NEPONSET RIVER WATERSHED
2004 WATER QUALITY ASSESSMENT REPORT

COMMONWEALTH OF MASSACHUSETTS
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NEPONSET RIVER WATERSHED

2004 WATER QUALITY ASSESSMENT REPORT

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Division of Watershed Management
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Mine Brook (MA73-09)
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Bubbling Brook (MA73-11)
Unnamed Tributary (MA73-13)
Unnamed Tributary (MA73-14)
Traphole Brook (MA73-17)
Steep Hill Brook (MA73-18)
Plantingfield Brook (MA73-23)
Unnamed Tributary (MA73-31)
Blue Hills Reservoir (MA73004)
Buckmaster Pond (MA73006)
Memorial Pond (MA73012)
Flynns Pond (MA73019)
Forge Pond (MA73020)
Lymans Pond (MA73021)
Hammer Shop Pond (MA73023)
Ganawatte Farm Pond (MA73037)
Sprague Pond (MA73053)
Turners Pond (MA73059)

List of Acronyms and Abbreviations

surface water quality standards	SWQS	Safe Drinking Water Act	SDWA
Waterbody System	WBS	New England Interstate Water Pollution Control Commission	NEIWPCC
Assessment Database	ADB	Massachusetts Department of Public Health	MA DPH
National Hydrography Dataset	NHD	rapid bioassessment protocol	RBP
Clean Water Act	CWA	Massachusetts Department of Fish and Game	MA DFG
U.S. Environmental Protection Agency	EPA	milligrams per liter	mg/L
Massachusetts Department of Environmental Protection	MassDEP	micrograms per liter	ug/L
total maximum daily load	TMDL	milliliter	ml
Division of Watershed Management	DWM	Massachusetts Division of Marine Fisheries	MA DMF
dissolved oxygen	DO	National Pollutant Discharge Elimination System	NPDES
colony forming units	CFU	Neponset River Watershed Assoc.	NepRWA
MassDEP Drinking Water Program	DWP	Polychlorinated biphenyls	PCB
continuous chronic criterion	CCC		

EXECUTIVE SUMMARY

NEPONSET RIVER WATERSHED 2004 WATER QUALITY ASSESSMENT REPORT

The Massachusetts Surface Water Quality Standards (SWQS) designate the most sensitive uses for which surface waters in the state shall be protected. The assessment of current water quality conditions is a key step in the successful implementation of the Watershed Approach. This critical phase provides an assessment of whether or not the designated uses are supported or impaired, or not assessed, as well as basic information needed to focus resource protection and remediation activities later in the watershed management planning process.

This report presents a summary of current water quality data/information in the Neponset River watershed used to assess the status of the designated uses as defined in the SWQS. The designated uses, where applicable, include: *Aquatic Life, Fish Consumption, Drinking Water, Primary and Secondary Contact Recreation and Aesthetics*. Each use, within a given assessment segment, is individually assessed as ***support*** or ***impaired***. When too little current data/information exists or no reliable data are available for an assessment segment the use is ***not assessed***. However, if there is some indication of water quality impairment, which is not "naturally-occurring", the use is identified with an "Alert Status". Some rivers and lakes do not have an assigned assessment segment identification number and the status of their designated uses has never been assessed, investigated, and/or reported to the EPA in the Commonwealth's Summary of Water Quality Report (305(b) Report) nor is information on these waters maintained in the Assessment Database (ADB). In the interest of reporting on all river miles and lake acres in the Neponset River watershed, any waters not currently assigned an assessment segment identification number are classified as ***not assessed other waters***.

The summary of the assessments for the *Aquatic Life, Fish Consumption, Shellfishing, and Primary and Secondary Contact Recreation* uses in the Neponset River watershed segments are illustrated in Figures 1 through 5, respectively. Since all segments are not assessed for *Aesthetic* uses, no figure is provided in this report for that use. The percentage of total river miles, lake acreage and estuarine area classified as impaired, support, and not assessed for each designated use are provided in Table 1.

Table 1. Percentage of total river miles (138 miles), lake acreage (1821 acres) and estuarine area (0.69 square miles) in the Neponset River basin assessed as support, impaired, or not assessed for each use. (National Hydrography Dataset (NHD) 1:24,000 is the source for the total river miles and lake acreage calculations)

	River			Lakes			Estuaries		
Use	**Support**	**Impaired**	**Not Assessed[1]**	**Support**	**Impaired**	**Not Assessed[1]**	**Support**	**Impaired**	**Not Assessed**
Aquatic Life	0.0%	27.8%	72.2%	0.0%	72.6%	27.4%	0.0%	0.0%	100%
Fish Consumption	0.0%	17.8%	82.2%	0.0%	32.6%	68.4%	0.0%	100%	0.0%
Shellfishing	Not Applicable						0.0%	97.1%	2.9%
Drinking Water	Not Assessed in this Report[2]						Not Applicable		
Primary Contact	14.3%	37.4%	48.3%	12.3%	0.0%	87.7%	0.0%	97.1%	2.9%
Secondary Contact	50.2%	1.5%	48.3%	12.3%	0.0%	87.7%	0.0%	97.1%	2.9%
Aesthetics	0.0%	0.0%	100%	0.0%	0.0%	100%	0.0%	0.0%	100%

1 - Not Assessed includes river or lakes not assigned assessment segments or not assessed other waters.
2 - While this use is not assessed in this report, information on drinking water source protection and finish water quality is available at http://www.mass.gov/dep/water/drinking.htm and from local public water suppliers.

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Figure 1. *Aquatic Life Use* assessment summary for rivers, estuarine, and lake segments in the Neponset River watershed

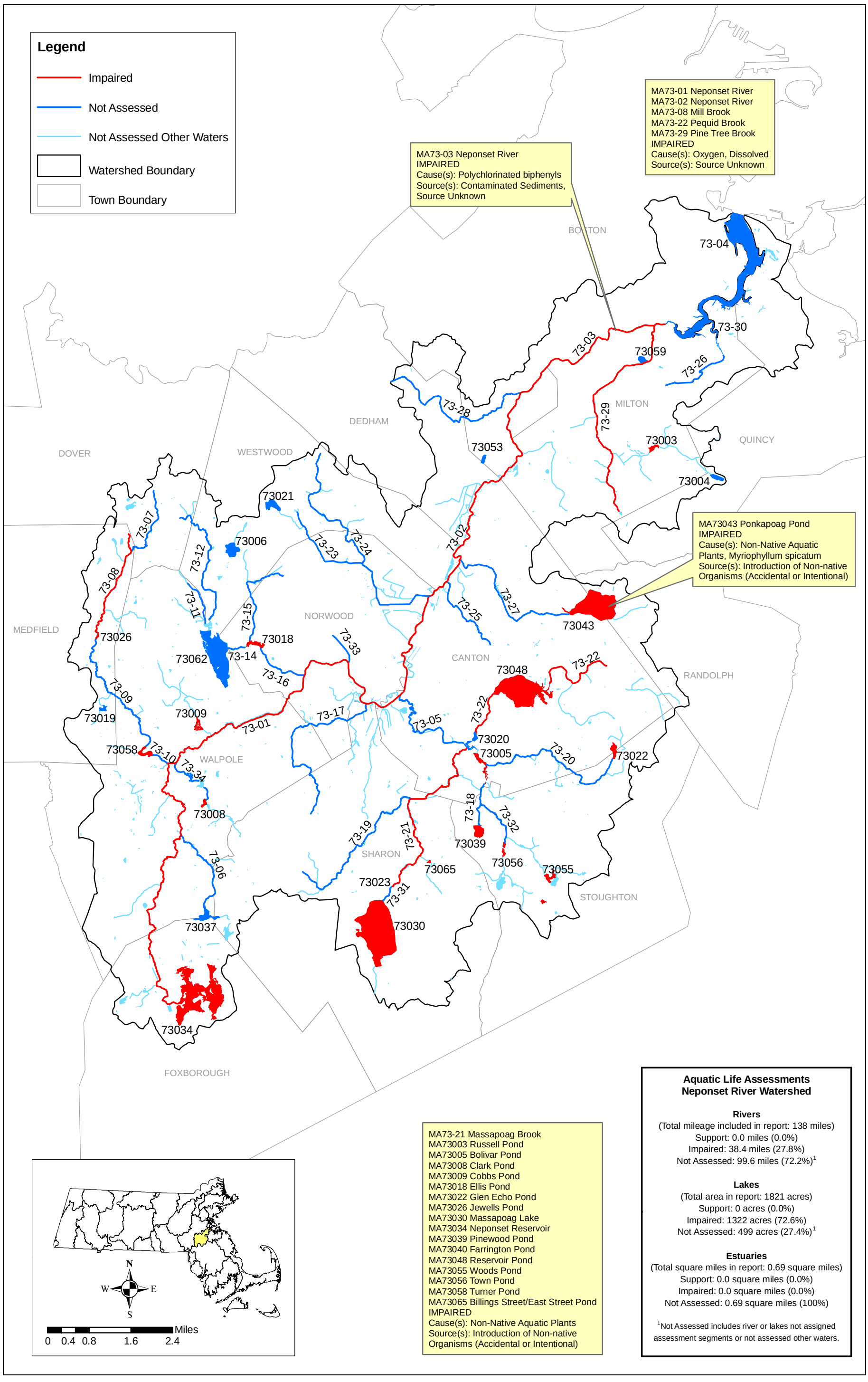

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Figure 2. *Fish Consumption Use* assessment summary for rivers, estuarine, and lake segments in the Neponset River watershed

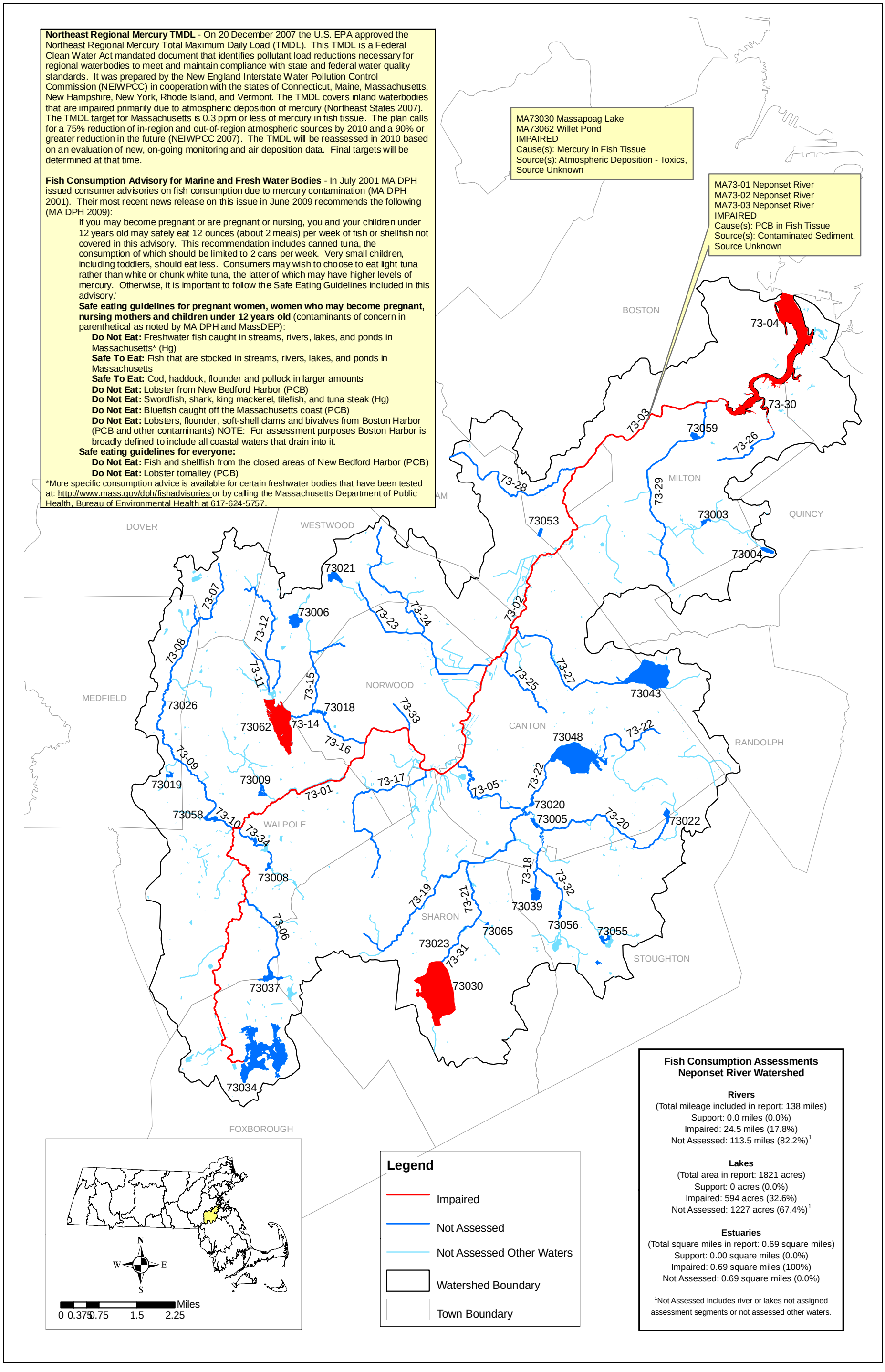

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Figure 3. *Shellfishing Use* assessment summary for estuarine segments in the Neponset River watershed

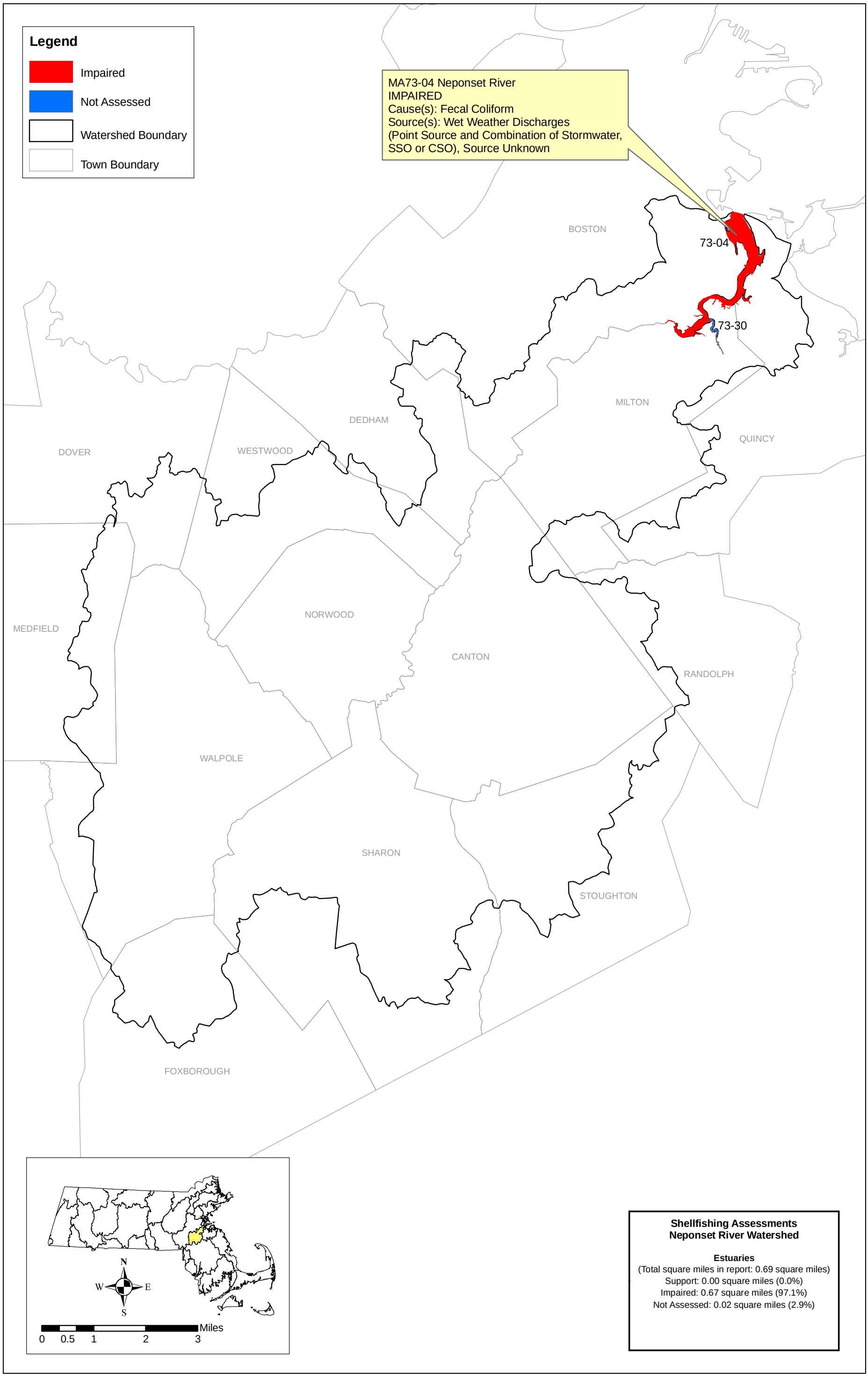

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Figure 4. *Primary Contact Recreational Use* assessment summary for rivers, estuarine, and lake segments in the Neponset River watershed

