Marine and Freshwater
Beach Testing in Massachusetts
2001 Season

Prepared by
Massachusetts Department of Public Health
Bureau of Environmental Health Assessment
Environmental Toxicology Program

In Collaboration with

Massachusetts Department of Public Health
Bureau of Health Quality Management
Division of Community Sanitation

October 2002

I. TABLE OF CONTENTS

I. TABLE OF CONTENTS **1**

INTRODUCTION **2**

A. OVERVIEW 2

II. BACKGROUND INFORMATION ON BEACH WATER QUALITY **2**

A. HEALTH EFFECTS FROM SWIMMING IN MARINE WATERS 2
B. BEACH WATER QUALITY TESTING METHODS - MARINE 3
1. Total Coliform Method *4*
2. Fecal Coliform Method *4*
3. Enterococcus Method *4*
C. HISTORICAL AND CURRENT WATER QUALITY CRITERIA - MARINE 5
1. Total Coliform *5*
2. Fecal Coliform *5*
3. Enterococcus *6*
D. HEALTH EFFECTS FROM SWIMMING IN FRESHWATER 6
E. BEACH WATER QUALITY TESTING METHODS – FRESHWATER 6
1. E. coli Method *7*
F. CURRENT WATER QUALITY CRITERIA – FRESHWATER 7
1. E. coli *7*
2. Enterococcus *7*

III. METHODS **7**

A. DESCRIPTION 7
B. LIMITATIONS 8

IV. RESULTS **9**

V. DISCUSSION **10**

A. MARINE BEACHES 10
B. FRESHWATER BEACHES 12

VI. FUTURE ACTIVITIES **13**

A. STANDARDIZED REPORTING FORM 13
B. GEOGRAPHIC INFORMATION SYSTEM (GIS) 13
C. TIER SYSTEM FOR BEACH CLASSIFICATION 14
D. REPORTING BEACH POSTINGS ON THE WORLD WIDE WEB 14

VII. SUMMARY **14**

VIII. ACKNOWLEDGMENTS **15**

IX. REFERENCES **16**

X. TABLES **20**

XI. FIGURES **81**

XII. APPENDICES **98**

A. MASSACHUSETTS STATE REGULATIONS 98
B. FEDERAL BEACH ACT 99

INTRODUCTION

A. OVERVIEW

Recreational use of water with microbial contamination can pose health risks to swimmers and others. As a result, beach water quality is regulated to promote public health. In Massachusetts, bathing beach water quality is regulated by M.G.L. C. 111, § 5S and regulations cited as 105 CMR 445.000: Minimum Standards for Bathing Beaches (State Sanitary Code, Chapter VII; Appendix A). Local boards of health (LBH), the Metropolitan District Commission (MDC), the Barnstable County Department of Health and the Environment, and the Massachusetts Department of Environmental Management (DEM) conduct the vast majority of beach water sampling in Massachusetts. Most of the samples are analyzed at private labs, while some are analyzed at municipal facilities. There is no certification in Massachusetts for laboratories conducting these tests.

In 2000, the U.S. Congress enacted the Beaches Environmental Assessment and Coastal Health (BEACH) Act that amended the Federal Water Pollution Control Act (commonly referred to as the Clean Water Act, or CWA) to improve the quality of coastal recreational waters (Appendix B). The BEACH Act seeks to reduce the risk of disease to users of the Nation's marine recreational waters through the identification of high-risk beaches, identification and mitigation of sources of pollution, and notification/risk communication to the public. It also authorizes grants to eligible states to support these objectives.

In late 2001, the Massachusetts Department of Public Health (MDPH) was awarded funding from the United States Environmental Protection Agency (USEPA) that partially support Department efforts to develop an inventory of marine bathing beaches, compile monitoring data, and begin to conduct assessments of those beaches identified as high-risk. The MDPH Bureau of Health Quality Management, Division of Community Sanitation (DCS), conducted a survey of Massachusetts municipalities in order to develop an inventory of all public and semi-public marine and freshwater beaches. They also collected data from reporting local health departments and other agencies for the 2001 bathing season and provided these data to the MDPH Bureau of Environmental Health Assessment Environmental Toxicology Program (ETP). While the data were incomplete, this report presents the results and analysis of the available 2001 data from Massachusetts marine and freshwater bathing beaches.

