ME0103000310_322R 01	Fish Brook (Fairfield)	Oxygen, Dissolved	EPA approval of TMDL (Category 4A) 8/30/2005	EPA approved TMDL 8/30/2005
'04	**'06**				ME0104000206_423R 01	Androscoggin R, main stem, Livermore impoundment	Benthic-Macroinvertebrate Bioassessments (Streams)	EPA approval of TMDL (Category 4A) 7/18/2005	4A listed for aquatic life and solids issues, TMDL is complete; EPA approved TMDL 7/18/2005 but there are ongoing licensing issues. Attained Class C biocriteria in 2003 and attained Class B biocriteria in 2004; Also 4B listed for dioxin; 5D listed for legacy PCB contamination.

Table 8-1 Status of Category 5a / TMDL Rivers and Streams: 2002 through 2006

Category by Report Year									
5	4A	4B	3	2	ADB Assessment Unit #	Water Name	Cause	Delisting Reason / Date	Comments
		'02 '04 '06			ME0104000206_423R 01	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	4A listed for aquatic life and solids issues, TMDL is complete; EPA approved TMDL 7/18/2005 but there are ongoing licensing issues. Attained Class C biocriteria in 2003 and attained Class B biocriteria in 2004; Also 4B listed for dioxin; 5D listed for legacy PCB contamination.
		'02 '04 '06			ME0104000207_412R 02	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			**'06**	'02	ME0104000208_413R 08	Bobbin Mill Brook (Lake Auburn Outlet, Auburn)	Benthic-Macroinvertebrate Bioassessments (Streams)	Flaws in original listing (Category 3) 3/9/05	Administrative error, conflicting data. Biocriteria non-attainment is inconsistent. Needs re-sampling to confirm non-attainment. 1998- non-attainment of biocriteria; biomonitoring in August 2003 showed attainment of biocriteria; Delist to Category 3--need to confirm that 1998 non-attainment was caused by natural conditions.
'04	**'06**				ME0104000208_424R _01	Androscoggin R, main stem, upstream of the Gulf Island Dam	BOD, Biochemical oxygen demand	EPA approval of TMDL (Category 4A) 7/18/2005	4A EPA approved TMDL (solids, DO, BOD, P) 7/18/05 but ongoing licensing issues; 5D Fish tissue sampling shows legacy PCB and dioxin contamination
		'02 '04 '06			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	4A EPA approved TMDL (solids, DO, BOD) 7/18/05 but ongoing licensing issues; 5D Fish tissue sampling shows legacy PCB and dioxin contamination
'04	**'06**				ME0104000208_424R _01	Androscoggin R, main stem, upstream of the Gulf Island Dam	Oxygen, Dissolved	EPA approval of TMDL (Category 4A) 7/18/2005	4A EPA approved TMDL (solids, DO, BOD, P) 7/18/05 but ongoing licensing issues; 5D Fish tissue sampling shows legacy PCB and dioxin contamination

Table 8-1 Status of Category 5a / TMDL Rivers and Streams: 2002 through 2006

Category by Report Year									
5	4A	4B	3	2	ADB Assessment Unit #	Water Name	Cause	Delisting Reason / Date	Comments
'04	**'06**				ME0104000208_424R _01	Androscoggin R, main stem, upstream of the Gulf Island Dam	Phosphorus	EPA approval of TMDL (Category 4A) 7/18/2005	4A EPA approved TMDL (solids, DO, BOD, P) 7/18/05 but ongoing licensing issues; 5D Fish tissue sampling shows legacy PCB and dioxin contamination
'04	**'06**				ME0104000208_424R _01	Androscoggin R, main stem, upstream of the Gulf Island Dam	Total suspended solids	EPA approval of TMDL (Category 4A) 7/18/2005	4A EPA approved TMDL (solids, DO, BOD, P) 7/18/05 but ongoing licensing issues; 5D Fish tissue sampling shows legacy PCB and dioxin contamination
		'02 '04 '06			ME0105000201_507R 01	Dennys River	Polychlorinated biphenyls	Other point source or nonpoint source controls are expected to meet water quality standards (Category 4B) 9/5/2006	Haz waste remediation project (Superfund)--expected to attain standards by 2010
'02 '04	**'06**				ME0105000217_520R 01	Carleton Stream (Blue Hill)	Benthic-Macroinvertebrate Bioassessments (Streams)	EPA approval of TMDL (Category 4A) 10/7/2004	EPA approved TMDL 10/7/2004
'02 '04	**'06**				ME0105000217_520R 01	Carleton Stream (Blue Hill)	Iron	EPA approval of TMDL (Category 4A) 10/7/2004	EPA approved TMDL 10/7/2004
'02 '04		**'06**			ME0105000305_528R 08_02	Sheepscot River below Sheepscot L	Oxygen, Dissolved	Other point source or nonpoint source controls are expected to meet water quality standards (Category 4B) 6/20/2006	Listed for dissolved oxygen; hatchery permit issued 2/20/06, expiration date 2/20/11; facility upgrade complete; Expected to attain standards by 2009.
'02 '04		**'06**			ME0106000101_605R 01	Mile Brook (Casco)	Benthic-Macroinvertebrate Bioassessments (Streams)	Other point source or nonpoint source controls are expected to meet water quality standards (Category 4B) 6/20/2006	Hatchery permit issued 5/8/2006; exp. Date 5/8/2011; other pollution controls are in place, attainment expected by 2009;
'02 '04				**'06**	ME0106000102_603R 05	Royal River, segment below Collyer Bk	Drinking water-trichloroethylene	State Determines water quality standard is being met (Category 2) 8/31/2006	Per RCRA 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.

Table 8-1 Status of Category 5a / TMDL Rivers and Streams: 2002 through 2006

Category by Report Year									
5	4A	4B	3	2	ADB Assessment Unit #	Water Name	Cause	Delisting Reason / Date	Comments
	'02 '04			**'06**	ME0106000103_609R_01	Presumpscot R, main stem, below Sacarappa Dam	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**	ME0106000103_609R_01	Presumpscot R, main stem, below Sacarappa Dam	Total Suspended Solids (TSS)	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).
'04			**'06**	'02	ME0106000106_607R12	Norton Brook (Falmouth)	Benthic-Macroinvertebrate Bioassessments (Streams)	Flaws in original listing of this cause (Category 3) 10/2006	Administrative error, conflicting data. More data required to support impaired assessment. Non-attainment of biocriteria in 2002 may be due to natural habitat effects; needs resampling
'02	'04 '06				ME0106000106_612R01_01	Goosefare Brook	Cd, Cr, Cu, Fe, Pd, Ni, Zn	EPA approval of TMDL (Category 4A) 9/29/2003	EPA approved TMDL 9/29/2003
	'02 '04 '06				ME0106000305_630R01	Salmon Falls R, segment below Collyer Bk	Ammonia (Un-ionized)	EPA approval of TMDL (Category 4A) 11/1/1999	4-A EPA approved TMDL 11/22/99 for BOD, ammonia and phosphorus; 5B non-CSO, low priority bacteria listing; 5D fish tissue monitoring shows legacy PCBs and Dioxin
	'02 '04 '06				ME0106000305_630R01	Salmon Falls R segment below Collyer Bk,	Nutrient/Eutrophication Biological Indicators	EPA approval of TMDL (Category 4A) 11/1/1999	4-A EPA approved TMDL 11/22/99 for BOD, ammonia and phosphorus; 5b non-CSO, low priority bacteria listing; 5D fish tissue monitoring shows legacy PCBs and Dioxin
	'02 '04 '06				ME0106000305_630R01	Salmon Falls R, segment below Collyer Bk	Oxygen, Dissolved	EPA approval of TMDL (Category 4A) 11/1/1999	4-A EPA approved TMDL 11/22/99 for BOD, ammonia and phosphorus; 5b non-CSO, low priority bacteria listing; 5D fish tissue monitoring shows legacy PCBs and Dioxin

Bold text indicates new delisting changes for 2006.

Table 8-2 Status of Category 5a / TMDL Lakes: 2000 through 2006 [1]

Lake	Town	MIDAS	Acres	HUC10	List Cat 00 [2]	List Cat 02	List Cat 04	List Cat 06	Comments
CHRISTINA RESERVOIR	FORT FAIRFIELD	9525	400	0101000501	(5a)	5a	5a	5a	06: S-chronic blooming 'wetland'; TMDL in prep. 2007
LILLY P	ROCKPORT	83	29	0105000220	(5a)	5a	5a	4a	06: S; TMDL app. Dec. 2005
NARROWS P (UPPER)	WINTHROP	98	279	0103000311	(3)	5a	5a	2 *	06: Originally listed in 1998 but low priority for TMDL (approved 2005). Data collected since listing and over long-term record indicate stable trend
ELL (L) P	WELLS	119	32	0106000304	(5a)	3	2	2 *	Delist no longer supporting repeated nusiance blooms
ARNOLD BROOK L	PRESQUE ISLE	409	395	0101000412	(5a)	5a	5a	5a	06: S; TMDL in prep 2007
DAIGLE P	NEW CANADA	1665	36	0101000303	(5a)	5a	5a	4a	06: S; TMDL Sept. 2006
CROSS L	T17 R05 WELS	1674	2515	0101000303	(5a)	5a	5a	4a	06: S; TMDL Sept. 2006
ECHO L	PRESQUE ISLE	1776	90	0101000412	(5a)	5a	5a	5a	06: I; TMDL in prep 2007
MADAWASKA L	T16 R04 WELS	1802	1526	0101000413	(5a)	4a	4a	2 *	06: S, occasional bloom; persistant improvement TMDL 2000
MONSON P	FORT FAIRFIELD	1820	160	0101000413	(5a)	5a	5a	5a	06: S; TMDL in prep 2007
SEBASTICOOK L	NEWPORT	2264	4288	0103000308	(5a)	4a	4a	4a	06: I - very slowly; TMDL 2001
HERMON P	HERMON	2286	461	0102000511	(5a)	5a	5a	5a	06: S; TMDL being reviewed 2007
HAMMOND P	HAMPDEN	2294	83	0102000511	(5a)	5a	5a	5a	06: S; TMDL being reviewed 2007
TOOTHAKER P	PHILLIPS	2336	30	0103000305	(3)	5a	5a	4a	06: S/I; TMDL Sept. 2004
HIGHLAND L	BRIDGTON	3454	1401	0106000101	(5a)	5a	5a	2*	06: TMDL Aug 2004; data indicates persistant stable trend
HIGHLAND (DUCK) L	FALMOUTH	3734	634	0106000103	(5a)	5a	4a	4a	06: TMDL 2003; trophic concerns persist; appears stable possibly deteriorating
SABATTUS P	GREENE	3796	1962	0104000210	(5a)	5a	5a	4a	06: Stable perhaps Improving; TMDL August 2004
WILSON P	WAYNE	3832	582	0103000311	(3)	3	2	5a	06: deteriorating trophic trend – all trophic param.
MOUSAM L	ACTON	3838	900	0106000302	(5a)	5a	4a	2*	06: Attainment of monitored uses verified. Data collected since listing and over long-term record indicate stable trend.
UNITY P	UNITY	5172	2528	0103000309	(5a)	5a	5a	4a	06: Stable; TMDL Sept 2004
LOVEJOY P	ALBION	5176	324	0103000309	(5a)	5a	5a	4a	06: Stable; TMDL 2004
COBBOSSEECONTEE L	WINTHROP	5236	5543	0103000311	(5a)	4a	4a	2*	06: I; no recent blooms; persistant improvement
PLEASANT (MUD) P	GARDINER	5254	746	0103000311	(5a)	5a	4a	4a	06: S-blooms persist; TMDL complete 2004
LONG P	BELGRADE	5272	2714	0103000310	(3)	3	3	5a	06: D-trophic&DO; Gloeotrichia blooms; trophic param. indicate shift
EAST P	SMITHFIELD	5349	1823	0103000310	(5a)	4a	4a	4a	06: blooms persist; deteriorating trophic trend continues; TMDL 2001
WEBBER P	VASSALBORO	5408	1201	0103000312	(5a)	5a	4a	4a	06: S; chronic blooms; TMDL 2003
THREEMILE P	CHINA	5416	1162	0103000312	(5a)	5a	4a	4a	06: S; chronic blooms; TMDL 2003
THREECORNERED P	AUGUSTA	5424	182	0103000312	(5a)	5a	4a	3	06: TMDL 2003;Improving; no recent blooms; additional time/data needed to verify
CHINA L	CHINA	5448	3845	0103000309	(5a)	4a	4a	4a	06: S-blooms persist; TMDL 2001.
DUCKPUDDLE P	NOBLEBORO	5702	293	0105000303	(5a)	5a	5a	3	06: I; TMDL Sept 2005 (note- bloomed in 2005)
LONG L	BRIDGTON	5780	4867	0106000101	(5a)	5a	5a	2*	06: TMDL May 2005; Data collected since listing and over long-term record indicate stable trend.

Table 8-2 Status of Category 5a / TMDL Lakes: 2000 through 2006 [1]

Lake	Town	MIDAS	Acres	HUC10	List Cat 00 [2]	List Cat 02	List Cat 04	List Cat 06	Comments
COBBOSSEECONTEE (LT)	WINTHROP	8065	75	0103000311	(5a)	5a	5a	4a	06: S-occ. bloom; TMDL 2005
TRAFTON L	LIMESTONE	9779	85	0101000413	(5a)	5a	5a	5a	06: S; TMDL in prep 2007
TOGUS P	AUGUSTA	9931	660	0103000312	(5a)	5a	5a	4a	06: S; TMDL Sept 2005
SEWALL P	ARROWSIC	9943	46	0105000307	(3)	3	5a	4a	06: S; TMDL March 2006
ANNABESSACOOK L	MONMOUTH	9961	1420	0103000311	(5a)	5a	4a	4a	06: blooms persist; possible improvement; TMDL 2004

[1] Non TMDL listing changes are summarized in Appendix III, Category Listing Change Summary – pgs. 86 and 87.
[2] In 2000, current Listing Categories had not been established. Equivalent Listing Categories have been assigned for purposes of comparison.
* 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 8-3 2004 Category 5/TMDL Estuarine/Marine Waters not on 2006 Category 5/TMDL List

Waterbody ID	DMR Area	Segment Description	2004 List Cat	2006 List Cat	Delisting Reason
730-7	22-F	Ovens Mouth - Sherman Creek Boothbay - Edgecomb	5B-1	2	Monitoring shows attainment of Class SB criteria for fecals.
724-10	27	St. George River	5B-1	2	Monitoring shows attainment of Class SB criteria for fecals.
722-33	37-I	Western Cove, Stinson Neck, Deer Isle	5B-1	2	Monitoring shows attainment of Class SB criteria for fecals.
707-6	42	Bass Harbor and Eastern Duck Cove	5B-1	2	Erroneously listed in 2004. Monitoring shows attainment of Class SB for fecals.
714-7	48	Thomas Bay, Bar Harbor	5B-1	2	Monitoring shows attainment of Class SB criteria for fecals.
705-2	53-C	Back Bay, Milbridge	5B-1	2	Monitoring shows attainment of Class SB criteria for fecals.
701-3	56-I	Canal Cove, Seward Neck, Lubec	5B-1	2	Monitoring shows attainment of Class SB criteria for fecals.
701-4	56-J	Sipp Bay, Perry and Robinston	5B-1	2	Monitoring shows attainment of Class SB criteria for fecals.

Table 8-4 presents specific Causes of River and Stream impairment for which a Total Maximum Daily Load report (TMDL) must be (or has been) prepared and the schedule that has been established to accomplish it. It is important to note that segments may appear multiple times, in cases where a TMDL is required to address multiple causes of impairment. This list has been presented in this format in keeping with the manner in which the EPA Assessment Database (ADB) stores and reports this information.

Table 8-4 River and Stream TMDL Current Project Update

ADB Assessment Unit ID	Water Name	Cause(s)	TMDL Project Status	Schedule	Priority
ME0101000105_103R01	Shields Branch of Big Black R	Escherichia coli		2012	
ME0101000105_103R01	Shields Branch of Big Black R	Oxygen, Dissolved		2012	
ME0101000121_117R	St. John River at Madawaska	Escherichia coli		2011	L
ME0101000412_140R02	Dudley Brook (Chapman)	Benthic-Macroinvertebrate Bioassessments (Streams)		2012	M
ME0101000412_140R03_01	Presque Isle Stream at Presque Isle	Ammonia (Un-ionized)	EPA approved TMDL 8/22/2000		
ME0101000412_140R03_01	Presque Isle Stream at Presque Isle	BOD, Biochemical oxygen demand	EPA approved TMDL 8/22/2000		
ME0101000412_140R03_01	Presque Isle Stream at Presque Isle	Phosphorus (Total)	EPA approved TMDL 8/22/2000		
ME0101000412_140R03_02	N Br Presque Isle Stream	DDT		2012	L
ME0101000412_140R04	Unnamed Stream (P.I. airport)	Benthic-Macroinvertebrate Bioassessments (Streams)	new listing, not started	2012	H
ME0101000412_143R01	Everett Brook (Ft. Fairfield)	Oxygen, Dissolved		2012	
ME0101000413_145R01	Little Madawaska River and tributaries	Benthic-Macroinvertebrate Bioassessments (Streams)	Does not need TMDL; remediation is complete- listed 4-b		L
ME0101000413_145R01	Little Madawaska River and tributaries	Polychlorinated biphenyls	4-b- Superfund remediation project is complete; expected to attain standards	2020	L
ME0101000413_145R02	Greenlaw Stream	Polychlorinated biphenyls			L
ME0101000413_146R01	Webster Brook	Escherichia coli		2012	L
ME0101000501_149R	Minor tributaries to Prestile Stream above dam in Mars Hill	DDT	5-d listed for legacy pollutant- DDT	2020	L
ME0101000501_149R01	Prestile Stream above dam in Mars Hill	Benthic-Macroinvertebrate Bioassessments (Streams)	not started	2007	H
ME0101000501_149R01	Prestile Stream above dam in Mars Hill	DDT	5-d listed for legacy pollutant - DDT	2020	L
ME0101000501_149R01	Prestile Stream above dam in Mars Hill	Nutrient/Eutrophication Biological Indicators	not started	2007	H
ME0101000501_149R01	Prestile Stream above dam in Mars Hill	Oxygen, Dissolved	not started	2007	
ME0101000501_150R	Prestile Str and tributaries entering below dam in Mars	DDT	5-d legacy pollutant		L
ME0101000504_152R01_01	Meduxnekeag River	Phosphorus (Total)	EPA approved 3/3/2001		L
ME0101000504_152R01_02	Meduxnekeag River	DDT	5d listed for legacy pollutant- DDT	2020	L
ME0102000110_205R03	Millinocket Stream (Millinocket)	Escherichia coli		2008	H

Table 8-4 River and Stream TMDL Current Project Update

ADB Assessment Unit ID	Water Name	Cause(s)	TMDL Project Status	Schedule	Priority
ME0102000402_219R_02	Piscataquis River at Dover Foxcroft	Escherichia coli		2009	M
ME0102000402_219R01	Piscataquis R	Oxygen, Dissolved		2009	
ME0102000403_215R_02	Sebec River at Milo	Escherichia coli		2009	M
ME0102000403_215R01	Sebec River at Milo above confluence with Piscataquis R	Benthic-Macroinvertebrate Bioassessments (Streams)		2008	M
ME0102000404_216R01_01	W. Br. Pleasant R (KIW Twp)	Iron	legacy pollutant- iron	2012	L
ME0102000404_216R01_02	Blood Bk (KIW Twp)	Iron	legacy pollutant- iron	2012	L
ME0102000502_220R_01	Mattanawcook Stream (Lincoln)	Escherichia coli	Delisted to Category 2-CSO removed; more recent data shows attainment of standards	N/A	
ME0102000502_220R_01	Mattanawcook Stream (Lincoln)	Oxygen, Dissolved	Delisted to Category 2-CSO removed; more recent data shows attainment of standards	N/A	
ME0102000502_230R	Penobscot R	Nutrient/Eutrophication Biological Indicators	Requires more monitoring data	2009	
ME0102000502_230R	Penobscot R	Oxygen, Dissolved		2009	
ME0102000502_231R	Penobscot R	Dioxin (including 2,3,7,8-TCDD)	4b listed; expected to attain		L
ME0102000502_231R	Penobscot R	Nutrient/Eutrophication Biological Indicators		2009	H
ME0102000502_231R	Penobscot R	Oxygen, Dissolved		2009	H
ME0102000502_231R	Penobscot R	Polychlorinated biphenyls	legacy pollutant- 5d	2020	L
ME0102000503_221R01	Cold Stream (Enfield) downstream of hatchery	Benthic-Macroinvertebrate Bioassessments (Streams)	draft fish hatchery permit should address impairment	2008	L
ME0102000506_222R01	Costigan Str (Costigan)	Escherichia coli		2007	
ME0102000506_222R01	Costigan Str (Costigan)	Oxygen, Dissolved		2007	
ME0102000506_232R	Penobscot R	Dioxin (including 2,3,7,8-TCDD)		2008	H
ME0102000509_226R01	Otter Stream	Escherichia coli		2012	L
ME0102000509_226R02	Boynton Brook	Escherichia coli	Not started	2012	L
ME0102000509_233R_01	Penobscot R	Dioxin (including 2,3,7,8-TCDD)			L
ME0102000509_233R_01	Penobscot R	Polychlorinated biphenyls	Category 5d for legacy PCB contamination	2020	L
ME0102000509_233R_02	Penobscot River at Orono	Escherichia coli	5b2- CSO permit controls in place	2012	L
ME0102000509_233R_03	Penobscot River at Old Town-Milford	Escherichia coli		2014	L
ME0102000510_224R01	Burnham Brook (Garland)	Oxygen, Dissolved		2012	
ME0102000510_224R02	Kenduskeag Stream	Escherichia coli		2012	L
ME0102000510_224R03	French Stream (Exeter)	Benthic-Macroinvertebrate Bioassessments (Streams)		2012	M
ME0102000510_224R04	Birch Stream (Bangor)	Benthic-Macroinvertebrate Bioassessments (Streams)	Draft sent to EPA 9/12/2005; Public review draft submitted	2006	H
ME0102000510_224R05	Unnamed (Pushaw) Stream (Bangor)	Habitat Assessment (Streams)	Public review draft by 2007	2007	H
ME0102000510_224R06	Arctic Brook (near Valley Ave Bangor)	Benthic-Macroinvertebrate Bioassessments (Streams)	Public review draft by 2007	2007	H

Table 8-4 River and Stream TMDL Current Project Update

ADB Assessment Unit ID	Water Name	Cause(s)	TMDL Project Status	Schedule	Priority
ME0102000510_224R06	Arctic Brook (near Valley Ave Bangor)	Habitat Assessment (Streams)	Public review draft by 2007	2007	H
ME0102000511_225R01_02	Shaw Brook (Bangor, Hampden)	Benthic-Macroinvertebrate Bioassessments (Streams)	Public review draft by January 2007	2007	H
ME0102000511_225R01_02	Shaw Brook (Bangor, Hampden)	Habitat Assessment (Streams)	Public review draft by January 2007	2007	H
ME0102000511_225R02	Sucker Brook (Hampden) (formerly 'Unnamed St.-Hampden')	Benthic-Macroinvertebrate Bioassessments (Streams)	not started	2012	
ME0102000511_225R02	Sucker Brook (Hampden) (formerly 'Unnamed St.-Hampden')	Oxygen, Dissolved	not started	2012	
ME0102000513_226R03	Penjajawoc Stream (Bangor) Meadow Bk (Bangor)	Benthic-Macroinvertebrate Bioassessments (Streams)	Draft completed	2007	H
ME0102000513_226R03	Penjajawoc Stream (Bangor) Meadow Bk (Bangor)	Habitat Assessment (Streams)	Draft completed	2007	H
ME0102000513_226R03	Penjajawoc Stream (Bangor) Meadow Bk (Bangor)	Oxygen, Dissolved	Draft completed	2007	
ME0102000513_234R	Penobscot River	Escherichia coli		2013	L
ME0102000513_234R02	Penobscot	Dioxin (including 2,3,7,8-TCDD)			L
ME0102000513_234R02	Penobscot	Polychlorinated biphenyls	5d-legacy PCBs	2020	L
ME0103000304_313R01	Mill Stream (Embden)	Benthic-Macroinvertebrate Bioassessments (Streams)	Hatchery permit issued; expiration date 1/30/2011. Expected to attain standards		L
ME0103000305_315R_02	Unnamed Stream trib to Sandy R (Avon-Dunham Hatchery)	Benthic-Macroinvertebrate Bioassessments (Streams)	4-b Expected to attain-Hatchery is closed; permit was issued 10/18/2005		L
ME0103000305_319R_02	Sandy R,	Benthic-Macroinvertebrate Bioassessments (Streams)	flows too high in 2006; unable to collect monitoring data required for TMDL. Next monitoring due in 2007	2008	H
ME0103000306_314R02	Cold Stream (Skowhegan)	Benthic-Macroinvertebrate Bioassessments (Streams)	Monitoring in 2006; TMDL not started	2008	H
ME0103000306_320R02	Currier Brook	Escherichia coli		2012	L
ME0103000306_320R03	Whitten Brook (Skowhegan)	Benthic-Macroinvertebrate Bioassessments (Streams)	draft due in April 2007	2007	H
ME0103000306_320R03	Whitten Brook (Skowhegan)	Escherichia coli	not started	2007	H
ME0103000306_320R03	Whitten Brook (Skowhegan)	Habitat Assessment (Streams)	Draft due April 2007	2007	H
ME0103000306_320R04	Mill Stream (Norridgewock)	Benthic-Macroinvertebrate Bioassessments (Streams)		2010	M
ME0103000306_338R_02	Kennebec River at Fairfield	Escherichia coli	5b2- CSO permit in place	2013	L
ME0103000306_338R_03	Kennebec River at Skowhegan	Escherichia coli	5b2- CSO permit in place	2013	L
ME0103000306_338R_04	Kennebec R,	Dioxin (including 2,3,7,8-TCDD)			L

Table 8-4 River and Stream TMDL Current Project Update

ADB Assessment Unit ID	Water Name	Cause(s)	TMDL Project Status	Schedule	Priority
ME0103000306_338R_04	Kennebec R,	Polychlorinated biphenyls	Not started- legacy PCB problem	2020	L
ME0103000306_339R_02	Kennebec R,	Dioxin (including 2,3,7,8-TCDD)			L
ME0103000306_339R_02	Kennebec R,	Polychlorinated biphenyls	not started- legacy PCB problem	2020	L
ME0103000307_330R	W Branch of Sebasticook R	Dioxin (including 2,3,7,8-TCDD)	not started	2011	M
ME0103000307_330R	W Branch of Sebasticook R	Polychlorinated biphenyls	not started	2011	M
ME0103000308_325R01	East Branch Sebasticook River Corundel Pd to Sebasticook L	Benzene	Superfund remediation should fix impairment	2012	L
ME0103000308_325R02	Brackett Brook (Palmyra)	Oxygen, Dissolved		2012	
ME0103000308_325R03	Mulligan Stream (St. Albans)	Oxygen, Dissolved	TMDL monitoring in 2006	2008	M
ME0103000308_331R	E Branch of Sebasticook R	Dioxin (including 2,3,7,8-TCDD)	4b listed, expected to attain		L
ME0103000308_331R	E Branch of Sebasticook R	Oxygen, Dissolved	Superfund remediation and lake TMDL are complete		L
ME0103000308_331R	E Branch of Sebasticook R	Polychlorinated biphenyls	5d listed, legacy pollutant		L
ME0103000308_331R01	Martin Stream (Dixmont)	Ammonia (Un-ionized)	Expected to attain		L
ME0103000308_331R01	Martin Stream (Dixmont)	Benthic-Macroinvertebrate Bioassessments (Streams)	Expected to attain		L
ME0103000308_332R	Sebasticook R	Dioxin (including 2,3,7,8-TCDD)	not started	2011	M
ME0103000308_332R	Sebasticook R	Polychlorinated biphenyls	legacy PCB contamination	2050	L
ME0103000309_327R01	Mill Stream (Albion)	Oxygen, Dissolved		2012	
ME0103000309_332R	Sebasticook River	Benthic-Macroinvertebrate Bioassessments (Streams)	not started	2011	M
ME0103000309_332R	Sebasticook River	Dioxin (including 2,3,7,8-TCDD)	Legacy upstream sources m(W.Br. Sebasticook); TMDL not started	2011	M
ME0103000309_332R	Sebasticook River	Escherichia coli	5b CSO permit in place; expected to attain standards		L
ME0103000309_332R	Sebasticook River	Nutrient/Eutrophication Biological Indicators	not started	2011	M
ME0103000309_332R	Sebasticook River	Oxygen, Dissolved	not started	2011	M
ME0103000309_332R	Sebasticook River	Polychlorinated biphenyls	legacy upstream sources (W. Br. Sebasticook)	2011	L
ME0103000310_322R01	Fish Brook (Fairfield)	Benthic-Macroinvertebrate Bioassessments (Streams)	EPA approved TMDL 8/30/05	2005	H
ME0103000310_322R01	Fish Brook (Fairfield)	Oxygen, Dissolved	EPA approved TMDL 8/30/2005	2005	H
ME0103000311_334R03	Jock Stream (Wales)	Nutrient/Eutrophication Biological Indicators	not started	2008	
ME0103000311_334R03	Jock Stream (Wales)	Oxygen, Dissolved	not started	2008	
ME0103000311_334R04	Mill Stream (Winthrop)	Benthic-Macroinvertebrate Bioassessments (Streams)	TMDL monitoring in 2005; biomonitoring in 2004	2008	M
ME0103000311_334R04	Mill Stream (Winthrop)	Impairment Unknown	TMDL monitoring in 2005; biomonitoring in 2004	2008	M

Table 8-4 River and Stream TMDL Current Project Update

ADB Assessment Unit ID	Water Name	Cause(s)	TMDL Project Status	Schedule	Priority
ME0103000311_334R05	Cobbossee Stream (Gardiner)	Phosphorus (Total)	EPA approved TMDL 5/20/2004 (under Pleasant Pond TMDL)	-	-
ME0103000312_333R02	Whitney Brook (Augusta)	Escherichia coli		2012	L
ME0103000312_333R04	Unnamed tributary to Bond Brook	Benthic-Macroinvertebrate Bioassessments (Streams)	Public review draft by 2007	2007	H
ME0103000312_333R04	Unnamed tributary to Bond Brook	Habitat Assessment (Streams)	Public review draft by 2007	2007	H
ME0103000312_335R03	Meadow Brook (Farmingdale)	Benthic-Macroinvertebrate Bioassessments (Streams)		2012	L
ME0103000312_339R_01	Kennebec R,	Dioxin (including 2,3,7,8-TCDD)	expected to attain		L
ME0103000312_339R_01	Kennebec R,	Polychlorinated biphenyls	not started- legacy PCB contamination	2020	L
ME0103000312_339R_02	Kennebec River at Waterville	Escherichia coli		2014	L
ME0103000312_340R_01	Kennebec R,	Dioxin (including 2,3,7,8-TCDD)			L
ME0103000312_340R_01	Kennebec R,	Polychlorinated biphenyls	not started- legacy PCB contamination	2020	L
ME0103000312_340R_02	Kennebec River at Augusta, including Riggs Brook	Escherichia coli		2013	L
ME0103000312_340R_03	Kennebec River at Hallowell	Escherichia coli		2008	L
ME0103000312_340R_04	Kennebec River at Gardiner-Randolph	Escherichia coli		2014	L
ME0103000312_427R	Merrymeeting Bay	Dioxin (including 2,3,7,8-TCDD)			L
ME0103000312_427R	Merrymeeting Bay	Polychlorinated biphenyls	not started- legacy PCB contamination	2020	L
ME0104000201_421R	Androscoggin R	Dioxin (including 2,3,7,8-TCDD)			L
ME0104000201_421R	Androscoggin R	Polychlorinated biphenyls	5d PCB legacy pollutant	2020	L
ME0104000202_421R	Androscoggin R	Dioxin (including 2,3,7,8-TCDD)			L
ME0104000202_421R	Androscoggin R	Polychlorinated biphenyls	not started- 5d- legacy PCB contamination	2020	L
ME0104000204_421R	Androscoggin R	Dioxin (including 2,3,7,8-TCDD)			L
ME0104000204_421R	Androscoggin R	Polychlorinated biphenyls	not started- legacy PCBs- Category 5d	2020	L
ME0104000204_422R	Androscoggin R	Dioxin (including 2,3,7,8-TCDD)			L
ME0104000204_422R	Androscoggin R	Polychlorinated biphenyls	not started- legacy PCB contamination; Category 5-d	2020	L
ME0104000205_410R01_02	Whitney Brook (Canton) .	Benthic-Macroinvertebrate Bioassessments (Streams)		2012	M
ME0104000205_422R	Androscoggin R	Dioxin (including 2,3,7,8-TCDD)			L
ME0104000205_422R	Androscoggin R	Polychlorinated biphenyls	not started- legacy PCB contamination; Category 5d	2020	L
ME0104000206_423R	Androscoggin R	Dioxin (including 2,3,7,8-TCDD)			L

Table 8-4 River and Stream TMDL Current Project Update

ADB Assessment Unit ID	Water Name	Cause(s)	TMDL Project Status	Schedule	Priority
ME0104000206_423R	Androscoggin R	Polychlorinated biphenyls	not started- legacy PCB contamination- Category 5d	2020	L
ME0104000206_423R01	Androscoggin R	Dioxin (including 2,3,7,8-TCDD)			L
ME0104000206_423R01	Androscoggin R	Benthic-Macroinvertebrate Bioassessments (Streams)	TMDL approved by EPA but ongoing licensing issues; approved 7/18/2005	2006 (Complete)	
ME0104000206_423R01	Androscoggin R	Polychlorinated biphenyls	5d- legacy pcbs	2020	L
ME0104000207_412R02	House/Lively Brook	Nitrogen (Total)	Consent order for waste (manure) removal; site permit in place; expected to attain	2010	L
ME0104000208_413R01	Jepson Brook (Lewiston)	Escherichia coli		2008	
ME0104000208_413R01	Jepson Brook (Lewiston)	Habitat Assessment (Streams)	not started	2010	M
ME0104000208_413R01	Jepson Brook (Lewiston)	Oxygen, Dissolved	not started	2010	M
ME0104000208_413R03	Stetson Brook (Lewiston)	Escherichia coli		2008	
ME0104000208_413R03	Stetson Brook (Lewiston)	Oxygen, Dissolved		2008	
ME0104000208_413R04	Logan Brook, Auburn	Escherichia coli		2010	L
ME0104000208_413R04	Logan Brook, Auburn	Habitat Assessment (Streams)	Draft completed	2007	H
ME0104000208_413R04	Logan Brook, Auburn	Oxygen, Dissolved	Draft completed	2007	H
ME0104000208_413R07	Gully Brook (Lewiston)	Escherichia coli	not started	2012	M
ME0104000208_413R07	Gully Brook (Lewiston)	Oxygen, Dissolved	not started	2012	M
ME0104000208_424R	Androscoggin R,	Dioxin (including 2,3,7,8-TCDD)			L
ME0104000208_424R	Androscoggin R,	Polychlorinated biphenyls	not started; legacy PCBs-5d listed	2020	L
ME0104000208_424R_01	Androscoggin R,	Phosphorus	TMDL approved by EPA but ongoing licensing issues; approved 7/18/2005	2006 (Complete)	
ME0104000208_424R_01	Androscoggin R,	Dioxin (including 2,3,7,8-TCDD)			L
ME0104000208_424R_01	Androscoggin R,	BOD, Biochemical oxygen demand	TMDL approved by EPA but ongoing licensing issues; approved 7/18/2005	2006 (Complete)	
ME0104000208_424R_01	Androscoggin R,	Oxygen, Dissolved	EPA approved TMDL but ongoing licensing issues; Approved 7/18/2005	2006 (Complete)	
ME0104000208_424R_01	Androscoggin R,	Polychlorinated biphenyls	not started; legacy PCB contamination- 5d listed	2020	L
ME0104000208_424R_01	Androscoggin R,	Total suspended solids	TMDL approved by EPA but ongoing licensing issues; approved 7/18/2005	2006 (Complete)	H
ME0104000209_417R_02	Little Androscoggin River at Mechanic Falls	Escherichia coli		2012	L
ME0104000210_413R02	Penley Brook (Auburn)	Oxygen, Dissolved	not started	2010	M