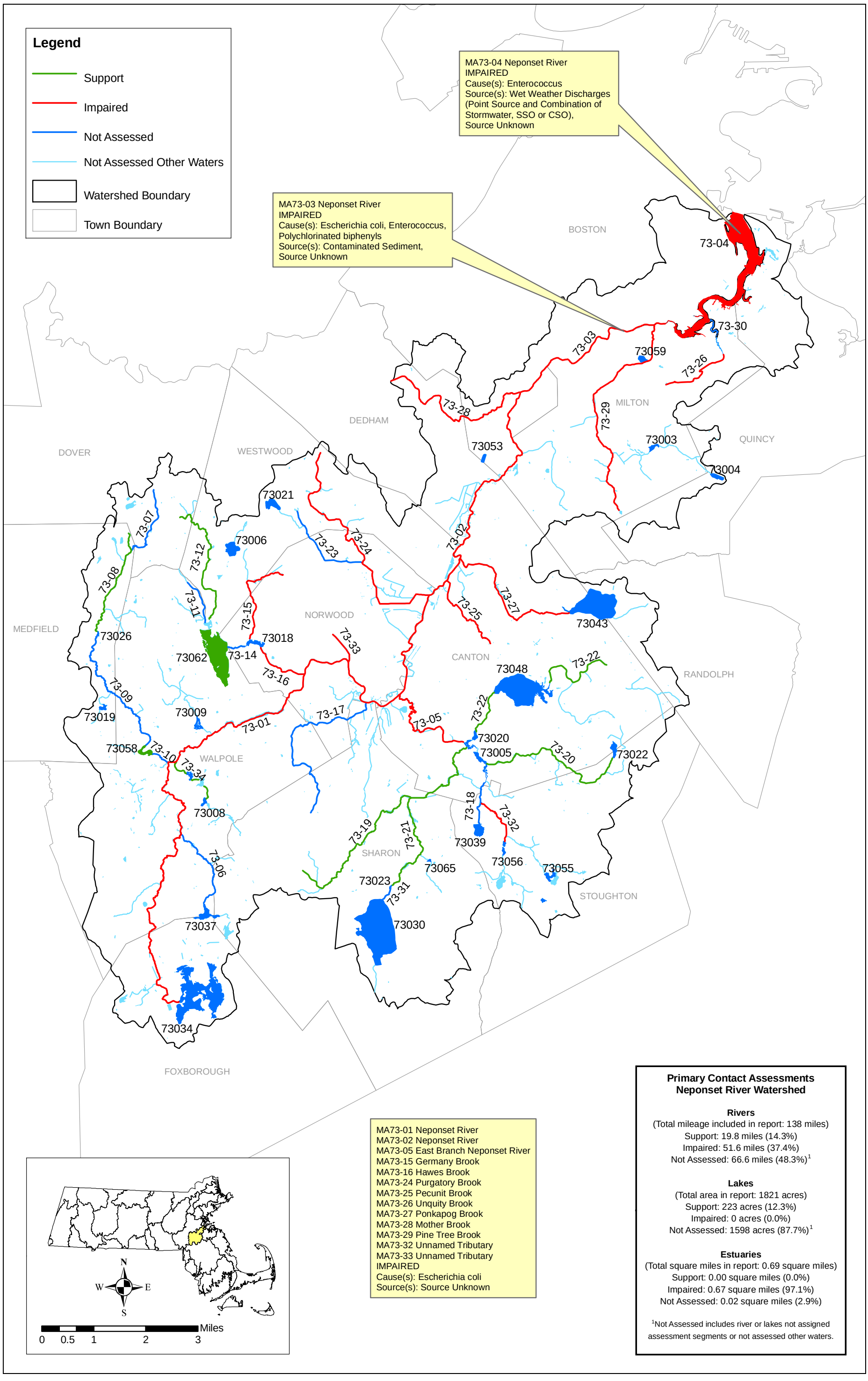

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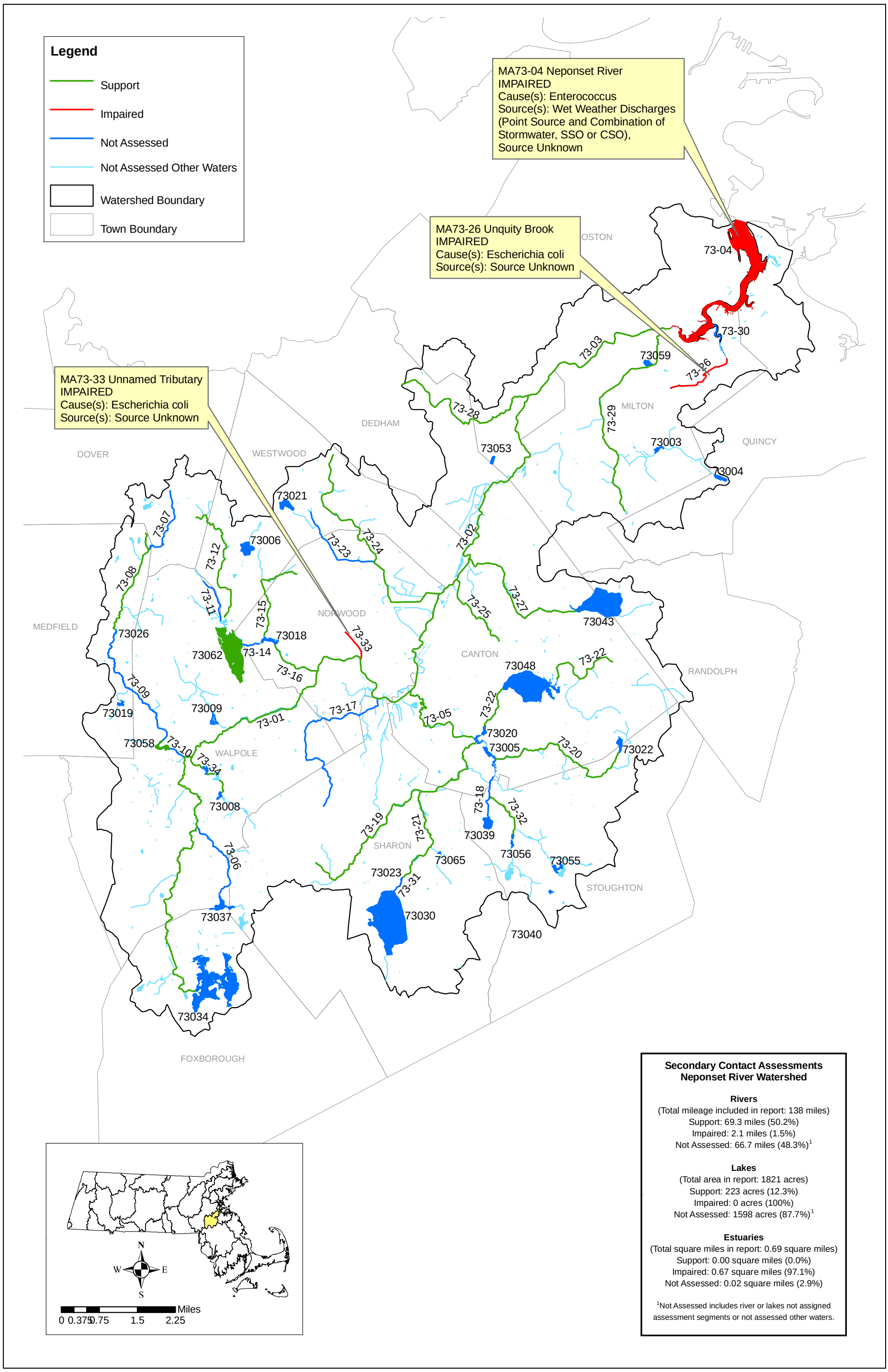
Figure 5. *Secondary Contact Recreational Use* assessment summary for rivers, estuarine, and lake segments in the Neponset River watershed



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INTRODUCTION

The goal of the Clean Water Act (CWA) is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. To meet this objective, the CWA requires states to develop information on the quality of the Nation's water resources and report this information to the U.S. Environmental Protection Agency (EPA), the U.S. Congress, and the public. Together, these agencies are responsible for implementation of the CWA mandates. Under Section 305(b) of the Federal Clean Water Act, every two years, the Massachusetts Department of Environmental Protection (MassDEP) must submit to EPA a statewide report that describes the status of water quality in the Commonwealth. Until 2002 this was accomplished as a statewide summary of water quality (the 305(b) Report). States are also required to submit, under Section 303(d) of the CWA, a list of impaired waters requiring a total maximum daily load (TMDL) calculation. In 2002, however, EPA gave states the option to combine elements of the statewide 305(b) Report and the Section 303(d) List of Impaired Waters into one "Integrated List of Waters" (Integrated List). This statewide list is based on the compilation of information for the Commonwealth's 27 watersheds. Massachusetts has opted to write individual watershed surface water quality assessment reports and use them as the supporting documentation for the Integrated List. The assessment reports utilize water quality data/information compiled from a variety of sources and provide an evaluation of applicable designated uses (*Aquatic Life, Fish Consumption, Drinking Water, Primary and Secondary Contact Recreation and Aesthetics*.). Quality-assured in-stream biological, habitat, physical/chemical, toxicity data and other information are evaluated to assess the status of designated uses. This analysis follows a standardized process described in Appendix A - Assessment Methodology.

MASSACHUSETTS INTEGRATED LIST OF WATERS

Section 305(b) of the CWA defines the process whereby states monitor and assess the quality of their surface and groundwater and report on the status of those waters every two years. Section 303(d) of the CWA requires states to periodically identify and list those waterbodies for which existing controls on point and nonpoint sources of pollutants are not stringent enough to attain or maintain compliance with applicable surface water quality standards. Through the year 2000 the MassDEP fulfilled the 305(b) and 303(d) reporting requirements in two completely separate documents. In 2001 the EPA released guidance that provided states with the option of preparing a single Integrated List of Waters to be submitted that would meet the reporting requirements of both sections 305(b) and 303(d) of the CWA.

The EPA approved the Massachusetts Year 2008 Integrated List of Waters in May 2009. In that report each waterbody segment was placed in one of five major categories. Category 1 included those waters that were meeting all designated uses. No Massachusetts waters were listed in Category 1 because a statewide health advisory pertaining to the consumption of fish precludes any waters from being in full support of the fish consumption use. Waters listed in Category 2 were found to support some of the uses for which they were assessed but other uses were not assessed. Category 3 contained those waters for which insufficient or no information was available to assess any uses.

Waters exhibiting impairment for one or more uses were placed in either Category 4 (impaired but not requiring a TMDL report) or Category 5 (impaired and requiring one or more TMDLs) according to the EPA guidance. Category 4 was further divided into three sub-categories – 4A, 4B and 4C – depending upon the reason that TMDLs were not needed. Category 4A included waters for which the required TMDL(s) had already been completed and approved by the EPA. However, since segments could only appear in one-category waters that had an approved TMDL for some pollutants, but not others, remained in Category 5. Category 4B was to include waters for which other pollution control requirements were reasonably expected to result in the attainment of the designated use before the next listing cycle. Because of the uncertainty related to making predictions about conditions in the future the MassDEP made a decision not to utilize Category 4B in the 2008 Integrated List. Finally, waters impaired by factors, such as flow modification or habitat alteration, that are not subjected to TMDL calculations because the impairment is not related to one or more pollutants were included in Category 4C. See individual segment assessments for information pertaining to the 2008 Integrated List category and causes of impairment.

NEPONSET RIVER WATERSHED DESCRIPTION

The Neponset River watershed is located in the western portion of the Boston Harbor Watershed. The Neponset River Basin borders the city of Boston on the north and Quincy on the south; it drains a watershed of 123 square miles. The headwaters of the Neponset River originate in Foxborough at Neponset Reservoir, a manmade impoundment of 312 acres. The river generally flows in a northeasterly direction and after traveling approximately 30 miles empties into Dorchester Bay. The river is impounded by 12 dams and passes through several mills and private reservoirs. The East Branch is the major tributary to the mainstem Neponset River. Mother Brook, a man-made diversion, conveys Charles River flow to the Neponset River. Most of the Neponset River is a fresh water stream. However, after the impoundment in Milton, by the Walter Baker Dam, the river becomes tidal.

The river has a strong industrial history predating the Industrial Revolution and was used to power textile, paper, and lumber mills, in manufacturing processes, and for the disposal of by-products and wastes. Historically industry, including many textile, paper, and lumber mills, thrived along the Neponset River. It was not long before the river gained a justly deserved reputation as highly polluted, with numerous untreated sewage and industrial discharges. Although the water quality problems were recognized in the late 1800's, it was not until the passage of state and federal legislation in the 1960's and 1970's that water quality issues were more seriously addressed. Today, the seventeenth, eighteenth, and nineteenth century mills have closed, connected to the sewer system, or installed waste treatment facilities. Great improvements have been made in the management of residential wastewater as well (NepRWA undated).

Currently, there are two designated ACEC's in the Neponset River Subwatershed, the Neponset River Estuary ACEC and the Fowl Meadow and Ponkapoag Bog ACEC. The Neponset River Estuary ACEC in Boston, Milton, and Quincy was officially designated as an ACEC on 27 March 1995. The ACEC encompasses approximately 1,300 acres. Approximately 80% of the ACEC consists of floodplains and two-thirds of the ACEC is composed of open water, salt marsh, and other wetland resource areas. The Neponset River Estuary ACEC supports valuable anadromous fishery habitat, soft-shell clam beds, commercially and recreationally important finfish species, and numerous bird species. The Fowl Meadow and Ponkapoag Bog ACEC was officially designated on 20 August 1992 and encompasses approximately 8,350 acres in Boston, Canton, Dedham, Milton, Norwood, Randolph, Sharon, and Westwood. Several municipal public wells within this ACEC provide water to Canton, Dedham, and Westwood. At least 13 state-listed rare species occur in the ACEC (MA DCR 2009).

OBJECTIVES

This report evaluates data\information generated in the Neponset River watershed since the last water quality assessment report that was published in November 2001. The methodology used to assess the designated use status of rivers and lakes in accordance with EPA and MassDEP use assessment methods is provided in Appendix A.

The objectives of this water quality assessment report are to:

1. evaluate whether or not surface waters in the Neponset River watershed, defined as segments in the MassDEP/EPA databases, currently support their designated uses and
2. identify the stressors impairing designated uses and any confirmed sources of those stressors

ASSESSMENT REPORT FORMAT

In this report the assessment information for waters that are assessed for any one or more designated use(s) is summarized in a table format. The tables summarize the assessment decisions for the *Aquatic Life, Fish Consumption, Shellfishing Primary* and *Secondary Contact Recreation* and *Aesthetics* uses, the data that lead to those decisions, the cause(s) of any impairment, and the confirmed source(s) for the impairment (Table 2).

Table 2. An example of the table format used to present assessment information in the 2004 Neponset River Watershed Assessment Report.

EXAMPLE BROOK (SEGMENT MA81-99)

Location: Fake Pond, Groton, to confluence with Cat Brook, Shirley.
Segment Length: 4.4 Miles
Classification: Class B
2006 Integrated List of Waters: Category 5 - Waters requiring a TMDL - Cause Unknown, Nutrients-Pathogens

Designated Use	Use Assessment	Alert
Aquatic Life	**Support**	**Yes**
MassDEP DWM measured dissolved oxygen, temperature, and pH six times at one site in 2003 and found no violations of the temperature or pH criterion and five violations of the dissolved oxygen criterion. The dissolved oxygen violations ranged from 2.9 mg/L to 3.6 mg/L. **Cause(s) of Impairment:** Dissolved oxygen **Source(s) of Impairment:** Unknown *Data Sources: 24*		
Fish Consumption	**Not Assessed**	**No**
This waterbody does not have a site-specific fish consumption advisory. All applicable statewide fish consumption advisories issued by MA DPH due to mercury contamination apply to this waterbody (See Special Note 4).		
Primary Contact	**Support**	**No**
MassDEP DWM collected five Escherichia coli samples at one site in 2003. The geometric mean of the samples collected during the primary contact season was 102 CFU/100ml. This result does not violate the geometric mean criterion (126 CFU/100ml) for Escherichia coli. *Data Sources: 24*		
Secondary Contact	**Support**	**No**
MassDEP DWM collected five Escherichia coli samples at one site in 2003. The geometric mean was 102 CFU/100ml. This result does not violate the geometric mean criterion (630 CFU/100ml) for Escherichia coli. *Data Sources: 24*		
Aesthetics	**Not Assessed**	**No**
MassDEP DWM recorded aesthetic field observations at one site in 2003. There were no field observations indicating prolonged or frequent occurrences of objectionable deposits, odors, turbidity or color, floating scum, or overabundant growths of aquatic plants or algae. *Data Sources: 24*		

The *Drinking Water* use is not assessed in this report. MassDEP Drinking Water Program (DWP) has primacy for implementing the provisions of the federal Safe Drinking Water Act (SDWA) and maintains current drinking supply monitoring data. More information is available on the MassDEP website at http://www.mass.gov/dep/water/drinking.htm.

The table is divided into several sections (i.e., one section for each applicable designated use) and the "Designated Use" column in the table indicates which use is being summarized in that section. The "Use Assessment" column states the assessment decision (support, impaired, not assessed) for the use. The "Alert" column is used when an issue was identified that is of concern (i.e., an "Alert Status" was noted for the use but the use was not assessed as impaired). In the space below each use in the table is a summary of the data responsible for the assessment decision and the source(s) of the data. Additional water quality data may be available but not summarized in this section of the report because it was not used to make the

assessment decision. The numbers identified as the data sources correspond to the numbered citations in the Data Sources Reviewed section which contains all sources of data reviewed for the assessment report. The "Cause(s) of Impairment" and "Source(s) of Impairment" identify the stressors leading to the impairment decision and the any confirmed source(s) of the stressor(s). The causes and sources come from the list in the EPA Assessment Database Version 2 (ADB).

SPECIAL NOTES

In the data summary of some segments, there is a reference to a special note. Special notes refer to unique assessment situations that apply to several segments and are best described in a separate section rather than repeated for each segment. The special notes for this assessment report are:

1. **Northeast Regional Mercury TMDL** - On 20 December 2007 the U.S. EPA approved the Northeast Regional Mercury Total Maximum Daily Load (TMDL). This TMDL is a Federal Clean Water Act mandated document that identifies pollutant load reductions necessary for regional waterbodies to meet and maintain compliance with state and federal water quality standards. It was prepared by the New England Interstate Water Pollution Control Commission (NEIWPCC) in cooperation with the states of Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont. The TMDL covers inland waterbodies that are impaired primarily due to atmospheric deposition of mercury (Northeast States 2007). The TMDL target for Massachusetts is 0.3 ppm or less of mercury in fish tissue. The plan calls for a 75% reduction of in-region and out-of-region atmospheric sources by 2010 and a 90% or greater reduction in the future (NEIWPCC 2007). The TMDL will be reassessed in 2010 based on an evaluation of new, on-going monitoring and air deposition data. Final targets will be determined at that time.
2. **Fish Consumption Advisory for Marine and Fresh Water Bodies** - In July 2001 MA DPH issued consumer advisories on fish consumption due to mercury contamination (MA DPH 2001). Their most recent news release on this issue in June 2009 recommends the following (MA DPH 2009):

   If you may become pregnant or are pregnant or nursing, you and your children under 12 years old may safely eat 12 ounces (about 2 meals) per week of fish or shellfish not covered in this advisory. This recommendation includes canned tuna, the consumption of which should be limited to 2 cans per week. Very small children, including toddlers, should eat less. Consumers may wish to choose to eat light tuna rather than white or chunk white tuna, the latter of which may have higher levels of mercury. Otherwise, it is important to follow the Safe Eating Guidelines included in this advisory.'