Table 8-4 River and Stream TMDL Current Project Update

ADB Assessment Unit ID	Water Name	Cause(s)	TMDL Project Status	Schedule	Priority
ME0104000210_418R01	Sabattus River between Sabattus and Androscoggin R	Benthic-Macroinvertebrate Bioassessments (Streams)	updated modeling report completed in 2006	2007	H
ME0104000210_418R01	Sabattus River between Sabattus and Androscoggin R	Nutrient/Eutrophication Biological Indicators	Updated, revised modeling report completed 2006	2007	H
ME0104000210_418R01	Sabattus River between Sabattus and Androscoggin R	Oxygen, Dissolved	Updated, revised modeling report completed 2006	2007	H
ME0104000210_418R02	No Name Brook (Lewiston)	Escherichia coli		2008	
ME0104000210_418R02	No Name Brook (Lewiston)	Oxygen, Dissolved		2008	
ME0104000210_419R01	Unnamed Brook (Biomon Sta. 347-Lisbon Falls at Rt 196)	Habitat Assessment (Streams)	not started	2010	H
ME0104000210_419R02	Hart Brook (Lewiston) A.K.A Dill Brook and including Goff Bk	Benthic-Macroinvertebrate Bioassessments (Streams)	Contract for TMDL under the name of "Dill Brook"; draft complete 9/2006	2007	H
ME0104000210_419R02	Hart Brook (Lewiston) A.K.A Dill Brook and including Goff Bk	Escherichia coli		2010	L
ME0104000210_419R02	Hart Brook (Lewiston) A.K.A Dill Brook and including Goff Bk	Habitat Assessment (Streams)	draft complete 9/2006 under the name of "Dill Brook"	2007	H
ME0104000210_419R02	Hart Brook (Lewiston) A.K.A Dill Brook and including Goff Bk	Oxygen, Dissolved	draft complete 9/2006,under the name of Dill Brook	2007	H
ME0104000210_420R01	Unnamed tributary to Androscoggin R	Habitat Assessment (Streams)		2012	L
ME0104000210_420R02	Unnamed tributary to Androscoggin R	Habitat Assessment (Streams)		2012	L
ME0104000210_420R03	Unnamed tributary to Androscoggin R	Habitat Assessment (Streams)		2012	L
ME0104000210_420R04	Unnamed tributary to Androscoggin R	Habitat Assessment (Streams)		2012	L
ME0104000210_425R_01	Androscoggin R,	Dioxin (including 2,3,7,8-TCDD)			L
ME0104000210_425R_01	Androscoggin R,	Polychlorinated biphenyls	not started, legacy PCB contamination- 5d listed	2020	L
ME0104000210_425R_02	Androscoggin River	Escherichia coli	CSO segment	2017	L
ME0104000210_426R	Androscoggin R	Dioxin (including 2,3,7,8-TCDD)			L
ME0104000210_426R	Androscoggin R	Polychlorinated biphenyls	not started, legacy PCB contamination; 5d listed	2020	L
ME0105000201_507R01	Dennys River	Impairment Unknown		2010	M
ME0105000201_507R01	Dennys River	Polychlorinated biphenyls			L
ME0105000203_508R02	Pottle Brook (Perry)	Escherichia coli		2012	L
ME0105000209_512R_02	McCoy Brook (Deblois)	Benthic-Macroinvertebrate Bioassessments (Streams)	5-d legacy effect from abandoned peat mining-low pH	2012	M
ME0105000209_512R_02	McCoy Brook (Deblois)	pH	5-d legacy effect from abandoned peat mining-low pH	2012	L
ME0105000209_512R_03	Great Falls Branch, Schoodic Stream (Deblois)	Benthic-Macroinvertebrate Bioassessments (Streams)		2012	M

Table 8-4 River and Stream TMDL Current Project Update

ADB Assessment Unit ID	Water Name	Cause(s)	TMDL Project Status	Schedule	Priority
ME0105000213_514R_01	Card Brook (Ellsworth)	Escherichia coli		2012	
ME0105000213_514R_01	Card Brook (Ellsworth)	Oxygen, Dissolved		2012	
ME0105000217_520R01	Carleton Stream (Blue Hill)	Benthic-Macroinvertebrate Bioassessments (Streams)			
ME0105000217_520R01	Carleton Stream (Blue Hill)	Iron	EPA approved TMDL 10/7/2004		L
ME0105000218_521R01	Warren Brook (Belfast)	Oxygen, Dissolved		2012	
ME0105000220_522R01_01	Megunticook River (Camden)	Escherichia coli		2012	L
ME0105000220_522R02_01	Unnamed Brook (Camden) .	Escherichia coli		2012	L
ME0105000220_522R03	Unnamed Brook (Rockport)	Escherichia coli		2012	L
ME0105000220_522R04	Unnamed Brook (Rockland)	Escherichia coli		2012	L
ME0105000305_528R01	Sheepscot River at Alna	Escherichia coli	Under bundled bacteria TMDL approach	2008	M
ME0105000305_528R02	West Branch Sheepscot River	Oxygen, Dissolved	Draft sent to EPA 9/30/2005; Public review draft completed in 2006	2007	H
ME0105000305_528R03	Dyer River below Rt 215	Escherichia coli	draft TMDL	2007	H
ME0105000305_528R03	Dyer River below Rt 215	Oxygen, Dissolved	draft TMDL	2007	H
ME0105000305_528R04	Trout Brook (Alna)	Oxygen, Dissolved	TMDL monitoring 2005	2009	M
ME0105000305_528R05	Meadow Bk (Whitefield)	Oxygen, Dissolved	TMDL monitoring in 2005	2009	M
ME0105000305_528R06	Carlton Bk (Whitefield)	Oxygen, Dissolved	TMDL monitoring in 2005	2009	
ME0105000305_528R07	Choate Bk (Windsor)	Oxygen, Dissolved	TMDL monitoring in 2005	2009	
ME0105000305_528R08_01	Chamberlain Bk (Whitefield) .	Oxygen, Dissolved	TMDL monitoring in 2005	2009	
ME0105000305_528R08_02	Sheepscot River below Sheepscot L	Oxygen, Dissolved	Hatchery permit provisions are expected to result in attainment; permit expiration date 2/20/11	2008	L
ME0106000101_605R01	Mile Brook (Casco)	Benthic-Macroinvertebrate Bioassessments (Streams)	4-b Expected to attain- hatchery permit issued	2006	H
ME0106000102_603R02	Chandler River including East Branch	Oxygen, Dissolved		2012	
ME0106000102_603R06	Cole Brook (Gray)	Benthic-Macroinvertebrate Bioassessments (Streams)		2012	L
ME0106000103_607R01	Black Brook (Windham)	Oxygen, Dissolved	Under bundled bacteria TMDL approach	2008	
ME0106000103_607R03	Colley Wright Brook (Windham)	Escherichia coli	Under bundled bacteria TMDL approach	2008	
ME0106000103_607R03	Colley Wright Brook (Windham)	Oxygen, Dissolved		2008	
ME0106000103_607R04	Piscataqua River (Falmouth)	Escherichia coli	5b1--low priority recreational waters	2012	L
ME0106000103_607R06	Hobbs Brook (Cumberland)	Escherichia coli	Under bundled bacteria TMDL approach	2008	
ME0106000103_607R06	Hobbs Brook (Cumberland)	Oxygen, Dissolved		2008	
ME0106000103_607R07	Inkhorn Brook (Westbrook)	Escherichia coli	Under bundled bacteria TMDL approach	2008	
ME0106000103_607R07	Inkhorn Brook (Westbrook)	Oxygen, Dissolved		2008	
ME0106000103_607R08	Mosher Brook (Gorham)	Escherichia coli	Under bundled bacteria TMDL approach	2008	

Table 8-4 River and Stream TMDL Current Project Update

ADB Assessment Unit ID	Water Name	Cause(s)	TMDL Project Status	Schedule	Priority
ME0106000103_607R08	Mosher Brook (Gorham)	Oxygen, Dissolved		2008	
ME0106000103_607R09	Otter Brook (Windham)	Escherichia coli	Under bundled bacteria TMDL approach	2008	
ME0106000103_607R09	Otter Brook (Windham)	Oxygen, Dissolved		2008	
ME0106000103_607R10	Thayer Brook	Oxygen, Dissolved		2008	
ME0106000103_607R11	Nason Brook (Gorham)	Escherichia coli	5-B, low priority, non-CSO, bacteria only waters		L
ME0106000103_607R12	Pleasant River (Windham)	Escherichia coli	not started, new 303d listing	2010	M
ME0106000103_607R12	Pleasant River (Windham)	Oxygen, Dissolved	not started, new 303d listing	2010	M
ME0106000103_609R_02	Presumpscot River at Westbrook	Escherichia coli		2011	L
ME0106000104_611R02	Phillips Brook (Scarborough)	Habitat Assessment (Streams)		2008	M
ME0106000105_607R11_01	Nasons Brook (Portland) south of Rt 25, trib to Fore River	Benthic-Macroinvertebrate Bioassessments (Streams)	TMDL monitoring in 2006	2008	H
ME0106000105_609R01	Unnamed Stream (Portland 3)	Benthic-Macroinvertebrate Bioassessments (Streams)	new listing, not started	2012	M
ME0106000105_610R01	Capisic Brook	Benthic-Macroinvertebrate Bioassessments (Streams)	Draft sent to EPA 7/29/05 under bundled Urban Stream project	2007	H
ME0106000105_610R01	Capisic Brook	Habitat Assessment (Streams)	Draft sent to EPA 7/29/2005 under bundled urban stream report	2007	H
ME0106000105_610R02	Clark Brook (Westbrook)	Oxygen, Dissolved		2012	
ME0106000105_610R03	Long Creek (South Portland)	Benthic-Macroinvertebrate Bioassessments (Streams)	Internal draft TMDL; active stakeholder process; developing Watershed Management Plan	2009	M
ME0106000105_610R03	Long Creek (South Portland)	Habitat Assessment (Streams)	Internal draft TMDL; active stakeholder process; developing Watershed Management Plan	2009	M
ME0106000105_610R04	Stroudwater River (South Portland, Westbrook)	Oxygen, Dissolved		2012	
ME0106000105_610R05	Trout Brook (South Portland)	Benthic-Macroinvertebrate Bioassessments (Streams)	Public review draft complete; bundled urban stream group	2007	H
ME0106000105_610R05	Trout Brook (South Portland)	Habitat Assessment (Streams)	Draft complete	2007	H
ME0106000105_610R06	Kimball Brook	Benthic-Macroinvertebrate Bioassessments (Streams)	TMDL monitoring in 2005 and 2006	2012	M
ME0106000105_610R06	Kimball Brook	Habitat Assessment (Streams)	TMDL monitoring in 2005 and 2006	2012	M
ME0106000105_610R07	Red Brook (Scarborough, S Portland)	Habitat Assessment (Streams)		2012	L
ME0106000105_610R07	Red Brook (Scarborough, S Portland)	Polychlorinated biphenyls		2012	
ME0106000105_610R08	Fall Bk (Portland)	Habitat Assessment (Streams)		2012	L

Table 8-4 River and Stream TMDL Current Project Update

ADB Assessment Unit ID	Water Name	Cause(s)	TMDL Project Status	Schedule	Priority
ME0106000105_610R09	Barberry Cr	Benthic-Macroinvertebrate Bioassessments (Streams)	Public review draft complete; comments close 8/18/06	2007	H
ME0106000105_610R09	Barberry Cr	Habitat Assessment (Streams)	Final TMDL submitted to EPA; public review draft comments close 8/18/2006	2007	H
ME0106000106_602R01	Frost Gully Brook	Benthic-Macroinvertebrate Bioassessments (Streams)	draft TMDL complete	2007	H
ME0106000106_602R01	Frost Gully Brook	Escherichia coli	Draft complete	2007	H
ME0106000106_602R01	Frost Gully Brook	Habitat Assessment (Streams)	draft complete	2007	H
ME0106000106_602R02	Mare Brook (Brunswick)	Habitat Assessment (Streams)		2008	M
ME0106000106_602R03	Concord Gully (Freeport)	Habitat Assessment (Streams)	draft complete	2007	H
ME0106000106_612R01_01	Goosefare Brook .	Cadmium	EPA approved TMDL complete 9/29/2003		
ME0106000106_612R01_01	Goosefare Brook .	Chromium (total)	EPA approved TMDL 9/29/2003		
ME0106000106_612R01_01	Goosefare Brook .	Copper	EPA approved TMDL 9/29/2003		
ME0106000106_612R01_01	Goosefare Brook .	Iron	EPA approved TMDL 9/29/2003		
ME0106000106_612R01_01	Goosefare Brook .	Lead	EPA approved TMDL 9/29/2003		
ME0106000106_612R01_01	Goosefare Brook .	Nickel	EPA approved TMDL 9/29/2003		
ME0106000106_612R01_01	Goosefare Brook .	Zinc	EPA approved TMDL 9/29/2003		
ME0106000106_612R01_02	Bear Brook, Saco	Escherichia coli	Not started	2011	L
ME0106000106_616R04	Bear Bk	Escherichia coli	Not started	2012	L
ME0106000204_618R01	Saco R	Escherichia coli		2012	L
ME0106000209_614R01	Ossippee R	Escherichia coli		2012	L
ME0106000210_615R01	Little Ossippee R	Benthic-Macroinvertebrate Bioassessments (Streams)	not started	2012	L
ME0106000210_615R01	Little Ossippee R	Oxygen, Dissolved	not started	2012	L
ME0106000210_615R02	Brown Brook (Limerick)	Benthic-Macroinvertebrate Bioassessments (Streams)	not started	2008	M
ME0106000210_615R02	Brown Brook (Limerick)	Habitat Assessment (Streams)		2008	M
ME0106000211_616R	Wales Pond Brook (Hollis)	Benthic-Macroinvertebrate Bioassessments (Streams)	not started	2009	H
ME0106000211_616R02	Tappan Bk	Escherichia coli		2012	L
ME0106000211_616R03	Sawyer Bk	Escherichia coli		2012	L
ME0106000211_616R05	Thatcher Bk (Biddeford)	Benthic-Macroinvertebrate Bioassessments (Streams)	New listing; Not started	2012	M
ME0106000211_616R05	Thatcher Bk (Biddeford)	Escherichia coli		2012	L
ME0106000211_616R06	Swan Pond Brook at South Street (Biddeford)	Escherichia coli		2012	L
ME0106000211_619R01	Saco River at Biddeford-Saco	Escherichia coli		2013	L
ME0106000301_622R01	Kennebunk River	Escherichia coli		2012	L
ME0106000301_622R02	Lord's Brook (Lyman)	BOD, Biochemical oxygen demand	Not started	2012	M
ME0106000301_622R02	Lord's Brook (Lyman)	Oxygen, Dissolved	Not started	2012	M

Table 8-4 River and Stream TMDL Current Project Update

ADB Assessment Unit ID	Water Name	Cause(s)	TMDL Project Status	Schedule	Priority
ME0106000301_622R02	Lord's Brook (Lyman)	Nutrient/Eutrophication Biological Indicators	Not started	2012	M
ME0106000302_628R01	Mousam R,	Aluminum	EPA approved TMDL 3/8/2001		
ME0106000302_628R01	Mousam R,	Ammonia (Un-ionized)	EPA approved TMDL 3/8/2001		
ME0106000302_628R01	Mousam R,	Arsenic	EPA approved TMDL 3/8/2001		
ME0106000302_628R01	Mousam R,	BOD, Biochemical oxygen demand	EPA approved TMDL 3/8/2001		
ME0106000302_628R01	Mousam R,	Copper	EPA approved TMDL 3/8/2001		
ME0106000302_628R01	Mousam R,	Lead	EPA approved TMDL 3/8/2001		
ME0106000302_628R01	Mousam R,	Phosphorus (Total)	EPA approved TMDL 3/8/2001		
ME0106000302_628R01	Mousam R,	Selenium	EPA approved TMDL 3/8/2001		
ME0106000302_628R01	Mousam R,	Silver	EPA approved TMDL 3/8/2001		
ME0106000302_628R01	Mousam R,	Zinc	EPA approved TMDL 3/8/2001		
ME0106000302_628R01_01	Mousam River downstream of Old Falls Dam	Escherichia coli	5B- CSO permit is in place		L
ME0106000302_628R02	Mousam River at Sanford	Escherichia coli		2008	L
ME0106000303_624R01	Stevens Brook (Wells, Ogunquit)	Benthic-Macroinvertebrate Bioassessments (Streams)	TMDL monitoring in 2006	2008	M
ME0106000304_625R01	Adams Brook (Berwick)	Benthic-Macroinvertebrate Bioassessments (Streams)	TMDL monitoring in 2006	2008	M
ME0106000304_625R03	West Brook (N. Berwick)	1,1-Dichloroethane	not started	2012	
ME0106000304_625R03	West Brook (N. Berwick)	1,2-Dichloroethane	not started	2012	
ME0106000304_625R03	West Brook (N. Berwick)	Oxygen, Dissolved	not started	2012	
ME0106000305_630R01	Salmon Falls R	Dioxin (including 2,3,7,8-TCDD)	4-b expected to attain	2008	L
ME0106000305_630R01	Salmon Falls R	Escherichia coli	NH data and TMDL	2008	
ME0106000305_630R01	Salmon Falls R	Polychlorinated biphenyls	not started; legacy PCBs	2020	L

Table 8-5 Lake TMDL Current Project Update

Lake	Lake ID	Pollutants	Project Status	Priority *	TMDL Submittal Target**
ARNOLD BROOK L	409	Total phosphorus	Public review draft	28	2007
ECHO L	1776	Total phosphorus	Public review draft	29	2007
MONSON P	1820	Total phosphorus	EPA approved	33	2007
TRAFTON L	9779	Total phosphorus	EPA approved	27	2007
CHRISTINA RESERVOIR	9525	Total phosphorus	Preliminary draft	30	2007
HAMMOND P	2294	Possible natural condition	Sediment aging	24	2007
HERMON P	2286	Possible natural condition	Sediment aging	25	2007
LONG P	5272	Dissolved oxygen; Total phosphorus	Report contract-EPA	34	2008
WILSON P	3832	Total phosphorus	Report contract-EPA	35	2007

* Priority rank begins with number 24 because TMDLs for lakes having priorities 1 - 23 are complete (and are listed in Category 4A)

** Calendar year projection as of November 2006

Table 8-6 Estuarine/Marine Current TMDL Project Update

Segment	Assessment Unit ID & Pollutant	Project Status	TMDL Submittal Target
Mousam River Estuary	811-9, PS	Report Review	2008

Chapter 9 Accessing and Managing Data Used in Making Decisions on Status of Waters

Maine DEP Quality Management System

Contact: Malcolm Burson, DEP Quality Assurance Manager, Office of Policy Services

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Related Website: www.maine.gov/dep/qms.htm

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 QMP or Quality Management Plan (Revision 2, as approved by EPA-New England, June, 2003). The Plan documents DEP's Quality Management System (QMS) which applies to all program areas and activities in the Maine DEP.

The QMS uses a rigorous internal second-party audit approach to managing for quality, in addition to program-level QA/QC activities. The latter are documented in Standard Operating Procedures (SOPs) developed and implemented for each program area. SOPs are included in all Quality Assurance Project/Program Plans (QAPPs) applicable to environmental data gathering and analysis.

The auditing program of the QMS uses trained auditors from within Maine DEP to assess the quality of management systems, procedures, and protocols. Audits are scheduled and overseen by the Quality Management Steering Committee (QMSC), and are designed to identify opportunities for improvement as well as non-conformances with established standards. Audits are carried out at three operational levels:

- System-wide audits of QMP elements such as "Documents and Records" or "Planning,"
- Program audits of identifiable operational systems, such as the Permit Compliance System (PCS), and
- Technical audits of QAPPs and similar planning documents.

Since its inception in 2001, the auditing program is assessed the following areas relevant to the 305(b) Report:

- NPDES Permit Compliance System and Discharge Monitoring Report system data management
- NPDES Water Inspection (documentation)
- Division of Land Resource Regulation
- Bureau of Remediation and Waste Management, GRO/DRO Sampling program (ground water)
- CWA 319 program
- Overboard Discharge Program

In 2006-7, the following areas are scheduled for audit:

- 319 Program; follow-up audit, and audit of a sub-grantee sampling and monitoring QAPP
- Marine monitoring program;
- Industrial stormwater program

In 2003, the QMSC initiated an effort to bring all laboratories providing environmental data results to the Department into compliance with basic laboratory standards. DEP published Laboratory Performance Standards and distributed these to all NPDES facilities and other laboratories. These Standards are being incorporated in wastewater permits as these are renewed. The Department is currently developing a Laboratory Quality Assurance Manual template for use by wastewater permit holders through a grant utilizing Joint Environmental Training Coordinating Committee (JETCC) funds.

The other major focus of QMS activity related to decisions regarding the status of waters is in Maine DEP's administration of QAPPs. As the result of a Memorandum of Agreement (January, 2002) between EPA-New England and the Department, authority to review and approve QAPPs has been delegated in stages from EPA to Maine DEP. QAPPs for water quality activities previously approved by EPA-NE are now overseen by Maine DEP, including approval of revisions. Following an initial round of parallel review, all water quality monitoring QAPPs under the CWA 319 program are reviewed and approved by DEP instead of EPA. In 2004, program-level QAPPs for Lakes Monitoring (including TMDL and volunteer monitoring) and Bio-criteria Monitoring were approved on the basis of parallel review by EPA-New England and DEP. A project QAPP for the Urban Streams TMDL program was approved using a similar process in 2003. Program-level QAPPs for Marine/Estuarine monitoring, and Wetlands monitoring, are under development. It is expected that when these are complete, DEP will have full authority to review and approve them. In 2005, Maine developed, and EPA approved, a program-level QAPP for the Section 319 Nonpoint Source Management program.

Certain other QAPPs related to water quality describe quality assurance activities for projects outside DEP's span of control. Chief among these are QAPPs for activities carried out by the Casco Bay Estuary Project (CBEP), and projects developed and carried out by EPA-New England in Maine. Since 2003, DEP has reviewed and approved several QAPPs for water quality sampling and monitoring activities carried out by non-DEP organizations. These have included Presumpscot River Watch; Great Works River Watershed coalition; and the Spruce Creek Water Quality Monitoring Program.

ENVIRONMENTAL INFORMATION MANAGEMENT SYSTEMS

ASSESSMENT DATABASE (ADB)

Contact: Susan Davies, DEP BLWQ, Division of Environmental Assessment (DEA)

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EPA Region 1 support has enabled assessment data for lakes and rivers and streams, from Maine's 2004 305b report to be uploaded into the Environmental Protection Agency **Assessment Database (ADB)**. ADB is a relational database application for tracking and reporting water quality assessment data, including use attainment, and causes and sources of impairment. The ADB is designed to increase the efficiency and accuracy of reporting on waterbody status.

The ADB supports three principal functions:

- Improve the quality and consistency of water quality reporting
- Reduce the burden of preparing reports under Sections 305(b), 303(d), 314, and 319 of the Clean Water Act (CWA)
- Improve water quality data analysis

The ability to report assessments out of ADB for the 2006 Maine Integrated Report establishes Maine's on-going ability to electronically track and document water quality assessment decisions for lakes and streams. It should simplify production of the 2008 Integrated Report. DEP is considering how to coordinate development of an integrated surface water analysis database (See below, Integrated Surface Water Analysis Database) to ensure that new monitoring data that will be stored in that system can be directly related to ADB assessment units. The Department goal is to integrate up-to-date monitoring data and assessment results, through spatial data analysis, to the fullest extent possible. ADB will make accurate and current assessment information more widely available within the Department and thereby improve reporting consistency. The database also provides for comment fields to document the reasoning and background information that may have influenced the reported assessment decision.

Biological Monitoring Internet Mapping Project (BioIMP)

Contact: Beth Connors, DEP BLWQ, Division of Environmental Assessment (DEA)

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Related Website:

www.maine.gov/dep/blwq/docmonitoring/biomonitoring/biomaps/index.htm

The Biological Monitoring Program assesses the health of rivers, streams, and wetlands by evaluating the composition of resident biological communities, including macroinvertebrates and algae, and has been moving toward a comprehensive watershed perspective in collecting and interpreting wetland and stream data. They have been collecting biological, chemical and physical data from rivers and streams since 1983 and from wetlands since 1998. Currently, the Biomonitoring Unit has established 788 river and stream sampling locations and 134 wetland sampling locations and has conducted over 1700 individual sampling events. (See the Aquatic Life Monitoring section for a more detailed program description).

The Biological Monitoring Program has created an internet mapping site to increase the accessibility of the unit's sampling locations and sampling results. The internet mapping site combines macroinvertebrate, algae, and water chemistry data for rivers, streams and wetlands into a common spatial format and displays it in a web-based platform, enabling the user to access local information about overall watershed conditions. The user can utilize map or text based search functions to focus on an area of interest, select an individual sampling station, and see results from a sampling event at that station. This internet mapping site also enables the user to print maps and download query results.

As of January 2006, a simple, first version of the internet mapping site has been made available for internal DEP review and contains information about 905 sampling stations and 1005 sampling events. Due to a rigorous quality assurance review procedure, not all of the Biological Monitoring Unit's data is ready to be released at this time.

The data released in the simple, first version includes:

- the sampling station's name and information about it's location (town and county)
- all associated sample ID number(s),
- the statutory class and attainment class (if applicable),
- a subset of physical and chemical parameters recorded at time of sampling (water temperature, dissolved oxygen)
- a subset of the biological community characteristics found in a sample (total abundance of all macroinvertebrates, generic richness of macroinvertebrates)

As this project is fully developed, more information about each sampling event will be available, all the above information and:

- a complete list of the physical and chemical parameters recorded at time of sampling,
- the results of water chemistry samples,
- a printable report with a site description, photos, and an evaluation of the site's overall health
- complete list of all biological communities (macroinvertebrates and algae) collected at each sample event

Environmental Groundwater Analysis Database (EGAD)

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Related Website: www.maine.gov/dep/rwm/egad/

The Maine Environmental and Groundwater Analysis Database (EGAD) is designed to store 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. It currently includes spatially located data for 37 different site types of potential and actual sources of contamination to groundwater in Maine. Access to comprehensive up-to-date analytical data allows DEP to assess trends in regional ground water quality and quantity. It also improves automated analysis and map-making capability including rapid access to information for emergency response to hazardous materials spills. Detailed well and analytical information in the database is used by staff to design remedial action at hazardous spill sites. It is also used by staff to evaluate potential for cumulative impacts of real estate development on ground water quality.

As of March 2006, the EGAD database contains data for 13,723 sites, 11,455 sample points, 142,621 samples, and 2,414,837 parameters. Ninety Eight percent (98%) of the sites and Forty Five percent (45%) of the sample points have been spatially located and are accessible for mapping purposes via the department GIS system. This GIS linkage enables a GIS user access the site and water quality information stored in the Oracle relational database, via the ESRI ArcMap software product. The department has worked with regional analytical laboratories to develop a common electronic data deliverable (EDD) for the submission of groundwater analytical data to the department. This has greatly improved the speed and efficiency of the input of analytical results into the database. The department is also developing tools to assist staff in the extraction of data from the database for use in reports, analysis, and map figures.

INTEGRATED SURFACE WATER ANALYSIS DATABASE

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The Department has numerous databases containing data on surface water bodies (rivers, streams, lakes, wetlands, marine waters), and the physical characteristics associated with them (gravel pits, sand-salt piles, hazardous waste sites, licensed discharges, designated resource protection areas, etc.). These databases are not integrated. The databases cannot, therefore, be used conjunctively, i.e. data from one database cannot be overlaid or compared with data from other databases except by time and labor consuming manual methods. A similar situation with groundwater databases was recently resolved by integrating these systems into EGAD (the Environmental Groundwater Analysis Database).

The Department has many requests and obligations from staff, federal agencies, and the public to share related surface water quality data in a meaningful way. In some cases, our ability to continue receiving federal funding for long-standing basic programs will require improvements in our ability to share data. Our ability to comprehensively understand resource issues that apply to licensing, compliance and enforcement processes is dependent on our ability to integrate data sources. Requests are becoming increasingly frequent to provide individuals, consultants, businesses and municipalities with information on potential or actual contamination sites in the vicinity of proposed building lots, source water protection areas and other areas of proposed development. The data we have available can also be used to evaluate the potential for cumulative impacts of development on water quality. However, since the data required to effectively answer these needs reside in multiple data sets, there are things that we should be able to do but that we cannot do.

To remedy this situation, the Department has decided, following careful analysis, to expand the existing EGAD system to house surface water data in addition to groundwater data. The expanded database will function as a utility to store and access comprehensive up-to-date surface water quality information, assist in answering inquiries, satisfy requests for surface water data, provide automated analysis and map-making capability, assess trends in regional surface water quality and quantity, and achieve rapid access to information for emergency response for hazardous materials spills. Furthermore, the EGAD system will allow complete integration of surface water and groundwater data via spatial relationships. The incorporation of surface water data into EGAD is scheduled to be completed by the end of 2007.

LISTINGS ON INDIVIDUAL WATERS

See Appendices II through IV (separate document) for listing information on specific waters.

State of Maine

Department of Environmental Protection

2006 Integrated Water Quality Monitoring and Assessment Report

Appendices:

Acronyms, HUC Maps, Definitions And Integrated Lists of Surface Waters

Table of Contents

APPENDIX I: ACRONYMS FOUND IN THE BODY OF THE 2006 305(B) REPORT ALONG WITH THE MEANING OR DEFINITION

No.	Term	Meaning or Definition
1	303(d) List	List of a state's Impaired Waters
2	305(b) Report	The 305(b) report is a complete assessment of all water quality management sub-segments in the state for which uses and standards are available. (a.k.a. The Integrated Report)
3	A/B	Above/Below (Fish Test for Dioxin)
4	ADB	EPA Database (short for Assessment DataBase)
5	ALPS	Aquifer Lakes Pilot Survey
6	AMCL	Alternate Maximum Contaminant Level
7	AMD	Acid Mine Drainage
8	ANC	Acid Neutralizing Capacity
9	AST	Above Ground Storage tank
10	AU	Animal Unit: 1 AU is equal to 1,000 lbs. of live animal body weight.
11	BMP	Best Management Practice
12	Board	Board of Environmental Protection
13	BOD	Biological or Biochemical Oxygen Demand
14	BPJ	Best Professional Judgment
15	CAFO	Concentrated Animal Feeding Operation
16	CBEP	Casco Bay Estuary Project
17	CDBG	Community Development Block Grant
18	CHL a	Chlorophyll a
19	CNMP	Certified Nutrient Management Planners
20	COD	Chemical Oxygen Demand
21	CSO	Combined Sewer Overflow
22	CWA	Clean Water Act
23	DAFRR	Maine Department of Agriculture, Food and Rural Resources - former name of the MDOA
24	DEP - BAQ	Department of Environmental Protection - Bureau of Air Quality
25	DEP - BLWQ	Department of Environmental Protection - Bureau of Land and Water Quality
26	DEP - BLWQ - DEA	DEP - Bureau of Land and Water Quality - Division of Environmental Assessment

No.	Term	Meaning or Definition
27	DEP - BLWQ - DECTA	DEP - Bureau of Land and Water Quality - Division of Engineering, Compliance and Technical Assistance
28	DEP - BLWQ - DLRR	DEP - Bureau of Land and Water Quality - Division of Land Resource Regulation
29	DEP - BLWQ - DPS	DEP - Bureau of Land and Water Quality - Division of Program Services
30	DEP - BLWQ - DWM	DEP - Bureau of Land and Water Quality - Division of Watershed Management
31	DEP - BLWQ - DWRR	DEP - Bureau of Land and Water Quality - Division of Water Resource Regulation
32	DEP - BLWQ - DWRR - UICP	DEP - BLWQ - Division of Water Resource Regulation - Underground Injection Control Program
33	DEP - BRWM	Department of Environmental Protection - Bureau of Remediation and Waste Management
34	DEP - BRWM - DOHWFR	DEP - Bureau of Remediation and Waste Management - Division of Oil and Hazardous Waste Facilities Regulation
35	DEP - BRWM - DOR	DEP - Bureau of Remediation and Waste Management - Division of Remediation
36	DEP - BRWM - DOR - USP	DEP - BRWM - Division of Remediation - Uncontrolled Hazardous Substance Sites Program
37	DEP - BRWM - DPS	DEP - Bureau of Remediation and Waste Management - Division of Program Services
38	DEP - BRWM - DSWM	DEP - Bureau of Remediation and Waste Management - Division of Solid Waste Management
39	DEP - BRWM - DTS	DEP - Bureau of Remediation and Waste Management - Division of Technical Services
40	DEP, MDEP, MeDEP, "The Department"	State of Maine - Department of Environmental Protection
41	DHS - BOH	Department of Human Services - Bureau of Health
42	DHS - BOH - DHE	DHS - Bureau of Health - Division of Health Engineering
43	DHS - BOH - DHE - DWP	DHS - Bureau of Health - Division of Health Engineering - Drinking Water Program
44	DHS - BOH - DHE - DWP - WHPP	DHS - BOH - DHE - Drinking Water Program - Wellhead Protection Program
45	DHS - BOH - DHE - RCP	DHS - Bureau of Health - Division of Health Engineering - Radiation Control Program
46	DHS - BOH - HETL	DHS - Bureau of Health - Public Health and Environmental Testing Laboratory
47	DHS, MDHS	Department of Human Services
48	DIFW - BRM	Maine Department of Inland Fisheries and Wildlife - Bureau of Resource Management
49	DIFW, IF&W, MDIFW	Maine Department of Inland Fisheries and Wildlife
50	DMR	Discharge Monitoring Report
51	DMR - BRM	Department of Marine Resources - Bureau of Resource Management
52	DMR - BRM - PHD	DMR - Bureau of Resource Management - Public Health Division
53	DMR, MDMR	Department of Marine Resources
54	DOA - OANRR	Maine Department of Agriculture - Office of Agricultural, Natural and Rural Resources
55	DOA - OANRR - BPC	DOA - Office of Agricultural, Natural and Rural Resources - Board of Pesticide Control

No.	Term	Meaning or Definition
56	DOA - OANRR - NMP	DOA - Office of Agricultural, Natural and Rural Resources - Nutrient Management Program
57	DOA, MDOA	Maine Department of Agriculture
58	DOC	Department of Conservation
59	DOC	Dissolved Organic Carbon
60	DOC - BGNA	Department of Conservation - Bureau of Geology and Natural Areas
61	DOC - BGNA - MGS	DOC - Bureau of Geology and Natural Areas - Maine Geologic Survey
62	DOC - BGNA - MNAP	DOC - Bureau of Geology and Natural Areas - Maine Natural Areas Program
63	DOC - LURC	Department of Conservation - Land Use Regulation Commission
64	DOE, U.S. DOE, USDOE	Department of Energy
65	EDD	Electronic Data Deliverable
66	EGAD	Environmental Groundwater Analysis Database
67	ELS	Eastern Lake Survey
68	EMAP	Environmental Monitoring and Assessment Program
69	EPA, USEPA, U.S. EPA	United States Environmental Protection Agency
70	EPA-NE, EPA-New England	Region 1 of the EPA (Covers CT, MA, ME, NH, RI & VT)
71	FFY	Federal Fiscal Year
72	GIS	Geographic Information Systems - computerized mapping systems
73	GPA	Great Pond Class A
74	GPS	Global Positioning System
75	GTCC	Greater Than Class C (radioactive waste)
76	HDPE	High-Density Poly Ethylene
77	HELM	High Elevation Lakes Monitoring
78	HLW	High Level (radioactive) Waste
79	HRS	Hazard Ranking System
80	HUC	Hydrologic Unit Code
81	ICAG	Interim Cover and Grading (procedure for landfills)
82	ISFSI	Independent Spent (nuclear power plant) Fuel Storage Installation
83	JETCC	Joint Environmental Training Coordinating Committee
84	LLW	Low Level (radioactive) Waste

No.	Term	Meaning or Definition
85	LQG	Large Quantity Generators
86	LUST	Leaking Underground Storage Tank
87	MCGL	Maximum Contaminant Goal Level
88	MCL	Maximum Contaminant Level
89	MDL	Maximum Daily Load
90	MDOT	Maine Department of Transportation
91	MEG	Maximum Exposure Guideline
92	MeGIS, OGIS	Maine Office of Geographic Information Systems (GIS)
93	MEPDES	Maine Pollutant Discharge Elimination System
94	mg/L	Milligrams Per Liter
95	MHBP	Maine Healthy Beaches Program
96	MRWA	Maine Rural Waters Association
97	MS4	Municipal Separate Storm Sewer Systems
98	MSW	Municipal Solid Waste
99	MWPP	Maine Water Pollution Prevention Program
100	NAD	EPA Database (short for National Assessment Database)
101	NCR	Noncompliance Review Meetings (can be monthly or quarterly - QNCR)
102	NEMO	Non-point Education for Municipal Officials Program
103	NGO	Non-governmental Organization
104	NMP	Nutrient Management Plan
105	NORM	Naturally Occurring Radioactive Materials
106	NPDES	National Pollutant Discharge Elimination System
107	NPL	National Priorities List (a.k.a. Superfund Sites)
108	NPS	Nonpoint Source (of Pollution)
109	NRC, U.S. NRC, USNRC	Nuclear Regulatory Commission
110	NRPA	Natural Resources Protection Act
111	OBD	Overboard Discharge -
112	ODGP	Overboard Discharge Grant Program
113	OIA	Office of Innovation and Assistance

No.	Term	Meaning or Definition
114	OME	Operations Management Evaluations
115	P2 Program	Pollution Prevention Program
116	PBT	Persistent Bioaccumulative and Toxic Pollutants
117	PCB	Polychlorinated Biphenyls
118	pci/L	Picocuries Per Liter
119	PCS	Permit Compliance System
120	pg/g	Picograms per Gram
121	POTW	Publicly Owned Treatment Works - e.g. a municipal wastewater treatment plant
122	Ppb	Parts Per Billion
123	Ppm	Parts Per Million
124	Ppq	Parts Per Quadrillion
125	P-WL	Wetland Protection Sub-District
126	QA/QC	Quality Assurance / Quality Control
127	QAPP	Quality Assurance Project/Program Plan
128	QMP	Quality Management Plan
129	QMS	Quality Management System
130	QMSC	Quality Management Steering Committee
131	RAP	Remedial Action Plan
132	RCRA	Resource Conservation and Recovery Act
133	REMAP	Regional Environmental Monitoring and Assessment Program
134	RFP	Request For Proposal
135	RLTM	Regional Long Term Monitoring
136	SBTAP	Small Business Technical Assistance Program
137	SCGP	Small Community Grant Program
138	SDT	Secchi Disk Transparency
139	SDWA	Safe Drinking Water Act
140	SHWT	Seasonal High Water Table
141	SOP	Standard Operating Procedures
142	SPCC	Spill Prevention Control and Countermeasures

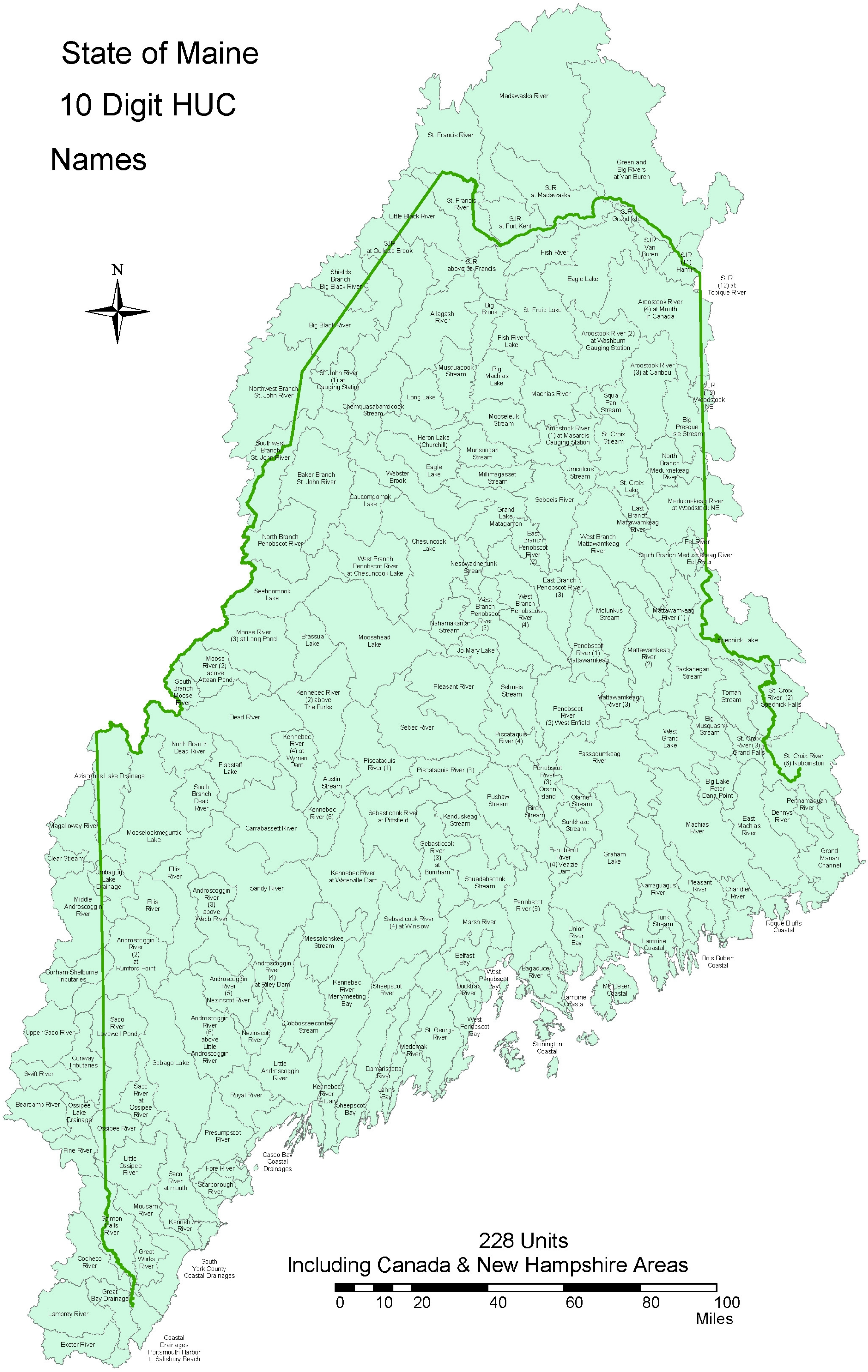
No.	Term	Meaning or Definition
143	SPO, MSPO	Maine State Planning Office
144	SPU	Standard Platinum Units
145	SQG	Small Quantity Generators
146	SRF	State Revolving Fund
147	State Fiscal Year	July 1st to June 30th
148	STORET	EPA Database (short for STOrage and RETrieval)
149	SWAP	Surface Water Assessment Program
150	TDS	Total Dissolved Solids
151	THWRP	Toxics and Hazardous Waste Reduction Program
152	TMDL	Total Maximum Daily Load
153	TPH	Total Petroleum Hydrocarbons
154	TSI	Trophic State Indices
155	UIC	Underground Injection Conduit
156	USDA	United State Department of Agriculture
157	USGS	United States Geological Survey
158	UST	Underground Storage Tank
159	VLMP	Volunteer Lake Monitoring Program
160	WET	Whole Effluent Toxicity

HUC MAPS FOR APPENDICES II THROUGH IV

State of Maine

10 Digit HUC

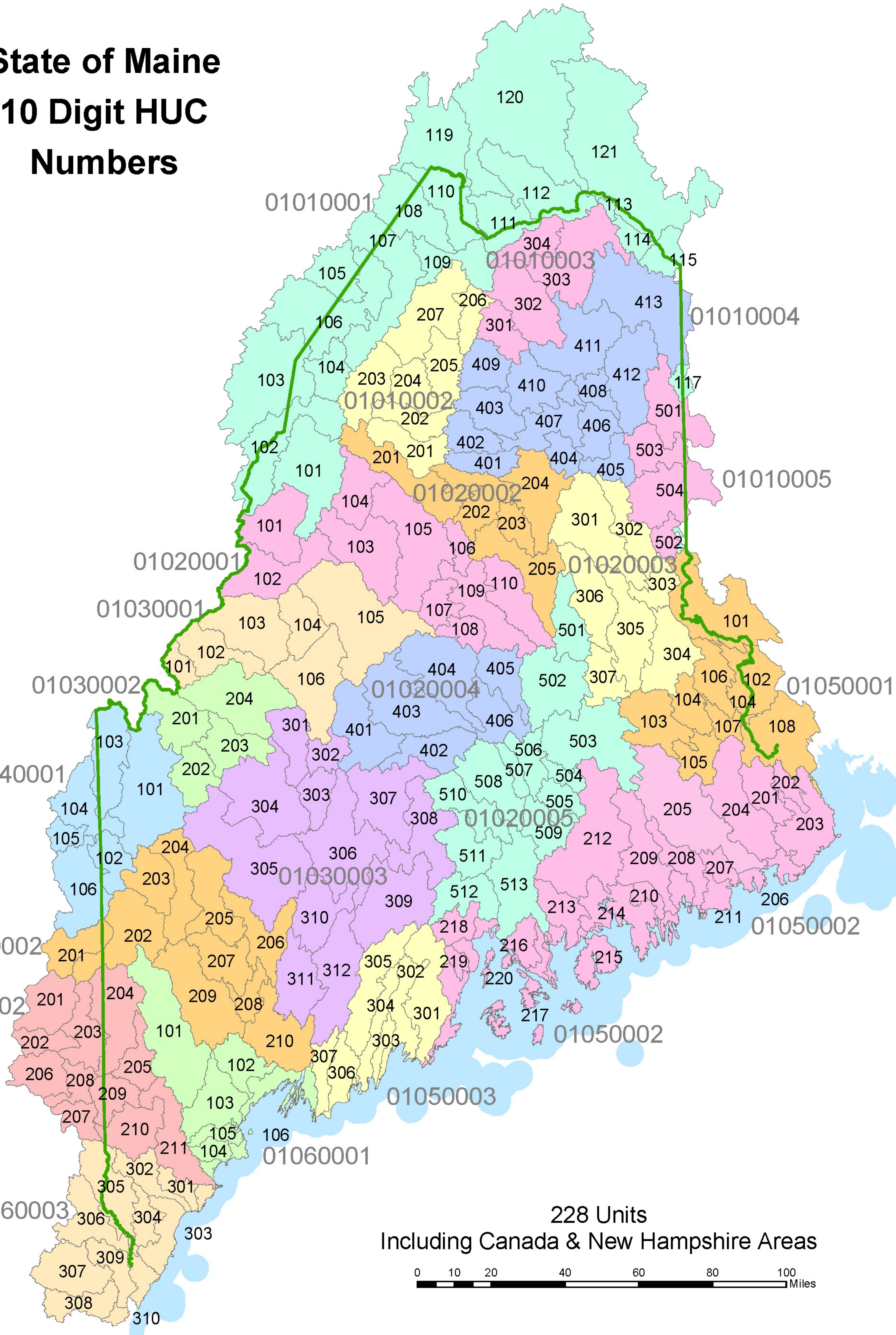
Names



228 Units
Including Canada & New Hampshire Areas

0 10 20 40 60 80 100
Miles

State of Maine 10 Digit HUC Numbers



DEFINITIONS FOR TERMS COMMON IN APPENDICES II THROUGH IV

ADB Assessment Unit ID: (Rivers and Streams Only) Combination of the Assessment Unit (HUC – Hydrologic Unit Code) and Segment ID (used in previous Integrated Reports) to create a unique identification code for each water segment in the ADB.

Assessment Unit (HUC): 10-digit HUC number – Note: HUCs can be thought of as very large watersheds, but they have not yet been assigned to marine waters.

Waterbody or Lake ID: Segment numbers within an assessment unit (these are the same numbers used by the Waterbody System in previous 305b reports). For lakes, this is a unique ID number for each lake that is also known as a MIDAS code.

DMR Area: A numeric code assigned to generalized areas of marine waters by the State Department of Marine Resources (DMR).

Segment or Lake Name / Segment Description: Common name for a river or stream segment, a lake or portions of marine waters (respectively).

Location: Additional description of the location of a river, stream or marine water segment.

Segment Size / Lake Area / Segment Acres: In miles for rivers and streams, in acres for lakes or marine waters (also in square miles for marine waters).

Segment Class: The assigned classification from M.R.S.A. Title 38 Section 467,468,469. Assessment is made according to the standards of the assigned class.

Monitored Date / Last Year Sampled: The last year data was collected from an assessment unit or segment. When data is older than five years, it is listed as an evaluated segment.

Scheduled Monitoring Date: Estimate of when a segment/lake is likely to be sampled again.

Impaired Use: Uses from M.R.S.A. Title 38 Section 465, 465-A, 465-B that are found to not be fully supported

Cause(s): Criteria that have not been attained or known pollutants that cause impairment. Final determination of all causes may require completion of the TMDL or other analyses.

Reason for DMR Closure: The reason as to why the DMR has closed an area to shellfishing.

Sources: A list of probable sources of impairment to a water body or segment. Final determination of sources may require completion of a TMDL or other problem analysis.

TMDL Schedule: Projected date for TMDL (Total Maximum Daily Load) completion. A "2006" indicates the TMDL's completion is expected within this reporting cycle. Other entries indicate when those TMDL's completion may be expected (or other management actions will be taken to bring a segment into attainment). These schedules may be revised in future report listings.

TMDL (Target) Date: Projected / scheduled date that a TMDL Report will be completed.

TMDL Number: (If known) A number assigned by the EPA to identify and track TMDLs

TMDL Approval: The year that the EPA approved a TMDL for a water segment or lake.

Expect to Attain Date: Future date when the quality of a waterbody or segment is expected to attain its designated uses and will no longer be considered impaired.

2004 ListCat / 2004 Listing Category: Previous category a segment/ water was listed under.

Comments / Notes: A general field to display relevant comments or notes.

APPENDIX II: RIVERS AND STREAMS

Category 1: Rivers and Streams Fully Attaining All Designated Uses

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	SEGMENT SIZE	SEGMENT CLASS	COMMENTS
ME0101000101_101R	Baker Branch St. John R and its tributaries		210.92	Class AA	Nature Conservancy reserve
ME0101000102_101R	SW Branch St. John R and its tributaries		142.9	Class AA	Nature Conservancy reserve
ME0101000104_106R	Minor tributaries St. John R entering above Nine Mile Bridge		74.36	Class A	
ME0101000104_114R	St. John R	main stem, above Nine Mile Bridge	17.4	Class AA	
ME0101000106_103R	Big Black R and its tributaries		159.14	Class AA	
ME0101000107_104R	Chimenticook Str and its tributaries	those riverine waters	25.35	Class A	
ME0101000107_105R	Pocwock Str and its tributaries	those riverine waters lying	37.8	Class A	
ME0101000107_106R	Minor tributaries St. John R entering above Ouellette Bk		77.41	Class A	
ME0101000107_114R	St. John R	main stem, above Ouellette Bk	47.2	Class AA	
ME0101000108_107R	Little Black R and its tributaries		111.07	Class A	
ME0101000109_106R	Minor tributaries St. John R entering above Little Black R		63.22	Class A	
ME0101000201_119R	Eagle Lake	Allagash R tributaries	98.83	Class AA	Allagash Wilderness Waterway
ME0101000202_119R	Heron (Churchill) Lake	Allagash R tributaries	97.52	Class AA	Allagash Wilderness Waterway
ME0101000203_119R	Chemquasabamticook Stream and tributaries		159.18	Class AA	Allagash Wilderness Waterway
ME0101000204_119R	Long Lake	Allagash R tributaries	155.17	Class AA	Allagash Wilderness Waterway

Category 1: Rivers and Streams Fully Attaining All Designated Uses

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	SEGMENT SIZE	SEGMENT CLASS	COMMENTS
ME0101000204_120R	Allagash R	main stem	7.41	Class AA	Allagash Wilderness Waterway
ME0101000205_119R	Musquacook Stream and tributaries		171.46	Class AA	Allagash Wilderness Waterway
ME0101000206_119R	Big Brook and tributaries		118.62	Class AA	Allagash Wilderness Waterway
ME0101000207_119R	Allagash R tributaries		272.88	Class AA	Allagash Wilderness Waterway
ME0101000207_120R	Allagash R	main stem	45.41	Class AA	Allagash Wilderness Waterway
ME0101000301_121R	Fish R	main stem, and its tributaries above outlet of Fish River Lake	144.98	Class AA	
ME0101000401_130R	Millimagasset Stream and tributaries		97.63	Class AA	
ME0101000402_130R	Munsungan Stream and tributaries		103.28	Class AA	
ME0101000403_130R	Mooseleuk Stream and tributaries		159.07	Class AA	
ME0101000404_130R	Umcolcus Stream and tributaries		77.28	Class AA	
ME0101000405_131R	St. Croix Stream	tributaries to St. Croix L	127.97	Class AA	
ME0101000406_131R	St. Croix Str and its tributaries		124.68	Class AA	
ME0101000407_130R	Aroostook R	main stem, and tributaries above St Croix Str	141.83	Class AA	
ME0101000409_133R	Machias R and tributaries above Big Machias L		175.53	Class AA	
ME0101000411_136R01	Gardner Brook and tributaries	Entering Aroostook R. from the north, upstream of Washburn	10	Class B	
ME0102000101_201R	North Branch of Penobscot R and its tributaries		176.66	Class A	
ME0102000106_202R	Nesowadnehunk Stream and tributaries		56.94	Class AA	Baxter State Park

Category 1: Rivers and Streams Fully Attaining All Designated Uses

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	SEGMENT SIZE	SEGMENT CLASS	COMMENTS
ME0102000107_202R	Namakanta Stream and tributaries		97.36	Class AA	Nature Conservancy Reserve, State Ecological Reserve
ME0102000109_202R	Tributaries of West Branch Penobscot R above Ferguson L		207.95	Class AA	Baxter State Park
ME0102000201_206R	Webster Bk and tributaries of East Branch Penobscot R	above Grand Matagamon	188.67	Class AA	Baxter State Park
ME0102000202_206R	Tributaries of East Branch Penobscot R at Grand Matagamon		167.03	Class AA	Baxter State Park
ME0103000101_301R	South Branch Moose R and its tributaries		48.72	Class AA	
ME0103000102_301R	Moose R and its tributaries above Attean Pd		139.43	Class AA	

Category 2: Rivers and Streams Attaining Some Designated Uses - Insufficient Information for Other Uses

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	SEGMENT SIZE	SEGMENT CLASS	COMMENTS
ME0101000103_102R	NW Branch St. John R and its tributaries		54.04	Class AA	
ME0101000105_103R	Shields Branch of Big Black R	Tributaries	7.88	Class AA	
ME0101000109_109R	Minor tributaries St. John R entering above St. Francis R		90.89	Class A	
ME0101000109_114R	St. John R	main stem, above confluence St. Francis R	26.59	Class AA	
ME0101000110_108R	St. Francis R and its tributaries		134.93	Class A	
ME0101000111_109R	Minor tributaries St. John R entering above Fort Kent		44	Class A	
ME0101000111_114R	St. John R	main stem, above Fort Kent	1.4	Class AA	
ME0101000111_115R	St. John R	main stem, above Fort Kent	17.49	Class A	
ME0101000112_110R	Minor tributaries St. John R entering above Madawaska		40.67	Class B	
ME0101000112_115R	St. John R	main stem, above Madawaska	0.63	Class A	
ME0101000113_111R	Minor tributaries St. John R entering above Grand Isle		14.58	Class B	
ME0101000114_112R	Violette Str and its tributaries (riverine waters only)		72.02	Class B	
ME0101000115_113R	Minor tributaries St. John R entering below Violette Bk		47.34	Class B	
ME0101000115_118R	St. John R	main stem, below Van Buren	10.02	Class C	
ME0101000116_113R	Minor tributaries St. John R entering beloe Grand Falls		5.79	Class B	
ME0101000116_116R	St. John R	main stem, above Madawaska	21.84	Class B	

Category 2: Rivers and Streams Attaining Some Designated Uses - Insufficient Information for Other Uses

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	SEGMENT SIZE	SEGMENT CLASS	COMMENTS
ME0101000116_117R	St. John R	main stem, from Madawaska to La Grande Isle	15.51	Class C	
ME0101000117_150R	Riviere de Chute and its tributaries		24.67	Class B	
ME0101000118_153R	Minor tributaries of the Eel River		21.21	Class B	
ME0101000121_111R	Minor tributaries St. John R	entering Madawaska and Van Buren	15.21	Class B	
ME0101000121_118R	St. John R	main stem, from La Grande Isle to Van Buren	10.23	Class C	
ME0101000302_121R	Fish R	main stem, and its tributaries above outlet of Porta	106.81	Class AA	
ME0101000302_122R	Fish R	main stem, and tributaries above the outlet of St. Froid lake	214.23	Class AA	
ME0101000303_123R	Tributaries of Fish R entering above the outlet of Mud Lake		87.36	Class B	
ME0101000303_124R	Tributaries of Fish R above the outlet Cross L		24.5	Class B	
ME0101000303_125R	Tributaries of Fish R above the outlet Square L		83.5	Class B	
ME0101000303_126R	Fish R	main stem, and tributaries above outlet of Eagle L	104.4	Class A	
ME0101000304_127R	Wallagrass Str and tributaries		76.71	Class B	
ME0101000304_128R	Tributaries of Fish R entering below outlet of Eagle Lake		61.45	Class B	
ME0101000304_129R	Fish R	main stem, below outlet of Eagle Lake	12.59	Class A	
ME0101000304_147R	Aroostook River	main stem, between St. Croix and Masardis Gauge	1.8	Class A	
ME0101000408_132R	Squapan Stream and tributaries		83.16	Class B	

Category 2: Rivers and Streams Attaining Some Designated Uses - Insufficient Information for Other Uses

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	SEGMENT SIZE	SEGMENT CLASS	COMMENTS
ME0101000408_136R	Minor tributaries of Aroostook R entering between confluence		25.54	Class A	
ME0101000410_133R	Machias R and its tributaries		182.92	Class AA	
ME0101000411_134R	Little Machias R and its tributaries		66.96	Class A	
ME0101000411_135R	Beaver Brk and its tributaries		104.55	Class B	
ME0101000411_136R	Minor tributaries of Aroostook R above Washburn Gauge		92.29	Class A	
ME0101000411_137R	Salmon Brk and its tributaries		52.37	Class B	
ME0101000411_147R	Aroostook River	main stem, above Washburn Gauge	29.39	Class A	
ME0101000412_138R	Minor tributaries Aroostook R	entering from south above Presque Isle	11.96	Class B	
ME0101000412_139R	Presque Isle Str	main stem above confluence of Alder Brk	108.56	Class A	
ME0101000412_140R	Presque Isle Str	main stem below confluence of Alder Brk	48.17	Class B	
ME0101000412_140R01	**No. Br.Presque Isle Stream**	**between Mapleton and Presque Isle**	**11.49**	**Class B**	**Previously 5-A listed. Removal of Mapleton POTW complete. 2004 biomonitoring- showed attainment of Class A biocriteria at Station 11 (0.2 km downstream of Mapleton POTW)**
ME0101000412_141R	Minor tributaries Aroostook R	entering north and west above Caribou	39.57	Class B	
ME0101000412_143R	Minor tributaries Aroostook R	entering from south below Presque Isle Str	9.91	Class B	
ME0101000412_148R	Aroostook River	main stem, above Caribou	24.17	Class B	
ME0101000413_142R	Caribou Str and its tributaries		33.18	Class B	

Category 2: Rivers and Streams Attaining Some Designated Uses - Insufficient Information for Other Uses

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	SEGMENT SIZE	SEGMENT CLASS	COMMENTS
ME0101000413_144R	Minor tributaries Arosstook R	entering from north below Caribou	35	Class B	
ME0101000413_145R	Little Madawaska R and tributaries		247.46	Class A	
ME0101000413_146R	Limestone Str and its tributaries		40.45	Class B	
ME0101000413_148R	Aroostook River	main stem, above Caribou	17.61	Class B	
ME0101000502_153R	S Branch of Meduxnekeag R and its tributaries		61.33	Class B	
ME0101000503_151R	N Branch of Meduxnekeag R and its tributaries		153.88	Class A	
ME0101000504_152R	Meduxnekeag R	main stem, and tributaries	243.63	Class B	
ME0102000102_201R	West Branch of Penobscot R	and its tributaries above Seboomook L outlet	194.24	Class A	
ME0102000103_201R01	West Branch of Penobscot R and its tributaries at Chesuncook		233.11	Class A	
ME0102000103_201R02	**West Branch of Penobscot R**	**below Seboomook Lake**	**1**	**Class A**	**New delisting from 4C Flow modified for hydropower. New hydro water quality certification in place, 2006**
ME0102000104_201R	West Branch Penobscot R tributaries above Caucomgomoc L		115.89	Class A	
ME0102000105_201R	West Branch of Penobscot R	and its tributaries above Chesuncook outlet	300.36	Class A	
ME0102000108_202R	Jo-Mary Lake tributaries		61.49	Class AA	
ME0102000109_203R	West Branch Penobscot R	main stem, from Ripogenus dam to Ferguson L	18.49	Class A	
ME0102000109_205R01	West Branch Penobscot R	main stem, below confluence with Millinocket Str	4.25	Class C	

Category 2: Rivers and Streams Attaining Some Designated Uses - Insufficient Information for Other Uses

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	SEGMENT SIZE	SEGMENT CLASS	COMMENTS
ME0102000110_202R	Tributaries of West Branch Penobscot R	entering below Ferguson L	247.22	Class AA	
ME0102000110_205R01	Backwater of Dolby Impoundment		0.5	Class C	Delisted in 2004; Previously 4-C listed. New impoundment oxygen measurement in attainment.
ME0102000203_206R	Tributaries of East Branch Penobscot R above Seboeis R		62.57	Class AA	
ME0102000203_207R	East Branch Penobscot R	main stem above Seboeis R	22.89	Class AA	
ME0102000204_206R	Seboeis River and tributaries		228.46	Class AA	
ME0102000205_206R	Tributaries of East Branch Penobscot R below Seboeis R		264.48	Class AA	
ME0102000205_207R	East Branch Penobscot R	main stem above Seboeis R	24.97	Class AA	
ME0102000301_208R	West Branch of Mattawamkeag R and its tributaries		337.93	Class A	
ME0102000302_209R	East Branch of Mattawamkeag R and its tributaries		160.72	Class A	
ME0102000303_212R	Minor tributaries of Mattawamkeag R	below confluence of E and W Branch	82.9	Class A	
ME0102000303_213R	Mattawamkeag R,	main stem, below confluence with E and W Branch	15.46	Class A	
ME0102000304_210R	Baskahegan Str and its tributaries		202.99	Class A	
ME0102000305_212R	Minor tributaries of Mattawamkeag R	below confluence with Baskahegan Str	218.31	Class A	
ME0102000305_213R	Mattawamkeag R	main stem, below confluence with Baskahegan Str	21.9	Class A	
ME0102000306_211R	Molunkus Str and its tributaries		238.97	Class A	
ME0102000307_212R	Minor tributaries of Mattawamkeag R below Kingman		117.37	Class A	

Category 2: Rivers and Streams Attaining Some Designated Uses - Insufficient Information for Other Uses

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	SEGMENT SIZE	SEGMENT CLASS	COMMENTS
ME0102000307_213R	Mattawamkeag R	main stem, below confluence with E and W Branch	12.79	Class AA	
ME0102000401_214R	Piscataquis R	main stem and tributaries, above the Rt. 6 bridge in Guilford	312.14	Class AA	
ME0102000402_218R	Minor tributaries of Piscataquis R	above confluence with Sebec R	203.6	Class A	
ME0102000403_215R_01	Sebec R and its tributaries		350.6	Class A	
ME0102000404_216R	Pleasant R and its tributaries		361.07	Class AA	
ME0102000405_217R	Sebois Str and its tributaries		159.76	Class A	
ME0102000406_218R	Minor tributaries of Piscataquis R	entering below confluence with Sebec R	154.74	Class A	
ME0102000406_219R	Piscataquis R	main stem, above confluence with Sebec R	23.29	Class B	
ME0102000501_220R	Minor tributaries Penobscot R	above confluence of Mattawamkeag R	144.51	Class A	
ME0102000502_220R_01	**Mattanawcook St**	**(Lincoln)**	**1.2**	**Class C**	**New delisted segment for E. coli and Oxygen, Category 3 for possible sediment contamination**
ME0102000502_220R_02	Minor tributaries Penobscot R	Piscataquis R	241.86	Class A	
ME0102000503_221R	Passadumkeag R and its tributaries		382.42	Class AA	
ME0102000504_222R	Olamon Stream and its tributaries		53.34	Class A	
ME0102000505_226R	Sunkhaze Stream and its tributaries		88.7	Class AA	
ME0102000506_222R	Minor tributaries of Penobscot R	between Piscataquis R and Orson Is	91.11	Class A	
ME0102000507_226R	Birch stream and its tributaries		63.38	Class B	
ME0102000508_223R	Pushaw Str and its tributaries		277.17	Class B	
ME0102000509_226R	Minor tributaries of Penobscot R	between Orson Is and Veazie Dam	127.81	Class B	

Category 2: Rivers and Streams Attaining Some Designated Uses - Insufficient Information for Other Uses

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	SEGMENT SIZE	SEGMENT CLASS	COMMENTS
ME0102000510_224R	Kenduskeag Str and its tributaries		199.83	Class B	
ME0102000511_225R	Souadabscook Str and tributaries		156	Class AA	
ME0102000512_228R	Marsh River and its tributaries (nontidal portions)		199.77	Class B	
ME0102000512_229R	Penobscot R	main stem, above confluence of Mattawamkeag R	13.03	Class C	
ME0102000513_226R	Minor tributaries Penobscot R	between Veazie Dam and Reed Bk (non-tidal portions)	62.12	Class B	
ME0102000513_227R	Minor tributaries entering from the east to Penobscot R	between Reed Bk and south end of Verona Is	185.21	Class B	
ME0102000513_227R01	Mill Stream (Orrington)		2	Class B	
ME0102000513_228R	Minor tributaries entering from the west to Penobscot R	between Reed Bk and south end of Verona Is	26.57	Class B	
ME0103000103_301R	Moose R and its tributaries above Rt 201 Jackman		88.74	Class AA	
ME0103000103_302R	Moose R and its tributaries at Long Pond		113.6	Class A	
ME0103000104_302R	Moose River and tributaries at Brassua L		134.37	Class A	
ME0103000105_303R	Moosehead Lake and minor tributaries of Moosehead Lake		401.92	Class A	
ME0103000106_304R	Minor tributaries of Kennebec R entering above Dead R		268.45	Class AA	
ME0103000106_306R	Kennebec R	main stem, above confluence of Dead R	19.16	Class AA	
ME0103000201_307R	North Branch of Dead R and its tributaries		131.98	Class A	
ME0103000203_309R	Flagstaff Lake and minor tributaries of Flagstaff Lake		96.52	Class A	

Category 2: Rivers and Streams Attaining Some Designated Uses - Insufficient Information for Other Uses

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	SEGMENT SIZE	SEGMENT CLASS	COMMENTS
ME0103000204_310R	Tributaries of Dead R entering below Flagstaff Lake		204.87	Class A	
ME0103000204_311R_01	Dead R, main stem		21.47	Class AA	A 1 mile segment (ME0 103000204_311R_02) is listed in Category 4c, flow modified for hydropower
ME0103000301_312R	Minor tributaries Kennebec R	between Dead River and Wyman Dam	80.26	Class A	
ME0103000302_312R	Austin Stream and tributaries		75.68	Class A	
ME0103000303_312R	Minor tributaries Kennebec R	between Wyman dam and Carrabassett R	69.04	Class A	
ME0103000304_313R	Carrabassett R and its tributaries		279.53	Class AA	
ME0103000305_315R_01	Sandy R	and tributaries above Rt 145 Strong	138.67	Class AA	
ME0103000305_316R	Sandy River and tributaries	between Rt. 145 and Rt. 2 Farmington	190.66	Class A	
ME0103000305_317R	Wilson Str and its tributaries above Wilson Pond		64.8	Class A	
ME0103000305_318R	Wilson Str	main stem, below Wilson Pond	15.99	Class C	
ME0103000305_319R_01	Sandy R,	main stem, below Rt. 2 bridge in Farmington	29.69	Class B	
ME0103000305_320R	Minor tributaries Kennebec R	between Carrabassett R and Sebasticook R	193.79	Class B	
ME0103000305_322R	Tributaries Messalonskee Str entering below Messalonskee L		21.23	Class B	
ME0103000305_323R	Messalonskee Str	main stem .	10.27	Class C	
ME0103000306_314R	Wesserunsett Str and its tributaries		109.85	Class B	
ME0103000307_324R	W Branch of Sebasticook R	and its tributaries except for main stem below Rt 23 (Hartland)	350.13	Class B	

Category 2: Rivers and Streams Attaining Some Designated Uses - Insufficient Information for Other Uses

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	SEGMENT SIZE	SEGMENT CLASS	COMMENTS
ME0103000307_329R	Higgins Brook, tributary to Great Moose L. & Sebasticook		97.99	Class A	
ME0103000309_326R	Twentyfive Mile Str and its tributaries		136.96	Class B	
ME0103000309_327R	Fifteen Mile Str and its tributaries		70.97	Class B	
ME0103000309_328R	China Lake Outlet and its tributaries		41.04	Class B	
ME0103000309_329R	Minor tributaries of Sebasticook R entering below Burnham		111.48	Class B	
ME0103000309_329R01	Minor tributaries of Sebasticook R	from E and W Branches to Burnham (bridge)	32.21	Class B	
ME0103000310_321R	Tributaries Messalonskee Str entering above Messalonskee L		167.07	Class B	
ME0103000311_334R	Cobbosseecontee Str and its tributaries		185.45	Class B	
ME0103000311_335R	Minor tributaries Kennebec R	Cobbossee Str to Merrymeeting Bay (Chops)	144.38	Class B	
ME0103000312_333R	Minor tributaries Kennebec R	between Sebasticook R and Cobbossee Str	132.5	Class B	
ME0103000312_333R01	Bond Brook (Augusta)		10	Class B	
ME0103000312_335R02	Togus Stream (Chelsea)		2.01	Class B	
ME0103000312_336R	Kennebec R	main stem, from Dead R to Wyman Dam	24.86	Class A	
ME0103000312_337R	Kennebec R	main stem, from Wyman Dam to Carrabassett R	23.14	Class A	
ME0104000101_402R	Mooseleukmeguntic - Cupsuptic R and its tributaries		38.33	Class AA	
ME0104000101_403R	Mooseleukmeguntic -Kennebago R and its tributaries		82.69	Class AA	