   Safe eating guidelines for pregnant women, women who may become pregnant, nursing mothers and children under 12 years old (contaminants of concern in parenthetical as noted by MA DPH and MassDEP):

   Do Not Eat: Freshwater fish caught in streams, rivers, lakes, and ponds in Massachusetts (Hg)
   Safe To Eat: Fish that are stocked in streams, rivers, lakes, and ponds in Massachusetts
   Safe To Eat: Cod, haddock, flounder and pollock in larger amounts
   Do Not Eat: Lobster from New Bedford Harbor (PCB)
   Do Not Eat: Swordfish, shark, king mackerel, tilefish, and tuna steak (Hg)
   Do Not Eat: Bluefish caught off the Massachusetts coast (PCB)
   Do Not Eat: Lobsters, flounder, soft-shell clams and bivalves from Boston Harbor (PCB and other contaminants) NOTE: For assessment purposes Boston Harbor is broadly defined to include all coastal waters that drain into it.

   Safe eating guidelines for everyone:

   Do Not Eat: Fish and shellfish from the closed areas of New Bedford Harbor (PCB)
   Do Not Eat: Lobster tomalley (PCB)

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MA DPH. 2001. *MA DPH Issues New Consumer Advisories on Fish Consumption and Mercury Contamination.* Massachusetts Department of Public Health, Bureau of Environmental Health Assessment, Boston, MA.

MA DPH. 2009. *Massachusetts Department Of Public Health Reminds Consumers Of State Fish Advisory – June 3, 2009.* Massachusetts Department of Public Health, Bureau of Environmental Health Assessment, Boston, MA. (Press release online @ http://www.mass.gov/?pageID=eohhs2pressrelease&L=4&L0=Home&L1=Government&L2=Departments+and+Divisions&L3=Department+of+Public+Health&sid=Eeohhs2&b=pressrelease&f=090603_fish_advisory&csid=Eeohhs2)

MA DCR. August 2000. Areas of Critical Environmental Concern Listing and Index. [Online] http://www.mass.gov/dcr/stewardship/acec/acecs.htm. Department of Conservation and Recreation, ACEC Program, Boston, MA.

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Northeast States. 2007. *Northeast Regional Mercury Total Maximum Daily Load.* Connecticut Department of Environmental Protection, Maine Department of Environmental Protection, Massachusetts Department of Environmental Protection, New Hampshire Department of Environmental Services, New York State Department of Environmental Conservation, Rhode Island Department of Environmental Management, Vermont Department of Environmental Conservation, New England Interstate Water Pollution Control Commission. October 24, 2007.

NEPONSET RIVER (SEGMENT MA73-01)

Segment Description: Outlet of Neponset Reservoir, Foxborough to confluence with East Branch, Canton. (through former pond segments Crackrock Pond MA73010 and Bird Pond MA73002)
Segment Length: 13.2 miles
Segment Classification: B\WWF
This segment is on the 2008 Integrated List of Waters in Category 5 - Waters Requiring a TMDL (Priority organics, Metals, Nutrients, Siltation, Organic enrichment/Low DO, Pathogens [6/21/2002, CN121.0], Suspended solids, Noxious aquatic plants, Turbidity). Bird Pond and Crackrock Pond, now included in this segment, are on the 2008 Integrated List of Waters in Category 3 - No Uses Assessed.

Designated Use	Use Assessment	Alert
Aquatic Life	**Impaired**	
NepRWA measured dissolved oxygen at three sites in 2007 and 2008 (n=30) and found eight violations of the dissolved oxygen criterion (5.0 mg/L). The violations ranged from 2.3 mg/L to 4.9 mg/L. **Cause(s) of Impairment:** Oxygen, Dissolved **Source(s) of Impairment:** Source Unknown *Data Sources: 20*		
Fish Consumption	**Impaired**	
MA DPH has issued a fish consumption advisory for the Neponset River due to polychlorinated bipenyls (PCB) contamination. Children younger than 12 years of age, pregnant women, women of childbearing age who may become pregnant, and nursing mothers should not eat Brown Bullhead fish from this water body. The general public should limit consumption of Brown Bullhead fish to two meals per month (See Special Note 1 and 2). **Cause(s) of Impairment:** PCB in Fish Tissue **Source(s) of Impairment:** Contaminated Sediment, Source Unknown *Data Sources: 9*		
Primary Contact	**Impaired**	
NepRWA collected E. coli samples at three sites in 2007 and 2008. The annual geometric means of the samples collected at each site during the primary contact season ranged from 22 CFU/100ml to 185 CFU/100ml. These results violate the geometric mean criterion (126 CFU/100ml) for E. coli. **Cause(s) of Impairment:** Escherichia coli **Source(s) of Impairment:** Source Unknown *Data Sources: 20*		
Secondary Contact	**Support**	
NepRWA collected E. coli samples at four sites in 2007 and 2008. The annual geometric means of the samples collected at each site ranged from 22 CFU/100ml to 185 CFU/100ml. These results do not violate the geometric mean criterion (630 CFU/100ml) for E. coli. *Data Sources: 20*		
Aesthetics	**Not Assessed**	
Insufficient data were available to assess the Aesthetic Use.		

NEPONSET RIVER (SEGMENT MA73-02)

Segment Description: Confluence with East Branch, Canton to confluence with Mother Brook, Boston.
Segment Length: 7.7 miles
Segment Classification: B\WWF
This segment is on the 2008 Integrated List of Waters in Category 5 - Waters Requiring a TMDL (Priority organics, Metals, Organic enrichment/Low DO, Pathogens [6/21/2002, CN121.0], Oil and grease, Turbidity, (Objectionable deposits*)). * denotes a non-pollutant.

Designated Use	Use Assessment	Alert
Aquatic Life	**Impaired**	
NepRWA measured dissolved oxygen at two sites in 2007 and 2008 (n=20) and found nine violations of the dissolved oxygen criterion (5.0 mg/L). The violations ranged from 3.3 mg/L to 4.9 mg/L. **Cause(s) of Impairment:** Oxygen, Dissolved **Source(s) of Impairment:** Source Unknown *Data Sources: 20*		
Fish Consumption	**Impaired**	
MA DPH has issued a fish consumption advisory for the Neponset River due to polychlorinated bipenyls (PCB) contamination. Children younger than 12 years of age, pregnant women, women of childbearing age who may become pregnant, and nursing mothers should not eat Brown Bullhead fish from this water body. The general public should limit consumption of Brown Bullhead fish to two meals per month (See Special Note 1 and 2). **Cause(s) of Impairment:** PCB in Fish Tissue **Source(s) of Impairment:** Contaminated Sediment, Source Unknown *Data Sources: 9*		
Primary Contact	**Impaired**	
NepRWA collected E. coli samples at two sites in 2007 and 2008. The annual geometric means of the samples collected at each site during the primary contact season ranged from 112 CFU/100ml to 276 CFU/100ml. These results violate the geometric mean criterion (126 CFU/100ml) for E. coli. **Cause(s) of Impairment:** Escherichia coli **Source(s) of Impairment:** Source Unknown *Data Sources: 20*		
Secondary Contact	**Support**	
NepRWA collected E. coli samples at two sites in 2007 and 2008. The annual geometric means of the samples collected at each site ranged from 117 CFU/100ml to 276 CFU/100ml. These results do not violate the geometric mean criterion (630 CFU/100ml) for E. coli. *Data Sources: 20*		
Aesthetics	**Not Assessed**	
Insufficient data were available to assess the Aesthetic Use.		

NEPONSET RIVER (SEGMENT MA73-03)

Segment Description: Confluence with Mother Brook, Boston to Milton Lower Falls Dam, Milton/Boston.
Segment Length: 3.6 miles
Segment Classification: B\WWF
This segment is on the 2008 Integrated List of Waters in Category 5 - Waters Requiring a TMDL (Priority organics, Metals, Organic enrichment/Low DO, Pathogens [6/21/2002, CN121.0], Oil and grease, (Objectionable deposits*)). * denotes a non-pollutant.

Designated Use	Use Assessment	Alert
Aquatic Life	**Impaired**	
In 2002, USGS conducted a study investigating the sediment and water quality in the Neponset River. As part of this study, USGS deployed passive water column samplers (PISCES) for polychlorinated biphenyls (PCB). USGS estimated dissolved PCB in the water column from the PISCES data and found that all eight sites in this segment had dissolved PCB concentrations 3 to 9 times higher than the continuous chronic criterion (CCC) set by EPA (14.0 ng/L). **Cause(s) of Impairment:** Polychlorinated biphenyls **Source(s) of Impairment:** Contaminated Sediments, Source Unknown *Data Sources: 18,19*		
Fish Consumption	**Impaired**	
MA DPH has issued a fish consumption advisory for the Neponset River due to polychlorinated bipenyls (PCB) contamination. Children younger than 12 years of age, pregnant women, women of childbearing age who may become pregnant, and nursing mothers should not eat Brown Bullhead fish from this water body. The general public should limit consumption of Brown Bullhead fish to two meals per month (See Special Note 1 and 2). **Cause(s) of Impairment:** PCB in Fish Tissue **Source(s) of Impairment:** Contaminated Sediments, Source Unknown *Data Sources: 9*		
Primary Contact	**Impaired**	
In 2002, USGS conducted a study investigating the sediment and water quality in the Neponset River. As part of this study, USGS deployed passive water column samplers (PISCES) for PCB. Using data from the PISCES, USGS calculated the toxicity equivalency of the 13 "dioxin-like" PCB cogener, expressed as 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD). All eight sites in this segment had estimated dissolved PCB concentrations, expressed as TCDD, greater than the EPA human health standard (0.005 pg/L). NepRWA collected E. coli samples at two sites in 2007 and 2008. The annual geometric means of the samples collected at each site during the primary contact season ranged from 271 CFU/100ml to 310 CFU/100ml. MWRA collected E. coli and Enterococcus at one site from 2003 to 2007. The annual gemometric means of the samples collected during the primary contact season at each site ranged from 285 CFU/100ml to 626 CFU/100ml for E .coli and 34 CFU/100ml to 299 CFU/100ml for Enterococcus. These results violate the geometric mean criterion for E. coli (126 CFU/100ml) and Enterococcus (33 CFU/100ml). **Cause(s) of Impairment:** Escherichia coli, Enterococcus, Polychlorinated biphenyls **Source(s) of Impairment:** Contaminated Sediments, Source Unknown *Data Sources: 18, 19, 20, 21*		

Secondary Contact	**Support**	**Yes**
NepRWA collected E. coli samples at two sites in 2007 and 2008. The annual geometric means of the samples collected at each site ranged from 273 CFU/100ml to 410 CFU/100ml. MWRA collected E. coli and Enterococcus at one site from 2003 to 2007. The annual gemometric means of the samples collected at each site ranged from 306 CFU/100ml to 441 CFU/100ml for E .coli and 41 CFU/100ml to 273 CFU/100ml for Enterococcus. These results do not violate the geometric mean criterion (630 CFU/100ml) for E. coli. An Alert Status is identified for this use due to occasional spikes in E.coli concentrations. *Data Sources: 20, 21*		
Aesthetics	**Not Assessed**	
Insufficient data were available to assess the Aesthetic Use.		

NEPONSET RIVER (SEGMENT MA73-04)

Segment Description: Milton Lower Falls Dam, Milton/Boston to mouth at Dorchester Bay, Boston/Quincy.
Segment Area: 0.67 square miles
Segment Classification: SB
This segment is on the 2008 Integrated List of Waters in Category 5 - Waters Requiring a TMDL (Priority organics, Organic enrichment/Low DO, Pathogens [6/21/2002, CN121.0], Turbidity, (Objectionable deposits*)). * denotes a non-pollutant.

Designated Use	Use Assessment	Alert
Aquatic Life	**Not Assessed**	
Insufficient data were available to assess the Aquatic Life Use.		
Fish Consumption	**Not Assessed**	
MA DPH has issued a fish consumption advisory for Boston Harbor due to polychlorinated bipenyls (PCB) and other contaminats. Pregnant women, women who may become pregnant, nursing mothers and children under 12 years old should not eat lobsters, flounder, soft-shell clams and bivalves from Boston Harbor. Boston Harbor is broadly defined to include all coastal waters that drain into it for the purpose of fish consumption assessment (See Special Note 1 and 2 and 2). **Cause(s) of Impairment:** PCB in Fish Tissue, Other **Source(s) of Impairment:** Source Unknown *Data Sources: 24*		
Shellfish	**Impaired**	
This segment contains portions of MA DMF's Designated Shellfish Growing Areas GBH3.0, GBH3.3 and GBH3.4. The shellfishing in all three growing areas is classified by MA DMF as Prohibited. **Cause(s) of Impairment:** Fecal Coliform **Source(s) of Impairment:** Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO), Source Unknown *Data Sources: 10*		
Primary Contact	**Impaired**	
MWRA collected Enterococcus at five sites from 2003 to 2007. The annual gemometric means of the samples collected during the primary contact season at each site ranged from 10 CFU/100ml to 271 CFU/100ml. These results violate the geometric mean criterion (33 CFU/100ml) for Enterococcus. **Cause(s) of Impairment:** Enterococcus **Source(s) of Impairment:** Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO), Source Unknown *Data Sources: 21*		
Secondary Contact	**Impaired**	
MWRA collected Enterococcus at five sites from 2003 to 2007. The annual gemometric means of the samples collected at each site ranged from 12 CFU/100ml to 295 CFU/100ml. These violate the geometric mean criterion (175 CFU/100ml) for E. coli. **Cause(s) of Impairment:** Enterococcus **Source(s) of Impairment:** Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO), Source Unknown *Data Sources: 21*		
Aesthetics	**Not Assessed**	
Insufficient data were available to assess the Aesthetic Use.		

EAST BRANCH NEPONSET RIVER (SEGMENT MA73-05)

Segment Description: East Branch Neponset River - Outlet of Forge Pond, Canton through East Branch Pond to confluence with Neponset River, Canton. (locally known as Canton River)
Segment Length: 2.6 miles
Segment Classification: B
This segment is on the 2008 Integrated List of Waters in Category 5 - Waters Requiring a TMDL (Cause Unknown, Metals, Organic enrichment/Low DO, Thermal modifications, (Flow alteration*), Pathogens [6/21/2002, CN121.0]). * denotes a non-pollutant.

Designated Use	Use Assessment	Alert
Aquatic Life	**Not Assessed**	
Insufficient data were available to assess the Aquatic Life Use.		
Fish Consumption	**Not Assessed**	
This waterbody does not have a site-specific fish consumption advisory. All applicable statewide fish consumption advisories issued by MA DPH due to mercury contamination apply to this waterbody (See Special Note 2).		
Primary Contact	**Impaired**	
NepRWA collected E. coli samples at one site in 2008. The annual geometric mean of the samples collected at the site during the primary contact season was 179 CFU/100ml. This result violates the geometric mean criterion (126 CFU/100ml) for E. coli. **Cause(s) of Impairment:** Escherichia coli **Source(s) of Impairment:** Source Unknown *Data Sources: 20*		
Secondary Contact	**Support**	
NepRWA collected E. coli samples at one site in 2007 and 2008. The annual geometric means of the samples collected at the site were 179 CFU/100ml and 183 CFU/100ml. These results do not violate the geometric mean criterion (630 CFU/100ml) for E. coli. *Data Sources: 20*		
Aesthetics	**Not Assessed**	
Insufficient data were available to assess the Aesthetic Use.		

MILL BROOK (SEGMENT MA73-08)

Segment Description: From headwaters (perennial portion) north of Hartford Street, Medfield to inlet of Jewells Pond, Medfield.
Segment Length: 2.3 miles
Segment Classification: B
This segment is on the 2008 Integrated List of Waters in Category 5 - Waters Requiring a TMDL (Cause Unknown, (Flow alteration*)). * denotes a non-pollutant.

Designated Use	Use Assessment	Alert
Aquatic Life	**Impaired**	
NepRWA measured dissolved oxygen at one site in 2007 and 2008 (n=9) and found four violations of the dissolved oxygen criterion (5.0 mg/L). The violations ranged from 1.3 mg/L to 4.4 mg/L. MA DFG collected fish at one site in 2006. The sample contained only three species and eight individuals, all classified as macrohabitat generalist. **Cause(s) of Impairment:** Oxygen, Dissolved **Source(s) of Impairment:** Source Unknown *Data Sources: 15, 20*		
Fish Consumption	**Not Assessed**	
This waterbody does not have a site-specific fish consumption advisory. All applicable statewide fish consumption advisories issued by MA DPH due to mercury contamination apply to this waterbody (See Special Note 2).		
Primary Contact	**Support**	
NepRWA collected E. coli samples at one site in 2007 and 2008. The annual geometric means of the samples collected at the site during the primary contact season were 25 CFU/100ml and 65 CFU/100ml. These results do not violate the geometric mean criterion (126 CFU/100ml) for E. coli. *Data Sources: 20*		
Secondary Contact	**Support**	
NepRWA collected E. coli samples at one site in 2007 and 2008. The annual geometric means of the samples collected at the site were 28 CFU/100ml and 65 CFU/100ml. These results do not violate the geometric mean criterion (630 CFU/100ml) for E. coli. *Data Sources: 20*		
Aesthetics	**Not Assessed**	
Insufficient data were available to assess the Aesthetic Use.		

MILL BROOK (SEGMENT MA73-12)

Segment Description: Source northeast of Ledgewood Drive, Dover to inlet of Pettee Pond, Westwood.
Segment Length: 2.9 miles
Segment Classification: B
This segment is on the 2008 Integrated List of Waters in Category 4a-TMDL is Completed (Pathogens [6/21/2002, CN121.0]).