Category 2: Rivers and Streams Attaining Some Designated Uses - Insufficient Information for Other Uses

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	SEGMENT SIZE	SEGMENT CLASS	COMMENTS
ME0104000102_404R	Umbagog - Rapid R and its tributaries		141.6	Class AA	
ME0104000102_405R	Umbagog	Tributaries of Umbagog Lake and segments of minor tributaries entering Androscoggin R in NH	43.95	Class A	
ME0104000103_401R	Azicohos - Magalloway R	and its tributaries upstream of the Maine-NH border	137.8	Class A	
ME0104000104_401R	Magalloway - Sturtevant Str and its tributaries		13.75	Class A	
ME0104000106_405R	Minor tributaries entering Androscoggin R in NH		8.83	Class A	
ME0104000201_406R	Minor tributaries of Androscoggin R	entering upstream of the Wild R	11.24	Class A	
ME0104000202_406R	Minor tributaries of Androscoggin R	entering above Rumford Point	129.85	Class AA	
ME0104000203_407R	Ellis R and its tributaries		119.67	Class A	
ME0104000204_408R	Swift R and its tributaries		66.07	Class A	
ME0104000204_410R	Androscoggin R	Minor tributaries of entering between Rumford Pt and Webb R	35.51	Class B	
ME0104000205_409R	Webb R and its tributaries		102.33	Class A	
ME0104000205_410R	Minor tributaries of Androscoggin R	entering between Rumford Pt and Webb R	46	Class B	
ME0104000206_410R	Minor tributaries of Androscoggin R	between Riley Dam and Nezinscot R	34.13	Class B	
ME0104000206_411R	Dead R and its tributaries above Androscoggin L		43.47	Class B	
ME0104000206_411R01	Dead R	Androscoggin L to Androscoggin R	8	Class B	
ME0104000207_412R	Nezinscot R and its tributaries		107.91	Class A	
ME0104000208_413R	Minor tributaries of Androscoggin R	between Nezinscot R and L Androscoggin R	17.32	Class B	

Category 2: Rivers and Streams Attaining Some Designated Uses - Insufficient Information for Other Uses

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	SEGMENT SIZE	SEGMENT CLASS	COMMENTS
ME0104000209_414R	Little Androscoggin R	and tributaries above Rt. 26 bridge in Paris	141.16	Class A	
ME0104000209_415R	Bog Brk and other tributaries of Little Androscoggin R	below Rt 26 bridge	78.25	Class A	
ME0104000209_416R	Little Androscoggin R	main stem, from Rt. 26 bridge in Paris to Rt 121 in Oxford	12.65	Class C	
ME0104000209_417R_01	Little Androscoggin R,	main stem, below Rt. 121 bridge in Oxford	24.49	Class C	
ME0104000210_418R	Sabattus R and its tributaries		22.45	Class B	
ME0104000210_419R	Minor tributaries of Androscoggin R	between L Androscoggin R and Brunswick Dam	89.77	Class B	
ME0104000210_420R	Minor tributaries of Merrymeeting Bay		94.31	Class B	
ME0105000101_501R	Tributaries of St. Croix R	entering above outlet of Spednik L	111.07	Class A	
ME0105000102_502R	St. Croix R	main stem, from outlet of Spednik Lake to Spednik Falls	110.55	Class A	
ME0105000103_502R	Grand Lake Stream and tributaries		230.47	Class A	Hatchery permit issued August 2006 to protect water quality;
ME0105000104_502R	Musquash Stream and tributaries		123.19	Class A	
ME0105000105_502R	Big Lake at Peter Dana Point		134.7	Class A	
ME0105000106_502R	Tomah Stream and tributaries		166.98	Class AA	
ME0105000107_502R	St. Croix River and tributaries above Grand Falls		60.35	Class A	
ME0105000108_503R	Minor tributaries of St. Croix R	between Grand Falls and tidewater	59.28	Class B	
ME0105000108_504R	Minor tributaries of St. Croix River Estuary	entering tidewater in Calais and Robbinston	38.1	Class B	

Category 2: Rivers and Streams Attaining Some Designated Uses - Insufficient Information for Other Uses

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	SEGMENT SIZE	SEGMENT CLASS	COMMENTS
ME0105000108_505R	St. Croix R	main stem, from Grand Falls to tidewater	22.17	Class A	
ME0105000201_507R	Dennys R and its tributaries		125.39	Class AA	
ME0105000202_508R	Pennamaquan River and tributaries		63.24	Class B	
ME0105000203_508R	Minor drainage entering tidewater in Washington County	between Robbinston and Sandy Point (Cutler)	180.8	Class B	
ME0105000204_509R	E Machias R and its tributaries		288.08	Class AA	
ME0105000204_509R01	Chase Mill Stream (East Machias)		1.52	Class B	
ME0105000205_510R	Machias R and its tributaries		489.5	Class AA	
ME0105000206_508R	Roque Bluffs Coastal	Minor drainages entering tidewater between Sandy Pt (Cutler) and E Machias R	51.68	Class B	
ME0105000207_513R	Chandler R and its tributaries		57.11	Class B	
ME0105000207_513R01	Minor drainages entering tidewater in Addison and Harrington		39.85	Class A	
ME0105000208_511R	Pleasant R and its tributaries		109.2	Class AA	
ME0105000208_511R01	Bog Stream (T18MD)		1.02	Class B	
ME0105000209_512R_01	Narraguagus R and its tributaries .		323.8	Class AA	
ME0105000209_513R	Minor drainages entering tidewater in Machias Bay		30.39	Class B	
ME0105000209_513R01	Roque Bluff Coastal	Minor drainages entering tidewater between E Machias R and Pleasant R	90.14	Class B	
ME0105000210_513R	Tunk Stream and tributaries		54.42	Class A	
ME0105000211_513R	Bois Bubert Coastal	and Tunk Str	76.96	Class B	

Category 2: Rivers and Streams Attaining Some Designated Uses - Insufficient Information for Other Uses

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	SEGMENT SIZE	SEGMENT CLASS	COMMENTS
ME0105000212_515R	W Branch of Union R and its tributaries		210.3	Class B	
ME0105000212_516R	E Branch of Union R and its tributaries		159.2	Class B	
ME0105000212_517R	Minor tributaries of Graham Lake		203.69	Class B	Reeds Brook- Green Lake NFH: final hatchery permit issued 2/6/04; exp date 2/6/09
ME0105000212_518R	Tributaries of Union R entering below outlet of Graham Lake		64.14	Class B	
ME0105000212_520R	Minor drainages entering Penobscot Bay	in Hancock County between Verona Is and Castine	7.51	Class B	
ME0105000213_514R_02	Union River Bay		18.62	Class AA	
ME0105000214_514R	Min. drainages entering tidewater between Tunk S./Haynes Pt.	(Trenton)	228.71	Class A	
ME0105000215_514R	Mt Desert Coastal	tributaries entering from Mt Desert and adjacent islands	115.98	Class AA	
ME0105000216_520R	Bagaduce River and its tributaries		125.06	Class B	
ME0105000216_520R01	Stonington Coastal	Minor drainages entering tidewater in Hancock County	209.66	Class B	
ME0105000217_514R	Stonington Coastal	Minor drainages entering tidewater in Hancock County west of Union River	39.64	Class AA	
ME0105000218_521R	Minor drainages entering tidewater in Waldo County		93.17	Class B	
ME0105000219_521R	Ducktrap River and its tributaries		51.55	Class AA	
ME0105000220_521R	West Penobscot Bay Coastal	Minor drainages entering tidewater in Waldo County south of Verona Is	84.39	Class B	
ME0105000220_522R01_02	Minor drainages entering tidewater in Knox County		116.06	Class B	

Category 2: Rivers and Streams Attaining Some Designated Uses - Insufficient Information for Other Uses

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	SEGMENT SIZE	SEGMENT CLASS	COMMENTS
ME0105000220_522R02_02	West Penobscot Bay Coastal -	Minor drainages entering tidewater from Waldo Cty line to Marshall Pt (St George R)	86.02	Class B	
ME0105000301_523R	St. George R and its tributaries		216.79	Class AA	
ME0105000301_524R01	Min drainages entering tidewater portion of St George R		79.67	Class B	
ME0105000301_524R02	Minor drainages to Muscongus Bay	including Meduncook River to Pemaquid Point .	13.26	Class B	
ME0105000302_524R01	Unnamed Brook (N. Cushing)		0.5	Class B	
ME0105000302_525R	Medomak River and its tributaries	including Meduncook River to Pemaquid Point .	86.91	Class A	
ME0105000302_526R	Minor drainages to Muscongus Bay	including Meduncook River to Pemaquid Point .	97.78	Class B	
ME0105000303_526R	Minor drainages entering tidewater into Johns Bay		46.92	Class B	
ME0105000303_526R01	Minor drainages entering tidewater of Damariscotta River		40.26	Class B	
ME0105000304_527R	Damariscotta Lake outlet	including its tributaries entering above tidewater	30.82	Class B	
ME0105000304_527R01	Damariscotta River below lake outlet		0.2	Class B	
ME0105000305_528R	Sheepscot R and its tributaries		186.3	Class AA	Palermo Fish Hatchery- final hatchery permit issued 2/20/06; exp date 2/20/11
ME0105000305_529R01	Minor drainages entering tidewater of Damariscotta River		7.07	Class B	
ME0105000305_529R02	Minor drainages entering tidewater of Sheepscot River		82.55	Class B	

Category 2: Rivers and Streams Attaining Some Designated Uses - Insufficient Information for Other Uses

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	SEGMENT SIZE	SEGMENT CLASS	COMMENTS
ME0105000306_529R	Minor drainages entering tidewater of Sheepscot Bay		93.8	Class B	
ME0105000306_530R	Minor drainages entering tidewater of Sheepscot Bay		50.48	Class B	
ME0105000307_530R	Min. drainages entering tidewater of Kennebec Estuary	below the Chops	133.36	Class B	
ME0106000101_605R	Crooked R and its tributaries		173.58	Class AA	
ME0106000101_606R	Sebago Lake and its tributaries		256.73	Class A	
ME0106000102_603R	Royal R and its tributaries		131.86	Class A	
ME0106000102_603R03	Eddy Brook (New Gloucester)		3.68	Class B	
ME0106000102_603R04	Hatchery Brook (Gray)		0.87	Class B	Final hatchery permit issued 6/6/06; exp date 6/6/11
ME0106000102_603R05	**Royal River**	**segment below Collyer Bk**	**2.15**	**Class B**	**Newly delisted segment; RCRA hazardous waste site; 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.**
ME0106000102_604R	Min. drainages entering tidewater	between Royal River and Presumpscot River	9.8	Class B	
ME0106000103_607R	Tributaries of Presumpscot R	entering below outlet of Sebago L	267.59	Class B	
ME0106000103_608R	Presumpscot R	main stem, above Dundee Dam	4.2	Class A	

Category 2: Rivers and Streams Attaining Some Designated Uses - Insufficient Information for Other Uses

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	SEGMENT SIZE	SEGMENT CLASS	COMMENTS
ME0106000103_609R_01	**Presumpscot R,**	**main stem, below Sacarappa Dam**	**6.9**	**Class C**	**Newly delisted segment; closure of pulp mill and breach of Smelt Hill Dam. Bioassessment (2005) shows attainment of Class C dissolved oxygen and biocriteria (attains Class B biocriteria just above Smelt Hill dam site).**
ME0106000103_611R	Min. drainages entering tidewater	in Cumberland County between Fore River and Scarborough R	36.49	Class B	
ME0106000103_612R	Min. drainages entering tidewater	in York County east of Saco River	10.19	Class B	
ME0106000106_601R	Min. drainages entering tidewater in Sagadhoc County	west of Small Point	26.74	Class B	
ME0106000106_602R	Min. drainages entering tidewater	between Cumberland-Sagadahoc line and Royal River	94.47	Class B	
ME0106000203_613R	Minor tributaries of Saco R entering above Swans Falls		1.48	Class A	
ME0106000203_618R	Saco R,	main stem, between the Maine-New Hampshire border and Swans Falls	5.42	Class AA	
ME0106000204_613R	Minor tributaries of Saco R	between Swans Falls and Rt 160 in Brownfield	209.74	Class A	
ME0106000204_618R	Saco R,	main stem, between Swans Falls and Rt 160 in Brownfield	27.53	Class AA	
ME0106000205_613R	Minor tributaries of Saco R	between Rt 160 in Brownfield and Ossippee River	116.42	Class A	
ME0106000205_618R	Saco R,	main stem, between Rt 160 in Brownfield and Ossippee River	14.95	Class AA	

Category 2: Rivers and Streams Attaining Some Designated Uses - Insufficient Information for Other Uses

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	SEGMENT SIZE	SEGMENT CLASS	COMMENTS
ME0106000209_614R	Ossippee R and its tributaries		105.38	Class B	
ME0106000210_615R	Little Ossippee R and its tributaries		266.16	Class B	
ME0106000210_616R	Minor tributaries of Saco R	between Little Ossippee River and tidewater	214.67	Class B	
ME0106000211_613R	Minor tributaries of Saco R	between the Ossippee River and Little Ossippee River	75.58	Class B	
ME0106000211_616R01	Deep Brook (Saco)		2.5	Class B	
ME0106000211_617R	Min. tributaries of Saco River Estuary	entering tidewater between head of tide and Camp Ellis	12	Class B	
ME0106000211_618R	Saco R	main stem, between the Maine-New Hampshire border and Swans Falls	14.71	Class AA	
ME0106000211_619R	Saco R	main stem, between the Little Ossippee River and tidewater	24.1	Class AA	
ME0106000211_619R02	Saco River (Dayton)		0.2	Class A	
ME0106000211_619R03	Saco River (West Buxton)		0.2	Class A	
ME0106000211_619R04	Saco River (Bar Mills)		0.2	Class A	
ME0106000301_622R	Kennebunk R and its tributaries		88.8	Class B	
ME0106000302_623R	Mousam R	main stem, above Rt. 224 bridge in Sanford and all tributaries to the entire main stem	164.91	Class B	
ME0106000302_624R	Min. drainages entering tidewater	between Mousam River and the Ogunquit-York boundary	98.83	Class B	
ME0106000303_621R	Min. drainages entering tidewater	between Saco River and Kennebunk River	37.41	Class B	
ME0106000304_625R02	Great Works R,	main stem, above Rt. 9 bridge in N Berwick and all tributaries	137.32	Class B	

Category 2: Rivers and Streams Attaining Some Designated Uses - Insufficient Information for Other Uses

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	SEGMENT SIZE	SEGMENT CLASS	COMMENTS
ME0106000304_626R	Min. drainages entering tidewater	between Ogunquit-York boundary and Piscataqua Estuary	99.62	Class B	
ME0106000305_627R	Minor tributaries of Salmon Falls River		155.81	Class B	
ME0106000305_629R	Great Works R	main stem, below Rt. 9 bridge in N Berwick	15.23	Class B	
ME0106000305_630R03	Salmon Falls R,	main stem, from Great East Lake to tidewater	22.2	Class B	
ME0106000310_626R	Min. drainages entering	tidewater of the Piscataqua Estuary	36.22	Class B	
ME0106000310_626R01	Smelt Brook (York)		3.18	Class B	

Bold text indicates waters that were removed from the 2004 impaired list or that were protected from impairment threat(s)

Category 3: Rivers and Streams with Insufficient Data or Information to Determine if Designated Uses are Attained (One or More Uses may be Impaired)

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	SEGMENT SIZE	SEGMENT CLASS	COMMENTS	SCHEDULED MONITORING DATE
ME0101000412_143R02	Merrit Brook	entering Aroostook R. from south, downstream of Presque Isle	1	Class B	Potential sources for impairment, inconclusive data.	2009
ME0101000413_142R01	**Caribou Stream (Caribou)**		**2.73**	**Class B**	**Previously 5A; Biocriteria attainment is inconsistent but last sample showed Class A biocriteria attainment**	**2009**
ME0102000502_220R_01	**Mattanawcook Stream**	**tributary to Penobscot R. in Lincoln**	**1.2**	**Class C**	**Dissolved oxygen and bacteria delisted to Category 2 this cycle. New data shows sediment contamination; fish consumption use may be impaired. Insufficient data**	**2005**
ME0102000511_225R01_01	Souadabscook Stream	main stem below Hammond Pd	5.5	Class AA	Eutrophic lake source, (Hermon Pd TMDL required). Data inconclusive for river segment	2006
ME0102000512_228R01	Unnamed Brook (Frankfort)		1	Class B	Potential sources for impairment, inconclusive data.	2006
ME0103000305_316R01	Barker Stream (Farmington)		8.22	Class B	Errors or inconsistencies in the original data. Limited new data indicates attainment.	2007
ME0103000305_316R03	Tannery Brook (Farmington)		1.5	Class B	Potential sources for impairment unknown, inconclusive data.	2007
ME0103000305_317R01	Meadow Brook (Wilton)		3.39	Class B	Potential sources for impairment unknown, inconclusive data.	2007
ME0103000306_314R01	Wesserunsett Stream at Athens		2.67	Class B	Errors or inconsistencies in the data.	2007
ME0103000306_320R01	Carrabassett Stream (Canaan, Skowhegan)		19.88	Class B	Errors or inconsistencies in the data.	2007

Category 3: Rivers and Streams with Insufficient Data or Information to Determine if Designated Uses are Attained (One or More Uses may be Impaired)

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	SEGMENT SIZE	SEGMENT CLASS	COMMENTS	SCHEDULED MONITORING DATE
ME0103000306_339R_01	Kennebec R,	Shawmut Dam	5.5	Class C	Insufficient data.	2007
ME0103000309_328R01	China Lake Outlet (Vassalboro)		4.27	Class B	2002 Aquatic Life assessment in attainment. NPS controls. Improved lake condition. Facility compliance review recommended.	2008
ME0103000309_329R02	Twelvemile Brook (Clinton)		3	Class B	Errors or inconsistencies in the data.	2007
ME0103000309_329R03	Unnamed stream (Benton)		2	Class B	Potential sources for impairment unknown, inconclusive data.	2007
ME0103000309_329R04	Farnham Brook (Pittsfield)		3	Class B	Potential sources for impairment unknown, inconclusive data.	2007
ME0103000311_334R01	Mud Mills Stream (Monmouth)		10.5	Class B	Errors or inconsistencies in the data.	2007
ME0103000311_334R02	Potters Brook (Litchfield)		4.23	Class B	Errors or inconsistencies in the data.	2007
ME0103000312_333R01_01	Tanning Brook	Manchester, tributary to Bond Brook	5	Class B	Class B stream; Biomonitoring Station 744 showed attainment of Class C in 2004	2007
ME0103000312_333R03	Kennedy Brook (Augusta)		2	Class B	Previously listed in Category 2 (2004) and 5-A listed (2002). Stormwater diversion; potential sources for impairment, data is inconsistent.	2007
ME0103000312_335R01	Kimball Brook (Pittston)		3.38	Class B	Errors or inconsistencies in the data.	2007
ME0103000312_420R01	Abagadasset River (Richmond, Bowdoinham)		13.33	Class B	Errors or inconsistencies in the data.	2007

Category 3: Rivers and Streams with Insufficient Data or Information to Determine if Designated Uses are Attained (One or More Uses may be Impaired)

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	SEGMENT SIZE	SEGMENT CLASS	COMMENTS	SCHEDULED MONITORING DATE
ME0104000101_403R_01	Rangeley River	From Rangeley Lake Dam to Mooselookmeguntic Lake in Oquossoc	1.3	Class A	Rangeley River- Cooke Oquossoc Hatchery- final hatchery permit issued 12/30/05; exp date 12/30/10; Lake outlet effect confounds interpretation of effect of salmon hatchery	2008
ME0104000202	Sunday River (Newry, Bethel)		5	Class A	Potential sources for impairment, inconclusive data.	2008
ME0104000205_410R01_01	Spears Stream (Peru).		9.75	Class B	Potential sources for impairment unknown, inconclusive data.	2008
ME0104000206_410R02	Sevenmile Stream	Tributary to Androscoggin entering from the north in Jay	3	Class B	Data from 1995 indicates possible dissolved oxygen and nutrient problem but stream was at extreme low flow when sampled (per Paul Mitnik, August 2006). Needs re-sampling to confirm impairment. Segment length is from Jay potw to confluence with Androscoggin	2007
ME0104000207_412R01	Nezinscot River at Buckfield		4	Class B	Potential sources for impairment, recent data provides conflicting status.	2008
ME0104000207_412R03	Nezinscot River at Turner		2	Class B	Potential sources for impairment, inconclusive data.	2008

Category 3: Rivers and Streams with Insufficient Data or Information to Determine if Designated Uses are Attained (One or More Uses may be Impaired)

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	SEGMENT SIZE	SEGMENT CLASS	COMMENTS	SCHEDULED MONITORING DATE
ME0104000208_413R08	**Bobbin Mill Brook**	**(Lake Auburn Outlet, Auburn)**	**3.45**	**Class B**	Administrative error, conflicting data. Biocriteria non-attainment is inconsistent. Needs re-sampling to confirm non-attainment. 1998- non-attainment of biocriteria; biomonitoring in August 2003 showed attainment of biocriteria; Delist to Category 3--need to confirm that 1998 non-attainment was caused by natural conditions.	2008
ME0104000209_414R02	Penneseeewassee Lake Outlet		1.24	Class B	New information inconclusive.	2008
ME0104000209_415R01	Davis Brook (Poland)		1	Class B	Errors or inconsistencies in the data.	2008
ME0105000108_503R01	Unnamed stream (Calais)		1	Class B	Potential sources for impairment unknown, inconclusive data.	2006
ME0105000108_505R01	Woodland Impoundment		5.5	Class C	Insufficient data. Long term river study in progress 2006.	2006
ME0105000213_519R	Union R	Main stem (Ellsworth) .	2.94	Class B	Insufficient data- needs re-sampling.	2006
ME0106000103_607R05	East Branch Piscataqua River	Mainstem entering Piscataqua just upstream of confluence with Presumpscot River in Falmouth	5.5	Class B		2010
ME0106000103_607R13	Tannery Brook (Gorham)	Tributary to Little River in Gorham	2	Class B	Potential sources of impairment; Variable or conflicting information; Category 3 listed from Rt 114 to confluence with Little river	2010

Category 3: Rivers and Streams with Insufficient Data or Information to Determine if Designated Uses are Attained (One or More Uses may be Impaired)

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	SEGMENT SIZE	SEGMENT CLASS	COMMENTS	SCHEDULED MONITORING DATE
ME0106000104_611R	Tributaries of the Scarborough River and Scarborough Marsh		99.99	Class B	Potential sources for impairment, insufficient data.	2005
ME0106000105_610R	Stroudwater River and minor drainages of the Fore River		50.45	Class B	Potential sources for impairment, insufficient data.	2005
ME0106000106_607R12	**Norton Brook**	**Falmouth**	**1.34**	**Class B**	Administrative error, conflicting data. More data required to support impaired assessment. Non-attainment of biocriteria in 2002 may be due to natural habitat effects; needs resampling	**2010**
ME0106000304_625R04	**Goodall Brook (Sanford)**	**upstream of Berwick Rd**	**2.5**	**Class B**	**Newly listed this cycle; Biomonitoring station 747- non-attainment of biocriteria in 2004. Needs re-sampling to confirm.**	**2010**

Bold text indicates waters that were moved into Category 3 during this reporting cycle

Category 4-A: Rivers and Streams with Impaired Use, TMDL Completed

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	CAUSE	SEGMENT SIZE	SEGMENT CLASS	TMDL NUMBER	COMMENTS
ME0101000303_124R01	**Dickey Brook**		**Nutrient/Eutrophication Biological Indicators**	**19.5**	**Class B**	*	**Submitted under Cross L. and Daigle Pond TMDL; EPA-approved 9/15/06**
ME0101000303_124R01	**Dickey Brook**		**Oxygen, Dissolved**	**19.5**	**Class B**	*	**Submitted under Cross L. and Daigle Pond TMDL; EPA-approved 9/15/06**
ME0101000303_124R02	**Daigle Brook**		**Nutrient/Eutrophication Biological Indicators**	**7.99**	**Class B**	*	**Submitted under Cross L. and Daigle Pond TMDL; EPA-approved 9/15/06**
ME0101000303_124R02	**Daigle Brook**		**Oxygen, Dissolved**	**7.99**	**Class B**	*	**Submitted under Cross L. and Daigle Pond TMDL; EPA-approved 9/15/06**
ME0101000412_140R03_01	Presque Isle Stream at Presque Isle		Ammonia (Un-ionized)	1	Class B	2529	EPA approved TMDL 8/22/2000
ME0101000412_140R03_01	Presque Isle Stream at Presque Isle		BOD, Biochemical oxygen demand	1	Class B	2529	EPA approved TMDL 8/22/2000
ME0101000412_140R03_01	Presque Isle Stream at Presque Isle		Phosphorus (Total)	1	Class B	2529	EPA approved TMDL 8/22/2000
ME0101000504_152R01_01	Meduxnekeag River	Below confluence with S Branch	Phosphorus (Total)	11	Class B	2471	EPA approved TMDL 3/8/2001
ME0103000310_322R01	**Fish Brook (Fairfield)**		**Benthic-Macroinvertebrate Bioassessments (Streams)**	**6.34**	**Class B**	**12077**	**EPA approved TMDL 8/30/2005**
ME0103000310_322R01	**Fish Brook (Fairfield)**		**Oxygen, Dissolved**	**6.34**	**Class B**	**12077**	**EPA approved TMDL 8/30/2005**
ME0103000311_334R05	Cobbossee Stream (Gardiner)		Phosphorus (Total)	1.46	Class B	9998	Completed as part of Pleasant Pond TMDL , EPA approved May 20, 2004

Category 4-A: Rivers and Streams with Impaired Use, TMDL Completed

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	CAUSE	SEGMENT SIZE	SEGMENT CLASS	TMDL NUMBER	COMMENTS
ME0104000206_423R_01	Androscoggin R,	main stem, Livermore Falls	Benthic-Macroinvertebrate Bioassessments (Streams)	1	Class C	11596	EPA approved TMDL 7/18/05 (solids, DO, BOD, P) but ongoing licensing issues; Also listed 5d for legacy PCB and dioxin contamination
ME0104000208_424R_01	Androscoggin R,	main stem, upstream of the Gulf Island Dam	Phosphorus	8.19	Class C	11594	EPA approved TMDL 7/18/05 (solids, DO, BOD, P) but ongoing licensing issues; Also listed 5d for legacy PCB and dioxin contamination
ME0104000208_424R_01	Androscoggin R,	main stem, upstream of the Gulf Island Dam	Oxygen, Dissolved	8.19	Class C	11594	EPA approved TMDL 7/18/05 (solids, DO, BOD, P) but ongoing licensing issues; Also listed 5d for legacy PCB and dioxin contamination
ME0104000208_424R_01	Androscoggin R,	main stem, upstream of the Gulf Island Dam	Total Suspended Solids	8.19	Class C	11594	EPA approved TMDL 7/18/05 (solids, DO, BOD, P) but ongoing licensing issues; Also listed 5d for legacy PCB and dioxin contamination
ME0104000208_424R_01	Androscoggin R,	main stem, upstream of the Gulf Island Dam	BOD, Biochemical oxygen demand	8.19	Class C	11594	EPA approved TMDL 7/18/05 (solids, DO, BOD, P) but ongoing licensing issues; Also listed 5d for legacy PCB and dioxin contamination
ME0105000217_520R01	Carleton Stream (Blue Hill)		Benthic-Macroinvertebrate Bioassessments (Streams)	1.23	Class C	10917	EPA approved TMDL 10/7/2004
ME0105000217_520R01	Carleton Stream (Blue Hill)		Iron	1.23	Class C	10917	EPA approved TMDL 10/7/2004

Category 4-A: Rivers and Streams with Impaired Use, TMDL Completed

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	CAUSE	SEGMENT SIZE	SEGMENT CLASS	TMDL NUMBER	COMMENTS
ME0106000106_612R01_01	Goosefare Brook		Cadmium	6.14	Class B	9765	EPA approved TMDL 9/29/2003; Principal sources include urban NPS
ME0106000106_612R01_01	Goosefare Brook		Chromium (total)	6.14	Class B	9765	EPA approved TMDL 9/29/2003; Principal sources include urban NPS
ME0106000106_612R01_01	Goosefare Brook		Copper	6.14	Class B	9765	EPA approved TMDL 9/29/2003; Principal sources include urban NPS
ME0106000106_612R01_01	Goosefare Brook		Iron	6.14	Class B	9765	EPA approved TMDL 9/29/2003; Principal sources include urban NPS
ME0106000106_612R01_01	Goosefare Brook		Lead	6.14	Class B	9765	EPA approved TMDL 9/29/2003; Principal sources include urban NPS
ME0106000106_612R01_01	Goosefare Brook		Nickel	6.14	Class B	9765	EPA approved TMDL 9/29/2003; Principal sources include urban NPS
ME0106000106_612R01_01	Goosefare Brook		Zinc	6.14	Class B	9765	EPA approved TMDL 9/29/2003; Principal sources include urban NPS
ME0106000302_628R01	Mousam R,	main stem, below Rt. 224 bridge in Sanford	Aluminum	20.48	Class B	2530	EPA approved TMDL 3/8/2001
ME0106000302_628R01	Mousam R,	main stem, below Rt. 224 bridge in Sanford	Ammonia (Un-ionized)	20.48	Class B	2530	EPA approved TMDL 3/8/2001
ME0106000302_628R01	Mousam R,	main stem, below Rt. 224 bridge in Sanford	Arsenic	20.48	Class B	2530	EPA approved TMDL 3/8/2001

Category 4-A: Rivers and Streams with Impaired Use, TMDL Completed

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	CAUSE	SEGMENT SIZE	SEGMENT CLASS	TMDL NUMBER	COMMENTS
ME0106000302_628R01	Mousam R,	main stem, below Rt. 224 bridge in Sanford	BOD, Biochemical oxygen demand	20.48	Class B	2530	EPA approved TMDL 3/8/2001
ME0106000302_628R01	Mousam R,	main stem, below Rt. 224 bridge in Sanford	Copper	20.48	Class B	2530	EPA approved TMDL 3/8/2001
ME0106000302_628R01	Mousam R,	main stem, below Rt. 224 bridge in Sanford	Lead	20.48	Class B	2530	EPA approved TMDL 3/8/2001
ME0106000302_628R01	Mousam R,	main stem, below Rt. 224 bridge in Sanford	Phosphorus (Total)	20.48	Class B	2530	EPA approved TMDL 3/8/2001
ME0106000302_628R01	Mousam R,	main stem, below Rt. 224 bridge in Sanford	Selenium	20.48	Class B	2530	EPA approved TMDL 3/8/2001
ME0106000302_628R01	Mousam R,	main stem, below Rt. 224 bridge in Sanford	Silver	20.48	Class B	2530	EPA approved TMDL 3/8/2001
ME0106000302_628R01	Mousam R,	main stem, below Rt. 224 bridge in Sanford	Zinc	20.48	Class B	2530	EPA approved TMDL 3/8/2001
ME0106000305_630R01	Salmon Falls R		Ammonia (Un-ionized)	7.43	Class B	1029	EPA approved TMDL 11/22/99; 5b non-CSO, low priority bacteria problem 5d fish tissue monitoring shows legacy PCBs and dioxin
ME0106000305_630R01	Salmon Falls R		Nutrient/Eutrophication Biological Indicators	7.43	Class B	1029	EPA approved TMDL 11/22/99; 5b non-CSO, low priority bacteria problem 5d fish tissue monitoring shows legacy PCBs and dioxin

Category 4-A: Rivers and Streams with Impaired Use, TMDL Completed

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	CAUSE	SEGMENT SIZE	SEGMENT CLASS	TMDL NUMBER	COMMENTS
ME0106000305_630R01	Salmon Falls R		Oxygen, Dissolved	7.43	Class B	1029	EPA approved TMDL 11/22/99; 5b non-CSO, low priority bacteria problem 5d fish tissue monitoring shows legacy PCBs and dioxin

Bold text indicates waters for which a TMDL has been approved since the 2004 Integrated Report was published
*TMDL # not yet assigned

Category 4-B: Rivers and Streams Impaired by Pollutants - Pollution Control Requirements Reasonably Expected to Result in Attainment

ADB ASSESSMENT UNIT ID	SEGMENT NAME	CAUSE	SEGMENT SIZE	SEGMENT CLASS	COMMENTS	EXPECT TO ATTAIN DATE
ME0101000413_145R01	Little Madawaska River and tributaries	Benthic-Macroinvertebrate Bioassessments (Streams)	20.5	Class B	Haz waste remediation project is complete (Superfund)—expected to attain standards	2008
ME0101000413_145R01	Little Madawaska River and tributaries	Polychlorinated biphenyls	20.5	Class B	Haz waste remediation project is complete (Superfund)—expected to attain standards	2020
ME0101000413_145R02	Greenlaw Stream	Polychlorinated biphenyls	17.12	Class B	Haz waste remediation project (Superfund)--expected to attain standards	2008
ME0102000502_231R	**Penobscot R'main stem, from Cambolasse Str to Piscataquis R**	**Dioxin (including 2,3,7,8-TCDD)**	**19.08**	**Class B**	**New licenses issued or underway for mills but needs further WQ monitoring and modeling to ascertain appropriate loads. PCBs are listed 5d- legacy pollutant. New Dioxin sources removed, expected to attain standards**	**2020**
ME0102000503_221R01	**Cold Stream (Enfield) downstream of hatchery**	**Benthic-Macroinvertebrate Bioassessments (Streams)**	**1.63**	**Class A**	**Final hatchery permit issued 3/31/06**	**2011**
ME0102000506_232R	Penobscot R	Dioxin (including 2,3,7,8-TCDD)	36.49	Class B	Dioxin license limits in 38 MRSA Section 420. New Dioxin sources removed, expected to attain standards. Compliance is measured by (1) no detection of dioxin in any internal waste stream (at 10 pg/l detection limit), (2) no detection in fish tissue sampled below a mill's outfall greater than upstream reference.	2020
ME0102000509_233R_01	Penobscot R	Dioxin (including 2,3,7,8-TCDD)	14.51	Class B	Dioxin license limits in 38 MRSA Section 420. New Dioxin sources removed, expected to attain standards. Compliance is measured by (1) no detection of dioxin in any internal waste stream (at 10 pg/l detection limit), (2) no detection in fish tissue sampled below a mill's outfall greater than upstream reference.	2020

Category 4-B: Rivers and Streams Impaired by Pollutants - Pollution Control Requirements Reasonably Expected to Result in Attainment

ADB ASSESSMENT UNIT ID	SEGMENT NAME	CAUSE	SEGMENT SIZE	SEGMENT CLASS	COMMENTS	EXPECT TO ATTAIN DATE
ME0102000513_234R02	Penobscot	Dioxin (including 2,3,7,8-TCDD)	10.1	Class B	Dioxin license limits in 38 MRSA Section 420. New Dioxin sources removed, expected to attain standards. Compliance is measured by (1) no detection of dioxin in any internal waste stream (at 10 pg/l detection limit), (2) no detection in fish tissue sampled below a mill's outfall greater than upstream reference.	2020
ME0103000304_313R01	**Mill Stream (Embden)**	**Benthic-Macroinvertebrate Bioassessments (Streams)**	**2.57**	**Class B**	**Hatchery permit issued 1/30/2006; exp. date 1/30/2011**	**2011**
ME0103000305_315R_02	**Unnamed Stream trib to Sandy R (Avon-Dunham)**	**Benthic-Macroinvertebrate Bioassessments (Streams)**	**2.63**	**Class B**	**Hatchery permit issued 10/18/2005; hatchery is now closed**	**2010**
ME0103000306_338R_04	Kennebec R,	Dioxin (including 2,3,7,8-TCDD)	22.76	Class B	Dioxin license limits in 38 MRSA Section 420. New Dioxin sources removed, expected to attain standards. Compliance is measured by (1) no detection of dioxin in any internal waste stream (at 10 pg/l detection limit), (2) no detection in fish tissue sampled below a mill's outfall greater than upstream reference.	2020
ME0103000306_339R_02	Kennebec R,	Dioxin (including 2,3,7,8-TCDD)	14.65	Class C	Dioxin license limits in 38 MRSA Section 420. New Dioxin sources removed, expected to attain standards. Compliance is measured by (1) no detection of dioxin in any internal waste stream (at 10 pg/l detection limit), (2) no detection in fish tissue sampled below a mill's outfall greater than upstream reference.	2020
ME0103000308_325R01	East Branch Sebasticook River Corundel Pd to Sebasticook L	Benzene	4.51	Class C	Haz waste remediation project (Superfund). CSO removal. New wastewater permit, removal to land treatment in 2004. Segment attains aquatic life criteria (2003 data). Expected to attain in 2010.	2010

Category 4-B: Rivers and Streams Impaired by Pollutants - Pollution Control Requirements Reasonably Expected to Result in Attainment

ADB ASSESSMENT UNIT ID	SEGMENT NAME	CAUSE	SEGMENT SIZE	SEGMENT CLASS	COMMENTS	EXPECT TO ATTAIN DATE
ME0103000308_325R01	East Branch Sebasticook River Corundel Pd to Sebasticook L	Benthic-Macroinvertebrate Bioassessments (Streams)	4.51	Class C	Haz waste remediation project (Superfund). CSO removal. New wastewater permit, removal to land treatment in 2004. Segment attains aquatic life criteria (2003 data). Expected to attain in 2010.	2010
ME0103000308_331R01	**Martin Stream (Dixmont)**	**Ammonia (Un-ionized)**	**0.5**	**Class A**	**CAFO permit in place, operations currently suspended; expected to attain stds. Segment length is from fields draining manure storage piles to downstream of Rt 7**	**2008**
ME0103000308_331R01	**Martin Stream (Dixmont)**	**Benthic-Macroinvertebrate Bioassessments (Streams)**	**0.5**	**Class A**	**CAFO permit in place, operations currently suspended, expected to attain stds. Segment length is from fields draining manure storage piles to downstream of Rt 7**	**2008**
ME0103000312_339R_01	Kennebec R,	Dioxin (including 2,3,7,8-TCDD)	17.7	Class B	Dioxin license limits in 38 MRSA Section 420. New Dioxin sources removed, expected to attain standards. Compliance is measured by (1) no detection of dioxin in any internal waste stream (at 10 pg/l detection limit), (2) no detection in fish tissue sampled below a mill's outfall greater than upstream reference.	2020
ME0103000312_340R_01	Kennebec R,	Dioxin (including 2,3,7,8-TCDD)	30.53	Class C	Dioxin license limits in 38 MRSA Section 420. New Dioxin sources removed, expected to attain standards. Compliance is measured by (1) no detection of dioxin in any internal waste stream (at 10 pg/l detection limit), (2) no detection in fish tissue sampled below a mill's outfall greater than upstream reference.	2020
ME0103000312_427R	Merrymeeting Bay	Dioxin (including 2,3,7,8-TCDD)	3.44	Class B	Dioxin license limits in 38 MRSA Section 420. New Dioxin sources removed, expected to attain standards. Compliance is measured by (1) no detection of dioxin in any internal waste stream (at 10 pg/l detection limit), (2) no detection in fish tissue sampled below a mill's outfall greater than upstream reference.	2020

Category 4-B: Rivers and Streams Impaired by Pollutants - Pollution Control Requirements Reasonably Expected to Result in Attainment

ADB ASSESSMENT UNIT ID	SEGMENT NAME	CAUSE	SEGMENT SIZE	SEGMENT CLASS	COMMENTS	EXPECT TO ATTAIN DATE
ME0104000201_421R	Androscoggin R	Dioxin (including 2,3,7,8-TCDD)	2.35	Class B	Dioxin license limits in 38 MRSA Section 420. New Dioxin sources removed, expected to attain standards. Compliance is measured by (1) no detection of dioxin in any internal waste stream (at 10 pg/l detection limit), (2) no detection in fish tissue sampled below a mill's outfall greater than upstream reference.	2020
ME0104000202_421R	Androscoggin R	Dioxin (including 2,3,7,8-TCDD)	31.04	Class B	Dioxin license limits in 38 MRSA Section 420. New Dioxin sources removed, expected to attain standards. Compliance is measured by (1) no detection of dioxin in any internal waste stream (at 10 pg/l detection limit), (2) no detection in fish tissue sampled below a mill's outfall greater than upstream reference.	2020
ME0104000204_421R	Androscoggin R	Dioxin (including 2,3,7,8-TCDD)	10.97	Class C	Dioxin license limits in 38 MRSA Section 420. New Dioxin sources removed, expected to attain standards. Compliance is measured by (1) no detection of dioxin in any internal waste stream (at 10 pg/l detection limit), (2) no detection in fish tissue sampled below a mill's outfall greater than upstream reference.	2020
ME0104000204_422R	Androscoggin R	Dioxin (including 2,3,7,8-TCDD)	6.8	Class C	Dioxin license limits in 38 MRSA Section 420. New Dioxin sources removed, expected to attain standards. Compliance is measured by (1) no detection of dioxin in any internal waste stream (at 10 pg/l detection limit), (2) no detection in fish tissue sampled below a mill's outfall greater than upstream reference.	2020
ME0104000205_422R	Androscoggin R	Dioxin (including 2,3,7,8-TCDD)	15.7	Class C	Dioxin license limits in 38 MRSA Section 420. New Dioxin sources removed, expected to attain standards. Compliance is measured by (1) no detection of dioxin in any internal waste stream (at 10 pg/l detection limit), (2) no detection in fish tissue sampled below a mill's outfall greater than upstream reference.	2020

Category 4-B: Rivers and Streams Impaired by Pollutants - Pollution Control Requirements Reasonably Expected to Result in Attainment

ADB ASSESSMENT UNIT ID	SEGMENT NAME	CAUSE	SEGMENT SIZE	SEGMENT CLASS	COMMENTS	EXPECT TO ATTAIN DATE
ME0104000206_423R	Androscoggin R	Dioxin (including 2,3,7,8-TCDD)	21.7	Class C	Dioxin license limits in 38 MRSA Section 420. New Dioxin sources removed, expected to attain standards. Compliance is measured by (1) no detection of dioxin in any internal waste stream (at 10 pg/l detection limit), (2) no detection in fish tissue sampled below a mill's outfall greater than upstream reference.	2020
ME0104000206_423R01	Androscoggin R	Dioxin (including 2,3,7,8-TCDD)	1	Class C	Dioxin license limits in 38 MRSA Section 420. New Dioxin sources removed, expected to attain standards. Compliance is measured by (1) no detection of dioxin in any internal waste stream (at 10 pg/l detection limit), (2) no detection in fish tissue sampled below a mill's outfall greater than upstream reference.	2008
ME0104000207_412R02	House/Lively Brook	Nitrogen (Total)	3.53	Class B	Waste (manure) removal (Agric NPS) by Consent Order and Site Permit-expected to attain standards; needs addtional monitoring to confirm attainment.	2008
ME0104000208_424R	Androscoggin R,	Dioxin (including 2,3,7,8-TCDD)	15.45	Class C	Dioxin license limits in 38 MRSA Section 420. New Dioxin sources removed, expected to attain standards. Compliance is measured by (1) no detection of dioxin in any internal waste stream (at 10 pg/l detection limit), (2) no detection in fish tissue sampled below a mill's outfall greater than upstream reference.	2020
ME0104000210_425R_01	Androscoggin R,	Dioxin (including 2,3,7,8-TCDD)	22.15	Class C	Dioxin license limits in 38 MRSA Section 420. New Dioxin sources removed, expected to attain standards. Compliance is measured by (1) no detection of dioxin in any internal waste stream (at 10 pg/l detection limit), (2) no detection in fish tissue sampled below a mill's outfall greater than upstream reference.	2020

Category 4-B: Rivers and Streams Impaired by Pollutants - Pollution Control Requirements Reasonably Expected to Result in Attainment

ADB ASSESSMENT UNIT ID	SEGMENT NAME	CAUSE	SEGMENT SIZE	SEGMENT CLASS	COMMENTS	EXPECT TO ATTAIN DATE
ME0104000210_426R	Androscoggin R	Dioxin (including 2,3,7,8-TCDD)	8.49	Class C	Dioxin license limits in 38 MRSA Section 420. New Dioxin sources removed, expected to attain standards. Compliance is measured by (1) no detection of dioxin in any internal waste stream (at 10 pg/l detection limit), (2) no detection in fish tissue sampled below a mill's outfall greater than upstream reference.	2020
ME0105000201_507R01	Dennys River	Polychlorinated biphenyls	4.5	Class AA	Haz waste remediation project (Superfund)--expected to attain standards by 2010	2010
ME0105000305_528R08_02	**Sheepscot River below Sheepscot L**	**Oxygen, Dissolved**	**5.67**	**Class B**	**Listed for dissolved oxygen; hatchery permit issued 2/20/06; Expected to attain standards.**	**2010**
ME0106000101_605R01	**Mile Brook (Casco)**	**Benthic-Macroinvertebrate Bioassessments (Streams)**	**2.28**	**Class B**	**Hatchery permit issued 5/8/2006; exp. date 5/8/2011**	**2009**

Bold text indicates waters that were moved into Category 4-B during this reporting cycle

Category 4-C: Rivers and Streams with Impairment not Caused by a Pollutant

ADB ASSESSMENT UNIT ID	SEGMENT NAME	CAUSE	SEGMENT SIZE	SEGMENT CLASS	COMMENTS
ME0102000109_205R02	West Branch Penobscot R	Other flow regime alterations	4.24	Class C	Flow diversion - modified for hydropower.
ME0102000513_227R02	Silver Lake Outlet	Other flow regime alterations	1.28	Class B	Water withdrawal.
ME0103000204_311R_02	Dead R, main stem	Other flow regime alterations	1	Class AA	Flow modified for hydropower. New hydro certification pending.
ME0103000306_338R_01	Kennebec R,	Other flow regime alterations	5	Class B	Impounded water (Norridgwock)
ME0103000309_332R01	Sebasticook River (Halifax impoundment)	Other flow regime alterations	2	Class C	Impounded water. Dam removal decision pending.
ME0106000103_608R01	Presumpscot River	Other flow regime alterations	16.14	Class A	Impoundments. Draft water quality certificate.
ME0106000203_613R01	Wards Brook (Fryeburg)	Other flow regime alterations	1.5	Class C	Impounded water
ME0106000302_628R01_01	**Mousam River below Old Falls Dam**	**Other flow regime alterations**	**1**	**Class C**	**Low oxygen from bottom release**

Bold text indicates waters that were moved into Category 4-C during this reporting cycle

Category 5-A: Rivers and Streams Impaired by Pollutants Other Than Those Listed in 5-B Through 5-D (TMDL Required)

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	CAUSE	SEGMENT SIZE	SEGMENT CLASS	TMDL PRIORITY	COMMENTS
ME0101000105_103R 01	Shields Branch of Big Black R	mainstem	Escherichia coli	8.16	Class AA	2012	
ME0101000105_103R 01	Shields Branch of Big Black R	mainstem	Oxygen, Dissolved	8.16	Class AA	2012	
ME0101000412_140R 02	Dudley Brook (Chapman)		Benthic-Macroinvertebrate Bioassessments (Streams)	6.41	Class A	2012	
ME0101000412_140R 04	**Unnamed Stream (P.I. airport)**	**Tributary to Presque Isle Stream, draining the airport**	**Benthic-Macroinvertebrate Bioassessments (Streams)**	**2.5**	**Class B**	**2012**	
ME0101000412_143R 01	Everett Brook (Ft. Fairfield)		Oxygen, Dissolved	3.53	Class B	2012	
ME0101000501_149R 01	Prestile Stream above dam in Mars Hill		Benthic-Macroinvertebrate Bioassessments (Streams)	15.78	Class A	2007	Eutrophic lake source; Agricultural NPS source; non-attainment of biocriteria; AU is also listed as 5d for legacy DDT sources
ME0101000501_149R 01	Prestile Stream above dam in Mars Hill		DDT	15.78	Class A	2020	Eutrophic lake source; Agricultural NPS source; non-attainment of biocriteria; AU is also listed as 5d for legacy DDT sources
ME0101000501_149R 01	Prestile Stream above dam in Mars Hill		Nutrient/Eutrophication Biological Indicators	15.78	Class A	2007	Eutrophic lake source; Agricultural NPS source; non-attainment of biocriteria; AU is also listed as 5d for legacy DDT sources
ME0101000501_149R 01	Prestile Stream above dam in Mars Hill		Oxygen, Dissolved	15.78	Class A	2007	Eutrophic lake source; Agricultural NPS source; non-attainment of biocriteria; AU is also listed as 5d for legacy DDT sources
ME0102000110_205R 03	Millinocket Stream (Millinocket)		Escherichia coli	3.03	Class C	2008	Evaluated

Category 5-A: Rivers and Streams Impaired by Pollutants Other Than Those Listed in 5-B Through 5-D (TMDL Required)

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	CAUSE	SEGMENT SIZE	SEGMENT CLASS	TMDL PRIORITY	COMMENTS
ME0102000402_219R 01	Piscataquis R	main stem, below Dover Foxcroft	Oxygen, Dissolved	13.44	Class B	2009	
ME0102000403_215R 01	Sebec River at Milo above confluence with Piscataquis R		Benthic-Macroinvertebrate Bioassessments (Streams)	2.29	Class B	2008	
ME0102000502_230R	Penobscot R	main stem, from Mattawamkeag R to Cambolassee Str	Nutrient/Eutrophication Biological Indicators	14.05	Class B	2009	
ME0102000502_230R	Penobscot R	main stem, from Mattawamkeag R to Cambolassee Str	Oxygen, Dissolved	14.05	Class B	2009	
ME0102000502_231R	Penobscot R	main stem, from Cambolasse Str to Piscataquis R	Oxygen, Dissolved	19.08	Class B	2009	New licenses issued or underway for mills but needs further WQ monitoring and modeling to ascertain appropriate loads. PCBs are listed 5d-legacy pollutant. Dioxin listed 4b- controls in place, expected to attain standards
ME0102000502_231R	Penobscot R	main stem, from Cambolasse Str to Piscataquis R	Nutrient/Eutrophication Biological Indicators	19.08	Class B	2009	New licenses issued or underway for mills but needs further WQ monitoring and modeling to ascertain appropriate loads. PCBs are listed 5d-legacy pollutant. Dioxin listed 4b- controls in place, expected to attain standards
ME0102000506_222R 01	Costigan Str (Costigan)		Escherichia coli	0.78	Class B	2007	
ME0102000506_222R 01	Costigan Str (Costigan)		Oxygen, Dissolved	0.78	Class B	2007	
ME0102000510_224R 01	Burnham Brook (Garland)		Oxygen, Dissolved	3.73	Class B	2012	
ME0102000510_224R 03	French Stream (Exeter)		Benthic-Macroinvertebrate Bioassessments (Streams)	12.79	Class B	2012	

Category 5-A: Rivers and Streams Impaired by Pollutants Other Than Those Listed in 5-B Through 5-D (TMDL Required)

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	CAUSE	SEGMENT SIZE	SEGMENT CLASS	TMDL PRIORITY	COMMENTS
ME0102000510_224R 04	Birch Stream (Bangor)		Benthic-Macroinvertebrate Bioassessments (Streams)	0.5	Class B	2006	Draft TMDL sent to EPA 9/29/2005 under bundled urban stream project.
ME0102000510_224R 05	Capehart Brook (AKA Unnamed (Pushaw) Stream (Bangor)		Habitat Assessment (Streams)	0.46	Class B	2007	
ME0102000510_224R 06	Arctic Brook (near Valley Ave Bangor)		Benthic-Macroinvertebrate Bioassessments (Streams)	0.18	Class B	2007	
ME0102000510_224R 06	Arctic Brook (near Valley Ave Bangor)		Habitat Assessment (Streams)	0.18	Class B	2007	
ME0102000511_225R 01_02	Shaw Brook (Bangor, Hampden)		Benthic-Macroinvertebrate Bioassessments (Streams)	3.91	Class B	2007	
ME0102000511_225R 01_02	Shaw Brook (Bangor, Hampden)		Habitat Assessment (Streams)	3.91	Class B	2007	
ME0102000511_225R 02	**Sucker Brook (Hampden) (formerly 'Unnamed St.-Hampden')**	**Tributary to Penobscot R. entering from the west, in Hampden**	**Oxygen, Dissolved**	**2.5**	**Class B**	**2012**	**Formerly identified and 303d listed as 'Unnamed Stream (Hampden 44.77326/68.79467)' Class B stream only attained Class C biocriteria in 2002 and 2004 monitoring.**
ME0102000511_225R 02	**Sucker Brook (Hampden) (formerly 'Unnamed St.-Hampden')**	**Tributary to Penobscot R. entering from the west, in Hampden**	**Benthic-Macroinvertebrate Bioassessments (Streams)**	**2.5**	**Class B**	**2012**	**Formerly identified and 303d listed as 'Unnamed Stream (Hampden 44.77326/68.79467)' Class B stream only attained Class C biocriteria in 2002 and 2004 monitoring.**
ME0102000513_226R 03	Penjajawoc Stream (Bangor) Meadow Bk (Bangor)		Benthic-Macroinvertebrate Bioassessments (Streams)	6.76	Class B	2007	

Category 5-A: Rivers and Streams Impaired by Pollutants Other Than Those Listed in 5-B Through 5-D (TMDL Required)

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	CAUSE	SEGMENT SIZE	SEGMENT CLASS	TMDL PRIORITY	COMMENTS
ME0102000513_226R 03	Penjajawoc Stream (Bangor) Meadow Bk (Bangor)		Habitat Assessment (Streams)	6.76	Class B	2007	
ME0102000513_226R 03	Penjajawoc Stream (Bangor) Meadow Bk (Bangor)		Oxygen, Dissolved	6.76	Class B	2007	
ME0103000305_319R _02	Sandy R,	main stem, segment below Farmington WWTP	Benthic-Macroinvertebrate Bioassessments (Streams)	3.24	Class B	2008	Flows too high in 2006; requires follow-up monitoring in order to complete TMDL, scheduled for 2007
ME0103000306_314R 02	Cold Stream (Skowhegan)		Benthic-Macroinvertebrate Bioassessments (Streams)	5.73	Class B	2008	
ME0103000306_320R 03	Whitten Brook (Skowhegan)		Benthic-Macroinvertebrate Bioassessments (Streams)	1.12	Class B	2007	
ME0103000306_320R 03	Whitten Brook (Skowhegan)		Habitat Assessment (Streams)	1.12	Class B	2007	
ME0103000306_320R 03	Whitten Brook (Skowhegan)		Escherichia coli	1.12	Class B	2007	
ME0103000306_320R 04	Mill Stream (Norridgewock)		Benthic-Macroinvertebrate Bioassessments (Streams)	8.17	Class B	2010	
ME0103000307_330R	W Branch of Sebasticook R		Polychlorinated biphenyls	12.5	Class C	2011	municipal and industrial PCBs
ME0103000307_330R	W Branch of Sebasticook R		Dioxin (including 2,3,7,8-TCDD)	12.5	Class C	2011	municipal and industrial dioxins
ME0103000308_325R 02	Brackett Brook (Palmyra)		Oxygen, Dissolved	2.74	Class B	2012	
ME0103000308_325R 03	Mulligan Stream (St. Albans)		Oxygen, Dissolved	4.03	Class B	2008	

Category 5-A: Rivers and Streams Impaired by Pollutants Other Than Those Listed in 5-B Through 5-D (TMDL Required)

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	CAUSE	SEGMENT SIZE	SEGMENT CLASS	TMDL PRIORITY	COMMENTS
ME0103000308_331R	**E Branch of Sebasticook R**	Below Sebasticook L.	Oxygen, Dissolved	**10.25**	**Class C**	**Low**	
ME0103000309_327R 01	Mill Stream (Albion)		Oxygen, Dissolved	2.17	Class B	2012	
ME0103000309_332R	Sebasticook River	main stem, below confluence of E and W branches	Nutrient/Eutrophication Biological Indicators	30.83	Class C	2011	5a-Benthic invertebrates; dissolved oxygen, nutrients/eutrophic indicators- TMDL scheduled for 2011 5a for 1 CSO in Winslow with LTCP (under KSTD's LTCP); Permit date 2009. 5d legacy dioxin and PCBs
ME0103000309_332R	Sebasticook River	main stem, below confluence with E and W branches	Oxygen, Dissolved	30.83	Class C	2011	5a-Benthic invertebrates; dissolved oxygen, nutrients/eutrophic indicators- TMDL scheduled for 2011 5a for 1 CSO in Winslow with LTCP (under KSTD's LTCP); Permit date 2009. 5d legacy dioxin and PCBs
ME0103000309_332R	Sebasticook River	main stem, below confluence with E and W branches	Benthic-Macroinvertebrate Bioassessments (Streams)	30.83	Class C	2011	5a-Benthic invertebrates; dissolved oxygen, nutrients/eutrophic indicators- TMDL scheduled for 2011. 5a for 1 CSO in Winslow with LTCP (under KSTD's LTCP); Permit date 2009. 5d legacy dioxin and PCBs
ME0103000309_332R	Sebasticook River	main stem, below confluence with E and W branches	Escherichia coli	30.83	Class C	low	5a-Benthic invertebrates; dissolved oxygen, nutrients/eutrophic indicators- TMDL scheduled for 2011. 5a for 1 CSO in Winslow with LTCP (under KSTD's LTCP); Permit date 2009. 5d legacy dioxin and PCBs
ME0103000311_334R 03	Jock Stream (Wales)		Oxygen, Dissolved	9.43	Class B	2008	
ME0103000311_334R 03	Jock Stream (Wales)		Nutrient/Eutrophication Biological Indicators	9.43	Class B	2008	

Category 5-A: Rivers and Streams Impaired by Pollutants Other Than Those Listed in 5-B Through 5-D (TMDL Required)

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	CAUSE	SEGMENT SIZE	SEGMENT CLASS	TMDL PRIORITY	COMMENTS
ME0103000311_334R 04	Mill Stream (Winthrop)		Benthic-Macroinvertebrate Bioassessments (Streams)	0.63	Class B	2008	Stream TMDL monitoring 2005; Biomon. sample 2004 - NA
ME0103000311_334R 04	Mill Stream (Winthrop)		Impairment Unknown	0.63	Class B	2008	Stream TMDL monitoring 2005; Biomon. sample 2004 - NA
ME0103000312_333R 04	Unnamed tributary to Bond Brook	(Augusta) entering below I-95	Habitat Assessment (Streams)	1.34	Class B	2007	
ME0103000312_333R 04	Unnamed tributary to Bond Brook	(Augusta) entering below I-95	Benthic-Macroinvertebrate Bioassessments (Streams)	1.34	Class B	2007	
ME0103000312_335R 03	Meadow Brook (Farmingdale)		Benthic-Macroinvertebrate Bioassessments (Streams)	2	Class B	2012	
ME0104000205_410R 01_02	Whitney Brook (Canton) .		Benthic-Macroinvertebrate Bioassessments (Streams)	1.82	Class B	2012	
ME0104000208_413R 01	Jepson Brook (Lewiston)		Oxygen, Dissolved	2.43	Class B	2010	Upstream section is a channelized stormwater conveyance for all but the last 1,000 feet before the confluence with the Androscoggin River in Lewiston. The lower 1000 feet has high gradient and intact riparian buffer (minimum 120 feet one side and 600 feet buffer width other side) with natural, ledge, boulder, rubble stream-bottom.
ME0104000208_413R 01	Jepson Brook (Lewiston)		Escherichia coli	2.43	Class B	2008	Upstream section is a channelized stormwater conveyance for all but the last 1,000 feet before the confluence with the Androscoggin River in Lewiston. The lower 1000 feet has high gradient and intact riparian buffer (minimum 120 feet one side and 600 feet buffer width other side) with natural, ledge, boulder, rubble stream-bottom.

Category 5-A: Rivers and Streams Impaired by Pollutants Other Than Those Listed in 5-B Through 5-D (TMDL Required)

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	CAUSE	SEGMENT SIZE	SEGMENT CLASS	TMDL PRIORITY	COMMENTS
ME0104000208_413R 01	Jepson Brook (Lewiston)		Habitat Assessment (Streams)	2.43	Class B	2010	Upstream section is a channelized stormwater conveyance for all but the last 1,000 feet before the confluence with the Androscoggin River in Lewiston. The lower 1000 feet has high gradient and intact riparian buffer (minimum 120 feet one side and 600 feet buffer width other side) with natural, ledge, boulder, rubble stream-bottom.
ME0104000208_413R 03	Stetson Brook (Lewiston)		Oxygen, Dissolved	6.82	Class B	2008	
ME0104000208_413R 03	Stetson Brook (Lewiston)		Escherichia coli	6.82	Class B	2008	
ME0104000208_413R 04	Logan Brook, Auburn		Escherichia coli	0.96	Class B	2010	
ME0104000208_413R 04	Logan Brook, Auburn		Habitat Assessment (Streams)	0.96	Class B	2007	
ME0104000208_413R 04	Logan Brook, Auburn		Oxygen, Dissolved	0.96	Class B	2007	
ME0104000208_413R 07	Gully Brook (Lewiston)		Escherichia coli	1.91	Class B	2012	
ME0104000208_413R 07	Gully Brook (Lewiston)		Oxygen, Dissolved	1.91	Class B	2012	
ME0104000210_413R 02	Penley Brook (Auburn)		Oxygen, Dissolved	1.57	Class B	2010	
ME0104000210_418R 01	Sabattus River between Sabattus and Androscoggin R		Benthic-Macroinvertebrate Bioassessments (Streams)	11.41	Class C	2007	Updated revised modeling report completed June 2006, for dissolved oxygen and nutrient issues

Category 5-A: Rivers and Streams Impaired by Pollutants Other Than Those Listed in 5-B Through 5-D (TMDL Required)

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	CAUSE	SEGMENT SIZE	SEGMENT CLASS	TMDL PRIORITY	COMMENTS
ME0104000210_418R 01	Sabattus River between Sabattus and Androscoggin R		Nutrient/Eutrophication Biological Indicators	11.41	Class C	2007	Updated revised modeling report completed June 2006, for dissolved oxygen and nutrient issues
ME0104000210_418R 01	Sabattus River between Sabattus and Androscoggin R		Oxygen, Dissolved	11.41	Class C	2007	Updated revised modeling report completed June 2006, for dissolved oxygen and nutrient issues
ME0104000210_418R 02	No Name Brook (Lewiston)		Escherichia coli	10.02	Class C	2008	
ME0104000210_418R 02	No Name Brook (Lewiston)		Oxygen, Dissolved	10.02	Class C	2008	
ME0104000210_419R 01	Unnamed Brook (Biomon Sta. 347-Lisbon Falls at Rt 196)		Habitat Assessment (Streams)	1.36	Class B	2010	
ME0104000210_419R 02	Hart Brook (Lewiston) A.K.A Dill Brook and including Goff Bk		Habitat Assessment (Streams)	4.15	Class B	2007	Hart Brook, including tributaries Goff Brook & Dill Brook; TMDL originally submitted under the name "Dill Brook"
ME0104000210_419R 02	Hart Brook (Lewiston) A.K.A Dill Brook and including Goff Bk		Escherichia coli	4.15	Class B	2010	Hart Brook, including tributaries Goff Brook & Dill Brook; TMDL originally submitted under the name "Dill Brook"
ME0104000210_419R 02	Hart Brook (Lewiston) A.K.A Dill Brook and including Goff Bk		Oxygen, Dissolved	4.15	Class B	2007	Hart Brook, including tributaries Goff Brook & Dill Brook; TMDL originally submitted under the name "Dill Brook"

Category 5-A: Rivers and Streams Impaired by Pollutants Other Than Those Listed in 5-B Through 5-D (TMDL Required)

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	CAUSE	SEGMENT SIZE	SEGMENT CLASS	TMDL PRIORITY	COMMENTS
ME0104000210_419R 02	Hart Brook (Lewiston) A.K.A Dill Brook and including Goff Bk		Benthic-Macroinvertebrate Bioassessments (Streams)	4.15	Class B	2007	Hart Brook, including tributaries Goff Brook & Dill Brook; TMDL originally submitted under the name "Dill Brook"
ME0104000210_420R 01	Unnamed tributary to Androscoggin R	(near River Rd. Brunswick) 43.91538/69.98089	Habitat Assessment (Streams)	1.85	Class B	2012	
ME0104000210_420R 02	Unnamed tributary to Androscoggin R	(near Water St. Brunswick) 43.92167/69.95586	Habitat Assessment (Streams)	0.56	Class B	2012	
ME0104000210_420R 03	Unnamed tributary to Androscoggin R	(near Jordan Ave., Brunswick) 43.91077/69.94130	Habitat Assessment (Streams)	1.73	Class B	2012	
ME0104000210_420R 04	Unnamed tributary to Androscoggin R	(near Rt. 196, Topsham) 43.92470/69.95027	Habitat Assessment (Streams)	1.77	Class B	2012	
ME0105000209_512R _03	Great Falls Branch, Schoodic Stream (Deblois)		Benthic-Macroinvertebrate Bioassessments (Streams)	1.33	Class A	2012	Formerly listed as segment 512R_02 - Great Falls Branch, Schoodic Stream
ME0105000213_514R _01	Card Brook (Ellsworth)		Escherichia coli	1.2	Class B	2012	
ME0105000213_514R _01	Card Brook (Ellsworth)		Oxygen, Dissolved	1.2	Class B	2012	
ME0105000218_521R 01	Warren Brook (Belfast)		Oxygen, Dissolved	6.04	Class B	2012	
ME0105000305_528R 02	West Branch Sheepscot River		Oxygen, Dissolved	2.29	Class AA	2007	Formerly referred to as "West Branch Sheepscot River below Halls Corner"

Category 5-A: Rivers and Streams Impaired by Pollutants Other Than Those Listed in 5-B Through 5-D (TMDL Required)

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	CAUSE	SEGMENT SIZE	SEGMENT CLASS	TMDL PRIORITY	COMMENTS
ME0105000305_528R 03	Dyer River below Rt 215		Oxygen, Dissolved	9.35	Class B	2007	
ME0105000305_528R 03	Dyer River below Rt 215		Escherichia coli	9.35	Class B	2007	
ME0105000305_528R 04	Trout Brook (Alna)		Oxygen, Dissolved	3.43	Class B	2009	
ME0105000305_528R 05	Meadow Bk (Whitefield)		Oxygen, Dissolved	5.94	Class B	2009	
ME0105000305_528R 06	Carlton Bk (Whitefield)		Oxygen, Dissolved	3.94	Class B	2009	
ME0105000305_528R 07	Choate Bk (Windsor)		Oxygen, Dissolved	1.33	Class B	2009	
ME0105000305_528R 08_01	Chamberlain Bk (Whitefield) .		Oxygen, Dissolved	1.76	Class B	2009	
ME0106000102_603R 02	Chandler River including East Branch		Oxygen, Dissolved	27.19	Class B	2012	
ME0106000102_603R 06	Cole Brook (Gray)		Benthic-Macroinvertebrate Bioassessments (Streams)	2.49	Class B	2012	
ME0106000103_607R 01	Black Brook (Windham)		Oxygen, Dissolved	6.07	Class B	2008	
ME0106000103_607R 03	Colley Wright Brook (Windham)		Oxygen, Dissolved	8.16	Class B	2008	
ME0106000103_607R 03	Colley Wright Brook (Windham)		Escherichia coli	8.16	Class B	2008	

Category 5-A: Rivers and Streams Impaired by Pollutants Other Than Those Listed in 5-B Through 5-D (TMDL Required)

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	CAUSE	SEGMENT SIZE	SEGMENT CLASS	TMDL PRIORITY	COMMENTS
ME0106000103_607R 06	Hobbs Brook (Cumberland)		Escherichia coli	1.54	Class B	2008	
ME0106000103_607R 06	Hobbs Brook (Cumberland)		Oxygen, Dissolved	1.54	Class B	2008	
ME0106000103_607R 07	Inkhorn Brook (Westbrook)		Escherichia coli	4.32	Class B	2008	
ME0106000103_607R 07	Inkhorn Brook (Westbrook)		Oxygen, Dissolved	4.32	Class B	2008	
ME0106000103_607R 08	Mosher Brook (Gorham)		Escherichia coli	2.03	Class B	2008	
ME0106000103_607R 08	Mosher Brook (Gorham)		Oxygen, Dissolved	2.03	Class B	2008	
ME0106000103_607R 09	Otter Brook (Windham)		Oxygen, Dissolved	2.16	Class B	2008	
ME0106000103_607R 09	Otter Brook (Windham)		Escherichia coli	2.16	Class B	2008	
ME0106000103_607R 10	Thayer Brook		Oxygen, Dissolved	3.82	Class B	2008	
ME0106000103_607R 12	**Pleasant River (Windham)**	**mainstem of Pleasant River from Thayer Brook to confluence with Presumpscot**	**Escherichia coli**	**8.8**	**Class B**	**2010**	
ME0106000103_607R 12	**Pleasant River (Windham)**	**mainstem of Pleasant River from Thayer Brook to confluence with Presumpscot**	**Oxygen, Dissolved**	**8.8**	**Class B**	**2010**	

Category 5-A: Rivers and Streams Impaired by Pollutants Other Than Those Listed in 5-B Through 5-D (TMDL Required)

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	CAUSE	SEGMENT SIZE	SEGMENT CLASS	TMDL PRIORITY	COMMENTS
ME0106000104_611R 02	Phillips Brook (Scarborough)		Habitat Assessment (Streams)	2.77	Class C	2008	
ME0106000105_607R 11_01	Nasons Brook (Portland) south of Rt 25, trib to Fore River		Benthic-Macroinvertebrate Bioassessments (Streams)	2	Class C	2008	
ME0106000105_609R 01	**Unnamed Stream (Portland 3)**	**Tributary to Presumpscot R. entering east of Rt. 302 in Portland**	**Benthic-Macroinvertebrate Bioassessments (Streams)**	**1.6**	**Class B**	**2012**	
ME0106000105_610R 01	Capisic Brook		Benthic-Macroinvertebrate Bioassessments (Streams)	3.02	Class C	2007	Draft TMDL sent to EPA 7/29/2005 under bundled Urban Stream report
ME0106000105_610R 01	Capisic Brook		Habitat Assessment (Streams)	3.02	Class C	2007	Draft TMDL sent to EPA 7/29/2005 under bundled Urban Stream report
ME0106000105_610R 02	Clark Brook (Westbrook)		Oxygen, Dissolved	1.23	Class C	2012	
ME0106000105_610R 03	Long Creek (South Portland)		Benthic-Macroinvertebrate Bioassessments (Streams)	4.12	Class C	2009	Active stakeholder process is underway to consider TMDL, watershed restoration process; current TMDL target date is 2009.
ME0106000105_610R 03	Long Creek (South Portland)		Habitat Assessment (Streams)	4.12	Class C	2009	Active stakeholder process is underway to consider TMDL, watershed restoration process; current TMDL target date is 2009.
ME0106000105_610R 04	Stroudwater River (South Portland, Westbrook)		Oxygen, Dissolved	15.71	Class B	2012	
ME0106000105_610R 05	Trout Brook (South Portland)		Benthic-Macroinvertebrate Bioassessments (Streams)	2.93	Class C	2007	Draft TMDL sent to EPA 9/1/2005 under bundled urban stream project
ME0106000105_610R 05	Trout Brook (South Portland)		Habitat Assessment (Streams)	2.93	Class C	2007	Draft TMDL sent to EPA 9/1/2005 under bundled urban stream project