Designated Use	Use Assessment	Alert
Aquatic Life	**Not Assessed**	
Insufficient data were available to assess the Aquatic Life Use.		
Fish Consumption	**Not Assessed**	
This waterbody does not have a site-specific fish consumption advisory. All applicable statewide fish consumption advisories issued by MA DPH due to mercury contamination apply to this waterbody (See Special Note 2).		
Primary Contact	**Support**	
NepRWA collected E. coli samples at one site in 2007 and 2008. The annual geometric means of the samples collected at the site during the primary contact season were 23 CFU/100ml and 89 CFU/100ml. These results do not violate the geometric mean criterion (126 CFU/100ml) for E. coli. *Data Sources: 20*		
Secondary Contact	**Support**	
NepRWA collected E. coli samples at one site in 2007 and 2008. The annual geometric means of the samples collected at the site were 20 CFU/100ml and 89 CFU/100ml. These results do not violate the geometric mean criterion (630 CFU/100ml) for E. coli. *Data Sources: 20*		
Aesthetics	**Not Assessed**	
Insufficient data were available to assess the Aesthetic Use.		

GERMANY BROOK (SEGMENT MA73-15)

Segment Description: Headwaters, east of Winter Street, Norwood to inlet of Ellis Pond, Norwood.
Segment Length: 2.0 miles
Segment Classification: B
This segment is on the 2008 Integrated List of Waters in Category 5 - Waters Requiring a TMDL (Nutrients, pH, Pathogens [6/21/2002, CN121.0], Taste, odor and color, (Objectionable deposits*)). * denotes a non-pollutant.

Designated Use	Use Assessment	Alert
Aquatic Life	**Not Assessed**	
Insufficient data were available to assess the Aquatic Life Use.		
Fish Consumption	**Not Assessed**	
This waterbody does not have a site-specific fish consumption advisory. All applicable statewide fish consumption advisories issued by MA DPH due to mercury contamination apply to this waterbody (See Special Note 2).		
Primary Contact	**Impaired**	
NepRWA collected E. coli samples at one site in 2007 and 2008. The annual geometric means of the samples collected at the site during the primary contact season were 326 CFU/100ml and 266 CFU/100ml. These results violate the geometric mean criterion (126 CFU/100ml) for E. coli. **Cause(s) of Impairment:** Escherichia coli **Source(s) of Impairment:** Source Unknown *Data Sources: 20*		
Secondary Contact	**Support**	**Yes**
NepRWA collected E. coli samples at one site in 2007 and 2008. The annual geometric means of the samples collected at the site were 469 CFU/100ml and 266 CFU/100ml. These results do not violate the geometric mean criterion (630 CFU/100ml) for E. coli. An Alert Status is identified for this use due to occasional spikes in E.coli concentrations. *Data Sources: 20*		
Aesthetics	**Not Assessed**	
Insufficient data were available to assess the Aesthetic Use.		

HAWES BROOK (SEGMENT MA73-16)

Segment Description: Outlet of Ellis Pond, Norwood to confluence with Neponset River, Norwood.
Segment Length: 1.1 miles
Segment Classification: B
This segment is on the 2008 Integrated List of Waters in Category 4a-TMDL is Completed (Pathogens [6/21/2002, CN121.0], Taste, odor and color [6/21/2002, CN121.0], Objectionable deposits [6/21/2002, CN121.0]).

Designated Use	Use Assessment	Alert
Aquatic Life	**Not Assessed**	
Insufficient data were available to assess the Aquatic Life Use.		
Fish Consumption	**Not Assessed**	
This waterbody does not have a site-specific fish consumption advisory. All applicable statewide fish consumption advisories issued by MA DPH due to mercury contamination apply to this waterbody (See Special Note 2).		
Primary Contact	**Impaired**	
NepRWA collected E. coli samples at one site in 2007 and three sites in 2008. The annual geometric means of the samples collected at each site during the primary contact season ranged from 29 CFU/100ml to 195 CFU/100ml. These results violate the geometric mean criterion (126 CFU/100ml) for E. coli. **Cause(s) of Impairment:** Escherichia coli **Source(s) of Impairment:** Source Unknown *Data Sources: 20*		
Secondary Contact	**Support**	
NepRWA collected E. coli samples at three sites in 2007 and 2008. The annual geometric means of the samples collected at each site ranged from 29 CFU/100ml to 204 CFU/100ml. These results do not violate the geometric mean criterion (630 CFU/100ml) for E. coli. *Data Sources: 20*		
Aesthetics	**Not Assessed**	
Insufficient data were available to assess the Aesthetic Use.		

BEAVER BROOK (SEGMENT MA73-19)

Segment Description: Headwaters near Moose Hill Street, Sharon through Sawmill Pond to confluence with Massapoag Brook, Sharon.
Segment Length: 3.5 miles
Segment Classification: B
This segment is on the 2008 Integrated List of Waters in Category 5 - Waters Requiring a TMDL (Cause Unknown, Organic enrichment/Low DO).

Designated Use	Use Assessment	Alert
Aquatic Life	**Not Assessed**	
Insufficient data were available to assess the Aquatic Life Use.		
Fish Consumption	**Not Assessed**	
This waterbody does not have a site-specific fish consumption advisory. All applicable statewide fish consumption advisories issued by MA DPH due to mercury contamination apply to this waterbody (See Special Note 2).		
Primary Contact	**Support**	
NepRWA collected E. coli samples at one site in 2007 and 2008. The annual geometric means of the samples collected at the site during the primary contact season were 52 CFU/100ml and 86 CFU/100ml. These results do not violate the geometric mean criterion (126 CFU/100ml) for E. coli. *Data Sources: 20*		
Secondary Contact	**Support**	
NepRWA collected E. coli samples at one site in 2007 and 2008. The annual geometric means of the samples collected at the site were 55 CFU/100ml and 86 CFU/100ml. These results do not violate the geometric mean criterion (630 CFU/100ml) for E. coli. *Data Sources: 20*		
Aesthetics	**Not Assessed**	
Insufficient data were available to assess the Aesthetic Use.		

BEAVER MEADOW BROOK (SEGMENT MA73-20)

Segment Description: Outlet of Glenn Echo Pond, Stoughton, to the inlet of Bolivar Pond, Canton.
Segment Length: 3.3 miles
Segment Classification: B
This segment is on the 2008 Integrated List of Waters in Category 5 - Waters Requiring a TMDL (Organic enrichment/Low DO, Pathogens [6/21/2002, CN121.0]).

Designated Use	Use Assessment	Alert
Aquatic Life	**Not Assessed**	
Insufficient data were available to assess the Aquatic Life Use.		
Fish Consumption	**Not Assessed**	
This waterbody does not have a site-specific fish consumption advisory. All applicable statewide fish consumption advisories issued by MA DPH due to mercury contamination apply to this waterbody (See Special Note 2).		
Primary Contact	**Support**	
NepRWA collected E. coli samples at one site in 2007 and 2008. The annual geometric means of the samples collected at the site during the primary contact season were 49 CFU/100ml and 48 CFU/100ml. These results do not violate the geometric mean criterion (126 CFU/100ml) for E. coli. *Data Sources: 20*		
Secondary Contact	**Support**	
NepRWA collected E. coli samples at one site in 2007 and 2008. The annual geometric means of the samples collected at the site were 49 CFU/100ml and 48 CFU/100ml. These results do not violate the geometric mean criterion (630 CFU/100ml) for E. coli. *Data Sources: 20*		
Aesthetics	**Not Assessed**	
Insufficient data were available to assess the Aesthetic Use.		

MASSAPOAG BROOK (SEGMENT MA73-21)

Segment Description: Outlet Hammer Shop Pond, Sharon, through Manns Pond (formely segment MA73028), Trowel Shop Pond, and Shephard Pond to the inlet of Forge Pond, Canton.
Segment Length: 4.2 miles
Segment Classification: B
This segment is on the 2008 Integrated List of Waters in Category 5 - Waters Requiring a TMDL (Cause Unknown, Nutrients). Manns Pond, now included in this segment, is on the 2008 Integrated List of Waters in Category 5 - Waters Requiring a TMDL (Turbidity, (Exotic species*)). * denotes a non-pollutant.

Designated Use	Use Assessment	Alert
Aquatic Life	**Impaired**	
Non-native species (*Cabomba caroliniana, Marsilea quadrifolia*) have been observed in Manns Pond which is part of this segment. **Cause(s) of Impairment:** Non-Native Aquatic Plants **Source(s) of Impairment:** Introduction of Non-native Organisms (Accidental or Intentional) *Data Sources: 11*		
Fish Consumption	**Not Assessed**	
This waterbody does not have a site-specific fish consumption advisory. All applicable statewide fish consumption advisories issued by MA DPH due to mercury contamination apply to this waterbody (See Special Note 2).		
Primary Contact	**Support**	
NepRWA collected E. coli samples at two sites in 2007 and 2008. The annual geometric means of the samples collected at each site during the primary contact season ranged from 10 CFU/100ml to 65 CFU/100ml. These results do not violate the geometric mean criterion (126 CFU/100ml) for E. coli. *Data Sources: 20*		
Secondary Contact	**Support**	
NepRWA collected E. coli samples at two sites in 2007 and 2008. The annual geometric means of the samples collected at each site ranged from 10 CFU/100ml to 65 CFU/100ml. These results do not violate the geometric mean criterion (630 CFU/100ml) for E. coli. *Data Sources: 20*		
Aesthetics	**Not Assessed**	
Insufficient data were available to assess the Aesthetic Use.		

PEQUID BROOK (SEGMENT MA73-22)

Segment Description: Headwaters east of York Street, Canton to the inlet of Forge Pond, Canton (excluding the approximately 1.3 miles through Reservoir Pond, segment MA73048).
Segment Length: 2.8 miles
Segment Classification: B
This segment is on the 2008 Integrated List of Waters in Category 5 - Waters Requiring a TMDL (Organic enrichment/Low DO, Pathogens [6/21/2002, CN121.0]).

Designated Use	Use Assessment	Alert
Aquatic Life	**Impaired**	
NepRWA measured dissolved oxygen at two sites in 2007 and 2008 (n=20) and found eight violations of the dissolved oxygen criterion (5.0 mg/L). The violations ranged from 3.3 mg/L to 4.9 mg/L. **Cause(s) of Impairment:** Oxygen, Dissolved **Source(s) of Impairment:** Source Unknown *Data Sources: 20*		
Fish Consumption	**Not Assessed**	
This waterbody does not have a site-specific fish consumption advisory. All applicable statewide fish consumption advisories issued by MA DPH due to mercury contamination apply to this waterbody (See Special Note 2).		
Primary Contact	**Support**	**Yes**
NepRWA collected E. coli samples at one site in 2007 and 2008. The annual geometric means of the samples collected at each site during the primary contact season ranged from 33 CFU/100ml to 123 CFU/100ml. These results do not violate the geometric mean criterion (126 CFU/100ml) for E. coli. An Alert Status is identified for this use due to spikes in E. coli concentrations. *Data Sources: 20*		
Secondary Contact	**Support**	
NepRWA collected E. coli samples at two sites in 2007 and 2008. The annual geometric means of the samples collected at each site ranged from 33 CFU/100ml to 175 CFU/100ml. These results do not violate the geometric mean criterion (630 CFU/100ml) for E. coli. *Data Sources: 20*		
Aesthetics	**Not Assessed**	
Insufficient data were available to assess the Aesthetic Use.		

PURGATORY BROOK (SEGMENT MA73-24)

Segment Description: Headwaters east of Farm Lane, Westwood to confluence with Neponset River, Norwood.
Segment Length: 5.1 miles
Segment Classification: B
This segment is on the 2008 Integrated List of Waters in Category 4a-TMDL is Completed (Pathogens [6/21/2002, CN121.0]).

Designated Use	Use Assessment	Alert
Aquatic Life	**Not Assessed**	
Insufficient data were available to assess the Aquatic Life Use.		
Fish Consumption	**Not Assessed**	
This waterbody does not have a site-specific fish consumption advisory. All applicable statewide fish consumption advisories issued by MA DPH due to mercury contamination apply to this waterbody (See Special Note 2).		
Primary Contact	**Impaired**	
NepRWA collected E. coli samples at one site in 2007 and 2008. The annual geometric means of the samples collected at the site during the primary contact season were 162 CFU/100ml and 269 CFU/100ml. These results violate the geometric mean criterion (126 CFU/100ml) for E. coli. **Cause(s) of Impairment:** Escherichia coli **Source(s) of Impairment:** Source Unknown *Data Sources: 20*		
Secondary Contact	**Support**	**Yes**
NepRWA collected E. coli samples at one site in 2007 and 2008. The annual geometric means of the samples collected at the site were 213 CFU/100ml and 269 CFU/100ml. These results do not violate the geometric mean criterion (630 CFU/100ml) for E. coli. An Alert Status is identified for this use due to occasional spikes in E.coli concentrations. *Data Sources: 20*		
Aesthetics	**Not Assessed**	
Insufficient data were available to assess the Aesthetic Use.		

PECUNIT BROOK (SEGMENT MA73-25)

Segment Description: Headwaters east of Carey Circle and west of Pecunit Street, Canton to the confluence with Neponset River, Canton.
Segment Length: 1.8 miles
Segment Classification: B
This segment is on the 2008 Integrated List of Waters in Category 2 - Attaining Some Uses (Primary Contact, Secondary Contact, Aesthetics); Others Not Assessed.

Designated Use	Use Assessment	Alert
Aquatic Life	**Not Assessed**	
Insufficient data were available to assess the Aquatic Life Use.		
Fish Consumption	**Not Assessed**	
This waterbody does not have a site-specific fish consumption advisory. All applicable statewide fish consumption advisories issued by MA DPH due to mercury contamination apply to this waterbody (See Special Note 2).		
Primary Contact	**Impaired**	
NepRWA collected E. coli samples at one site in 2007 and 2008. The annual geometric means of the samples collected at the site during the primary contact season were 93 CFU/100ml and 227 CFU/100ml. These results violate the geometric mean criterion (126 CFU/100ml) for E. coli. **Cause(s) of Impairment:** Escherichia coli **Source(s) of Impairment:** Source Unknown *Data Sources: 20*		
Secondary Contact	**Support**	
NepRWA collected E. coli samples at one site in 2007 and 2008. The annual geometric means of the samples collected at the site were 77 CFU/100ml and 227 CFU/100ml. These results do not violate the geometric mean criterion (630 CFU/100ml) for E. coli. *Data Sources: 20*		
Aesthetics	**Not Assessed**	
Insufficient data were available to assess the Aesthetic Use.		

UNQUITY BROOK (SEGMENT MA73-26)

Segment Description: Isolated (urban): Headwaters (perennial portion) near Randolph Avenue, Milton to confluence with Gulliver Creek, Milton (Note: Confluence not visible on quad, brook culverted underground east of Otis Street/west of Govenor Belcher Lane, Milton)
Segment Length: 1.5 miles
Segment Classification: B
This segment is on the 2008 Integrated List of Waters in Category 5 - Waters Requiring a TMDL (Nutrients, pH, Siltation, Organic enrichment/Low DO, (Flow alteration*), (Other habitat alterations*), Pathogens [6/21/2002, CN121.0], (Objectionable deposits*)). * denotes a non-pollutant.

Designated Use	Use Assessment	Alert
Aquatic Life	**Not Assessed**	
Insufficient data were available to assess the Aquatic Life Use.		
Fish Consumption	**Not Assessed**	
This waterbody does not have a site-specific fish consumption advisory. All applicable statewide fish consumption advisories issued by MA DPH due to mercury contamination apply to this waterbody (See Special Note 2).		
Primary Contact	**Impaired**	
NepRWA collected E. coli samples at two sites in 2007 and three sites in 2008. The annual geometric means of the samples collected at each site during the primary contact season ranged from 427 CFU/100ml to 938 CFU/100ml. These results violate the geometric mean criterion (126 CFU/100ml) for E. coli. **Cause(s) of Impairment:** Escherichia coli **Source(s) of Impairment:** Source Unknown *Data Sources: 20*		
Secondary Contact	**Impaired**	
NepRWA collected E. coli samples at two sites in 2007 and three sites in 2008. The annual geometric means of the samples collected at each site ranged from 449 CFU/100ml to 938 CFU/100ml. These results violate the geometric mean criterion (630 CFU/100ml) for E. coli. **Cause(s) of Impairment:** Escherichia coli **Source(s) of Impairment:** Source Unknown *Data Sources: 20*		
Aesthetics	**Not Assessed**	
Insufficient data were available to assess the Aesthetic Use.		

PONKAPOG BROOK (SEGMENT MA73-27)

Segment Description: Outlet of Ponkapoag Pond, Canton to confluence with Neponset River, Canton.
Segment Length: 3.1 miles
Segment Classification: B
This segment is on the 2008 Integrated List of Waters in Category 4a-TMDL is Completed (Pathogens [6/21/2002, CN121.0]).

Designated Use	Use Assessment	Alert
Aquatic Life	**Not Assessed**	
Insufficient data were available to assess the Aquatic Life Use.		
Fish Consumption	**Not Assessed**	
This waterbody does not have a site-specific fish consumption advisory. All applicable statewide fish consumption advisories issued by MA DPH due to mercury contamination apply to this waterbody (See Special Note 2).		
Primary Contact	**Impaired**	
NepRWA collected E. coli samples at one site in 2007 and 2008. The annual geometric means of the samples collected at the site during the primary contact season were 88 CFU/100ml and 170 CFU/100ml. These results violate the geometric mean criterion (126 CFU/100ml) for E. coli. **Cause(s) of Impairment:** Escherichia coli **Source(s) of Impairment:** Source Unknown *Data Sources: 20*		
Secondary Contact	**Support**	
NepRWA collected E. coli samples at one site in 2007 and 2008. The annual geometric means of the samples collected at the site were 93 CFU/100ml and 170 CFU/100ml. These results do not violate the geometric mean criterion (630 CFU/100ml) for E. coli. *Data Sources: 20*		
Aesthetics	**Not Assessed**	
Insufficient data were available to assess the Aesthetic Use.		

MOTHER BROOK (SEGMENT MA73-28)

Segment Description: Headwaters at the Charles River Diversion control structure, Dedham to confluence with Neponset River, Boston. [Reported as MA72-13 until May 3, 2000]
Segment Length: 3.7 miles
Segment Classification: B
This segment is on the 2008 Integrated List of Waters in Category 5 - Waters Requiring a TMDL (Nutrients, Organic enrichment/Low DO, (Flow alteration*), Pathogens [6/21/2002, CN121.0], Taste, odor and color). * denotes a non-pollutant.