Category 5-A: Rivers and Streams Impaired by Pollutants Other Than Those Listed in 5-B Through 5-D (TMDL Required)

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	CAUSE	SEGMENT SIZE	SEGMENT CLASS	TMDL PRIORITY	COMMENTS
ME0106000105_610R 06	Kimball Brook		Habitat Assessment (Streams)	1.55	Class C	2012	Biomon Station 795; Biomonitoring results - non-attainment of Class C
ME0106000105_610R 06	Kimball Brook		Benthic-Macroinvertebrate Bioassessments (Streams)	1.55	Class C	2012	Biomon Station 795; Biomonitoring results - non-attainment of Class C
ME0106000105_610R 07	Red Brook (Scarborough, S Portland)		Habitat Assessment (Streams)	7.15	Class C	2012	
ME0106000105_610R 07	Red Brook (Scarborough, S Portland)		Polychlorinated biphenyls	7.15	Class C	2012	
ME0106000105_610R 08	Fall Bk (Portland)		Habitat Assessment (Streams)	2.54	Class C	2012	
ME0106000105_610R 09	Barberry Cr		Benthic-Macroinvertebrate Bioassessments (Streams)	3.03	Class C	2007	Draft TMDL sent to EPA 7/29/2005 under bundled urban stream project.
ME0106000105_610R 09	Barberry Cr		Habitat Assessment (Streams)	3.03	Class C	2007	Draft TMDL sent to EPA 7/29/2005 under bundled urban stream project.
ME0106000106_602R 01	Frost Gully Brook		Benthic-Macroinvertebrate Bioassessments (Streams)	4.04	Class A	2007	
ME0106000106_602R 01	Frost Gully Brook		Escherichia coli	4.04	Class A	2007	
ME0106000106_602R 01	Frost Gully Brook		Habitat Assessment (Streams)	4.04	Class A	2007	
ME0106000106_602R 02	Mare Brook (Brunswick)		Habitat Assessment (Streams)	4.9	Class B	2008	
ME0106000106_602R 03	Concord Gully (Freeport)		Habitat Assessment (Streams)	2.47	Class B	2007	

Category 5-A: Rivers and Streams Impaired by Pollutants Other Than Those Listed in 5-B Through 5-D (TMDL Required)

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	CAUSE	SEGMENT SIZE	SEGMENT CLASS	TMDL PRIORITY	COMMENTS
ME0106000210_615R 01	Little Ossippee R	segment from Lake Arrowhead Dam to Saco River	Oxygen, Dissolved	12.49	Class B	2012	
ME0106000210_615R 01	Little Ossippee R	segment from Lake Arrowhead Dam to Saco River	Benthic-Macroinvertebrate Bioassessments (Streams)	12.49	Class B	2012	
ME0106000210_615R 02	Brown Brook (Limerick)		Habitat Assessment (Streams)	2.44	Class B	2008	Biomon Station 445; Class B stream only attains Class C
ME0106000210_615R 02	Brown Brook (Limerick)		Benthic-Macroinvertebrate Bioassessments (Streams)	2.44	Class B	2008	Biomon Station 445; Class B stream only attains Class C
ME0106000211_616R	Wales Pond Brook (Hollis)		Benthic-Macroinvertebrate Bioassessments (Streams)	2.66	Class B	2009	draft hatchery permit (Shy Beaver); ongoing issues
ME0106000211_616R 05	**Thatcher Bk (Biddeford)**		**Benthic-Macroinvertebrate Bioassessments (Streams)**	**5.67**	**Class B**	**2012**	
ME0106000211_616R 05	**Thatcher Bk (Biddeford)**		**Escherichia coli**	**5.67**	**Class B**	**2012**	
ME0106000301_622R 02	**Lord's Brook (Lyman)**		**BOD, Biochemical oxygen demand**	**2.35**	**Class B**	**2012**	**Fungal growth on stream bottom; currently revising permit**
ME0106000301_622R 02	**Lord's Brook (Lyman)**		**Oxygen, Dissolved**	**2.35**	**Class B**	**2012**	**Fungal growth on stream bottom; currently revising permit**
ME0106000301_622R 02	**Lord's Brook (Lyman)**		**Nutrient/Eutrophication Biological Indicators**	**2.35**	**Class B**	**2012**	**Fungal growth on stream bottom; currently revising permit**
ME0106000303_624R 01	Stevens Brook (Wells, Ogunquit)		Benthic-Macroinvertebrate Bioassessments (Streams)	2.87	Class B	2008	
ME0106000304_625R 01	Adams Brook (Berwick)		Benthic-Macroinvertebrate Bioassessments (Streams)	2.97	Class B	2008	

Category 5-A: Rivers and Streams Impaired by Pollutants Other Than Those Listed in 5-B Through 5-D (TMDL Required)

ADB ASSESSMENT UNIT ID	SEGMENT NAME	LOCATION	CAUSE	SEGMENT SIZE	SEGMENT CLASS	TMDL PRIORITY	COMMENTS
ME0106000304_625R03	West Brook (N. Berwick)		Oxygen, Dissolved	3.22	Class B	2012	AWQC drinking water impairment from industrial NPS/hazardous waste; dichloroethane

Bold text indicates waters that were moved into Category 5A during this reporting cycle

Category 5-B: Rivers and Streams Impaired by Bacteria Contamination (TMDL Required)

ADB ASSESSMENT UNIT ID	SEGMENT NAME	CAUSE	SEGMENT SIZE	SEGMENT CLASS	COMMENTS
ME0101000121_117R	St. John River at Madawaska	Escherichia coli	0 *	Class C	
ME0101000413_146R01	Webster Brook	Escherichia coli	12.1	Class B	
ME0102000402_219R_02	Piscataquis River at Dover Foxcroft	Escherichia coli	0 *	Class B	
ME0102000403_215R_02	Sebec River at Milo	Escherichia coli	0 *	Class B	Also listed in 5-A
ME0102000509_226R01	Otter Stream	Escherichia coli	6.27	Class B	
ME0102000509_226R02	Boynton Brook	Escherichia coli	2.64	Class B	
ME0102000509_233R_02	Penobscot River at Orono	Escherichia coli	0 *	Class B	Orono CSO permit has been issued-
ME0102000509_233R_03	Penobscot River at Old Town-Milford	Escherichia coli	0 *	Class B	
ME0102000510_224R02	Kenduskeag Stream	Escherichia coli	1.5	Class B	
ME0102000513_234R	Penobscot River	Escherichia coli	0 *	Class B	Also listed in 4-B, 5D and 5-A
ME0103000306_320R02	Currier Brook	Escherichia coli	3.19	Class B	
ME0103000306_338R_02	Kennebec River at Fairfield	Escherichia coli	0 *	Class C	
ME0103000306_338R_03	Kennebec River at Skowhegan	Escherichia coli	0 *	Class B	
ME0103000312_333R02	Whitney Brook (Augusta)	Escherichia coli	2.68	Class B	
ME0103000312_339R_02	Kennebec River at Waterville	Escherichia coli	0 *	Class B	
ME0103000312_340R_02	Kennebec River at Augusta, including Riggs Brook	Escherichia coli	0 *	Class B	
ME0103000312_340R_03	Kennebec River at Hallowell	Escherichia coli	0 *	Class B	
ME0103000312_340R_04	Kennebec River at Gardiner-Randolph	Escherichia coli	0 *	Class B	
ME0104000209_417R_02	Little Androscoggin River at Mechanic Falls	Escherichia coli	0 *	Class C	
ME0104000210_425R_02	Androscoggin River	Escherichia coli	0 *	Class C	

Category 5-B: Rivers and Streams Impaired by Bacteria Contamination (TMDL Required)

ADB ASSESSMENT UNIT ID	SEGMENT NAME	CAUSE	SEGMENT SIZE	SEGMENT CLASS	COMMENTS
ME0105000203_508R02	Pottle Brook (Perry)	Escherichia coli	0.5	Class B	
ME0105000220_522R01_01	Megunticook River (Camden)	Escherichia coli	3.56	Class B	
ME0105000220_522R02_01	Unnamed Brook (Camden)	Escherichia coli	0.7	Class B	
ME0105000220_522R03	Unnamed Brook (Rockport)	Escherichia coli	0.5	Class B	
ME0105000220_522R04	Unnamed Brook (Rockland)	Escherichia coli	0.5	Class B	
ME0105000305_528R01	Sheepscot River at Alna	Escherichia coli	4.01	Class AA	
ME0106000103_607R04	Piscataqua River (Falmouth)	Escherichia coli	12.53	Class B	
ME0106000103_607R11	Nason Brook (Gorham)	Escherichia coli	2.7	Class B	
ME0106000103_609R_02	Presumpscot River at Westbrook	Escherichia coli	0 *	Class C	
ME0106000106_612R01_02	Bear Brook, Saco	Escherichia coli	0 *	Class B	
ME0106000106_616R04	Bear Bk	Escherichia coli	0.5	Class B	
ME0106000204_618R01	Saco R	Escherichia coli	5	Class AA	
ME0106000209_614R01	Ossippee R	Escherichia coli	5	Class B	
ME0106000211_616R02	Tappan Bk	Escherichia coli	0.5	Class B	
ME0106000211_616R03	Sawyer Bk	Escherichia coli	0.5	Class B	
ME0106000211_616R06	Swan Pond Brook at South Street (Biddeford)	Escherichia coli	1	Class B	
ME0106000211_619R01	Saco River at Biddeford-Saco	Escherichia coli	0 *	Class B	
ME0106000301_622R01	Kennebunk River	Escherichia coli	3.07	Class B	
ME0106000302_628R02	Mousam River at Sanford	Escherichia coli	0 *	Class C	TMDL approved for other parameters
ME0106000305_630R01	Salmon Falls R	Escherichia coli	7.43	Class B	Also listed 5d- legacy PCBs and dioxin and 4A-TMDL approved for other parameters

* Estimate of affected river miles is not provided since it is highly variable depending on an overflow event

Category 5-C: Waters Impaired by Atmospheric Deposition of Mercury. Regional or National TMDL may be Required.

5-C: Impairment caused by atmospheric deposition of mercury and a regional scale TMDL is required. Maine has a fish consumption advisory for fish taken from all freshwaters due to mercury. Many waters, and many fish from any given water, do not exceed the action level for mercury. However, because it is impossible for someone consuming a fish to know whether the mercury level exceeds the action level, the Maine Department of Human Services decided to establish a statewide advisory for all freshwater fish that recommends limits on consumption. Maine has already instituted statewide programs for removal and reduction of mercury sources. The State of Maine is participating in the development of regional scale TMDLs for the control of mercury.

Category 5-D: Rivers and Streams Impaired by Legacy Pollutants

ADB ASSESSMENT UNIT ID	SEGMENT NAME	CAUSE	SEGMENT SIZE	SEGMENT CLASS	COMMENTS
ME0101000412_140R03_02	N Br Presque Isle Stream	DDT	14.68	Class B	legacy DDT contamination
ME0101000501_149R	Minor tributaries to Prestile Stream above dam in Mars Hill	DDT	77.2	Class B	legacy DDT contamination
ME0101000501_150R	Prestile Str and tributaries entering below dam in Mars Hill	DDT	95.55	Class B	legacy DDT contamination
ME0101000504_152R01_02	Meduxnekeag River	DDT	11	Class B	legacy DDT contamination
ME0102000404_216R01_01	W. Br. Pleasant R (KIW Twp)	Iron	1	Class AA	legacy iron mine contamination
ME0102000404_216R01_02	Blood Bk (KIW Twp)	Iron	1	Class A	legacy iron mine contamination
ME0102000509_231R	Penobscot R	Polychlorinated biphenyls	19.08	Class B	New licenses issued or underway for mills but needs further WQ monitoring and modeling to ascertain appropriate loads. PCBs are listed 5d- legacy pollutant. Dioxin listed 4b- controls in place, expected to attain standards
ME0102000509_233R_01	Penobscot R	Polychlorinated biphenyls	14.51	Class B	4-b Dioxin license limits in 38 MRSA Section 420. Compliance is measured by (1) no detection of dioxin in any internal waste stream (at 10 pg/l detection limit), (2) no detection in fish tissue sampled below a mill's outfall greater than upstream reference. Fish tissue monitoring has revealed legacy PCBs
ME0102000513_234R02	Penobscot	Polychlorinated biphenyls	10.1	Class B	4-b Dioxin license limits in 38 MRSA Section 420. Compliance is measured by (1) no detection of dioxin in any internal waste stream (at 10 pg/l detection limit), (2) no detection in fish tissue sampled below a mill's outfall greater than upstream reference. Fish tissue monitoring has revealed legacy PCBs
ME0103000306_338R_04	Kennebec R,	Polychlorinated biphenyls	22.76	Class B	4-b Dioxin license limits in 38 MRSA Section 420. Compliance is measured by (1) no detection of dioxin in any internal waste stream (at 10 pg/l detection limit), (2) no detection in fish tissue sampled below a mill's outfall greater than upstream reference. Fish tissue monitoring has revealed legacy PCBs

Category 5-D: Rivers and Streams Impaired by Legacy Pollutants

ADB ASSESSMENT UNIT ID	SEGMENT NAME	CAUSE	SEGMENT SIZE	SEGMENT CLASS	COMMENTS
ME0103000306_339R_02	Kennebec R,	Polychlorinated biphenyls	14.65	Class C	4-b Dioxin license limits in 38 MRSA Section 420. Compliance is measured by (1) no detection of dioxin in any internal waste stream (at 10 pg/l detection limit), (2) no detection in fish tissue sampled below a mill's outfall greater than upstream reference. Fish tissue monitoring has revealed legacy PCBs
ME0103000308_331R	**E Branch of Sebasticook R,** Below Sebasticook L.	Dioxin (including 2,3,7,8-TCDD)	**10.25**	**Class C**	Upstream Lake TMDL and superfund project are complete; Dioxin, PCB--Category 5D Dissolved oxygen -5A
ME0103000308_331R	**E Branch of Sebasticook R** Below Sebasticook L.	Polychlorinated biphenyls	**10.25**	**Class C**	Upstream Lake TMDL and superfund project are complete; Dioxin, PCB--Category 5D Dissolved oxygen -5A
ME0103000309_332R	Sebasticook River	Polychlorinated biphenyls	30.83	Class C	5a-Benthic invertebrates; dissolved oxygen, nutrients/eutrophic indicators-New hydro certification received in 2006; TMDL scheduled for 2011. 5b2 for 1 CSO in Winslow with LTCP (under KSTD's LTCP); Permit date 2009. Legacy PCBs and dioxin from upstream sources (W. Branch)
ME0103000309_332R	Sebasticook River	Dioxin (including 2,3,7,8-TCDD)	30.83	Class C	5a-Benthic invertebrates; dissolved oxygen, nutrients/eutrophic indicators-New hydro certification received in 2006; TMDL scheduled for 2011. 5b2 for 1 CSO in Winslow with LTCP (under KSTD's LTCP); Permit date 2009. Legacy PCBs and dioxin from upstream sources (W. Branch)
ME0103000312_339R_01	Kennebec R,	Polychlorinated biphenyls	17.7	Class B	4-b Dioxin license limits in 38 MRSA Section 420. Compliance is measured by (1) no detection of dioxin in any internal waste stream (at 10 pg/l detection limit), (2) no detection in fish tissue sampled below a mill's outfall greater than upstream reference. Fish tissue monitoring has revealed legacy PCBs
ME0103000312_340R_01	Kennebec R,	Polychlorinated biphenyls	30.53	Class C	4-b Dioxin license limits in 38 MRSA Section 420. Compliance is measured by (1) no detection of dioxin in any internal waste stream (at 10 pg/l detection limit), (2) no detection in fish tissue sampled below a mill's outfall greater than upstream reference. Fish tissue monitoring has revealed legacy PCBs
ME0103000312_427R	Merrymeeting Bay	Polychlorinated biphenyls	3.44	Class B	4-b Dioxin license limits in 38 MRSA Section 420. Compliance is measured by (1) no detection of dioxin in any internal waste stream (at 10 pg/l detection limit), (2) no detection in fish tissue sampled below a mill's outfall greater than upstream reference. Fish tissue monitoring has revealed legacy PCBs

Category 5-D: Rivers and Streams Impaired by Legacy Pollutants

ADB ASSESSMENT UNIT ID	SEGMENT NAME	CAUSE	SEGMENT SIZE	SEGMENT CLASS	COMMENTS
ME0104000201_421R	Androscoggin R	Polychlorinated biphenyls	2.35	Class B	4-b Dioxin license limits in 38 MRSA Section 420. Compliance is measured by (1) no detection of dioxin in any internal waste stream (at 10 pg/l detection limit), (2) no detection in fish tissue sampled below a mill's outfall greater than upstream reference. Fish tissue monitoring has revealed legacy PCBs
ME0104000202_421R	Androscoggin R	Polychlorinated biphenyls	31.04	Class B	4-b Dioxin license limits in 38 MRSA Section 420. Compliance is measured by (1) no detection of dioxin in any internal waste stream (at 10 pg/l detection limit), (2) no detection in fish tissue sampled below a mill's outfall greater than upstream reference. Fish tissue monitoring has revealed legacy PCBs
ME0104000204_421R	Androscoggin R	Polychlorinated biphenyls	10.97	Class C	4-b Dioxin license limits in 38 MRSA Section 420. Compliance is measured by (1) no detection of dioxin in any internal waste stream (at 10 pg/l detection limit), (2) no detection in fish tissue sampled below a mill's outfall greater than upstream reference. Fish tissue monitoring has revealed legacy PCBs
ME0104000204_422R	Androscoggin R	Polychlorinated biphenyls	6.8	Class C	4-b Dioxin license limits in 38 MRSA Section 420. Compliance is measured by (1) no detection of dioxin in any internal waste stream (at 10 pg/l detection limit), (2) no detection in fish tissue sampled below a mill's outfall greater than upstream reference. Fish tissue monitoring has revealed legacy PCBs
ME0104000205_422R	Androscoggin R	Polychlorinated biphenyls	15.7	Class C	4-b Dioxin license limits in 38 MRSA Section 420. Compliance is measured by (1) no detection of dioxin in any internal waste stream (at 10 pg/l detection limit), (2) no detection in fish tissue sampled below a mill's outfall greater than upstream reference. Fish tissue monitoring has revealed legacy PCBs
ME0104000206_423R	Androscoggin R	Polychlorinated biphenyls	21.7	Class C	4-b Dioxin license limits in 38 MRSA Section 420. Compliance is measured by (1) no detection of dioxin in any internal waste stream (at 10 pg/l detection limit), (2) no detection in fish tissue sampled below a mill's outfall greater than upstream reference. Fish tissue monitoring has revealed legacy PCBs
ME0104000206_423R01	Androscoggin R	Polychlorinated biphenyls	1	Class C	4a listed for aquatic life and solids issues,TMDL is complete; EPA approved TMDL 7/18/2005 but there are ongoing licensing issues. Attained Class C biocriteria in 2003 and attained Class B biocriteria in 2004 listed for legacy PCB contamination
ME0104000208_424R	Androscoggin R,	Polychlorinated biphenyls	15.45	Class C	4-b Dioxin license limits in 38 MRSA Section 420. Compliance is measured by (1) no detection of dioxin in any internal waste stream (at 10 pg/l detection limit), (2) no detection in fish tissue sampled below a mill's outfall greater than upstream reference. Fish tissue monitoring has revealed legacy PCBs

Category 5-D: Rivers and Streams Impaired by Legacy Pollutants

ADB ASSESSMENT UNIT ID	SEGMENT NAME	CAUSE	SEGMENT SIZE	SEGMENT CLASS	COMMENTS
ME0104000210_425R_01	Androscoggin R,	Polychlorinated biphenyls	22.15	Class C	4-b Dioxin license limits in 38 MRSA Section 420. Compliance is measured by (1) no detection of dioxin in any internal waste stream (at 10 pg/l detection limit), (2) no detection in fish tissue sampled below a mill's outfall greater than upstream reference. Fish tissue monitoring has revealed legacy PCBs
ME0104000210_426R	Androscoggin R	Polychlorinated biphenyls	8.49	Class C	4-b Dioxin license limits in 38 MRSA Section 420. Compliance is measured by (1) no detection of dioxin in any internal waste stream (at 10 pg/l detection limit), (2) no detection in fish tissue sampled below a mill's outfall greater than upstream reference. Fish tissue monitoring has revealed legacy PCBs
ME0105000209_512R_02	McCoy Brook (Deblois)	Benthic-Macroinvertebrate Bioassessments (Streams)	1	Class B	Legacy peat mining effects
ME0105000209_512R_02	McCoy Brook (Deblois)	pH	1	Class B	Legacy peat mining effects
ME0106000305_630R01	Salmon Falls R	Dioxin (including 2,3,7,8-TCDD)	7.43	Class B	5b non-CSO, low priority bacteria problem fish tissue monitoring shows legacy PCBs and dioxin.
ME0106000305_630R01	Salmon Falls R	Polychlorinated biphenyls	7.43	Class B	5b non-CSO, low priority bacteria problem fish tissue monitoring shows legacy PCBs and dioxin.

APPENDIX III: LAKES

Category 1: Lake Waters Fully Attaining All Designated Uses

HUC			HUC Name	Total HUC Area (Sq. Miles)	Lake Area within the HUC listed in Category 1 (Acres)	# of Lakes within the HUC listed in Category 1	Last Sampling within the HUC in Category 1 (pre-2005)	Other listing categories having lakes within this HUC
ME	0101000101	*	Baker Branch St. John River	355.24	3383	89	2001	
ME	0101000102	*	Southwest Branch St. John River	354.42	191	30		
ME	0101000103	*	Northwest Branch St. John River	504.67	333	5	2000	
ME	0101000104	*	St. John River (1) at Gauging Station	127.53	211	25	2000	
ME	0101000105	*	Shields Branch Big Black River	162.98	2	1		
ME	0101000106	*	Big Black River	466.4	1178	14		
ME	0101000107	*	St. John River at Oullette Brook	384.74	2866	10		
ME	0101000108	*	Little Black River	261.73	38	4		2
ME	0101000109	*	St. John River above St. Francis	176.48	298	17	1999	2
ME	0101000110	*	St. Francis River	228.41	3289	9	1989	2
ME	0101000114	*	St. John River at Van Buren	64.98	8	1		2
ME	0101000201	*	Eagle Lake	169.18	11806	30	2004	
ME	0101000202	*	Heron Lake (Churchill)	129	5875	21	2004	
ME	0101000203	*	Chemquasabamticook Stream	214.54	3293	9	1989	
ME	0101000204	*	Long Lake	143.4	2436	10	2004	
ME	0101000205	*	Musquacook Stream	155.53	3889	20	1999	
ME	0101000206	*	Big Brook	100.88	708	11	2004	
ME	0101000207	*	Allagash River	320.93	2134	15	2004	2
ME	0101000301	*	Fish River Lake	128.98	3601	15	2001	
ME	0101000302	*	St. Froid Lake	273.95	1238	43	2004	2
ME	0101000303	*	Eagle Lake	353.06	1067	9	2003	2,4A
ME	0101000304	*	Fish River	133.44	107	4		2
ME	0101000401	*	Millimagasset Stream	108.59	5215	35	2003	
ME	0101000402	*	Munsungan Stream	120.15	2668	37	2004	
ME	0101000403	*	Mooseleuk Stream	168.76	1600	24		

Category 1: Lake Waters Fully Attaining All Designated Uses

HUC			HUC Name	Total HUC Area (Sq. Miles)	Lake Area within the HUC listed in Category 1 (Acres)	# of Lakes within the HUC listed in Category 1	Last Sampling within the HUC in Category 1 (pre-2005)	Other listing categories having lakes within this HUC
ME	0101000404	*	Umcolcus Stream	82.6	1244	10		2
ME	0101000405	*	St. Croix Lake	112.34	162	25		2
ME	0101000406	*	St. Croix Stream	126.48	273	17		
ME	0101000407	*	Aroostook River (1) at Masardis Gauging Station	175.93	43	6		2
ME	0101000409	*	Big Machias Lake	146.85	1542	14		
ME	0101000410	*	Machias River	182.46	395	10	1981	
ME	0101000411	*	Aroostook R (2) at Washburn Gauging Station	348.8	110	8		2
ME	0101000412	*	Aroostook River (3) at Caribou	289.41	41	2		2,5A
ME	0101000413	*	Aroostook River (4) at Mouth in Canada	499.04	92	2		2,3,5A
ME	0101000501	*	Big Presque Isle Stream	232.18	5	2		2,5A
ME	0101000502	*	South Branch Meduxnekeag River	64.55	4	1		2
ME	0101000503	*	North Branch Meduxnekeag River	147.7	186	12	2001	2
ME	0102000101	*	North Branch Penobscot River	255.48	3529	59	2001	
ME	0102000102	*	Seeboomook Lake	266.8	4999	102	2004	2
ME	0102000103	*	WEST Branch Penobscot R at Chesuncook Lk	314.76	5473	59	2001	2
ME	0102000104	*	Caucomgomok Lake	178.46	10211	59	2001	
ME	0102000105	*	Chesuncook Lake	404.77	34926	73	2001	
ME	0102000106	*	Nesowadnehunk Stream	66.56	1936	32	2003	
ME	0102000107	*	Nahamakanta Stream	103.18	4679	76	2004	
ME	0102000108	*	Jo-Mary Lake	83.5	6949	40	1999	
ME	0102000109	*	West Branch Penobscot River (3)	245.71	25876	105	2004	2
ME	0102000110	*	West Branch Penobscot River (4)	211.31	12365	66	1989	2
ME	0102000201	*	Webster Brook	289.69	21919	48	2004	2
ME	0102000202	*	Grand Lake Matagamon	200.84	6042	51	2004	
ME	0102000203	*	East Branch Penobscot River (2)	89.69	913	43		
ME	0102000204	*	Seboeis River	268.31	6638	76	2004	2
ME	0102000205	*	East Branch Penobscot River (3)	269.47	1439	81	1999	2

Category 1: Lake Waters Fully Attaining All Designated Uses

HUC			HUC Name	Total HUC Area (Sq. Miles)	Lake Area within the HUC listed in Category 1 (Acres)	# of Lakes within the HUC listed in Category 1	Last Sampling within the HUC in Category 1 (pre-2005)	Other listing categories having lakes within this HUC
ME	0102000301	*	West Branch Mattawamkeag River	368.52	129	9		2
ME	0102000302	*	East Branch Mattawamkeag River	165.95	45	1		2
ME	0102000304	*	Baskahegan Stream	233.6	824	4		2
ME	0102000305	*	Mattawamkeag River (2)	276.47	1358	5	1989	2
ME	0102000306	*	Molunkus Stream	233.59	766	8	1996	2
ME	0102000401	*	Piscataquis River (1)	264.05	282	16	1999	2
ME	0102000403	*	Sebec River	351.1	1372	37	1999	2
ME	0102000404	*	Pleasant River	339.32	4354	81	2004	2
ME	0102000405	*	Seboeis Stream	161.16	3812	24	2003	2
ME	0102000501	*	Penobscot River (1) at Mattawamkeag	161.07	941	6		2
ME	0102000502	*	Penobscot River (2) at West Enfield	298.2	1115	5	1989	2
ME	0102000503	*	Passadumkeag River	398.81	10851	27	2004	2
ME	0102000504	*	Olamon Stream	53.88	9	1		2
ME	0102000505	*	Sunkhaze Stream	94.65	68	13		2
ME	0102000508	*	Pushaw Stream	238.53	1014	2	1989	2
ME	0103000101	*	South Branch Moose River	68.34	171	14		
ME	0103000102	*	Moose River (2) above Attean Pond	180.94	2207	56	2004	2
ME	0103000103	*	Moose River (3) at Long Pond	307.3	1643	35	2004	2
ME	0103000104	*	Brassua Lake	157.53	473	27		4C
ME	0103000105	*	Moosehead Lake	549	4116	92	2004	2
ME	0103000106	*	Kennebec River (2) above The Forks	323.12	6404	120	2004	2
ME	0103000201	*	North Branch Dead River	200.89	2348	50	2001	2
ME	0103000202	*	South Branch Dead River	147.96	73	4		2
ME	0103000203	*	Flagstaff Lake	173.02	825	18	1986	2,4C
ME	0103000204	*	Dead River	357.53	5691	190	1992	2
ME	0103000301	*	Kennebec River (4) at Wyman Dam	158.85	2344	22	2004	2
ME	0103000302	*	Austin Stream	89.87	297	11		2

Category 1: Lake Waters Fully Attaining All Designated Uses

HUC			HUC Name	Total HUC Area (Sq. Miles)	Lake Area within the HUC listed in Category 1 (Acres)	# of Lakes within the HUC listed in Category 1	Last Sampling within the HUC in Category 1 (pre-2005)	Other listing categories having lakes within this HUC
ME	0103000303	*	Kennebec River (6)	110.29	87	9		2
ME	0103000304	*	Carrabassett River	396.83	398	19		2
ME	0103000305	*	Sandy River	592.92	86	6	1996	2,4A
ME	0103000312	*	Kennebec River at Merrymeeting Bay	314.46	3	1		2,3,4A
ME	0104000101	*	Mooselookmeguntic Lake	473.72	3283	36	2004	2
ME	0104000102	*	Umbagog Lake Drainage	122.05	759	7	2004	2
ME	0104000103	*	Aziscohos Lake Drainage	245.91	1606	33	2004	4C
ME	0104000202	*	Androscoggin River (2) at Rumford Point	308.23	27	3		2
ME	0104000203	*	Ellis River	164.26	29	2	2000	2
ME	0104000204	*	Ellis River	202.35	89	13		2
ME	0104000205	*	Androscoggin River (3) above Webb River	245.05	22	3	1987	2
ME	0104000209	*	Androscoggin R (6) above Little Androscoggin	353.1	6	1		2
ME	0105000101	*	Spednick Lake	411.52	291	1		2
ME	0105000102	*	St. Croix River (2) at Spednick Falls	216.84	778	6	1996	
ME	0105000103	*	West Grand Lake	224.54	4426	10	2004	2
ME	0105000104	*	Big Musquash Stream	114.17	412	3	2001	2
ME	0105000105	*	Big Lake at Peter Dana Point	121.07	1417	15	1999	2
ME	0105000106	*	Tomah Stream	153.03	233	8	1996	2
ME	0105000201	*	Dennys River	130.64	190	2		2
ME	0105000203	*	Grand Manan Channel	246.09	370	8		2
ME	0105000204	*	East Machias River	311.96	1357	11	2001	2
ME	0105000205	*	Machias River	498.35	11912	90	2004	2
ME	0105000208	*	Pleasant River	130.39	243	13	1992	2
ME	0105000209	*	Narraguagus River	245.16	826	47	1990	2
ME	0105000210	*	Tunk Stream	48.41	1076	15	2004	2
ME	0105000212	*	Graham Lake	495.07	1908	20	2000	2,3,4C
ME	0105000214	*	Lamoine Coastal	256.14	180	11	2004	2

Category 1: Lake Waters Fully Attaining All Designated Uses

HUC			HUC Name	Total HUC Area (Sq. Miles)	Lake Area within the HUC listed in Category 1 (Acres)	# of Lakes within the HUC listed in Category 1	Last Sampling within the HUC in Category 1 (pre-2005)	Other listing categories having lakes within this HUC
ME	0106000101	*	Sebago Lake	441.76	306	13	1999	2,3
ME	0106000103	*	Presumpscot River	205.44	15	4		2,4A
ME	0106000105	*	Fore River	54.46	1	1		2
ME	0106000305	*	Salmon Falls River	242.91	150	1	1985	2
Totals within Category 1:					**295,443**	**2,857**		

* Lakes within this HUC can be found under other listing categories (see right column)

Category 2: Lake Waters Within Hydrologic Unit Attaining Some Designated Uses - Insufficient Information for Other Uses

HUC			HUC Name	Total HUC Area (Sq. Miles)	Lake Area within the HUC listed in Category 2 (Acres)	# of Lakes within the HUC listed in Category 2	Last Sampling within the HUC in Category 2 (pre-2005)	Other listing categories having lakes within this HUC
ME	0101000108	*	Little Black River	261.73	3	1		1
ME	0101000109	*	St. John River above St. Francis	176.48	41	4		1
ME	0101000110	*	St. Francis River	228.41	330	2		1
ME	0101000111	*	St. John River at Fort Kent	184.38	266	7	2000	
ME	0101000112	*	St. John River at Madawaska	310.29	3	1		
ME	0101000113	*	St. John River at Grand Isle	16.18	16	1		
ME	0101000114	*	St. John River at Van Buren	64.98	4	3		1
ME	0101000115	*	St. John River (11) at Hamlin	102.19	41	7		
ME	0101000116	*	St. John River (12) at Tobique River	0.41	19	1		
ME	0101000117	*	St. John River (13) at Woodstock NB	40.37	28	6		
ME	0101000121	*	Green and Big Rivers at Van Buren	948.13	11	6		
ME	0101000207	*	Allagash River	320.93	1	1		1
ME	0101000302	*	St. Froid Lake	273.95	4874	2	2004	1
ME	0101000303	*	Eagle Lake	353.06	20281	15	2004	1,4A
ME	0101000304	*	Fish River	133.44	792	18	2001	1
ME	0101000404	*	Umcolcus Stream	82.6	2	2		1
ME	0101000405	*	St. Croix Lake	112.34	416	1		1
ME	0101000407	*	Aroostook R (1) at Masardis Gauging Station	175.93	338	21		1
ME	0101000408	*	Squa Pan Stream	81.21	17	1		4C
ME	0101000411	*	Aroostook R (2) at Washburn Gauging Station	348.8	340	4		1
ME	0101000412	*	Aroostook River (3) at Caribou	289.41	352	15	2002	1,5A
ME	0101000413	*	Aroostook River (4) at Mouth in Canada	499.04	1938	33	2004	1,3,5A
ME	0101000501	*	Big Presque Isle Stream	232.18	214	24	1982	1,5A
ME	0101000502	*	South Branch Meduxnekeag River	64.55	290	7		1

Category 2: Lake Waters Within Hydrologic Unit Attaining Some Designated Uses - Insufficient Information for Other Uses

HUC			HUC Name	Total HUC Area (Sq. Miles)	Lake Area within the HUC listed in Category 2 (Acres)	# of Lakes within the HUC listed in Category 2	Last Sampling within the HUC in Category 2 (pre-2005)	Other listing categories having lakes within this HUC
ME	0101000503	*	North Branch Meduxnekeag River	147.7	138	10	1999	1
ME	0101000504	*	Meduxnekeag River at Woodstock NB	300.02	1868	45	2004	
ME	0102000102	*	Seeboomook Lake	266.8	6460	3	2001	1
ME	0102000103	*	WEST Branch Penobscot R at Chesuncook Lk	314.76	22	1		1
ME	0102000109	*	West Branch Penobscot River (3)	245.71	8	2		1
ME	0102000110	*	West Branch Penobscot River (4)	211.31	554	5		1
ME	0102000201	*	Webster Brook	289.69	58	1		1
ME	0102000204	*	Seboeis River	268.31	1242	10	2001	1
ME	0102000205	*	East Branch Penobscot River (3)	269.47	7	1		1
ME	0102000301	*	West Branch Mattawamkeag River	368.52	5218	43	2004	1
ME	0102000302	*	East Branch Mattawamkeag River	165.95	2732	16	2004	1
ME	0102000303	*	Mattawamkeag River (1)	102.28	70	1	2004	
ME	0102000304	*	Baskahegan Stream	233.6	10280	6	2004	1
ME	0102000305	*	Mattawamkeag River (2)	276.47	443	12		1
ME	0102000306	*	Molunkus Stream	233.59	1591	13	1989	1
ME	0102000307	*	Mattawamkeag River (3)	127.82	804	14	2004	
ME	0102000401	*	Piscataquis River (1)	264.05	3406	46	2003	1
ME	0102000402	*	Piscataquis River (3)	178.58	1253	19	2004	
ME	0102000403	*	Sebec River	351.1	14497	64	2004	1
ME	0102000404	*	Pleasant River	339.32	14	4		1
ME	0102000405	*	Seboeis Stream	161.16	4445	14	1989	1
ME	0102000406	*	Piscataquis River (4)	164.69	7515	32	2002	
ME	0102000501	*	Penobscot River (1) at Mattawamkeag	161.07	928	8	1999	1
ME	0102000502	*	Penobscot River (2) at West Enfield	298.2	5581	17	2004	1
ME	0102000503	*	Passadumkeag River	398.81	8073	20	2004	1

Category 2: Lake Waters Within Hydrologic Unit Attaining Some Designated Uses - Insufficient Information for Other Uses

HUC			HUC Name	Total HUC Area (Sq. Miles)	Lake Area within the HUC listed in Category 2 (Acres)	# of Lakes within the HUC listed in Category 2	Last Sampling within the HUC in Category 2 (pre-2005)	Other listing categories having lakes within this HUC
ME	0102000504	*	Olamon Stream	53.88	318	3		1
ME	0102000505	*	Sunkhaze Stream	94.65	4	1		1
ME	0102000506	*	Penobscot River (3) at Orson Island	112.65	6	4		
ME	0102000507	*	Birch Stream	54.55	103	3		
ME	0102000508	*	Pushaw Stream	238.53	6058	16	2004	1
ME	0102000509	*	Penobscot River (4) at Veazie Dam	140.5	2253	25	2003	
ME	0102000510	*	Kenduskeag Stream	191.28	174	5	2004	
ME	0102000511	*	Souadabscook Stream	177.79	645	12	2002	5A
ME	0102000512	*	Marsh River	168.72	438	20	2004	
ME	0102000513	*	Penobscot River (6)	290.37	6098	25	2004	
ME	0103000102	*	Moose River (2) above Attean Pond	180.94	19	1		1
ME	0103000103	*	Moose River (3) at Long Pond	307.3	9581	24	2003	1
ME	0103000105	*	Moosehead Lake	549	79454	12	2004	1
ME	0103000106	*	Kennebec River (2) above The Forks	323.12	3051	17	2004	1
ME	0103000201	*	North Branch Dead River	200.89	48	5		1
ME	0103000202	*	South Branch Dead River	147.96	657	10	2004	1
ME	0103000203	*	Flagstaff Lake	173.02	83	6	2004	1,4C
ME	0103000204	*	Dead River	357.53	385	23	1977	1
ME	0103000301	*	Kennebec River (4) at Wyman Dam	158.85	4700	21	2004	1
ME	0103000302	*	Austin Stream	89.87	882	11		1
ME	0103000303	*	Kennebec River (6)	110.29	337	16		1
ME	0103000304	*	Carrabassett River	396.83	3615	42	2004	1
ME	0103000305	*	Sandy River	592.92	3741	88	2004	1,4A
ME	0103000306	*	Kennebec River at Waterville Dam	410.5	3280	43	2004	
ME	0103000307	*	Sebasticook River at Pittsfield	316.21	7012	28	2004	

Category 2: Lake Waters Within Hydrologic Unit Attaining Some Designated Uses - Insufficient Information for Other Uses

HUC			HUC Name	Total HUC Area (Sq. Miles)	Lake Area within the HUC listed in Category 2 (Acres)	# of Lakes within the HUC listed in Category 2	Last Sampling within the HUC in Category 2 (pre-2005)	Other listing categories having lakes within this HUC
ME	0103000308	*	Sebasticook River (3) at Burnham	266.25	2936	14	2004	4A
ME	0103000309	*	Sebasticook River (4) at Winslow	365.58	1898	47	2004	4A
ME	0103000310	*	Messalonskee Stream	207.64	4073	48	2004	3,4A,5A
ME	0103000311	*	Cobbosseecontee Stream	216.27	10579	47	2004	3,4A,5A
ME	0103000312	*	Kennebec River at Merrymeeting Bay	314.46	1569	33	2004	1,3,4A
ME	0104000101	*	Mooselookmeguntic Lake	473.72	32243	45	2004	1
ME	0104000102	*	Umbagog Lake Drainage	122.05	8353	4	2001	1
ME	0104000104	*	Magalloway River	195.1	650	9	1996	
ME	0104000106	*	Middle Androscoggin River	268.68	24	1		
ME	0104000201	*	Gorham-Shelburne Tributaries	154.72	7	1		
ME	0104000202	*	Androscoggin River (2) at Rumford Point	308.23	713	5	2004	1
ME	0104000203	*	Ellis River	164.26	1258	6	2004	1
ME	0104000204	*	Ellis River	202.35	108	11		1
ME	0104000205	*	Androscoggin River (3) above Webb River	245.05	3461	11	2004	1
ME	0104000206	*	Androscoggin River (4) at Riley Dam	203.85	5906	52	2004	3
ME	0104000207	*	Androscoggin River (5) at Nezinscot River	178.75	1743	29	2004	
ME	0104000208	*	Nezinscot River	83.22	3591	16	2004	
ME	0104000209	*	Androscoggin R (6) above Little Androscoggin	353.1	10255	58	2004	1
ME	0104000210	*	Little Androscoggin River	262.87	614	28	2004	4A
ME	0105000101	*	Spednick Lake	411.52	35904	10	2004	1
ME	0105000103	*	West Grand Lake	224.54	31174	22	2004	1
ME	0105000104	*	Big Musquash Stream	114.17	3218	10	2004	1
ME	0105000105	*	Big Lake at Peter Dana Point	121.07	10334	4	2004	1
ME	0105000106	*	Tomah Stream	153.03	239	7		1
ME	0105000107	*	St. Croix River (3) at Grand Falls	70.2	7627	4	2004	

Category 2: Lake Waters Within Hydrologic Unit Attaining Some Designated Uses - Insufficient Information for Other Uses

HUC			HUC Name	Total HUC Area (Sq. Miles)	Lake Area within the HUC listed in Category 2 (Acres)	# of Lakes within the HUC listed in Category 2	Last Sampling within the HUC in Category 2 (pre-2005)	Other listing categories having lakes within this HUC
ME	0105000108	*	St. Croix River (6) at Robbinston	323.71	2792	20	2004	
ME	0105000201	*	Dennys River	130.64	10294	5	2004	1
ME	0105000202	*	Pennamaquan River	54.4	2025	10		
ME	0105000203	*	Grand Manan Channel	246.09	3332	12	2004	1
ME	0105000204	*	East Machias River	311.96	15289	26	2004	1
ME	0105000205	*	Machias River	498.35	1948	14	2004	1
ME	0105000206	*	Roque Bluffs Coastal	83.23	167	4	2004	
ME	0105000208	*	Pleasant River	130.39	1201	15	2004	1
ME	0105000209	*	Narraguagus River	245.16	2382	17	2004	1
ME	0105000210	*	Tunk Stream	48.41	2466	6	2000	1
ME	0105000211	*	Bois Bubert Coastal	75.62	53	6		
ME	0105000212	*	Graham Lake	495.07	18173	92	2004	1,3,4C
ME	0105000213	*	Union River Bay	126.78	4117	12	2004	
ME	0105000214	*	Lamoine Coastal	256.14	3300	51	2004	1
ME	0105000215	*	Mt. Desert Coastal	108.01	2626	44	2004	
ME	0105000216	*	Bagaduce River	81.92	1250	12	2004	
ME	0105000217	*	Stonington Coastal	140	1030	55	1999	
ME	0105000218	*	Belfast Bay	91.6	2254	25	2004	
ME	0105000219	*	Ducktrap River	33.17	993	16	2004	
ME	0105000220	*	West Penobscot Bay Coastal	162.7	1989	31	2004	4A
ME	0105000301	*	St. George River	278.44	8010	100	2004	
ME	0105000302	*	Medomak River	152.87	1554	38	2004	
ME	0105000303	*	Johns Bay	46.94	2473	14	2004	3
ME	0105000304	*	Damariscotta River	115.51	4604	21	2004	
ME	0105000305	*	Sheepscot River	250.89	4366	55	2004	

Category 2: Lake Waters Within Hydrologic Unit Attaining Some Designated Uses - Insufficient Information for Other Uses

HUC			HUC Name	Total HUC Area (Sq. Miles)	Lake Area within the HUC listed in Category 2 (Acres)	# of Lakes within the HUC listed in Category 2	Last Sampling within the HUC in Category 2 (pre-2005)	Other listing categories having lakes within this HUC
ME	0105000306	*	Sheepscot Bay	113.16	514	36	2004	
ME	0105000307	*	Kennebec River Estuary	89.51	723	16	2004	4A
ME	0106000101	*	Sebago Lake	441.76	45624	75	2004	1,3
ME	0106000102	*	Royal River	140.93	769	12	2004	
ME	0106000103	*	Presumpscot River	205.44	2627	29	2004	1,4A
ME	0106000104	*	Scarborough River	53.72	10	3		
ME	0106000105	*	Fore River	54.46	45	11		1
ME	0106000106	*	Casco Bay Coastal Drainages	170.01	368	32	2004	
ME	0106000204	*	Saco River-Lovewell Pond	566.22	7340	58	2004	
ME	0106000205	*	Saco River at Ossipee River	114.23	4180	49	2004	
ME	0106000209	*	Ossipee River	122.89	2052	31	2004	
ME	0106000210	*	Little Ossipee River	185.21	4287	73	2004	
ME	0106000211	*	Saco River at mouth	220.24	1513	41	2004	
ME	0106000301	*	Kennebunk River	59.18	319	9	2004	
ME	0106000302	*	Mousam River	116.97	2845	38	2004	3
ME	0106000303	*	South York County Coastal Drainages	155.09	594	37	2004	
ME	0106000304	*	Great Works River	86.67	519	22	2004	
ME	0106000305	*	Salmon Falls River	242.91	3766	20	2004	1
ME	0106000310	*	Coastal Drainages-Portsmouth Harb.to Salisbury	65.19	39	8		
Totals within Category 2:					**596,065****	**2,874****		

* Lakes within this HUC can be found under other listing categories (see right column)
**Totals do not include 6 lakes (22 Acres) occurring on islands and not currently assigned to a HUC

Category 3: Lake Waters with Insufficient Data or Information to Determine if Designated Uses are Attained

HUC			Lake Name	Lake ID	Lake Area (Acres)	Date of Last Visit; Year of Likely Next Visit		Comments	Other listing categories having lakes within this HUC	2004 Listing Category
ME	0101000413	*	FISCHER L	1808	10	2005	2007	06: S; blooms observed; add'l data needed; FR=55	1,2,5A	3
ME	0103000310	*	GREAT P	5274	8239	2005	2007	06: S/D-trophic&DO; Gloeotrichia blooms	2,4A,5A	3
ME	0103000310	*	MESSALONSKEE L	5280	3510	2005	2007	06: S/D-trophic&DO; Gloeotrichia blooms	2,4A,5A	3
ME	0103000310	*	SALMON L (ELLIS P)	5352	666	2005	2007	06: apparent trophic deterioration	2,4A,5A	2
ME	0103000311	*	COCHNEWAGON P	3814	410	2005	2007	06: apparent trophic deterioration; alum treatment ~15 y.a.	2,4A,5A	2
ME	0103000312	*	THREECORNERED P	5424	182	2005	2007	06: TMDL 2003;Improving; no recent blooms; additional time/data needed to verify	2,4A	4a
ME	0104000206	*	ANDROSCOGGIN L	3836	3980	2005	2007	06: apparent trophic deterioration	2	3
ME	0105000212	*	ABRAMS P	4444	423	2005	2007	06: apparent trophic deterioration	2,4C	3
ME	0105000303	*	DUCKPUDDLE P	5702	293	2005	2007	06: I; TMDL Sept 2005 (note bloomed in 2005)	2	5a
ME	0106000101	*	PAPOOSE P	3414	64	2005	2007	06: S/I - Trophic concerns persist; appears stable-possibly improving-data inconclusive	2	3
ME	0106000302	*	ESTES L	7	387	2005	2007	06: I; Improvement but occasional blooms;(need 2 more yrs data)	2	3
Total acreage for 11 lakes within Categoy 3:					18,164					

* Lakes within this HUC can be found under other listing categories (see column second in from right)

Category 4-A: Lake Waters with Impaired Use, TMDL Completed

HUC			Lake Name	Lake ID	Lake Area (Acres)	Date of Last Visit; Year of Likely Next Visit		TMDL Year approved by EPA (Impaired use & notes)	Other listing categories having lakes within this HUC	2004 Listing Category
ME	0101000303	*	CROSS L	1674	2515	2005	2007	2006 (Prim.Contact, stable, blooms persist)	1,2	5a
ME	0101000303	*	DAIGLE P	1665	36	2005	2007	2006 (Prim.Contact, stable, blooms persist)	1,2	5a
ME	0103000305	*	TOOTHAKER P	2336	30	2005	2007	2004 (Prim.Contact, stable, blooms persist)	1,2	5a
ME	0103000308	*	SEBASTICOOK L	2264	4288	2005	2007	2001 (Prim.Contact, slow improve., blooms persist)	2	4a
ME	0103000309	*	CHINA L	5448	3845	2005	2007	2001 (Prim.Contact, stable, blooms persist)	2	4a
ME	0103000309	*	LOVEJOY P	5176	324	2005	2007	2004 (Prim.Contact, stable, blooms persist)	2	5a
ME	0103000309	*	UNITY P	5172	2528	2005	2007	2004 (Prim.Contact, stable, blooms persist)	2	5a
ME	0103000310	*	EAST P	5349	1823	2005	2007	2001 (Prim.Contact, blooms persist; deteriorating trophic trend)	2,3,5A	4a
ME	0103000311	*	ANNABESSACOOK L	9961	1420	2005	2007	2004 (Prim.Contact; blooms persist; possible improvement)	2,3,5A	4a
ME	0103000311	*	COBBOSSEECONTEE (LT)	8065	75	2005	2007	2005 (Prim.Contact, stable, occas.bloom)	2,3,5A	5a
ME	0103000311	*	PLEASANT (MUD) P	5254	746	2005	2007	2004 (Prim.Contact, stable, blooms persist)	2,3,5A	4a
ME	0103000312	*	THREEMILE P	5416	1162	2005	2007	2003 (Prim.Contact, stable, blooms persist)	1,2,3	4a
ME	0103000312	*	TOGUS P	9931	660	2005	2007	2005 (Prim.Contact, stable, occas.bloom)	1,2,3	5a
ME	0103000312	*	WEBBER P	5408	1201	2005	2007	2003 (Prim.Contact, stable, blooms persist)	1,2,3	4a
ME	0104000210	*	SABATTUS P	3796	1962	2005	2007	2004 (Prim.Contact, stable perhaps improving	2	5a
ME	0105000220	*	LILLY P	83	29	2005	2007	2005 (Prim.Contact, stable)	2	5a
ME	0105000307	*	SEWALL P	9943	46	2005	2007	2006 (Prim.Contact, stable)	2	5a
ME	0106000103	*	HIGHLAND (DUCK) L	3734	634	2005	2007	2003 (Aquatic life, trophic concerns persist; appears stable possibly deteriorating	1,2	4a
Total acreage for 16 lakes with Category 4A:					**20,773**					

* Lakes within this HUC can be found under other listing categories (see column second in from right)

Category 4-C: Lake Waters with Impairment not Caused by a Pollutant

HUC			Lake Name	Lake ID	Lake Area (Acres)	Date of Last Visit; Year of Likely Next Visit		Comment (Impaired use)	Other listing categories having lakes within this HUC	2004 Listing Category
ME	0101000408	*	SQUAPAN L	1654	5120	2001	2007	Non-att.d/t non-poll. (Aquatic Life: draw down)	2	4c
ME	0103000104	*	BRASSUA L	4120	8979	1996	2007	Non-att.d/t non-poll. (Aquatic Life: draw down)	1	4c
ME	0103000203	*	FLAGSTAFF L	38	20300			Non-att.d/t non-poll. (Aquatic Life: draw down)	1,2	4c
ME	0104000103	*	AZISCOHOS L	3290	6700	2004	2009	Non-att.d/t non-poll. (Aquatic Life: draw down)	1	4c
ME	0105000212	*	GRAHAM L	4350	7865	2004	2009	Non-att.d/t non-poll. (Aquatic Life: draw down)	1,2,3	4c
Total acreage for 5 lakes within Category 4C:					**48,964**					

* Lakes within this HUC can be found under other listing categories (see column second in from right)

Category 5-A: Lake Waters Needing TMDLs

HUC			Lake Name	Lake ID	Lake Area (Acres)	Date of Last Visit; Year of Likely Next Visit	Impaired Use	TMDL (Target Dates)	Priority **	Other listing categories having lakes within this HUC	2004 Listing Category
ME	0101000412	*	ARNOLD BROOK L	409	395	2005 2007	Prim. Cont.	2007	28	1,2	5a
ME	0101000412	*	ECHO L	1776	90	2005 2007	Prim. Cont.	2007	29	1,2	5a
ME	0101000413	*	MONSON P	1820	160	2005 2007	Prim. Cont.	2007	33	1,2,3,4a	5a
ME	0101000413	*	TRAFTON L	9779	85	2005 2007	Prim. Cont.	2007	27	1,2,3,4a	5a
ME	0101000501	*	CHRISTINA RESERVOIR	9525	400	2005 2007	Prim. Cont.	2007	30	1,2	5a
ME	0102000511	*	HAMMOND P	2294	83	2005 2007	Prim. Cont.	2007	24	2	5a
ME	0102000511	*	HERMON P	2286	461	2005 2007	Prim. Cont.	2007	25	2	5a
ME	0103000310	*	LONG P	5272	2714	2005 2007	Trophic trend	2008	34	2,3,4a	3
ME	0103000311	*	WILSON P	3832	582	2005 2007	Trophic trend	2008	35	2,3,4a	2
Total acreage for 11 lakes in Category 5A:					7,521						

* Lakes within this HUC can be found under other listing categories (see column second in from right)

** Priority rank begins with number 24 because TMDLs for lakes having priorities 1 - 23 are complete (listed in category 4a)

Category 5-C: Lake Waters Impaired by Atmospheric Deposition of Mercury

All lakes are listed in Category 5-C

Category Listing Change Summary: 2004 to 2006 (37 Lakes)

HUC	Lake Name	Lake ID	2004 ListCat	2006 ListCat	Notes
0103000311	COCHNEWAGON	3814	2	3	Apparent trophic deterioration; Alum treatment ~15 Y.A.
0103000310	SALMON L	5352	2	3	Apparent trophic deterioration
0106000211	WALES P	5020	2	4b	Hatchery discharge attainment issue
0103000311	WILSON L	3832	2	5a	Trophic deterioration
0106000304	LEIGH'S MILL P	117	3	2 *	WQ depends on river WQ input; FR indicates technically not lake
0106000101	THOMAS P	3392	3	2 *	Attainment of monitored uses verified (stable trophic trend)
0106000103	SEBAGO L (LITTLE)	3714	3	2 *	Attainment of monitored uses verified (improving trophic trend)
0104000209	TAYLOR P	3750	3	2 *	Attainment of monitored uses verified (stable trophic trend)
0104000209	TRIPP P	3758	3	2 *	Attainment of monitored uses verified (stable trophic trend)
0106000305	NORTHEAST P	3876	3	2 *	Attainment of monitored uses verified (stable trophic trend)
0106000302	SQUARE P	3916	3	2 *	Attainment of monitored uses verified (stable trophic trend)
0106000301	KENNEBUNK P	3998	3	2 *	Attainment of monitored uses verified (improving trophic trend)
0105000220	NORTON P	4850	3	2 *	Attainment of monitored uses verified (stable trophic trend)
0106000211	WATCHIC P	5040	3	2 *	Attainment of monitored uses verified (stable/improving trophic trend)
0103000311	WOODBURY P	5240	3	2 *	Attainment of monitored uses verified (stable/improving trophic trend)
0106000101	BAY OF NAPLES	9685	3	2 *	Attainment of monitored uses verified (stable trophic trend)
0103000310	LONG P	5272	3	5a	Trophic deterioration (Gloeotrichia blooms); all trophic parameters support shift
0101000413	MADAWASKA L	1802	4a	2 *	Occasional Bloom;persistant improvement
0106000302	MOUSAM L	3838	4a	2 *	Attainment of monitored uses verified (stable/improving trophic trend)
0103000311	COBBOSSEECONTEE L	5236	4a	2 *	No Recent Blooms; persistant improvement
0103000312	THREECORNERED P	5424	4a	3	No Recent Blooms; additional time(data) required to verify; TMDL 2003

Category Listing Change Summary: 2004 to 2006 (37 Lakes)

HUC	Lake Name	Lake ID	2004 ListCat	2006 ListCat	Notes
0102000102	CANADA FALLS L	2516	4c	1 *	New water level agreement reached (Aquatic life designated use considered in attainment)
0102000105	RAGGED L	2936	4c	1 *	New water level agreement reached (Aquatic life designated use considered in attainment)
0102000104	CAUCOMGOMOC L	4012	4c	1 *	New water level agreement reached (Aquatic life designated use considered in attainment)
0102000102	SEBOOMOOK L	4048	4c	2 *	New water level agreement reached (Aquatic life designated use considered in attainment)
0103000311	NARROWS P (UPPER)	98	5a	2 *	TMDL accepted Jan. 2005; attainment of monitored uses verified (stable trophic trend)
0106000101	HIGHLAND L	3454	5a	2 *	TMDL completed August 2004; data indicates stable trend; persistant Improvement
0106000101	LONG L	5780	5a	2 *	TMDL accepted May 2005; attainment of monitored uses verified (stable trophic trend)
0105000303	DUCKPUDDLE P	5702	5a	3	TMDL completed Sept. 2005; data indicates improvement; additional time(data) required to verify
0105000220	LILLY P	83	5a	4a	December 2005
0101000303	DAIGLE P	1665	5a	4a	September 2006
0101000303	CROSS L	1674	5a	4a	September 2006
0103000305	TOOTHAKER P	2336	5a	4a	September 2004
0104000210	SABATTUS P	3796	5a	4a	August 2004
0103000309	UNITY P	5172	5a	4a	September 2004
0103000309	LOVEJOY P	5176	5a	4a	September 2005
0103000311	COBBOSSEECONTEE (LT)	8065	5a	4a	Occasional Bloom, TMDL 2005
0103000312	TOGUS P	9931	5a	4a	September 2005
0105000307	SEWALL P	9943	5a	4a	March 2006

* Lakes currently listed in Categories 1 or 2 do not appear individually in their respective Appendix III tables but rather are included in the overall lake summary for the HUC.

Appendix IV: Estuarine and Marine Waters

Category 1: Estuarine and Marine Waters Fully Attaining All Designated Uses

No waters are listed in Category 1 in 2006

Category 2: Estuarine and Marine Waters Attaining Some Designated Uses – Insufficient Information for Other Uses

Waterbody ID	DMR Area		Segment Description	Segment Acres	Segment Class	Last Year Sampled	Reason for DMR Closure	Segment Size (Square Miles)	Comments
812		*	Piscataqua R. Estuary		SC/SB			0.00	
826		*	Fort Foster, Kittery to Bald Head York		SB/SA			0.00	
824		*	Bald Head, York to Kennebunk R. Estuary (east bank), Kennebunkport		SB			0.00	
824-1	4B		Ogunquit & Moody Beaches	1,108.30	SB	Current	2 STP outfalls	1.7317188	
821		*	Kennebunk R. Estuary (east bank), Kennebunkport to Biddeford Pool, Biddeford		SB			0.00	
821-3	8-B		Timber Point to Fortunes Rocks, Biddeford	279.2	SB	Current	OBDs (Over Board Discharges)	0.4362500	
811		*	Biddeford Pool, Biddeford to Dyer Point (Two Lights), Cape Elizabeth		SB			0.00	
811-3	12		Prouts Neck, Scarborough	1004.8	SB	Current	STP outfall	1.5700000	
804		*	Dyer Point (Two Lights), Cape Elizabeth to Parker Point (west bank of Royal R.), Yarmouth		SB/SA			0.00	
802		*	Parker Point (west Bank of Royal R.), Yarmouth to south end of Butler Cove (Merrymeeting Bay), Bath		SB/SA			0.00	
802-1	14-D		Great Chebeague Island, Cumberland	22.1	SB	Current	OBD	0.0345313	
802-3	16-C		Cousins & Littlejohn Islands, Yarmouth	59.5	SB	Current	STP outfall; OBDs	0.0929688	
802-4	17		Harraseeket River, Freeport	530.8	SB	Current	STP outfall	0.8293750	

Category 2: Estuarine and Marine Waters Attaining Some Designated Uses – Insufficient Information for Other Uses

Waterbody ID	DMR Area	Segment Description	Segment Acres	Segment Class	Last Year Sampled	Reason for DMR Closure	Segment Size (Square Miles)	Comments
802-10	18-C	Mere Point Neck-Birch Island, Brunswick	15.3	SB	Current	Improper septic systems	0.0239063	
802-12	18-E	Cundy's Harbor and Dingley Island, Harpswell	235.2	SB	Current	OBDs	0.3675000	
802-14	18-H	Harpswell Sound, Harpswell	55	SB	Current	OBDs	0.0859375	
802-15	18-I	Harpswell Fuel Depot, Harpswell	102.3	SB	Current	Closed originally because of presumed fuel contamination; 2002 mussel results show no contamination; Testing clams and sediments in the SWAT program	0.1598438	
802-16	18-M	Lookout Point & Wilson Cove, Harpswell	9.9	SB	Current	Horse manure runoff, but elevated fecal counts not reported	0.0154688	
802-17	18-R	East Harpswell and Long Island, Harpswell	15.4	SB	Current	Improper septic systems	0.0240625	
							0.00	
802-21	18AA	Little Yarmouth Island	8.4	SB	Current	Improper septic systems	0.0131250	
	18-P	Bombazine Is. And Foster Pt.	29.8	SB	Current	OBDs	0.0465625	
802-22	19	Wood Island - Malaga Island, Phippsburg	350.3	SB	Current/ incomplete survey	Improper septic systems	0.5473438	Moved from Category 5 (incorrect placement in 2004?)
802-23	19-A	Birch Point, West Bath - Bear Island, Phippsburg	107	SB	Current	OBDs; Improper septic systems	0.1671875	
802-22	19B	N. Cape Small Hbr.	7	SB	Current	Septic system problems	0.0109375	
802-24	19-C	Dam Cove - Birch Point, West Bath	291.6	SB	Current	OBDs	0.4556250	

Category 2: Estuarine and Marine Waters Attaining Some Designated Uses – Insufficient Information for Other Uses

Waterbody ID	DMR Area		Segment Description	Segment Acres	Segment Class	Last Year Sampled	Reason for DMR Closure	Segment Size (Square Miles)	Comments
710		*	South end of Butler Cove (Meerymeeting Bay), Bath to east point of Sagadahoc Bay, Georgetown		SB			0.00	
730		*	East point of Sagadahoc Bay, Georgetown to Ocean Point, Boothbay		SB/SA			0.00	
730-2	20-E		N.Robinhood Cove, So. Robinhood Cove, & Knubble Bay, Georgetown/Westport	674	SB	Current	OBDs, marina	1.0531250	Moved from Category 3
730-3	21		Indian Point, Georgetown, to Fowle Pt., Westport	2425.3	SB	Current	OBDs, incomplete survey	3.7895313	
730-4	22		Sheepscot River	1431.7	SB	Current	OBDs	2.2370313	
730-5	22-B		Hodgdon Island, Boothbay	249.2	SB	Current	OBD	0.3893750	Knickercane Cove - Merrow Island, Boothbay
730-5	22-C		Cameron Point. Southport	206.98	SB	Current	OBD, gray water discharges	0.3234063	Back River, Boothbay
730-7	22-F		Ovens Mouth - Sherman Creek, Boothbay – Edgecomb	162.3	SB	Current	OBD	0.2535938	Moved from Category 5, elevated fecals in 2004
730-8	22-G		Upper Sheepscot River	299.2	SB	Current	Restricted: possible NPS	0.4675000	No prohibited areas - 7/2/1997
730-9	23		Boothbay Harbor - Damariscove Island	7337.9	SB/SA	Mainland is current	OBDs; Boats	11.4654688	
730-11	23-B		Southwestern Southport Island	392.5	SB	Current	OBDs	0.6132813	
729-1	24		Damariscotta River - Boothbay	692.6	SB	Current	OBDs; Boats	1.0821875	
729		*	Ocean Point, Boothbay to Pemaquid Point, Bristol		SB			0.00	
729-3	25-A		South Bristol	550.4	SB	Current	OBDs; Boats	0.8600000	

Category 2: Estuarine and Marine Waters Attaining Some Designated Uses – Insufficient Information for Other Uses

Waterbody ID	DMR Area		Segment Description	Segment Acres	Segment Class	Last Year Sampled	Reason for DMR Closure	Segment Size (Square Miles)	Comments
729-4	25-B		Pemaquid River, Bristol	324.6	SB	Current	OBDs; Boats	0.5071875	
726-1	25-C		New Harbor, Bristol	161.8	SB	Current	OBDs; Boats	0.2528125	
729-5	25-E		Inner Heron Island	11	SB	no station	No station; Septic system problems	0.0171875	
729-6	25-F		Pemaquid Neck, Bristol	580.1	SB	Current	OBDs	0.9064063	
726-2	25-D		Long Cove Point to Muscongus Harbor, Bristol	556.1	SB	Current	OBDs	0.8689063	
726-4	25-G		Soldiers Cove, Bristol	18.7	SB	Current	OBDs, improper septics	0.0292188	
726-5	25-H		Keene Narrows, Medomak - Bremen	70.4	SB	Current	Marina; Septic system problems	0.1100000	
726-6	25-I		Muscongus Harbor, Bristol-Bremen	11.7	SB	Current	OBD; Boats, Septic system problems	0.0182813	
726-7	25-J		Eastern Farmers Island, South Bristol	13.4	SB	Current	OBD	0.0209375	
726-8	25-N		High Island to McFarlands Cove, South Bristol	172.7	SB	Current	Improper septic systems	0.2698438	OBD in 2004
726		*	Pemaquid Point, Bristol to middle north side of Back River Cove, Waldoboro		SB			0.00	
724		*	Middle north side of Back River Cove, Waldoboro to Marshall Point, St. George		SB			0.00	
724-3	26-B		Friendship Harbor	508.5	SB	Current	OBDs	0.7945313	
724-5	26-H		Broad Cove, Cushing	25.5	SB	Current	Restricted: wildlife	0.0398438	
724-6	26-K		Upper Meduncook Rive - Crotch Island, Cushing	27	SB	Current	Septic system problems - Crotch Island	0.0421875	
724-7	26-M		Pleasant Point Gut - Davis Cove, Cushing	24.9	SB	Current	Septic system problems	0.0389063	

Category 2: Estuarine and Marine Waters Attaining Some Designated Uses – Insufficient Information for Other Uses

Waterbody ID	DMR Area		Segment Description	Segment Acres	Segment Class	Last Year Sampled	Reason for DMR Closure	Segment Size (Square Miles)	Comments
724-9	26-0		Friendship Long Island & Vicinity, Friendship	167.6	SB	Current but more samples needed	Septic system problems	0.2618750	Moved from Category 3
724-10	27		St. George River	1,046.40	SB	Current	STP; seasonal closure	1.6350000	Moved from Category 5, elevated fecals in 2004
	27-C		Upper Bay, St. George	469.28	SB	Current	Conditional on STP	0.7332500	
724-12	28-A		Port Clyde and the St. George Islands, St. George and Cushing	390.4	SB	Current	OBDs; Septic system problems	0.6100000	
722		*	Marshall Point, St. George to Naskeag Point, Brooklin		SB/SA			0.00	
722-3	28-B		Spruce Head Island - Thorndike Point	403.7	SB	Current	Incomplete DMR sanitary survey; OBDs; Boats	0.6307813	
722-4	28-C		Rackliff Island, St. George	65.3	SB	2 stations dropped in 2002	OBDs	0.1020313	
722-5	28-E		Ash Point-Birch Point, Owl's Head	60.2	SB	Current	Incomplete DMR sanitary survey; OBDs	0.0940625	
722-9	29-A		Owl's Head	726.8	SB	Current	OBDs	1.1356250	
722-12	30-A		Southwestern Vinalhaven	2242.9	SB		Incomplete DMR sanitary survey; OBDs; Septic system problems	3.5045313	
	30-B		The Basin, Vinalhaven	34.7	SB	Current	Questionable plumbing	0.0542188	New
722-15	30-I		North Haven Island	3,984.80	SB	Current	OBDs; Boats	6.2262500	
722-18	30-L		Bartlett and Crabtree	51.5	SB	Current	Septic system problems	0.0804688	Ames Creek, North Haven
722-20	30-N		Indian Point - Burnt Island, North Haven	40.9	SB	Current	OBDs; Septic system problems	0.0639063	

Category 2: Estuarine and Marine Waters Attaining Some Designated Uses – Insufficient Information for Other Uses

Waterbody ID	DMR Area		Segment Description	Segment Acres	Segment Class	Last Year Sampled	Reason for DMR Closure	Segment Size (Square Miles)	Comments
722-26	36		Penobscot & Bagaduce Rivers, in Castine-Penobscot	1,632.00	SB/SA	Current	OBDs	2.5500000	lower acres--divided into 36, 36A, B & C
722-26	36-C		Harborside, Brooksville	207.00	SB	Current	OBDs	0.3234375	new, also lists heavy metals
722-27	36-F		Islesboro	1771.3	SB	Current	OBD; Boats; Septic system problems	2.7676563	
722-28	37		Condon Point, Brooksville, to "Herricks" Village Brooksville	547	SB	Current	OBDs	0.8546875	
722-29	37-A		Deer Isle	61	SB	Current	OBDs	0.0953125	
722-30	37-B		Blastow Cove, Deer Isle	7	SB	Current	OBDs	0.0109375	
722-31	37-C		Heart Island, Deer Isle	9	SB	Current	OBDs	0.0140625	
722-32	37-E		Eggemoggin, Little Deer Isle	43	SB	Current	OBDs	0.0671875	
722-35	38-A		Inner Harbor, Stonington-Deer Isle	0.5	SB	Current	OBDs (and STP)	0.0007813	
722-36	38-B		Burnt Cove, Stonington	75	SB	Current	OBD, formerly high fecal counts, on OBD removal list	0.1171875	
722-37	38-C		Fifield Point to Moose Island	51	SB	Current	OBDs	0.0796875	
707		*	Naskeag Point, Brooklin to Bass Harbor Head, Tremont		SB/SA			0.00	
707-1	39		Blue Hill Harbor	308	SB	Current	OBDs	0.4812500	
707-2	39-C		McHerd Cove - Webber Cove, East Blue Hill	42	SB	Current	OBDs	0.0656250	
707-3	39-D		High Head-Sand Point, South Blue Hill	38	SB	Current	OBDs	0.0593750	
707-1A	39-J		Hub Island and Peters Cove, Blue Hill Harbor, Blue Hill	62	SB	Current	STP	0.0968750	New
707-5	40		Union River Bay, Surry & Trenton	6,778.00	SB	Current	STP	10.5906250	

Category 2: Estuarine and Marine Waters Attaining Some Designated Uses – Insufficient Information for Other Uses