Designated Use	Use Assessment	Alert
Aquatic Life	**Not Assessed**	
Insufficient data were available to assess the Aquatic Life Use.		
Fish Consumption	**Not Assessed**	
This waterbody does not have a site-specific fish consumption advisory. All applicable statewide fish consumption advisories issued by MA DPH due to mercury contamination apply to this waterbody (See Special Note 2).		
Primary Contact	**Impaired**	
NepRWA collected E. coli samples at one site in 2007 and two sites in 2008. The annual geometric means of the samples collected at each site during the primary contact season ranged from 106 CFU/100ml to 561 CFU/100ml. These results violate the geometric mean criterion (126 CFU/100ml) for E. coli. **Cause(s) of Impairment:** Escherichia coli **Source(s) of Impairment:** Source Unknown *Data Sources: 20*		
Secondary Contact	**Support**	**Yes**
NepRWA collected E. coli samples at two sites in 2007 and 2008. The annual geometric means of the samples collected at each site ranged from 106 CFU/100ml to 561 CFU/100ml. These results do not violate the geometric mean criterion (630 CFU/100ml) for E. coli. An Alert Status is identified for this use due to occasional spikes in E.coli concentrations. *Data Sources: 20*		
Aesthetics	**Not Assessed**	
Insufficient data were available to assess the Aesthetic Use.		

PINE TREE BROOK (SEGMENT MA73-29)

Segment Description: Outlet of Hillside Pond, Milton through Pope's Pond (formerly segment MA73044) to confluence Neponset River, Milton.
Segment Length: 4.6 miles
Segment Classification: B
This segment is on the 2008 Integrated List of Waters in Category 5 - Waters Requiring a TMDL (Organic enrichment/Low DO, (Other habitat alterations*), Pathogens [6/21/2002, CN121.0]). * denotes a non-pollutant. Pope's Pond, now included in this segment, is on the 2008 Integrated List of Waters in Category 5 - Waters Requiring a TMDL (Noxious aquatic plants, Turbidity).

Designated Use	Use Assessment	Alert
Aquatic Life	**Impaired**	
NepRWA measured dissolved oxygen at three sites in 2007 and 2008 (n=27) and found seven violations of the dissolved oxygen criterion (5.0 mg/L). The violations ranged from 2.1 mg/L to 4.9 mg/L. MA DFG collected fish at one site in 2002. The sample was dominated by individuals classified as macrohabitat generalist and pollution tolerant. **Cause(s) of Impairment:** Oxygen, Dissolved **Source(s) of Impairment:** Source Unknown *Data Sources: 15, 20*		
Fish Consumption	**Not Assessed**	
This waterbody does not have a site-specific fish consumption advisory. All applicable statewide fish consumption advisories issued by MA DPH due to mercury contamination apply to this waterbody (See Special Note 2).		
Primary Contact	**Impaired**	
NepRWA collected E. coli samples at one site in 2007 and two sites in 2008. The annual geometric means of the samples collected at each site during the primary contact season ranged from 54 CFU/100ml to 507 CFU/100ml. MassDEP SERO collected E. coli samples at four sites in 2006. The annual geometric means of the samples collected at each site during the primary contact season ranged from 96 CFU/100ml to 345 CFU/100ml. These results violate the geometric mean criterion (126 CFU/100ml) for E. coli. **Cause(s) of Impairment:** Escherichia coli **Source(s) of Impairment:** Source Unknown *Data Sources: 20, 1*		
Secondary Contact	**Support**	**Yes**
NepRWA collected E. coli samples at three sites in 2007 and 2008. The annual geometric means of the samples collected at each site ranged from 54 CFU/100ml to 538 CFU/100ml. MassDEP SERO collected E. coli samples at four sites in 2006. The annual geometric means of the samples collected at each site during the primary contact season ranged from 96 CFU/100ml to 345 CFU/100ml. These results do not violate the geometric mean criterion (630 CFU/100ml) for E. coli. An Alert Status is identified for this use due to occasional spikes in E.coli concentrations. *Data Sources: 20*		
Aesthetics	**Not Assessed**	
Insufficient data were available to assess the Aesthetic Use.		

GULLIVER CREEK (SEGMENT MA73-30)

Segment Description: From confluence Unquity Brook, Milton to confluence Neponset River, Milton. (Note: Unquity Brook culverted, confluence not visible on quad)
Segment Length: 0.02 square miles
Segment Classification: SB
This segment is on the 2008 Integrated List of Waters in Category 4a-TMDL is Completed (Pathogens [6/21/2002, CN121.0]).

Designated Use	Use Assessment	Alert
Aquatic Life	**Not Assessed**	
Insufficient data were available to assess the Aquatic Life Use.		
Fish Consumption	**Impaired**	
MA DPH has issued a fish consumption advisory for Boston Harbor due to polychlorinated bipenyls (PCB) and other contaminats. Pregnant women, women who may become pregnant, nursing mothers and children under 12 years old should not eat lobsters, flounder, soft-shell clams and bivalves from Boston Harbor. Boston Harbor is broadly defined to include all coastal waters that drain into it for the purpose of fish consumption assessment (See Special Note 1 and 2 and 2). **Cause(s) of Impairment:** PCB in Fish Tissue, Other **Source(s) of Impairment:** Source Unknown *Data Sources: 24*		
Shellfish	**Not Assessed**	
MA DMF does not classify any shellfishing areas in this segment so the Shellfishing Use is not assessed.		
Primary Contact	**Not Assessed**	
Insufficient data were available to assess the Primary Contact Use.		
Secondary Contact	**Not Assessed**	
Insufficient data were available to assess the Secondary Contact Use.		
Aesthetics	**Not Assessed**	
Insufficient data were available to assess the Aesthetic Use.		

UNNAMED TRIBUTARY (SEGMENT MA73-32)

Segment Description: From the outlet of Town Pond, Stoughton to the confluence with Steep Hill Brook, Stoughton.
Segment Length: 1.0 miles
Segment Classification: B
This segment is on the 2008 Integrated List of Waters in Category 5 - Waters Requiring a TMDL (Cause Unknown, Nutrients, pH).

Designated Use	Use Assessment	Alert
Aquatic Life	**Not Assessed**	
Insufficient data were available to assess the Aquatic Life Use.		
Fish Consumption	**Not Assessed**	
This waterbody does not have a site-specific fish consumption advisory. All applicable statewide fish consumption advisories issued by MA DPH due to mercury contamination apply to this waterbody (See Special Note 2).		
Primary Contact	**Impaired**	
NepRWA collected E. coli samples at one site in 2008. The annual geometric mean of the samples collected at the site during the primary contact season was 143 CFU/100ml. This result violates the geometric mean criterion (126 CFU/100ml) for E. coli. **Cause(s) of Impairment:** Escherichia coli **Source(s) of Impairment:** Source Unknown *Data Sources: 20*		
Secondary Contact	**Support**	
NepRWA collected E. coli samples at one site in 2007 and 2008. The annual geometric means of the samples collected at the site were 55 CFU/100ml and 143 CFU/100ml. These results do not violate the geometric mean criterion (630 CFU/100ml) for E. coli. *Data Sources: 20*		
Aesthetics	**Not Assessed**	
Insufficient data were available to assess the Aesthetic Use.		

UNNAMED TRIBUTARY (SEGMENT MA73-33)

Segment Description: Locally known as "Meadow Brook" - From where the underground/culverted stream emerges east of Pleasant Street, Norwood to confluence with Neponset River, Norwood.
Segment Length: 0.6 miles
Segment Classification: B
This segment is on the 2008 Integrated List of Waters in Category 5 - Waters Requiring a TMDL (Nutrients, Pathogens, Taste, odor and color).

Designated Use	Use Assessment	Alert
Aquatic Life	**Not Assessed**	
Insufficient data were available to assess the Aquatic Life Use.		
Fish Consumption	**Not Assessed**	
This waterbody does not have a site-specific fish consumption advisory. All applicable statewide fish consumption advisories issued by MA DPH due to mercury contamination apply to this waterbody (See Special Note 2).		
Primary Contact	**Impaired**	
NepRWA collected E. coli samples at one site in 2007 and 2008. The annual geometric means of the samples collected at the site during the primary contact season were 1412 CFU/100ml and 2862 CFU/100ml. These results violate the geometric mean criterion (126 CFU/100ml) for E. coli. **Cause(s) of Impairment:** Escherichia coli **Source(s) of Impairment:** Source Unknown *Data Sources: 20*		
Secondary Contact	**Impaired**	
NepRWA collected E. coli samples at one site in 2007 and 2008. The annual geometric means of the samples collected at the site were 1452 CFU/100ml and 2862 CFU/100ml. These results violate the geometric mean criterion (630 CFU/100ml) for E. coli. **Cause(s) of Impairment:** Escherichia coli **Source(s) of Impairment:** Source Unknown *Data Sources: 20*		
Aesthetics	**Not Assessed**	
Insufficient data were available to assess the Aesthetic Use.		

UNNAMED TRIBUTARY (SEGMENT MA73-34)

Segment Description: Outlet Clark Pond, Walpole to confluence with Neponset River, Walpole (locally considered part of Spring Brook) (excluding the approximately 0.2 miles through Diamond Pond and the approximately 0.2 miles through Memorial Pond segment MA73012)
Segment Length: 0.8 miles
Segment Classification: B
This segment is on the 2008 Integrated List of Waters in Category 2 - Attaining Some Uses (Primary Contact, Secondary Contact); Others Not Assessed.

Designated Use	Use Assessment	Alert
Aquatic Life	**Not Assessed**	
Insufficient data were available to assess the Aquatic Life Use.		
Fish Consumption	**Not Assessed**	
This waterbody does not have a site-specific fish consumption advisory. All applicable statewide fish consumption advisories issued by MA DPH due to mercury contamination apply to this waterbody (See Special Note 2).		
Primary Contact	**Support**	
NepRWA collected E. coli samples at one site in 2007 and 2008. The annual geometric means of the samples collected at the site during the primary contact season were 53 CFU/100ml and 58 CFU/100ml. These results do not violate the geometric mean criterion (126 CFU/100ml) for E. coli. *Data Sources: 20*		
Secondary Contact	**Support**	
NepRWA collected E. coli samples at one site in 2007 and 2008. The annual geometric means of the samples collected at the site were 40 CFU/100ml and 58 CFU/100ml. These results do not violate the geometric mean criterion (630 CFU/100ml) for E. coli. *Data Sources: 20*		
Aesthetics	**Not Assessed**	
Insufficient data were available to assess the Aesthetic Use.		

RUSSELL POND (SEGMENT MA73003)

Segment Description: Milton
Segment Length: 9 acres
Segment Classification: B
This segment is on the 2008 Integrated List of Waters in Category 5 - Waters Requiring a TMDL (Noxious aquatic plants, Turbidity, (Exotic species*)). * denotes a non-pollutant.

Designated Use	Use Assessment	Alert
Aquatic Life	**Impaired**	
A non-native species (*Potamogeton crispus*) has been observed in Russell Pond. **Cause(s) of Impairment:** Non-Native Aquatic Plants **Source(s) of Impairment:** Introduction of Non-native Organisms (Accidental or Intentional) *Data Sources: 11*		
Fish Consumption	**Not Assessed**	
This waterbody does not have a site-specific fish consumption advisory. All applicable statewide fish consumption advisories issued by MA DPH due to mercury contamination apply to this waterbody (See Special Note 2).		
Primary Contact	**Not Assessed**	
Insufficient data were available to assess the Primary Contact Use.		
Secondary Contact	**Not Assessed**	
Insufficient data were available to assess the Secondary Contact Use.		
Aesthetics	**Not Assessed**	
Insufficient data were available to assess the Aesthetic Use.		

BOLIVAR POND (SEGMENT MA73005)

Segment Description: Canton
Segment Length: 20 acres
Segment Classification: B
This segment is on the 2008 Integrated List of Waters in Category 5 - Waters Requiring a TMDL (Turbidity, (Exotic species*)). * denotes a non-pollutant.

Designated Use	Use Assessment	Alert
Aquatic Life	**Impaired**	
A non-native species (Cabomba caroliniana) has been observed in Bolivar Pond. **Cause(s) of Impairment:** Non-Native Aquatic Plants **Source(s) of Impairment:** Introduction of Non-native Organisms (Accidental or Intentional) *Data Sources: 11*		
Fish Consumption	**Not Assessed**	
This waterbody does not have a site-specific fish consumption advisory. All applicable statewide fish consumption advisories issued by MA DPH due to mercury contamination apply to this waterbody (See Special Note 2).		
Primary Contact	**Not Assessed**	
Insufficient data were available to assess the Primary Contact Use.		
Secondary Contact	**Not Assessed**	
Insufficient data were available to assess the Secondary Contact Use.		
Aesthetics	**Not Assessed**	
Insufficient data were available to assess the Aesthetic Use.		

CLARK POND (SEGMENT MA73008)

Segment Description: Walpole
Segment Length: 7 acres
Segment Classification: B
This segment is on the 2008 Integrated List of Waters in Category 4c - Impairment Not Caused by a Pollutant (Exotic species*). * denotes a non-pollutant.

Designated Use	Use Assessment	Alert
Aquatic Life	**Impaired**	
Non-native species (*Myriophyllum heterophyllum, Trapa natans*) have been observed in Clark Pond. **Cause(s) of Impairment:** Non-Native Aquatic Plants **Source(s) of Impairment:** Introduction of Non-native Organisms (Accidental or Intentional) *Data Sources: 11*		
Fish Consumption	**Not Assessed**	
This waterbody does not have a site-specific fish consumption advisory. All applicable statewide fish consumption advisories issued by MA DPH due to mercury contamination apply to this waterbody (See Special Note 2).		
Primary Contact	**Not Assessed**	
Insufficient data were available to assess the Primary Contact Use.		
Secondary Contact	**Not Assessed**	
Insufficient data were available to assess the Secondary Contact Use.		
Aesthetics	**Not Assessed**	
Insufficient data were available to assess the Aesthetic Use.		

COBBS POND (SEGMENT MA73009)

Segment Description: Walpole
Segment Length: 14 acres
Segment Classification: B
This segment is on the 2008 Integrated List of Waters in Category 5 - Waters Requiring a TMDL (Nutrients, Organic enrichment/Low DO, Noxious aquatic plants, Turbidity, (Exotic species*)). * denotes a non-pollutant.

Designated Use	Use Assessment	Alert
Aquatic Life	**Impaired**	
A non-native species (*Cabomba caroliniana*) has been observed in Cobbs Pond. **Cause(s) of Impairment:** Non-Native Aquatic Plants **Source(s) of Impairment:** Introduction of Non-native Organisms (Accidental or Intentional) *Data Sources: 13*		
Fish Consumption	**Not Assessed**	
This waterbody does not have a site-specific fish consumption advisory. All applicable statewide fish consumption advisories issued by MA DPH due to mercury contamination apply to this waterbody (See Special Note 2).		
Primary Contact	**Not Assessed**	
Insufficient data were available to assess the Primary Contact Use.		
Secondary Contact	**Not Assessed**	
Insufficient data were available to assess the Secondary Contact Use.		
Aesthetics	**Not Assessed**	
Insufficient data were available to assess the Aesthetic Use.		

ELLIS POND (SEGMENT MA73018)

Segment Description: Norwood
Segment Length: 17 acres
Segment Classification: B
This segment is on the 2008 Integrated List of Waters in Category 4c - Impairment Not Caused by a Pollutant (Exotic species*). * denotes a non-pollutant.

Designated Use	Use Assessment	Alert
Aquatic Life	**Impaired**	
Non-native species (*Cabomba caroliniana, Trapa natans*) have been observed in Ellis Pond. **Cause(s) of Impairment:** Non-Native Aquatic Plants **Source(s) of Impairment:** Introduction of Non-native Organisms (Accidental or Intentional) *Data Sources: 11, 13*		
Fish Consumption	**Not Assessed**	
This waterbody does not have a site-specific fish consumption advisory. All applicable statewide fish consumption advisories issued by MA DPH due to mercury contamination apply to this waterbody (See Special Note 2).		
Primary Contact	**Not Assessed**	
Insufficient data were available to assess the Primary Contact Use.		
Secondary Contact	**Not Assessed**	
Insufficient data were available to assess the Secondary Contact Use.		
Aesthetics	**Not Assessed**	
Insufficient data were available to assess the Aesthetic Use.		

GLEN ECHO POND (SEGMENT MA73022)

Segment Description: Canton/Stoughton
Segment Length: 16 acres
Segment Classification: B
This segment is on the 2008 Integrated List of Waters in Category 3 - No Uses Assessed

Designated Use	Use Assessment	Alert
Aquatic Life	**Impaired**	
A non-native species (*Myriophyllum heterophyllum*) has been observed in Glen Echo Pond. **Cause(s) of Impairment:** Non-Native Aquatic Plants **Source(s) of Impairment:** Introduction of Non-native Organisms (Accidental or Intentional) *Data Sources: 13*		
Fish Consumption	**Not Assessed**	
This waterbody does not have a site-specific fish consumption advisory. All applicable statewide fish consumption advisories issued by MA DPH due to mercury contamination apply to this waterbody (See Special Note 2).		
Primary Contact	**Not Assessed**	
Insufficient data were available to assess the Primary Contact Use.		
Secondary Contact	**Not Assessed**	
Insufficient data were available to assess the Secondary Contact Use.		
Aesthetics	**Not Assessed**	
Insufficient data were available to assess the Aesthetic Use.		

JEWELLS POND (SEGMENT MA73026)

Segment Description: Medfield
Segment Length: 4 acres
Segment Classification: B
This segment is on the 2008 Integrated List of Waters in Category 3 - No Uses Assessed

Designated Use	Use Assessment	Alert
Aquatic Life	**Impaired**	
A non-native species (*Myriophyllum heterophyllum*) has been observed in Jewells Pond. **Cause(s) of Impairment:** Non-Native Aquatic Plants **Source(s) of Impairment:** Introduction of Non-native Organisms (Accidental or Intentional) *Data Sources: 12*		
Fish Consumption	**Not Assessed**	
This waterbody does not have a site-specific fish consumption advisory. All applicable statewide fish consumption advisories issued by MA DPH due to mercury contamination apply to this waterbody (See Special Note 2).		
Primary Contact	**Not Assessed**	
Insufficient data were available to assess the Primary Contact Use.		
Secondary Contact	**Not Assessed**	
Insufficient data were available to assess the Secondary Contact Use.		
Aesthetics	**Not Assessed**	
Insufficient data were available to assess the Aesthetic Use.		