Waterbody ID	DMR Area		Segment Description	Segment Acres	Segment Class	Last Year Sampled	Reason for DMR Closure	Segment Size (Square Miles)	Comments
707-5A	40-A		Union River, Patten Bay & Heath Brook, Ellsworth, Surry & Trenton	1,828.00	SB	Current	OBDs, WWTP	2.8562500	was DMR area 40
707-6	42		Bass Harbor & Eastern Duck Cove, Tremont	702	SB	Current	OBDs (placed in incorrect category 2004)	1.0968750	
707-7	42-A		Lunt Harbor, Frenchboro	10	SB	Current	OBDs	0.0156250	
707-8	42-B		Burnt Coat Harbor, Swans Island	64	SB	Current	OBDs	0.1000000	
707-9	42-D		Red Point, Swans Island	178	SB	Current	OBDs	0.2781250	
714		*	Bass Harbor Head, Tremont to Schoodic Point, Winter Harbor		SB/SA			0.00	
714-1	43		Southwest Harbor	569	SB	Current	OBDs	0.8890625	
714-2	44		Northeast Harbor and Bracy Cove	1,259.00	SB/SA	Current	OBDs and STP	1.9671875	was Southern Mt. Desert Island & the Cranberry Isles was 8711 acres now in DMR areas 45, 45A, 45B
714-3	44A		Broad Cove and Somes Harbor, Mount Desert	125	SB/SA	Current	OBDs; Seasonal marina	0.1953125	
	45		Sutton Island	120	SB	Current	OBDs	0.1875000	was part of DMR area 44
	45A		Great Cranberry Island	81	SB	Current	OBDs	0.1265625	was part of DMR area 44
	45B		Little Cranberry Island	196	SB	Current	OBDs	0.3062500	was part of DMR area 44
714-4	46		Seal Harbor	288	SB	Current	OBDs and STP	0.4500000	
714-6	47		Bar Harbor	1,941.00	SB	Current	OBDs	3.0328125	
714-6	47		Bar Harbor depuration area (Bar Island bar)	46	SB	Current	CSOs; Seasonal marina	0.0718750	
714-8	49		Salisbury Cove, Bar Harbor	208	SB	Current	OBDs	0.3250000	
714-12	50		Sorrento	49	SB	Current	OBDs; Seasonal marina	0.0765625	

Category 2: Estuarine and Marine Waters Attaining Some Designated Uses – Insufficient Information for Other Uses

Waterbody ID	DMR Area		Segment Description	Segment Acres	Segment Class	Last Year Sampled	Reason for DMR Closure	Segment Size (Square Miles)	Comments
714-17	51		Winter Harbor	139	SB	Current	OBDs	0.2171875	
714-18	51-A		Arey Cove, Winter Harbor	84	SB	Current	OBDs	0.1312500	
714-19	51-B		Grindstone Neck, Winter Harbor	292	SB	Current	OBDs	0.4562500	
714-20		*	Northwest End Flanders Bay, Sullivan-Sorrento		SB		DMR Area 50-D; 9/19/2001 Repealed -open; Was on TMDL list in 1998	0.00	
706		*	Schoodic Point, Winter Harbor to Petit Manan Point, Steuben		SB			0.00	
706-1	52		Prospect Harbor and Shark Cove, Gouldsboro	288	SB	Current	OBDs	0.4500000	was Corea Hbr, was 443 acres
706-2	52-A		Corea Harbor and Sand Cove, Gouldsboro	110	SB	Current	OBDs	0.1718750	Sand Cove added, was 42 acres
706-4	52-C		Bunkers Harbor, Gouldsboro	207	SB	Current	OBDs	0.3234375	
706-5	52-D		Southwestern Petit Manan Point, Steuben	106	SB	Current	OBDs	0.1656250	
706-9			Wonsqueak Harbor, Gouldsboro	10	SB	Current	OBDs	0.0156250	
705		*	Petit Manan Point, Steuben to Ray Point, Milbridge		SB/SA			0.00	
704		*	Ray Point, Milbridge to south end of Cape Split, Addison		SB			0.00	
704-1	53-A		Pleasant River and Dyer Cove, Addison	489	SB	Current	OBDs	0.7640625	
704-4	53-H		Cape Split, Addison	84	SB	Current	OBDs	0.1312500	
703		*	South end of Cape Split, Addison to Kelley Point, Jonesport		SB/SA			0.00	

Category 2: Estuarine and Marine Waters Attaining Some Designated Uses – Insufficient Information for Other Uses

Waterbody ID	DMR Area		Segment Description	Segment Acres	Segment Class	Last Year Sampled	Reason for DMR Closure	Segment Size (Square Miles)	Comments
703-1	53-H		Cape Split, Addison	acres in waterbody 704-4	SB	Current	OBDs		
713		*	Kelley Point, Jonesport to Point of Maine, Machiasport		SB			0.00	
709		*	Point of Maine, Machiasport to Thorton Point, Cutler		SB			0.00	
709-1	55-E		Machias - East. Machias Rivers	729	SB	Current	OBDs (and STP)	1.1390625	was DMR area 55
709-2A	55		Randall Flats and Sanborn Cove, Machiasport	710	SB	Current	STP (Conditional restricted)	1.1093750	
709-2	55-B		Howard Cove - Starboard Cove, Bucks Harbor	118	SB	Current	OBDs	0.1843750	
709-3	55-C		Northeastern Holmes Bay, Whiting - Cutler	144	SB	Current	OBDs	0.2250000	
709-4	55-H		Bucks Harbor, Machiasport	47	SB	Current	OBDs	0.0734375	
708		*	Thorton Point, Cutler to Todd Head, Eastport		SB/SA/SC			0.00	
708-2	55-D		Great Head, Cutler & Bog Brook Cove, Trescott	167	SB	Current	OBDs	0.2609375	
708-5	57		Eastport	653	SC	Current	OBDs (STP or 2 – boundary dependent)	1.0203125	
701		*	Cobscook Bay		SB/SA			0.00	
701-5	57		Eastport	acres in waterbody 701-5	SC	Current	OBDs (STP or 2 – boundary dependent)		
701-6	57-A		Pleasant Point, Perry and Kendall Head, Eastport	872	SB	Current	OBDs (STP or 2 – boundary dependent)	1.3625000	

Category 2: Estuarine and Marine Waters Attaining Some Designated Uses – Insufficient Information for Other Uses

Waterbody ID	DMR Area		Segment Description	Segment Acres	Segment Class	Last Year Sampled	Reason for DMR Closure	Segment Size (Square Miles)	Comments
701-9	58-C		North Lubec	70	SB	Current	OBDs	0.1093750	
702		*	Todd Head, Eastport to Whitlocks Mill, Calais		SB/SC			0.00	
702-1	57		Eastport	653	SC	Current	OBDs (STP or 2 – boundary dependent)	1.0203125	

*segments of this waterbody can be found in other listing categories

Category 3: Estuarine and Marine Waters with Insufficient Data or Information to Determine if Designated Uses are Attained

Waterbody ID	DMR Area	Segment Description	Segment Acres	Segment Class	Last Year Sampled	Projected Sample Date	Segment Size (Square Miles)	Comments
824-2	4-A	Perkins Cove	13.2	SB	No station		0.0206250	Many boats – no data
802-26		Quahog Bay, inside of the south end of Pole Island	589.61	SB	2005	2006	0.9212656	Possible Dissolved Oxygen Non-attainment; 309.4 acres in 5-B-1
722-10	29-B	Matinicus Island - Ragged Island	2,203.20	SB	no survey or samples	Far off the Maine coast - logistical problems	3.4425000	Never
702-3	60	Little River, Perry	29	SB	7/25/1988		0.0453125	No information
		Total =	2,835.0			Total =	4.4297031	

Category 4-A: Estuarine and Marine Waters with Impaired Use, TMDL Completed

Waterbody ID	Segment Description	Segment Size Acres	Segment Class	Last Year Sampled	Impaired Use	Cause	Source	TMDL Approved	Segment Size (Square Miles)	Comments
812	Piscataqua R. Estuary, Eliot, So. Berwick	Acres included in Category 5-B-1	SB	1994	Marine Life Use Support	Dissolved Oxygen	Municipal point sources	1999	0.00	

(A TMDL is complete, but ther is insufficient new data to determine if attainment has been achieved)

Category 4-B-1: Estuarine and Marine Waters Impaired by Pollutants - Pollution Control Requirements Reasonably Expected to Result in Attainment

Waterbody ID	Segment Description	Segment Size Acres	Segment Class	Last Year Sampled	Impaired Use	Cause	Source	Segment Size (Square Miles)	Comments
824-5	Ogunquit R.	Acres included in Category 5-B-1	SB	1995	Marine Life Use Support	Dissolved Oxygen	Municipal point source	0.00	Outfall moved out of estuary
811-8	Goosefare Brook	Acres included in Category 5-B-1	SC	1994	Marine Life Use Support	Dissolved Oxygen	Municipal point source	0.00	Outfall moved out of estuary; TMDL on freshwater brook
726-11	Medomak R. Estuary	Acres included in Category 5-B-1	SB	2003	Marine Life Use Support	Dissolved Oxygen	Listed previously for Marine Life Use Support for Dissolved Oxygen caused by Municipal Point Source. Discharge has been removed (spray irrigation).	0.00	No data available yet on attainment.
724-13	St. George R. Estuary (DMR Area 27)	Acres included in Category 5-B-1	SB	1999	Marine Life Use Support; Bacteria (Included in Category 5-B-1)	Dissolved Oxygen	Listed previously for Marine Life Use Support for Dissolved Oxygen caused by Municipal Point Source. New discharge license has been issued; Nonpoint source.	0.00	New license issued based on modeling; No data available yet on attainment
722-45	Penobscot R. Estuary	Acres included in Category 5-B-1	SC		Fish Consumption	Toxics: Dioxin, PCBs, Bacteria	Industrial point sources, CSOs	0.00	Dioxin legislation passed; hazardous waste clean-up

Category 4-C: Estuarine and Marine Waters with Impairment not Caused by a Pollutant

Waterbody ID	Segment Description	Segment Size Acres	Segment Class	Last Year Sampled	Impaired Use	Cause	Source	Segment Size (Square Miles)	Comments
802-27	New Meadows R. Estuary, including the "Lake" upstream of Howard Point	Acres included in Category 5-B-1	SB	2002	Marine Life Use Support	Dissolved Oxygen	Partial Impoundment	0.00	

Category 5-A: Estuarine and Marine Waters Impaired by Pollutants Other Than Those Listed in 5-B Through 5-D (TMDL Required)

Waterbody ID	Segment Description	Segment Acres	Segment Class	Last Year Sampled	Impaired Use	Cause	Source	TMDL Date	Segment Size (Square Miles)	Comments
811-9	Mousam R. Estuary (DMR Area 6)	192	SB	1995 - current for bacteria	Marine Life Use Support	Dissolved Oxygen; Elevated Fecals, Nonpointsource	Municipal point source, Nonpoint source, Sediment Oxygen Demand	2008	0.30	Includes 54.7 acre DMR closure
811-8	Saco R. Estuary	576	SC	1998	Marine Life Use Support	Toxicity, Copper, Elevated Fecals	Municipal point source, CSOs	2008	0.90	
804-7	Fore R. Estuary	768	SC	2001	Marine Life Use Support	Aquatic life, Toxics, Elevated Fecals	Municipal point source, CSOs, Stormwater, Hazardous waste sites, Nonpoint (spills of all sizes)	2012	1.20	Additional acres included in category 5-B-1
802-25	Royal R. Estuary	173.5	SB	2005	Marine Life Use Support	DO, Elevated fecals, NPS	Municipal point source, Stormwater, Nonpoint Source	2010	0.27	Additional acres included in category 5-B-1. Pending wasteload allocation study.
	Total =	1709.5						Total =	2.67	

Category 5-B-1: Estuarine and Marine Waters Impaired only by Bacteria (TMDL Required)

Waterbody ID	DMR Area	Segment Description	Segment Size Acres	Segment Class	Last Year Sampled	Source	Segment Size (Square Miles)	Comments
812-1	1	Piscataqua R. Estuary, Kittery, Eliot, So. Berwick	1144.2	SB/SC	Current	4 STP outfalls; Stormwater; Elevated fecals; Nonpoint Source	1.7878125	
826-1	1B	Jaffrey Point, N. H. to Brave Boat Harbor, York	1,211.90	SB	Current	2 STP outfalls; Stormwater, Elevated fecals; Nonpoint Source	1.8935938	
826-2	2	York River	276.1	SB	Current	Elevated fecals; Nonpoint Source	0.4314063	OBDs removed
826-2	2A	York Harbor	41.2	SB	Current	Elevated fecals; Nonpoint Source	0.0643750	was in category 3; Seasonal Boat Closure
826-3	2B	Lobster Cove	57.4	SB	Current	Elevated fecals; Nonpoint Source	0.0896875	
826-3	3	Cape Neddick	1425.7	SB	Current	1 STP outfall; Elevated fecals; Nonpoint Source	2.2276563	
824-1	4	Ogunquit River	32.7	SB	Current	Elevated fecals; Nonpoint Source	0.0510938	was in category 2, STP
824-3	5	Webhannet River	604.7	SB	Current	Elevated fecals; Nonpoint Source	0.9448438	STP removed
824-3	5A	Little River	133.1	SB	Current	Elevated fecals; Nonpoint Source	0.2079688	
824-4	7	Kennebunk River	498.3	SB	Current	1 STP outfall; Nonpoint Source; Elevated fecals	0.7785938	
821-1	8	Cape Porpoise	126.6	SB	Current	Elevated fecals; Nonpoint Source	0.1978125	
821-2	8-A	Cape Porpoise Harbor	130.7	SB	Current	OBDs; Elevated fecals; Nonpoint Source	0.2042188	
821-2A	8-AA	Goosefare Bay	7.8	SB	Current	OBDs; Elevated fecals; Nonpoint Source	0.0121875	was part of DMR area 8
811-1	9	Saco River	1245.4	SB/SC	Current	6 STP outfalls; Storrmwater; Elevated fecals; Nonpoint Source	1.9459375	an additional 576 acres are included in Category 5-A
	10	Saco Bay	3404.4	SB	Current	STP outfall; Elevated fecals; Nonpoint Source	5.3193750	was part of DMR area 9
811-2	11	Scarborough River	201.7	SB/SA	Current	OBDs; Elevated fecals; Nonpoint Source	0.3151563	was Northern Saco Bay & Scarborough River

Category 5-B-1: Estuarine and Marine Waters Impaired only by Bacteria (TMDL Required)

Waterbody ID	DMR Area	Segment Description	Segment Size Acres	Segment Class	Last Year Sampled	Source	Segment Size (Square Miles)	Comments
811-4	13	Spurwink River	45.1	SB/SA	Current	Elevated fecals; Nonpoint Source	0.0704688	
804-1	14	Portland - Falmouth Area	12827.6	SB/SC	2/19/2002	4 STP outfalls; Stormwater; Elevated fecals; Nonpoint Source	20.0431250	an additional 768 acres are included in Category 5-A
804-2	14-A	Falmouth – Cumberland	11.5	SB	Current	Elevated fecals; Nonpoint Source	0.0179688	
804-3	14-C	Long Island - Cliff Island, Portland	617.2	SB	Current - Long Is; 10/12/00 – others	OBDs; Elevated fecals; Nonpoint Source	0.9643750	
802-25	16	Royal & Cousins R. Estuaries	108.8	SB	Current	STP, OBD, Elevated fecals	0.1700000	an additional 173.5 acres are included in Category 5-A
802-5	17-B	Maquoit Bay, Brunswick and Freeport	300.9	SB	Current	Elevated fecals; Nonpoint Source	0.4701563	Combined 17-A & 17-B, 2002 report
	17-E	Basin, Ash and Stover Coves, Harpswell	280.1	SB	Current	Elevated fecals; Nonpoint Source	0.4376563	seasonal closure May-Sep, new
	17-F	Orrs and Bailey Island, Harpswell	200.4	SB	Current	OBDs; Elevated fecals; Nonpoint Source	0.3131250	new
	17-G	Harpswell Sound, Harpswell	547.1	SB	Current	OBDs; Elevated fecals; Nonpoint Source	0.8548438	new
802-7	18	Potts Harbor	675.3	SB	Current	Elevated fecals; Nonpoint Source	1.0551563	
802-8	18-A	Gurnet Strait, Harpswell	154.5	SB	Current	OBDs; Elevated fecals; Nonpoint Source	0.2414063	
802-9	18-BB	New Meadows River, Brunswick, West Bath, Harpswell	12.6	SB	Current	OBDs; Elevated fecals; Nonpoint Source	0.0196875	was 19-E in part
	18-B	New Meadows Lake, Brunswick, West Bath	22.5	SB	Current	Elevated fecals; Nonpoint Source	0.0351563	
802-10	18-J	Middle Bay	76.9	SB	Current	Elevated fecals; Nonpoint Source	0.1201563	Mislabeled as 18-C in 2004

Category 5-B-1: Estuarine and Marine Waters Impaired only by Bacteria (TMDL Required)

Waterbody ID	DMR Area	Segment Description	Segment Size Acres	Segment Class	Last Year Sampled	Source	Segment Size (Square Miles)	Comments
	18-CC	Merepoint, Brunsick	14.5	SB	Current	Elevated fecals; Nonpoint Source	0.0226563	new
802-11	18-D	Eastern Bailey - Orr's Island, Western Quahog Bay,	1,256.60	SB	Current	OBDs; Elevated fecals; Nonpoint Source	1.9634375	
802-12	18-F	Card Cove and Orrs Cove, Harpswell	52.1	SB	Current	Seasonal Boat Closure, Elevated fecals	0.0814063	was in Category 2
	18-G	Northern Quahog Bay	257.3	SB	Current	OBDs; Elevated fecals; Nonpoint Source	0.4020313	
802-19	18-X	Little Hen Island and Big Hen Island, Harpswell	70.7	SB	Current	OBDs; Elevated fecals; Nonpoint Source	0.1104688	
802-9	19-F	Long Cove, West Bath	7.7	SB	Current	Elevated fecals; Nonpoint Source	0.0120313	was in Category 2
710-1	20	Upper Kennebec River and Tributaries	17,293.80	SB	Current	Elevated fecals; Nonpoint Source	27.0215625	
	20-G	Middle Kennebec River	1,145.50	SB	Current	Seasonal elevated fecals; Nonpoint Source	1.7898438	new
710-2	20-H	Lower Kennebec, Phippsburg/Georgetown	1865.4	SB	Current	OBD; Elevated fecals; Nonpoint Source	2.9146875	
730-1	20-B	Back River, Wiscasset and Westport	139.4	SB	Current	OBD; Elevated fecals; Nonpoint Source	0.2178125	
730-6	22-E	Western Barters Island, Boothbay	225.9	SB	Current	Elevated fecals; Nonpoint Source	0.3529688	
730-10	23-A	Ebencook Harbor, Southport	1226.9	SB	Current	OBDs; Boats; Elevated fecals; Nonpoint Source	1.9170313	
729-2	24-A	Lower Salt Bay	42.6	SB	Current	Elevated fecals; Nonpoint Source	0.0665625	
729-2	25	Damariscotta River, Newcastle – Damariscotta	694.5	SB	Current	STP; Elevated fecals; Nonpoint Source	1.0851563	
726-10	26	Medomak River, Waldoboro and Friendship	155.6	SB	Current	Elevated fecals after rainfall; Nonpoint Source	0.2431250	

Category 5-B-1: Estuarine and Marine Waters Impaired only by Bacteria (TMDL Required)

Waterbody ID	DMR Area	Segment Description	Segment Size Acres	Segment Class	Last Year Sampled	Source	Segment Size (Square Miles)	Comments
724-2	26-A	Monhegan Island	521.6	SB	Never	Untreated household sewage (straight pipe)	0.8150000	Permanent PSP (paralytic shellfish poisoning) Closure
724-4	26-D	Wiley Cove, Cushing	61.2	SB	Current	Elevated fecals; Farm animals, Nonpoint Source	0.0956250	
	26-E	Dutch Neck and Back River	35.1	SB	Current	Elevated fecals; Nonpoint Source	0.0548438	new
724-8	26-N	Maple Juice Cove, Cushing	124	SB	Current	Septic system problems; Elevated fecals; Nonpoint Source	0.1937500	
724-11	27-B	Deep Cove - Otis Cove, St. George	318.2	SB	Current	OBD; Septic system problems; Elevated fecals; Nonpoint Source	0.4971875	
722-1	27-A	Eastern Wheeler Bay, St. George	35.1	SB	Current	OBDs; Elevated fecals; Nonpoint Source	0.0548438	
	27-E	Upper St. George and Mill River	317.6	SB	Current	STP; OBDs; Elevated fecals; Nonpoint Source	0.4962500	new
722-2	28	Tenants Harbor to Mosquito Head, St. George	621.4	SB	Current	OBDs; Elevated fecals; Boats; Nonpoint Source	0.9709375	
722-6	28-H	Marshall Point - Mosquito Head, St. George	193.8	SB	Current	OBD; Septic system problems; Elevated fecals; Nonpoint Source	0.3028125	
722-7	28-I	Weskeag River, So. Thomaston and Owls Head	41.9	SB	Current	Septic system problems; Elevated fecals; Nonpoint Source	0.0654688	
722-8	29	Rockland	2,459.90	SB/SC	Current	STP; OBDs; Stormwater; Boats; Elevated fecals; Nonpoint Source	3.8435938	
722-11	30	Rockport	2,036.30	SB	Current	OBDs; Boats; Elevated fecals; Nonpoint Source	3.1817188	
722-13	30-D	Vinalhaven	1,255.20	SB	Current	OBDs; Boats; Elevated fecals; Nonpoint Source	1.9612500	
722-14	30-H	Kent Cove, North Haven	180.8	SB	Current	Elevated fecals; Nonpoint Source	0.2825000	

Category 5-B-1: Estuarine and Marine Waters Impaired only by Bacteria (TMDL Required)

Waterbody ID	DMR Area	Segment Description	Segment Size Acres	Segment Class	Last Year Sampled	Source	Segment Size (Square Miles)	Comments
722-16	30-J	Vinal Cove - Starboard Rock, Vinalhaven	90.4	SB	Current	OBD; Elevated fecals; Nonpoint Source	0.1412500	
722-17	30-K	Southern Harbor, North Haven	36.4	SB	Current	Elevated fecals; Nonpoint Source	0.0568750	
722-19	30-M	Roberts Harbor, Vinalhaven	175.4	SB	Current	OBD; Elevated fecals; Nonpoint Source	0.2740625	
722-21	31-A	Rockport Harbor to Ducktrap Harbor, Lincolnville	2,139.60	SB	Current	STP; Elevated fecals; Nonpoint Source	3.3431250	
722-22	31-B	Great Spruce Head - Kelleys Cove, Northport	1,237.30	SB	Current	STP; Elevated fecals; Nonpoint Source	1.9332813	
722-23	32	Belfast Bay	4,172	SB	Current	STP; OBDs; Boats; Elevated fecals; Nonpoint Source	6.5187500	
722-24	33	Searsport - Stockton Springs	2789	SB/SC	Current	STP; OBDs; Septic system problems; Elevated fecals; Nonpoint Source	4.3578125	
	34	Stockton Springs	460.60	SB/SC	Current	Eelevated fecals, Nonpoint Source	0.7196875	
722-25	35	Penobscot River	12,743.00	SB/SC	Current	STP; OBDs; Boats; Elevated fecals; Nonpoint Source	19.9109375	
722-26A	36-A	Northern Bay, Penobscot	786.30	SB	Current	OBDs, Elevated fecals, Nonpoint Source	1.2285938	new
722-26B	36-B	Upper Baggaduce River	7.00	SA	Current	Agriculture, Nonpoint Source	0.0109375	new
722-29A	37-D	Long Cove, Deer isle	22.00	SB	Current	Eelevated fecals, Nonpoint Source	0.0343750	new
722-34	38	Stonington Harbor & NW Crocket Cove, Deer Isle & Stonington	222	SB	Current	OBDs; Elevated fecals; Nonpoint Source	0.3468750	
722-38	39-A	Center Harbor – Brooklin	32	SB	Current	Elevated fecals; Seasonal marina, Nonpoint Source	0.0500000	
722-38	39-B	Eastern Flye Point, Brooklin	11	SB	Current	Elevated fecals; Nonpoint Source	0.0171875	

Category 5-B-1: Estuarine and Marine Waters Impaired only by Bacteria (TMDL Required)

Waterbody ID	DMR Area	Segment Description	Segment Size Acres	Segment Class	Last Year Sampled	Source	Segment Size (Square Miles)	Comments
722-39	39-F	Benjamin River, Sedgwick	23	SB	Current	Seasonal marina; Elevated fecals; Nonpoint Source	0.0359375	
707-4	39-E	Salt Pond, Sedgwick – Brooklin	80	SB	Current	Elevated fecals; Nonpoint Source	0.1250000	
	39-H	Northwest Herrick Bay, Brooklin	38	SB	Current	Elevated fecals; Nonpoint Source	0.0593750	new
	39-G	Northern Morgan Bay	114	SB	Current	Elevated fecals; Nonpoint Source	0.1781250	new
	39-I	Bragdon Brook, Blue Hill	25	SB	Current	Elevated fecals; Nonpoint Source	0.0390625	new
707-10	42-E	Mackerel Cove, Swans Island	4	SB	Current	Elevated fecals; Nonpoint Source	0.0062500	
707-5	48-A	Goose Cove, Trenton	121	SB	Current	Elevated fecals; Nonpoint Source	0.1890625	
707-11	48-B	Pretty Marsh Harbor, Mount Desert	180	SB	Current	Elevated fecals; Nonpoint Source	0.2812500	
	48-C	Northwest Cove, Bar Harbor	87	SB	Current	Elevated fecals; Nonpoint Source	0.1359375	
714-9	49-A	Jellison Cove, Hancock	9	SB	Current	Elevated fecals; Nonpoint Source	0.0140625	
714-10	49-B	Carrying Place, Hancock	25	SB	Current	Elevated fecals; Nonpoint Source	0.0390625	
714-11	49-C	Kilkenny Cove, Hancock	43	SB	Current	Elevated fecals; Nonpoint Source	0.0671875	
	49-D	Eagle Point, Sullivan	7	SB	Current	Elevated fecals; Nonpoint Source	0.0109375	new
714-13	50-A	US Rt. 1 Bridge, West Sullivan and Long Cove, Sullivan	30	SB	Current	Elevated fecals; Nonpoint Source	0.0468750	
714-14	50-B	Springer Brook, Mill Brook and West Brook, W. Franklin	93	SB	Current	Elevated fecals; Nonpoint Source	0.1453125	
714-15	50-C	Johnny's Brook and Card Mill Stream, Franklin	2	SB	Current	Elevated fecals; Nonpoint Source	0.0031250	
	50-D	Evergreen Point, Sullivan	34	SB	Current	Elevated fecals; Nonpoint Source	0.0531250	new

Category 5-B-1: Estuarine and Marine Waters Impaired only by Bacteria (TMDL Required)

Waterbody ID	DMR Area	Segment Description	Segment Size Acres	Segment Class	Last Year Sampled	Source	Segment Size (Square Miles)	Comments
714-16	50-E	Egypt Bay, Hancock and Franklin	106	SB	Current	Elevated fecals; Nonpoint Source	0.1656250	
	51-C	Bunker Cove, South Gouldsboro	12	SB	Current	Elevated fecals; Nonpoint Source	0.0187500	new
706-3	52-B	Mill Pond Stream, Gouldsboro	8	SB	Current	Elevated fecals; Nonpoint Source	0.0125000	
706-6	52-E	Dyer Harbor - Pinkham Bay, Steuben	73	SB	Current	Elevated fecals; Nonpoint Source	0.1140625	
706-7	52-F	Birch Harbor, Gouldsboro	19	SB	Current	Seasonal marina; Elevated fecals; Nonpoint Source	0.0296875	
	52-G	Joy Bay, Gouldsboro and Steuben	1024	SB	Current	Elevated fecals; Nonpoint Source	1.6000000	
706-8	52-J	Dyer Harbor, Steuben	162	SB	Current	Elevated fecals; Nonpoint Source	0.2531250	
705-3	52-K	Mitchell Point, Milbridge	32	SB	Current	Septic system problems; Elevated fecals; Nonpoint Source	0.0500000	
705-1	53	Narraguagus River, Milbridge	821	SB	Current	Elevated fecals, OBDs, Nonpoint Sourcce	1.2828125	was in Category 2
704-2	53-D	Curtis Creek, Flat Bay, Harrington	31	SB	Current	Elevated fecals; Nonpoint Source	0.0484375	
704-3	53-E	Upper Harrington River	483	SB	Current	Elevated fecals; Nonpoint Source	0.7546875	
705-3	53-G	Smith Cove, Narraguagus Bay, Milbridge	3	SB	Current	Elevated fecals; Nonpoint Source	0.0046875	
703-2	54	Jonesport and West Jonesport	459	SB	Current	OBDs; Elevated fecals; Nonpoint Source	0.7171875	
703-3	54-A	North End of Beals Island	95	SB	Current	Elevated fecals; Nonpoint Source	0.1484375	
703-4	54-B	Indian River, Addison – Jonesport	68	SB	Current	Elevated fecals; Nonpoint Source	0.1062500	

Category 5-B-1: Estuarine and Marine Waters Impaired only by Bacteria (TMDL Required)

Waterbody ID	DMR Area	Segment Description	Segment Size Acres	Segment Class	Last Year Sampled	Source	Segment Size (Square Miles)	Comments
703-5	54-K	Southeastern Alley Bay & Pig Island Gut, Beals	24	SB	Current	Elevated fecals; Nonpoint Source	0.0375000	
703-6	54-M	Lamesen Brook in West River, Addison	52	SB	Current	Elevated fecals; Nonpoint Source	0.0812500	
713-1	54-D	East & West Branches, Little Kennebec Bay, Machias and Machiasport	68	SB	Current	Elevated fecals; Nonpoint Source	0.1062500	
713-2	54-G	White Creek, Masons Bay, Jonesport – Jonesboro	47	SB	Current	Elevated fecals; Nonpoint Source	0.0734375	
713-3	54-H	Chandler River, Jonesboro	119	SB	Current	Elevated fecals, OBDs, Nonpoint Source	0.1859375	
709-5	55-I	Indian Head, Machiasport	17	SB	Current	Elevated fecals; Nonpoint Source	0.0265625	
708-1	55-A	Little River - Cutler Harbor	37	SB	Current	Elevated fecals; Nonpoint Source	0.0578125	
708-3	55-G	Money Cove, Cutler	32	SB	Current	Elevated fecals; Nonpoint Source	0.0500000	
708-4	56-C	Haycock Harbor, Trescott	16	SA/SB	Current	Elevated fecals; Nonpoint Source	0.0250000	
708-6	58	Lubec and South Lubec	70	SB	Current	OBDs; Elevated fecals; Nonpoint Source	0.1093750	
701-1	56	Denny's River and Northwest Denny's Bay, Edmunds – Pembroke	88	SA/SB	Current	Elevated fecals; Nonpoint Source	0.1375000	
701-2	56-A	Pennamaquan Bay, Pembroke	80	SB	Current	Elevated fecals; Nonpoint Source	0.1250000	
708-4	56-B	East Stream, Trescott	15	SA/SB	Current	Elevated fecals; Nonpoint Source	0.0234375	
	56-D	Crane Mill Brook, Edmunds	94	SA	Current	Elevated fecals; Nonpoint Source	0.1468750	New
	56-H	Ox Cove, Pembroke	653	SA	Current	Elevated fecals; Nonpoint Source	1.0203125	New
701-7	57-B	Deep Cove, Eastport	154	SC	Current	Elevated fecals; Nonpoint Source	0.2406250	

Category 5-B-1: Estuarine and Marine Waters Impaired only by Bacteria (TMDL Required)

Waterbody ID	DMR Area	Segment Description	Segment Size Acres	Segment Class	Last Year Sampled	Source	Segment Size (Square Miles)	Comments
	59	Hal Moon Cove, Eastport	46	SB	Current	Elevated fecals; Nonpoint Source	0.0718750	New
701-8	58	Lubec and South Lubec	487	SB	Current	OBDs; Elevated fecals; Nonpoint Source	0.7609375	
701-10	58-F	The Haul-Up, South Bay, West Lubec	40	SB	Current	Elevated fecals; Nonpoint Source	0.0625000	
702-4	62	St. Croix River – Passamaquoddy Bay	7,933.00	SB/SC	Current	OBDs (and STP); Elevated fecals; Nonpoint Source	12.3953125	
		Total =	98,380.0			Total =	153.718750	

Category 5-B-2: Estuarine and Marine Waters Impaired by Bacteria from Combined Sewer Overflows

Waterbody ID	Location	Permitted Facility Name	Goal (separation or partial)	Enforcement Control (permit or consent decree, date) *	Segment Size (Square Miles)	Comments
811-6	Biddeford	Biddeford WWTF	Separation	Permit & A.O. 2013	0.00	Draft Phase II CSO Master Plan was submitted to Dept. on 6/30/05. Presently under review.
811-7	Saco	Saco WWTP	Partial w/ generic bypass	Permit and C.D. 2011	0.00	EPA Consent Decree - By Dec. 31, 2006 Construct Enhanced Conveyance Lines and CSO Primary Treatment Facility. By 9/31/2009 start design of remaining sewer separation projects; complete design by 1/31/2010; start construction by 4/30/2010; complete construction by 10/31/2010. Will include Major Milestones in permit being renewed in 2006.
804-7	Cape Elizabeth	Portland Water District - Portland WWTF	Separation	2008	0.00	Abatement anticipated by permit renewal time.
804-6	South Portland	South Portland WPCF	Partial	2012	0.00	(1) By November 30, 2006, the permittee shall submit an updated CSO Master Plan and abatement schedule
804-5	Portland	Portland Water District - Portland WWTF	Partial	2018	0.00	(2) PWD - As an exhibit to the application for permit renewal, the permittee shall submit an updated CSO Master Plan and abatement schedule. (3/6/08). Will include Major Milestone in permit being renewed in 2008.
710-03	Bath	Bath WPCF	Separation	Permit 2015	0.00	Will include Major Milestone in permit being renewed in 2006.
722-40	Rockland	Rockland WWTF	Partial w/ generic bypass	Permit 2011	0.00	Will include Major Milestone in permit being renewed in 2006.
722-41	Belfast	Belfast WWTF	Separation	Permit 2011	0.00	Will include Major Milestone in permit being renewed in 2006.
722-42	Bucksport	Bucksport WWTP	Separation	Permit 2012	0.00	CSO Master Plan approved 12/30/04. Will include Major Milestones in permit being renewed in 2007.
722-43	Winterport	Winterport Sewerage District	Separation	Permit 2015	0.00	EPA Administrative Order issued 7/20/04. CSO Master Plan approved 12/28/04.
722-44	Hamden	Hamden, Town of	Partial w/ storage	Permit 2015	0.00	Infiltration/inflow monitoring report and a revised CSO abatement/elimination schedule submitted 6/19/03. Approved 12/23/03. Will include Major Milestone in permit being renewed in 2007.
714-21	Bar Harbor	Bar Harbor, Town of	Separation	Permit 2010	0.00	(1) On or before December 31, 2006, *[PCS Code 81699]* the permittee shall submit a CSO Master Plan and abatement schedule to the Department for review and approval.
709-6	Machias	Machias WWTF	Separation	Permit 2008	0.00	Will include Major Milestone in permit being renewed in 2005.

*Last date in schedule OR best estimation of when water quality standards will be attained **Indeterminate value

(1) Major Milestone is listed in permit with statement that it can not be modified without formal application renewal

(2) Major Milestone is listed in permit, but does not include statement that it can not be modified without formal application renewal

Category 5-D: Estuarine and Marine Waters Impaired by Legacy Pollutants

All estuarine and marine waters are listed in Category 5-D, partially supporting fishing ("shellfish" consumption) due to elevated levels of PCBs and other persistent, bioaccumulating substances in lobster tomalley.