MASSAPOAG LAKE (SEGMENT MA73030)

Segment Description: Sharon
Segment Length: 389 acres
Segment Classification: B
This segment is on the 2008 Integrated List of Waters in Category 4c - Impairment Not Caused by a Pollutant (Metals [12/20/2007NEHgTMDL], Exotic species*). * denotes a non-pollutant.

Designated Use	Use Assessment	Alert
Aquatic Life	**Impaired**	
Non-native species (*Myriophyllum heterophyllum, Cabomba caroliniana*) have been observed in Massapoag Lake. **Cause(s) of Impairment:** Non-Native Aquatic Plants **Source(s) of Impairment:** Introduction of Non-native Organisms (Accidental or Intentional) *Data Sources: 11, 12*		
Fish Consumption	**Impaired**	
MA DPH has issued a fish consumption advisory for the Massapoag Lake due to mercury contamination. Children younger than 12 years of age, pregnant women, women of childbearing age who may become pregnant, and nursing mothers should not eat any Largemouth Bass fish from this water body. The general public should limit consumption of Largemouth Bass fish to two meals per month (See Special Note 1 and 2 and 2). **Cause(s) of Impairment:** Mercury in Fish Tissue **Source(s) of Impairment:** Atmospheric Deposition - Toxics, Source Unknown *Data Sources: 9*		
Primary Contact	**Not Assessed**	
Insufficient data were available to assess the Primary Contact Use.		
Secondary Contact	**Not Assessed**	
Insufficient data were available to assess the Secondary Contact Use.		
Aesthetics	**Not Assessed**	
Insufficient data were available to assess the Aesthetic Use.		

NEPONSET RESERVOIR (SEGMENT MA73034)

Segment Description: Foxborough
Segment Length: 312 acres
Segment Classification: B\WWF
This segment is on the 2008 Integrated List of Waters in Category 5 - Waters Requiring a TMDL (Noxious aquatic plants, Turbidity, (Exotic species*)). * denotes a non-pollutant.

Designated Use	Use Assessment	Alert
Aquatic Life	**Impaired**	
A non-native species (*Cabomba caroliniana*) has been observed in Neponset Reservoir. **Cause(s) of Impairment:** Non-Native Aquatic Plants **Source(s) of Impairment:** Introduction of Non-native Organisms (Accidental or Intentional) *Data Sources: 11*		
Fish Consumption	**Not Assessed**	
This waterbody does not have a site-specific fish consumption advisory. All applicable statewide fish consumption advisories issued by MA DPH due to mercury contamination apply to this waterbody (See Special Note 2).		
Primary Contact	**Not Assessed**	
Insufficient data were available to assess the Primary Contact Use.		
Secondary Contact	**Not Assessed**	
Insufficient data were available to assess the Secondary Contact Use.		
Aesthetics	**Not Assessed**	
Insufficient data were available to assess the Aesthetic Use.		

PINEWOOD POND (SEGMENT MA73039)

Segment Description: Stoughton
Segment Length: 25 acres
Segment Classification: B
This segment is on the 2008 Integrated List of Waters in Category 4c - Impairment Not Caused by a Pollutant (Exotic species*). * denotes a non-pollutant.

Designated Use	Use Assessment	Alert
Aquatic Life	**Impaired**	
A non-native species (*Myriophyllum heterophyllum*) has been observed in Pinewood Pond. **Cause(s) of Impairment:** Non-Native Aquatic Plants **Source(s) of Impairment:** Introduction of Non-native Organisms (Accidental or Intentional) *Data Sources: 11*		
Fish Consumption	**Not Assessed**	
This waterbody does not have a site-specific fish consumption advisory. All applicable statewide fish consumption advisories issued by MA DPH due to mercury contamination apply to this waterbody (See Special Note 2).		
Primary Contact	**Not Assessed**	
Insufficient data were available to assess the Primary Contact Use.		
Secondary Contact	**Not Assessed**	
Insufficient data were available to assess the Secondary Contact Use.		
Aesthetics	**Not Assessed**	
Insufficient data were available to assess the Aesthetic Use.		

FARRINGTON POND (SEGMENT MA73040)

Segment Description: Stoughton
Segment Length: 3 acres
Segment Classification: B
This segment is on the 2008 Integrated List of Waters in Category 4c - Impairment Not Caused by a Pollutant (Exotic species*). * denotes a non-pollutant.

Designated Use	Use Assessment	Alert
Aquatic Life	**Impaired**	
A non-native species (*Myriophyllum heterophyllum*) has been observed in Farrington Pond. **Cause(s) of Impairment:** Non-Native Aquatic Plants **Source(s) of Impairment:** Introduction of Non-native Organisms (Accidental or Intentional) *Data Sources: 11*		
Fish Consumption	**Not Assessed**	
This waterbody does not have a site-specific fish consumption advisory. All applicable statewide fish consumption advisories issued by MA DPH due to mercury contamination apply to this waterbody (See Special Note 2).		
Primary Contact	**Not Assessed**	
Insufficient data were available to assess the Primary Contact Use.		
Secondary Contact	**Not Assessed**	
Insufficient data were available to assess the Secondary Contact Use.		
Aesthetics	**Not Assessed**	
Insufficient data were available to assess the Aesthetic Use.		

PONKAPOAG POND (SEGMENT MA73043)

Segment Description: Canton/Randolph
Segment Length: 214 acres
Segment Classification: B
This segment is on the 2008 Integrated List of Waters in Category 4c - Impairment Not Caused by a Pollutant (Exotic species*). * denotes a non-pollutant.

Designated Use	Use Assessment	Alert
Aquatic Life	**Impaired**	
Non-native species (*Myriophyllum heterophyllum, Myriophyllum spicatum*) have been observed in Ponkapoag Lake. **Cause(s) of Impairment:** Non-Native Aquatic Plants, Myriophyllum spicatum **Source(s) of Impairment:** Introduction of Non-native Organisms (Accidental or Intentional) *Data Sources: 11*		
Fish Consumption	**Not Assessed**	
This waterbody does not have a site-specific fish consumption advisory. All applicable statewide fish consumption advisories issued by MA DPH due to mercury contamination apply to this waterbody (See Special Note 2).		
Primary Contact	**Not Assessed**	
Insufficient data were available to assess the Primary Contact Use.		
Secondary Contact	**Not Assessed**	
Insufficient data were available to assess the Secondary Contact Use.		
Aesthetics	**Not Assessed**	
Insufficient data were available to assess the Aesthetic Use.		

RESERVOIR POND (SEGMENT MA73048)

Segment Description: Canton
Segment Length: 251 acres
Segment Classification: B
This segment is on the 2008 Integrated List of Waters in Category 4c - Impairment Not Caused by a Pollutant (Exotic species*). * denotes a non-pollutant.

Designated Use	Use Assessment	Alert
Aquatic Life	**Impaired**	
Non-native species (*Myriophyllum heterophyllum, Cabomba caroliniana*) have been observed in Reservoir Pond. **Cause(s) of Impairment:** Non-Native Aquatic Plants **Source(s) of Impairment:** Introduction of Non-native Organisms (Accidental or Intentional) *Data Sources: 11, 12*		
Fish Consumption	**Not Assessed**	
This waterbody does not have a site-specific fish consumption advisory. All applicable statewide fish consumption advisories issued by MA DPH due to mercury contamination apply to this waterbody (See Special Note 2).		
Primary Contact	**Not Assessed**	
Insufficient data were available to assess the Primary Contact Use.		
Secondary Contact	**Not Assessed**	
Insufficient data were available to assess the Secondary Contact Use.		
Aesthetics	**Not Assessed**	
Insufficient data were available to assess the Aesthetic Use.		

WOODS POND (SEGMENT MA73055)

Segment Description: Stoughton
Segment Length: 14 acres
Segment Classification: B
This segment is on the 2008 Integrated List of Waters in Category 4c - Impairment Not Caused by a Pollutant (Exotic species*). * denotes a non-pollutant.

Designated Use	Use Assessment	Alert
Aquatic Life	**Impaired**	
A non-native species (*Myriophyllum heterophyllum*) has been observed in Woods Pond. **Cause(s) of Impairment:** Non-Native Aquatic Plants **Source(s) of Impairment:** Introduction of Non-native Organisms (Accidental or Intentional) *Data Sources: 11*		
Fish Consumption	**Not Assessed**	
This waterbody does not have a site-specific fish consumption advisory. All applicable statewide fish consumption advisories issued by MA DPH due to mercury contamination apply to this waterbody (See Special Note 2).		
Primary Contact	**Not Assessed**	
Insufficient data were available to assess the Primary Contact Use.		
Secondary Contact	**Not Assessed**	
Insufficient data were available to assess the Secondary Contact Use.		
Aesthetics	**Not Assessed**	
Insufficient data were available to assess the Aesthetic Use.		

TOWN POND (SEGMENT MA73056)

Segment Description: Stoughton
Segment Length: 8 acres
Segment Classification: B
This segment is on the 2008 Integrated List of Waters in Category 4c - Impairment Not Caused by a Pollutant (Exotic species*). * denotes a non-pollutant.

Designated Use	Use Assessment	Alert
Aquatic Life	**Impaired**	
A non-native species (*Cabomba caroliniana*) has been observed in Town Pond. **Cause(s) of Impairment:** Non-Native Aquatic Plants **Source(s) of Impairment:** Introduction of Non-native Organisms (Accidental or Intentional) *Data Sources: 11*		
Fish Consumption	**Not Assessed**	
This waterbody does not have a site-specific fish consumption advisory. All applicable statewide fish consumption advisories issued by MA DPH due to mercury contamination apply to this waterbody (See Special Note 2).		
Primary Contact	**Not Assessed**	
Insufficient data were available to assess the Primary Contact Use.		
Secondary Contact	**Not Assessed**	
Insufficient data were available to assess the Secondary Contact Use.		
Aesthetics	**Not Assessed**	
Insufficient data were available to assess the Aesthetic Use.		

TURNER POND (SEGMENT MA73058)

Segment Description: Walpole
Segment Length: 18 acres
Segment Classification: B
This segment is on the 2008 Integrated List of Waters in Category 4c - Impairment Not Caused by a Pollutant (Exotic species*). * denotes a non-pollutant.

Designated Use	Use Assessment	Alert
Aquatic Life	**Impaired**	
A non-native species (*Cabomba caroliniana*) has been observed in Turners Pond. **Cause(s) of Impairment:** Non-Native Aquatic Plants **Source(s) of Impairment:** Introduction of Non-native Organisms (Accidental or Intentional) *Data Sources: 11*		
Fish Consumption	**Not Assessed**	
This waterbody does not have a site-specific fish consumption advisory. All applicable statewide fish consumption advisories issued by MA DPH due to mercury contamination apply to this waterbody (See Special Note 2).		
Primary Contact	**Support**	
NepRWA collected E. coli samples at one site in 2007 and 2008. The annual geometric means of the samples collected at the site during the primary contact season were 6 CFU/100ml and 29 CFU/100ml. These results do not violate the geometric mean criterion (126 CFU/100ml) for E. coli. *Data Sources: 20*		
Secondary Contact	**Support**	
NepRWA collected E. coli samples at one site in 2007 and 2008. The annual geometric means of the samples collected at the site were 6 CFU/100ml and 29 CFU/100ml. These results do not violate the geometric mean criterion (630 CFU/100ml) for E. coli. *Data Sources: 20*		
Aesthetics	**Not Assessed**	
Insufficient data were available to assess the Aesthetic Use.		

WILLET POND (SEGMENT MA73062)

Segment Description: Walpole/Westwood/Norwood (includes unnamed tributary formerly reported as MA73-13)
Segment Length: 205 acres
Segment Classification: B
This segment is on the 2008 Integrated List of Waters in Category 4a-TMDL is Completed (Metals [12/20/2007NEHgTMDL]).

Designated Use	Use Assessment	Alert
Aquatic Life	**Not Assessed**	
Insufficient data were available to assess the Aquatic Life Use.		
Fish Consumption	**Impaired**	
MA DPH has issued a fish consumption advisory for the Massapoag Lake due to mercury contamination. Children younger than 12 years of age, pregnant women, women of childbearing age who may become pregnant, and nursing mothers should not eat any Largemouth Bass fish from this water body. The general public should limit consumption of Largemouth Bass fish to two meals per month (See Special Note 1 and 2). **Cause(s) of Impairment:** Mercury in Fish Tissue **Source(s) of Impairment:** Atmospheric Deposition - Toxics, Source Unknown *Data Sources: 9*		
Primary Contact	**Support**	
NepRWA collected E. coli samples at one site in 2008. The annual geometric mean of the samples collected at the site during the primary contact season was 14 CFU/100ml. These results do not violate the geometric mean criterion (126 CFU/100ml) for E. coli. *Data Sources: 20*		
Secondary Contact	**Support**	
NepRWA collected E. coli samples at one site in 2008. The annual geometric mean of the samples collected at the site was 14 CFU/100ml. These results do not violate the geometric mean criterion (630 CFU/100ml) for E. coli. *Data Sources: 20*		
Aesthetics	**Not Assessed**	
Insufficient data were available to assess the Aesthetic Use.		

BILLINGS STREET/EAST STREET POND (SEGMENT MA73065)

Segment Description: Sharon
Segment Length: 2 acres
Segment Classification: B
This segment is on the 2008 Integrated List of Waters in Category 4c - Impairment Not Caused by a Pollutant (Exotic species*). * denotes a non-pollutant.

Designated Use	Use Assessment	Alert
Aquatic Life	**Impaired**	
A non-native species (*Myriophyllum heterophyllum*) has been observed in Billings Street/East Street Pond. **Cause(s) of Impairment:** Non-Native Aquatic Plants **Source(s) of Impairment:** Introduction of Non-native Organisms (Accidental or Intentional) *Data Sources: 11*		
Fish Consumption	**Not Assessed**	
This waterbody does not have a site-specific fish consumption advisory. All applicable statewide fish consumption advisories issued by MA DPH due to mercury contamination apply to this waterbody (See Special Note 2).		
Primary Contact	**Not Assessed**	
Insufficient data were available to assess the Primary Contact Use.		
Secondary Contact	**Not Assessed**	
Insufficient data were available to assess the Secondary Contact Use.		
Aesthetics	**Not Assessed**	
Insufficient data were available to assess the Aesthetic Use.		

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APPENDIX A - ASSESSMENT METHODOLOGY
GUIDELINES FOR EVALUATING DESIGNATED USE STATUS OF MASSACHUSETTS SURFACE WATERS - 2009

WATER QUALITY CLASSIFICATION

The Massachusetts Surface Water Quality Standards (SWQS) designate the most sensitive uses for which the surface waters of the Commonwealth shall be enhanced, maintained and protected; prescribe minimum water quality criteria required to sustain the designated uses; and include provisions for the prohibition of discharges (MassDEP 2006). These regulations should undergo public review every three years. The surface waters are segmented and each segment is assigned to one of the six classes described below. Each class is identified by the most sensitive and, therefore, governing water uses to be achieved and protected. Surface waters may be suitable for other beneficial uses, but shall be regulated by the Department of Environmental Protection to protect and enhance the designated uses.

Inland Water Classes

- *CLASS A* - These waters include waters designated as a source of public water supply and their tributaries. They are designated as excellent habitat for fish, other aquatic life and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation, even if not allowed. These waters shall have excellent aesthetic value. These waters are protected as Outstanding Resource Waters.
- *CLASS B* - These waters are designated as a habitat for fish, other aquatic life, and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation. Where designated in 314 CMR 4.06, they shall be suitable as a source of public water supply with appropriate treatment ("Treated Water Supply"). Class B waters shall be suitable for irrigation and other agricultural uses and for compatible industrial cooling and process uses. These waters shall have consistently good aesthetic value.
- *CLASS C* - These waters are designated as a habitat for fish, other aquatic life and wildlife, including for their reproduction, migration, growth and other critical functions, and for secondary contact recreation. These waters shall be suitable for the irrigation of crops used for consumption after cooking and for compatible industrial cooling and process uses. These waters shall have good aesthetic value.

Coastal And Marine Classes

- *CLASS SA* - These waters are designated as an excellent habitat for fish, other aquatic life and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation. In certain waters, excellent habitat for fish, other aquatic life and wildlife may include, but is not limited to, sea grass. Where designated in the tables to 314 CMR 4.00 for shellfishing, these waters shall be suitable for shellfish harvesting without depuration (Approved and Conditionally Approved Shellfish Areas). These waters shall have excellent aesthetic value.
- *CLASS SB* - These waters are designated as a habitat for fish, other aquatic life and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation. In certain waters, habitat for fish, other aquatic life and wildlife may include, but is not limited to, seagrass. Where designated in the tables to 314 CMR 4.00 for shellfishing, these waters shall be suitable for shellfish harvesting with depuration (Restricted and Conditionally Restricted Shellfish Areas). These waters shall have consistently good aesthetic value.
- *CLASS SC* - These waters are designated as a habitat for fish, other aquatic life and wildlife, including for their reproduction, migration, growth and other critical functions, and for secondary contact recreation. They shall also be suitable for certain industrial cooling and process uses. These waters shall have good aesthetic value.

The Clean Water Act (CWA), Section 305(b), water quality reporting process is an essential aspect of the Nation's water pollution control effort. It is the principal means by which EPA, Congress, and the public evaluate existing water quality, assess progress made in maintaining and restoring water quality, and determine the extent of remaining problems. By this process, states report on waterbodies within the context of meeting their designated uses. These uses include: *Aquatic Life, Fish Consumption, Drinking Water, Primary Contact Recreation, Secondary Contact Recreation, Shellfish Harvesting* and *Aesthetics*. Two subclasses of Aquatic Life are also designated in the Massachusetts Surface Water Quality Standards (SWQS): Cold Water Fishery – waters capable of sustaining a year-round population of cold water aquatic life, such as trout – and Warm Water Fishery – waters that are not capable of sustaining a year-round population of cold water aquatic life (MassDEP 2006).

The SWQS, summarized in Table A1, prescribe minimum water quality criteria to sustain the designated uses. Furthermore, these standards describe the hydrological conditions at which water quality criteria must be applied (MassDEP 2006). In rivers the lowest flow conditions at and above which aquatic life criteria must be applied are the lowest mean flow for seven consecutive days to be expected once in ten years (7Q10). In waters where flows are regulated by dams or similar structures the lowest flow conditions at which aquatic life criteria must be applied are the flows equal to or exceeded 99% of the time on a yearly basis or another equivalent flow that has been agreed upon (see Mass DEP 2006 for more detail). In coastal and marine waters and for lakes the Massachusetts Department of Environmental Protection (MassDEP) will determine on a case-by-case basis the most severe hydrological condition for which the aquatic life criteria must be applied.

The availability of appropriate and reliable scientific data and technical information is fundamental to the 305(b) reporting process. It is EPA policy (EPA Order 5360.1 CHG 1) that any individual or group performing work for or on behalf of EPA establish a quality system to support the development, review, approval, implementation, and assessment of data collection operations. To this end MassDEP describes its Quality System in an EPA-approved Quality Management Plan to ensure that environmental data collected or compiled by the MassDEP are of known and documented quality and are suitable for their intended use. For external sources of information, MassDEP requires the following: 1) an appropriate Quality Assurance Project Plan (QAPP) including a laboratory Quality Assurance /Quality Control (QA/QC) plan; 2) use of a state certified lab (or as otherwise approved by DEP for a particular analysis); and 3) sample data, QA/QC and other pertinent sample handling information documented in a citable report. This information will be reviewed by MassDEP to determine its validity and usability to assess water use support. Data use could be modified or rejected due to poor or undocumented QAPP implementation, lack of project documentation, incomplete reporting of data or information, and/or project monitoring objectives unsuitable for MassDEP assessment purposes.

EPA provides guidelines to states for making their use support determinations (EPA 1997 and 2002, Grubbs and Wayland III 2000 and Wayland III 2001). The determination of whether or not a waterbody supports each of its designated uses is a function of the type(s), quality and quantity of available current information. Although data/information older than five years are usually considered “historical” and used for descriptive purposes they can be utilized in the use support determination provided they are known to reflect the current conditions. While the water quality standards (Table A1) prescribe minimum water quality criteria to sustain the designated uses, numerical criteria are not available for every indicator of pollution. Best available guidance from available literature may be applied in lieu of actual numerical criteria (e.g., freshwater sediment data may be compared to *Guidelines for the Protection and Management of Aquatic Sediment Quality in Ontario* 1993 by D. Persaud, R. Jaagumagi and A. Hayton). Excursions from criteria due solely to “naturally occurring” conditions (e.g., low pH in some areas) do not constitute violations of the SWQS.

Each designated use within a given segment is individually assessed as ***support*** or ***impaired***. When too little current data/information exist or no reliable data are available, the use is ***not assessed***. In this report, however, if there is some indication that water quality impairment may exist, and it is not “naturally occurring”, the use is identified with an “Alert Status”. It is important to note that not all waters are assessed. Some ponds, rivers, and estuaries have never been assessed; the status of their designated uses has never been reported to EPA in the Commonwealth’s 305(b) Report or the Integrated List of Waters nor is information on these waters maintained in the waterbody system database (WBS) or the new assessment database (ADB). These waterbodies are considered ***not assessed other waters.***

Table A1. Summary of Massachusetts Surface Water Quality Standards (MassDEP 2006, MA DPH 2002, FDA 2003).

Dissolved Oxygen	Class A Cold Water Fishery (CWF) and Class B Cold Water Fishery (BCWF) and Class SA: ≥6.0 mg/L Class A and Class B Warm Water Fishery (BWWF) and Class SB: ≥5.0 mg/L Class C: Not <5.0 mg/L at least 16 hours of any 24-hour period and not <3.0 mg/L at any time. Class SC: Not <5.0 mg/L at least 16 hours of any 24-hour period and not <4.0 mg/L anytime. For all classes, where natural background conditions are lower than the criteria stated for each class, DO shall not be less than natural background conditions. Natural seasonal and daily variations that are necessary to protect existing and designated uses shall also be maintained.
Temperature	Class A CWF: ≤68°F (20°C) based on the mean of the daily maximum temperature over a seven day period in cold water fisheries, unless naturally occurring and ΔT due to a discharge ≤1.5°F (0.8°C). Class A WWF: ≤83°F (28.3°C) and ΔT due to a discharge ≤1.5°F (0.8°C). Class BCWF: ≤68°F (20°C) based on the mean of the daily maximum temperature over a seven day period in all cold water fisheries, unless naturally occurring, and ΔT due to a discharge ≤Δ3°F (1.7°C)

Table A1. Summary of Massachusetts Surface Water Quality Standards (MassDEP 2006, MA DPH 2002, FDA 2003).

	Class BWWF: ≤83°F (28.3°C) and ΔT due to a discharge ≤5°F (2.8°C) in rivers (based on the minimum expected flow for the month) and ΔT due to a discharge ≤3°F (1.7°C) in the epilimnion (based on the monthly average of maximum daily temperatures) in lakes, Class C and Class SC: ≤85°F (29.4°C) and ΔT due to a discharge ≤5°F (2.8°C) Class SA: ≤85°F (29.4°C) nor a maximum daily mean of 80°F (26. 7°C) and ΔT due to a discharge ≤1.5°F (0.8°C) Class SB: ≤85°F (29.4°C) nor a maximum daily mean of 80°F (26. 7°C) and Δ T due to a discharge ≤1.5°F (0.8°C) between July and September and ≤ 4.0°F (2.2°C) between October and June. *For all classes, natural seasonal and daily variations that are necessary to protect existing and designated uses shall be maintained. There shall be no changes from natural background conditions that would impair any uses assigned to each class, including those conditions necessary to protect normal species diversity, successful migration, reproductive functions or growth of aquatic organisms.* For CWF waters, where a reproducing cold water aquatic community exists at a naturally higher temperature, the temperature necessary to protect the community shall not be exceeded and natural daily and seasonal temperature fluctuations necessary to protect the community shall be maintained. Class B, C, SA, SB, and SC: See MassDEP 2006 for language specific to alternative effluent limitations relating to thermal discharges and cooling water intake structures.
pH	Class A, Class BCWF and Class BWWF: 6.5 - 8.3 SU and Δ0.5 outside the natural background range. Class C: 6.5 - 9.0 SU and Δ1.0 outside the natural background range. Class SA and Class SB: 6.5 - 8.5 SU and Δ0.2 SU outside the natural background range. Class SC: 6.5 - 9.0 SU and Δ0.5 SU outside the natural background range. There shall be no change from natural background conditions that would impair any use assigned to each class.
Solids	All Classes: *These waters shall be free from floating, suspended, and settleable solids in concentrations or combinations that would impair any use assigned to each class, that would cause aesthetically objectionable conditions, or that would impair the benthic biota or degrade the chemical composition of the bottom.*
Color and Turbidity	All Classes: *These waters shall be free from color and turbidity in concentrations or combinations that are aesthetically objectionable or would impair any use.*
Oil and Grease	Class A and Class SA: *Waters shall be free from oil and grease, petrochemicals and other volatile or synthetic organic pollutants.* Class SA: *Waters shall be free from oil and grease and petrochemicals.* Class B, Class C, Class SB and Class SC: *Waters shall be free from oil, grease, and petrochemicals that produce a visible film on the surface of the water, impart an oily taste to the water or an oily or other undesirable taste to the edible portions of aquatic life, coat the banks or bottom of the water course, or are deleterious or become toxic to aquatic life.*
Taste and Odor	Class A and Class SA: *None other than of natural origin.* Class B, Class C, Class SB and Class SC: *None in such concentrations or combinations that are aesthetically objectionable, that would impair any use assigned to each class, or that would cause tainting or undesirable flavors in the edible portions of aquatic life.*
Aesthetics	All Classes: *All surface waters shall be free from pollutants in concentrations or combinations that settle to form objectionable deposits; float as debris, scum or other matter to form nuisances; produce objectionable odor, color, taste or turbidity; or produce undesirable or nuisance species of aquatic life.*
Toxic Pollutants	All Classes: *All surface waters shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife. For pollutants not otherwise listed in 314 CMR 4.00, the National Recommended Water Quality Criteria: 2002, EPA 822-R-02-047, November 2002 published by EPA pursuant to Section 304(a) of the Federal Water Pollution Control Act, are the allowable receiving water concentrations for the affected waters, unless the Department either establishes a site specific criterion or determines that naturally occurring background concentrations are higher. The Department shall use the water quality criteria for the protection of aquatic life expressed in terms of the dissolved fraction of metals when EPA's 304(a) recommended criteria provide for use of the dissolved fraction* (see Mass DEP 2006 for more detail regarding permit limits, conversion factors, site specific criteria).
Nutrients	*Unless naturally occurring, all surface waters shall be free from nutrients in concentrations that would cause or contribute to impairment of existing or designated uses and shall not exceed the site specific criteria developed in a TMDL or as otherwise established by the Department pursuant to these Standards.*
Bacteria (MassDEP 2006	Class A: *At water supply intakes in unfiltered public water supplies:* either fecal coliform shall not exceed 20

Table A1. Summary of Massachusetts Surface Water Quality Standards (MassDEP 2006, MA DPH 2002, FDA 2003).

and MA DPH 2002) Class A criteria apply to the *Drinking Water Use*. Class B and SB criteria apply to *Primary Contact Recreation Use* while Class C and SC criteria apply to *Secondary Contact Recreation Use*.	organisms/100 ml in all samples taken in any six month period, or total coliform shall not exceed 100 organisms/ 100 ml in 90% of the samples taken in any six month period. If both total and fecal coliform are measured, then only the fecal coliform criterion must be met. <u>Class A other waters, Class B</u>: Where *E.* coli is the chosen indicator at public bathing beaches as defined by MA DPH: The geometric mean of the five most recent *E. coli* samples taken within during the same bathing season shall not exceed 126 colonies/ 100 ml and no single sample taken during the bathing season shall exceed 235 colonies/ 100 ml (these criteria may be applied on a seasonal basis at the Department's discretion). Where Enterococci are the chosen indicators at public bathing beaches*:* The geometric mean of the five most recent samples taken during the same bathing season shall not exceed 33 colonies /100 ml and no single *Enterococci* sample taken during the bathing season shall exceed 61 colonies /100 ml. For other waters and, during the non bathing season, for waters at public bathing beaches: The geometric mean of all *E. coli* samples taken within the most recent six months shall not exceed 126 colonies/ 100 ml typically based on a minimum of five samples and no single sample shall exceed 235 colonies/ 100 ml. These criteria may be applied on a seasonal basis at the Department's discretion. The geometric mean of all *Enterococci* samples taken within the most recent six months shall not exceed 33 colonies/ 100 ml typically based on a minimum of five samples and no single sample shall exceed 61 colonies/ 100 ml. These criteria may be applied on a seasonal basis at the Department's discretion. <u>Class C:</u> *The geometric mean of all E. coli samples taken within the most recent six months shall not exceed 630 E. coli/ 100 ml, typically based on a minimum of five samples and 10% of such samples shall not exceed 1260 E. coli/ 100 ml.* This criterion may be applied on a seasonal basis at the discretion of the Department. <u>Class SA:</u> Waters designated for shellfishing: *Fecal coliform bacteria shall not exceed a geometric mean (Most Probable Number (MPN) method) of 14 organisms/100 ml, nor shall more than 10% of the samples exceed an MPN of 28 organisms/100 ml, or other values of equivalent protection based on sampling and analytical methods used by the Massachusetts Division of Marine Fisheries and approved by the National Shellfish Sanitation Program in the latest revision of the Guide for the Control of Molluscan Shellfish Areas (more stringent regulations may apply, see 314 CMR 4.06(1)(d)(5)).* <u>Class SB:</u> Waters designated for shellfishing: *Fecal coliform median or geometric mean MPN shall not exceed 88 organisms/100 ml, nor shall more than 10% of the samples exceed an MPN of 260 organisms/100 ml or other values of equivalent protection based on sampling and analytical methods used by the Massachusetts Division of Marine Fisheries and approved by the National Shellfish Sanitation Program in the latest revision of the Guide for the Control of Molluscan Shellfish Areas (more stringent regulations may apply, see 314 CMR 4.06(1)(d)(5)).* <u>Class SA and Class SB</u>: At public bathing beaches, as defined by MA DPH: No single *Enterococci* sample taken during the bathing season shall exceed 104 colonies /100 ml and the geometric mean of the five most recent *Enterococci* samples taken within the same bathing season shall not exceed 35 colonies /100 ml. At public bathing beaches during the non-bathing season and in non bathing beach waters: No single *Enterococci* sample shall exceed 104 colonies/ 100 ml and the geometric mean of all samples taken within the most recent six months, typically a minimum of five samples, shall not exceed 35 colonies/ 100 ml. These criteria may be applied on a seasonal basis at the discretion of the Department). <u>Class SC:</u> *The geometric mean of all Enterococci samples taken within the most recent six months shall not exceed 175 colonies/ 100 ml, typically based on the five most recent samples, and 10% of such samples shall not exceed 350 colonies/ 100 ml. This criterion may be applied on a seasonal basis at the discretion of the Department.*

Note: *Italics are direct quotations.* Δ criterion (referring to a change from natural background conditions) is applied to the effects of a permitted discharge.

DESIGNATED USES

The Massachusetts Surface Water Quality Standards designate the most sensitive uses for which the surface waters of the Commonwealth shall be enhanced, maintained and protected. Each of these uses is briefly described below (MassDEP 2006):

- *AQUATIC LIFE* - suitable habitat for sustaining a native, naturally diverse, community of aquatic flora and fauna, including, but not limited to, wildlife and threatened and endangered species and for their reproduction, migration, growth and other critical functions. Two subclasses of aquatic life are also designated in the standards for freshwater bodies: *Cold Water Fishery* - capable of sustaining a year-round population of cold water aquatic life, such as trout; *Warm Water Fishery* - waters that are not capable of sustaining a year-round population of cold water aquatic life. In certain waters, excellent habitat for fish, other aquatic life and wildlife may include, but is not limited to, seagrass.
- *FISH CONSUMPTION* - pollutants shall not result in unacceptable concentrations in edible portions of marketable fish or for the recreational use of fish, other aquatic life or wildlife for human consumption.
- *DRINKING WATER* - used to denote those waters used as a source of public drinking water. They may be subject to more stringent regulation in accordance with the Massachusetts Drinking Water Regulations (310 CMR 22.00). These waters are designated for protection as Outstanding Resource Waters under 314 CMR 4.04(3).
- *SHELLFISH HARVESTING* (in SA and SB segments) – Class SA waters where designated shall be suitable for shellfish harvesting without depuration (Approved and Conditionally Approved Shellfish Areas); Class SB waters where designated shall be suitable for shellfish harvesting with depuration (Restricted and Conditionally Restricted Shellfish Areas).
- *PRIMARY CONTACT RECREATION* - suitable for any recreation or other water use in which there is prolonged and intimate contact with the water with a significant risk of ingestion of water. These include, but are not limited to, wading, swimming, diving, surfing and water skiing.
- *SECONDARY CONTACT RECREATION* - suitable for any recreation or other water use in which contact with the water is either incidental or accidental. These include, but are not limited to, fishing, including human consumption of fish, boating and limited contact incident to shoreline activities. Where designated, secondary contact recreation also includes shellfishing, including human consumption of shellfish. Human consumption of fish and shellfish are assessed as the *Fish Consumption* and *Shellfish Harvesting* uses, respectively.
- *AESTHETICS* - all surface waters shall be free from pollutants in concentrations or combinations that settle to form objectionable deposits; float as debris, scum or other matter to form nuisances; produce objectionable odor, color, taste or turbidity; or produce undesirable or nuisance species of aquatic life.
- *AGRICULTURAL AND INDUSTRIAL* - suitable for irrigation or other agricultural process water and for compatible industrial cooling and process water.

The guidance used to assess the *Aquatic Life, Fish Consumption, Drinking Water, Shellfish Harvesting, Primary* and *Secondary Contact Recreation* and *Aesthetics* uses follows.

Note: Waterbodies affected by Combined Sewer Overflow (CSO) discharges are qualified in the standards, however, unless a variance has been granted and states otherwise, excursions from criteria are not allowed during storm events (designated uses are still applicable).

AQUATIC LIFE USE

This use is suitable for sustaining a native, naturally diverse, community of aquatic flora and fauna, including, but not limited to, wildlife and threatened and endangered species and for their reproduction, migration, growth and other critical functions. The results of biological (and habitat), toxicological, and chemical data are integrated to assess this use. The nature, frequency, and precision of the MassDEP's data collection techniques dictate that a weight of evidence be used to make the assessment, with biosurvey results used as the final arbiter of borderline cases. The following chart provides an overview of the guidance used to assess the status (support or impaired) of the *Aquatic Life Use.*

Variable	***Support*** Data available clearly indicates support or minor modification of the biological community. Excursions from chemical criteria (Table A1) not frequent or prolonged and may be tolerated if the biosurvey results demonstrate support.	***Impaired*** There are frequent or severe violations of chemical criteria, presence of acute toxicity, or a moderate or severe modification of the biological community.
BIOLOGY		
Rapid Bioassessment Protocol (RBP) III*	Non/Slightly impacted	Moderately or Severely Impacted
Fish Community	Best Professional Judgment (BPJ)	BPJ
Habitat and Flow	BPJ	Dewatered streambed due to artificial regulation or channel alteration, BPJ
Eelgrass Bed Habitat (Howes *et al.* 2003, Costello 2003)	Stable (No/minimal loss), BPJ	Loss/decline, BPJ
Non-native species	BPJ	Non-native species present, BPJ
Plankton/Periphyton	No/infrequent algal blooms	Frequent and/or prolonged algal blooms
TOXICITY TESTS**		
Water Column/Ambient	≥75% survival either 48 hr or 7-day exposure	<75% survival either 48 hr or 7-day exposure
Sediment	≥75% survival	<75% survival
CHEMISTRY-WATER**		
Dissolved oxygen (DO) (MassDEP 2006, EPA 1997)	Infrequent excursion from criteria (Table A1), BPJ (minimum of three samples representing critical period)	Frequent and/or prolonged or severe excursion from criteria [river and shallow lakes - exceedances >10% of representative measurements; deep lakes (with hypolimnion) - exceedances in the hypolimnetic area >10% of the surface area during maximum oxygen depletion].
pH (MassDEP 2006, EPA 1999a)	Infrequent excursion from criteria (Table A1)	Criteria exceeded >10% of measurements.
Temperature **(**MassDEP 2006,EPA 1997) [Note: typically the analysis of this variable is applicable to a summer index period ranging anywhere from mid-June through early September.]	Infrequent excursion from criteria (Table A1)	Small datasets: Criteria exceeded >10% of measurements. Deployed probe (long term) datasets: CWF: excursion based on mean of the daily maximum temperatures over a 7-day period. WWF: BPJ (e.g., >10% days in a 30 day period or three consecutive days in a 30 day period exceed 28.3℃, or 7-day average of daily maximum temperatures exceeds 28.3℃)
Toxic Pollutants (MassDEP 2006, EPA 1999a) Ammonia-N (MassDEP 2006, EPA 1999b) Chlorine (MassDEP 2006, EPA 1999a)	Infrequent excursion from criteria (Table A1) Ammonia is pH and temperature dependent[1] 0.011 mg/L (freshwater) or 0.0075 mg/L (saltwater) total residual chlorine (TRC)[2]	Frequent and/or prolonged excursion from criteria (exceeded >10% of measurements).

AQUATIC LIFE USE (CONTINUED)

CHEMISTRY-SEDIMENT**		
Toxic Pollutants (Persaud *et al.* 1993)	Concentrations ≤ Low Effect Level (L-EL), BPJ	Concentrations ≥ Severe Effect Level (S-EL)[3], BPJ
CHEMISTRY-TISSUE		
PCB – whole fish (Coles 1998)	≤500 µg/kg wet weight	BPJ
DDT (Environment Canada 1999)	≤14.0 µg/kg wet weight	BPJ
PCB in aquatic tissue (Environment Canada 1999)	≤0.79 ng TEQ/kg wet weight	BPJ

*RBP II analysis may be considered for assessment decision on a case-by-case basis, **For identification of impairment, one or more of the following variables may be used to identify possible causes/sources of impairment: NPDES facility compliance with whole effluent toxicity test and other limits, turbidity and suspended solids data, nutrient (nitrogen and phosphorus) data for water column/sediments. [1] Saltwater is temperature dependent only. [2] The minimum quantification level for TRC is 0.05 mg/L. [3]For the purpose of this report, the S-EL for total polychlorinated biphenyl compounds (PCB) in sediment (which varies with total organic carbon (TOC) content) with 1% TOC is 5.3 ppm while a sediment sample with 10% TOC is 53 ppm.

Note: National Academy of Sciences/National Academy of Engineering (NAS/NAE) guideline for maximum organochlorine concentrations (i.e., total PCB) in fish tissue for the protection of fish-eating wildlife is 500µg/kg wet weight (ppb, not lipid-normalized). PCB data (tissue) in this report are presented in µg/kg wet weight (ppb) and are not lipid-normalized to allow for direct comparison to the NAS/NAE guideline.

FISH CONSUMPTION USE

Pollutants shall not result in unacceptable concentrations in edible portions of marketable fish or for the recreational use of fish, other aquatic life or wildlife for human consumption. The assessment of this use is made using the most recent Fish Consumption Advisories issued by the Massachusetts Executive Office of Health and Human Services, Department of Public Health (MA DPH), Bureau of Environmental Health Assessment (MA DPH 2009a). The MA DPH identifies waterbodies where elevated levels of a specified contaminant in edible portions of freshwater species pose a health risk for human consumption. Hence, the *Fish Consumption Use* is assessed as impaired in these waters.

In July 2001 MA DPH issued consumer advisories on fish consumption due to mercury contamination (MA DPH 2001). Their most recent news release on this issue in June 2009 recommends the following (MA DPH 2009b):

'Fish Consumption Advisory for Marine and Fresh Water Bodies

Fish is good for you and your family. It is a good source of protein and it is low in fat. It may also protect you against heart disease. A varied diet, including safe fish, will lead to good nutrition and better health. If you may become pregnant or are pregnant or nursing, you and your children under 12 years old may safely eat 12 ounces (about 2 meals) per week of fish or shellfish not covered in this advisory. This recommendation includes canned tuna, the consumption of which should be limited to 2 cans per week. Very small children, including toddlers, should eat less. Consumers may wish to choose to eat light tuna rather than white or chunk white tuna, the latter of which may have higher levels of mercury. Otherwise, it is important to follow the Safe Eating Guidelines included in this advisory.'

Safe eating guidelines for pregnant women, women who may become pregnant, nursing mothers and children under 12 years old: **(contaminants of concern in parenthetical as noted by MA DPH and MassDEP)**

Do Not Eat: *Freshwater fish caught in streams, rivers, lakes, and ponds in Massachusetts** (Hg)

Safe To Eat: *Fish that are stocked in streams, rivers, lakes, and ponds in Massachusetts*

Safe To Eat: *Cod, haddock, flounder and pollock in larger amounts*

Do Not Eat: *Lobster from New Bedford Harbor* (PCB)

Do Not Eat: *Swordfish, shark, king mackerel, tilefish, and tuna steak* (Hg)

Do Not Eat: *Bluefish caught off the Massachusetts coast* (PCB)

Do Not Eat: *Lobsters, flounder, soft-shell clams and bivalves from Boston Harbor* (PCB and other contaminants)

NOTE: For assessment purposes Boston Harbor is broadly defined to include all coastal waters that drain into it.

Safe eating guidelines for everyone:

Do Not Eat: *Fish and shellfish from the closed areas of New Bedford Harbor* (PCB)

Do Not Eat: *Lobster tomalley* (PCB)

*More specific consumption advice is available for certain freshwater bodies that have been tested at: http://www.mass.gov/dph/fishadvisories or by calling the Massachusetts Department of Public Health, Bureau of Environmental Health at 617-624-5757.

The following is an overview of EPA's guidance used to assess the status (support or impaired) of the *Fish Consumption Use*. Because of the statewide advisory no waters can be assessed as support for the *Fish Consumption Use*. Therefore, if no site-specific advisory is in place, the *Fish Consumption Use* is not assessed.

Variable	***Support*** No restrictions or bans in effect	***Impaired*** There is a "no consumption" advisory or ban in effect for the general population or a sub-population for one or more fish species or there is a commercial fishing ban in effect.
MA DPH Fish Consumption Advisory List	Not applicable, precluded by statewide advisory (Hg)	Waterbody on MA DPH Fish Consumption Advisory List

Note: MA DPH's statewide advisory does not include fish stocked by the state Division of Fisheries and Wildlife or farm-raised fish sold commercially.

Northeast Regional Mercury TMDL: On 20 December 2007 the U.S. EPA approved the Northeast Regional Mercury Total Maximum Daily Load (TMDL). This TMDL is a Federal Clean Water Act mandated document that identifies pollutant load reductions necessary for regional waterbodies to meet and maintain compliance with state and federal water quality standards. It was prepared by the New England Interstate Water Pollution Control Commission (NEIWPCC) in cooperation with the states of Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont. The TMDL covers inland waterbodies that are impaired primarily due to atmospheric deposition of mercury (Northeast States 2007). The TMDL target for Massachusetts is 0.3 ppm or less of mercury in fish tissue. The plan calls for a 75% reduction of in-region and out of region atmospheric sources by 2010 and a 90% or greater reduction in the future (NEIWPCC 2007). The TMDL will be reassessed in

2010 based on an evaluation of new on-going monitoring and air deposition data. Final targets will be determined at that time.

DRINKING WATER USE

The term *Drinking Water Use* denotes those waters used as a source of public drinking water. These waters may be subject to more stringent regulation in accordance with the Massachusetts Drinking Water Regulations (310 CMR 22.00). They are designated for protection as Outstanding Resource Waters in 314 CMR 4.04(3). MassDEP's Drinking Water Program (DWP) has primacy for implementing the provisions of the federal Safe Drinking Water Act (SDWA). Except for suppliers with surface water sources for which a waiver from filtration has been granted (these systems also monitor surface water quality) all public drinking water supplies are monitored as finished water (tap water). Monitoring includes the major categories of contaminants established in the SDWA: bacteria, volatile and synthetic organic compounds, inorganic compounds and radionuclides. The DWP maintains current drinking supply monitoring data. The suppliers currently report to MassDEP and EPA the status of the supplies on an annual basis in the form of a consumer confidence report (http://yosemite.epa.gov/ogwdw/ccr.nsf/Massachusetts). Below is EPA's guidance to assess the status (support or impaired) of the drinking water use.

Variable	***Support*** No closures or advisories (no contaminants with confirmed exceedances of maximum contaminant levels, conventional treatment is adequate to maintain the supply).	***Impaired*** Has one or more advisories or more than conventional treatment is required or has a contamination-based closure of the water supply.
Drinking Water Program (DWP) Evaluation	See note below	See note below

Note: While this use is not assessed in this report, information on drinking water source protection and finish water quality is available at http://www.mass.gov/dep/water/drinking.htm and from local public water suppliers.

SHELLFISHING USE

This use is assessed using information from the Department of Fish and Game's Division of Marine Fisheries (DMF). A designated shellfish growing area is an area of potential shellfish habitat. Growing areas are managed with respect to shellfish harvest for direct human consumption, and comprise at least one or more classification areas. The classification areas are the management units, and range from being approved to prohibited (described below) with respect to shellfish harvest. Shellfish areas under management closures are *not assessed.* Not enough testing has been done in these areas to determine whether or not they are fit for shellfish harvest, therefore, they are closed for the harvest of shellfish.

Variable	***Support*** SA Waters: Approved[1] SB Waters: Approved[1], Conditionally Approved[2], or Restricted[3]	***Impaired*** SA Waters: Conditionally Approved[2], Restricted[3], Conditionally Restricted[4], or Prohibited[5] SB Waters: Conditionally Restricted[4] or Prohibited[5]
DMF Shellfish Project Classification Area Information (MA DFG 2009)	Reported by DMF	Reported by DMF

NOTE: Designated shellfish growing areas may be viewed using the MassGIS datalayer available from MassGIS at http://www.mass.gov/mgis/dsga.htm. This coverage currently reflects classification areas as of July 1, 2000.

[1] **Approved** - "...open for harvest of shellfish for direct human consumption subject to local rules and regulations..." An approved area is open all the time and closes only due to hurricanes or other major coastwide events.

[2] **Conditionally Approved** - "...subject to intermittent microbiological pollution..." During the time the area is open, it is "...for harvest of shellfish for direct human consumption subject to local rules and regulations…" A conditionally approved area is closed some of the time due to runoff from rainfall or seasonally poor water quality. When open, shellfish harvested are treated as from an approved area.

[3] **Restricted** - area contains a "limited degree of pollution." It is open for "harvest of shellfish with depuration subject to local rules and state regulations" or for the relay of shellfish. A restricted area is used by DMF for the relay of shellfish to a less contaminated area.

[4] **Conditionally Restricted** - "...subject to intermittent microbiological pollution..." During the time area is restricted, it is only open for "the harvest of shellfish with depuration subject to local rules and state regulations." A conditionally restricted area is closed some of the time due to runoff from rainfall or seasonally poor water quality. When open, only soft-shell clams may be harvested by specially licensed diggers (Master/Subordinate Diggers) and transported to the DMF Shellfish Purification Plant for depuration (purification).

[5] **Prohibited -** Closed for harvest of shellfish.

PRIMARY CONTACT RECREATION USE

This use is suitable for any recreational or other water use in which there is prolonged and intimate contact with the water with a significant risk of ingestion of water during the primary contact recreation season (1 April to 15 October). These include, but are not limited to, wading, swimming, diving, surfing and water skiing. The chart below provides an overview of the guidance used to assess the status (support or impaired) of the *Primary Contact Recreation Use*. Excursions from criteria due to natural conditions are not considered impairment of use.

Variable	***Support*** Criteria are met, no aesthetic conditions that preclude the use	***Impaired*** Frequent or prolonged violations of criteria and/or formal bathing area closures, or severe aesthetic conditions that preclude the use
Bacteria (105 CMR 445.000) Minimum Standards for Bathing Beaches State Sanitary Code) (MassDEP 2006)	At "public bathing beach" areas: Formal beach postings/advisories neither frequent nor prolonged during the swimming season (the number of days posted or closed cannot exceed 10% during the locally operated swimming season). Collected samples* meet the geometric mean criteria (Table A1). Shellfish Growing Area classified as "Approved by DMF.	At "public bathing beach" areas: Formal beach closures/postings >10% of time during swimming season (the number of days posted or closed exceeds 10% during the locally operated swimming season). Collected samples* do not meet the geometric mean criteria (Table A1).
Aesthetics (MassDEP 1996) - *All surface waters shall be free from pollutants in concentrations or combinations that settle to form objectionable deposits; float as debris, scum or other matter to form nuisances; produce objectionable odor, color, taste or turbidity; or produce undesirable or nuisance* [growth or amount] *species of aquatic life*		
Odor, oil and grease, color and turbidity, floating matter	Narrative "free from" criteria met or excursions neither frequent nor prolonged, BPJ.	Narrative "free from" criteria not met - objectionable conditions either frequent and/or prolonged, BPJ.
Transparency (MA DPH 1969)	Public bathing beach and lakes – Secchi disk depth $\geq$1.2 meters ($\geq$ 4') (minimum of three samples representing critical period).	Public bathing beach and lakes - Secchi disk depth <1.2 meters (< 4') (minimum of three samples representing critical period).
Nuisance organisms	No overabundant growths (i.e., blooms) that render the water aesthetically objectionable or unusable, BPJ.	Overabundant growths (i.e., blooms and/or non-native macrophyte growth dominating the biovolume) rendering the water aesthetically objectionable and/or unusable, BPJ.

* Data sets to be evaluated for assessment purposes must be representative of a sampling location (at least five samples per station recommended) and the season being analyzed, as described in the SWQS (see Table 1). Samples collected on one date from multiple stations on a river are not considered adequate to assess this designated use. Because of low sample frequency (i.e., less than ten samples per station) an impairment decision will not be based on a single sample exceedance (i.e., the geometric mean of five samples is < 126 *E. coli* colonies/100 ml but one of the five sample exceeds 235 *E. coli* colonies/100 ml). The method detection limit (MDL) will be used in the calculation of the geometric mean when data are reported as less than the MDL (e.g., use 20 cfu/100 ml if the result is reported as <20 cfu/100 ml). Those data reported as too numerous to count (TNTC) will not be used in the geometric mean calculation; however frequency of TNTC sample results should be presented.

SECONDARY CONTACT RECREATION USE

This use is suitable for any recreation or other water use in which contact with the water is either incidental or accidental. These include, but are not limited to, fishing, boating and limited contact incident to shoreline activities. Following is an overview of the guidance used to assess the status (support or impaired) of the *Secondary Contact Use*. Excursions from criteria due to natural conditions are not considered impairment of use.

Variable	***Support*** Criteria are met, no aesthetic conditions that preclude the use	***Impaired*** Frequent or prolonged violations of criteria, or severe aesthetic conditions that preclude the use
Bacteria (MassDEP 2006)	Collected samples* meet the Class C or SC geometric mean criteria (see Table A1). Shellfish Growing Area classified as "Approved" by DMF.	Collected samples* do not meet the Class C or SC geometric mean criteria (see Table A1).
Aesthetics (MassDEP 2006) - *All surface waters shall be free from pollutants in concentrations or combinations that settle to form objectionable deposits; float as debris, scum or other matter to form nuisances; produce objectionable odor, color, taste or turbidity; or produce undesirable or nuisance* [growth or amount] *species of aquatic life*		
Odor, oil and grease, color and turbidity, floating matter	Narrative "free from" criteria met or excursions neither frequent nor prolonged, BPJ.	Narrative "free from" criteria not met - objectionable conditions either frequent and/or prolonged, BPJ.
Transparency (MA DPH 1969)	Public bathing beach and lakes – Secchi disk depth $\geq$1.2 meters ($\geq$ 4') (minimum of three samples representing critical period).	Public bathing beach and lakes - Secchi disk depth <1.2 meters (< 4') (minimum of three samples representing critical period).
Nuisance organisms	No overabundant growths (i.e., blooms) that render the water aesthetically objectionable or unusable, BPJ.	Overabundant growths (i.e., blooms and/or non-native macrophyte growth dominating the biovolume) rendering the water aesthetically objectionable and/or unusable, BPJ.

*Data sets to be evaluated for assessment purposes must be representative of a sampling location (at least five samples per station recommended) over time. Because of low sample frequency (i.e., less than ten samples per station) an impairment decision will not be based on a single sample exceedance. Samples collected on one date from multiple stations on a river are not considered adequate to assess this designated use.

AESTHETICS USE

All surface waters shall be free from pollutants in concentrations or combinations that settle to form objectionable deposits; float as debris, scum or other matter to form nuisances; produce objectionable odor, color, taste or turbidity; or produce undesirable or nuisance species of aquatic life. The aesthetic use is closely tied to the public health aspects of the recreational uses (swimming and boating). Below is an overview of the guidance used to assess the status (support or impaired) of the *Aesthetics Use*.

Variable	***Support*** Narrative "free from" criteria met	***Impaired*** Objectionable conditions frequent and/or prolonged
Odor, oil and grease, color and turbidity, floating matter	Narrative "free from" criteria met or excursions neither frequent nor prolonged, BPJ.	Narrative "free from" criteria not met - objectionable conditions either frequent and/or prolonged, BPJ.
Transparency (MA DPH 1969)	Public bathing beach and lakes – Secchi disk depth $\geq$1.2 meters ($\geq$ 4') (minimum of three samples representing critical period).	Public bathing beach and lakes - Secchi disk depth <1.2 meters (< 4') (minimum of three samples representing critical period).
Nuisance organisms	No overabundant growths (i.e., blooms) that render the water aesthetically objectionable or unusable, BPJ.	Overabundant growths (i.e., blooms and/or non-native macrophyte growth dominating the biovolume) rendering the water aesthetically objectionable and/or unusable, BPJ.

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