II. BACKGROUND INFORMATION ON BEACH WATER QUALITY

A. HEALTH EFFECTS FROM SWIMMING IN MARINE WATERS

Several prospective and retrospective epidemiological studies conducted by USEPA (Cabelli, 1983; USEPA 1986; Cabelli, 1989) have concluded that swimming in polluted marine water poses health risks to swimmers. This conclusion is based on the observation that there is an increased rate of adverse health effects among swimmers

compared to non-swimmers in marine waters. Swimming in polluted marine water can lead to gastrointestinal symptoms (e.g., nausea, vomiting, diarrhea, abdominal pain), respiratory symptoms (e.g., sore throat, cough, chest cold, runny nose, sneezing), eye and ear symptoms (e.g., irritation, earache, itchiness), dermatological symptoms (e.g., skin rash, pruritis), and constitutional symptoms (e.g., fever, chills). The epidemiological studies suggest that swimmers may be exposed to pathogens (disease-causing microorganisms) while swimming. Pathogens in marine waters typically have a fecal source. Pathogens associated with human fecal matter (e.g., some strains of *Escherichia coli*) may be present in the water due to a variety of sources including but not limited to ocean disposal of sewage by boats, sewage treatment plant outfalls, illegal sewage hookups, and combined sewer overflows. Pathogens may be ingested or absorbed while swimming, thereby causing an increased risk of disease among swimmers relative to non-swimmers (Cabelli *et al.*, 1982; Cabelli, 1983; Cabelli, 1989; Coye and Goldoft, 1989; CDC, 1990-1996; Corbett *et al.*, 1993).

B. BEACH WATER QUALITY TESTING METHODS - MARINE

The pathogens that cause swimming-associated disease are very difficult to measure directly. Furthermore, because of the wide variety of different pathogens that might be present in marine waters, measuring all possible pathogens is not practical for routine testing programs. Therefore, public health officials typically estimate the potential for pathogens to be present in the water by testing the water for a microorganism or a group of microorganisms whose life cycle(s) mimics that of specific pathogens but which are easier to measure than the pathogens themselves. Because they indicate when pathogens are likely to be present, these microorganisms or groups of microorganisms are called "indicators" (Cabelli, 1983).

In the United States, concern about pathogens in marine waters typically has been related to pathogens associated with fecal contamination (Cabelli, 1983). As a result, methods commonly used in this country test for an indication of the degree of fecal contamination of the water. The most accurate indicators of fecal contamination are specific microorganisms (e.g., *Escherichia coli, Streptococcus faecalis,* or *Clostridium perfringens*) that are present predominantly in human and animal feces (Cabelli, 1983). Testing for a single indicator species, however, can fail to detect the presence of fecal pathogens if that indicator species does not survive in the natural environment for as long as the fecal pathogens themselves do (NAS, 1977). Therefore, methods that test for groups of microorganisms, such as total coliforms, fecal coliforms, or Enterococci, are frequently used instead (Cabelli, 1983). These tests are usually easier and faster to perform than those that test for specific indicator species. In the case of Enterococci, they also strongly correlate with swimming-associated disease (USEPA, 1986). One disadvantage of using groups of microorganisms as indicators is that these tests can falsely predict the presence of fecal contamination if organisms that are not associated with fecal contamination are detected by the method (NAS, 1977; Cabelli, 1983).

As of the year 2000, Enterococci are the required indicator organisms for determining levels of contamination at marine bathing beaches in Massachusetts. In the past, total coliforms and fecal coliforms were used as indicators for marine bathing beaches. Some

beaches still do testing for total or fecal coliforms in addition to the mandated testing for Enterococci. Therefore, the methods for detecting and criteria set for total coliform, fecal coliform, and Enterococci are described below, even though Enterococci are the current indicator bacteria required by the Massachusetts State Sanitary Code.

1. Total Coliform Method

The most general, but no longer recommended, testing method is the total coliform method. This method measures the number of bacteria in a water sample that will grow under certain laboratory conditions (Cabelli, 1983). A large number of different kinds of organisms are measured by this method, some of which are found exclusively in human and animal intestines (i.e., *Escherichia coli*) (Cabelli, 1983; USEPA, 1985). The advantages of this testing method are that it can be performed quickly and it is relatively sensitive to the presence of fecal contamination given the large number of species that it can detect. However, this method can falsely predict the presence of fecal pathogens because some of the species that are detected by the method (e.g., some species in the genus *Aeromonas*) are not found exclusively in human and animal feces (NAS, 1977; Cabelli, 1983). Furthermore, some waterborne pathogens (e.g., *Salmonella typhi*) and all viruses (e.g., Hepatitis A) are not measured by this method (NAS, 1977).

2. Fecal Coliform Method

The fecal coliform test is similar to the total coliform test in that it measures the number of bacteria (including *Escherichia coli*) that can grow under certain laboratory conditions. However, the fecal coliform test only measures a subset of the species detected by the total coliform method. As a result, the fecal coliform test detects fewer organisms that are not associated with fecal contamination than the total coliform test, thereby reducing the chances of false-positive results. False positive results are still possible, however, because the fecal coliform method does detect some bacteria that have other sources besides human and animal feces (Cabelli, 1983). The fecal coliform method, like the total coliform method, can fail to detect waterborne pathogens in some cases because it does not detect all waterborne pathogens or viruses.

3. Enterococcus Method

Similar to the total and fecal coliform methods, the Enterococcus method detects the number of bacteria that grow under certain laboratory conditions (USEPA, 1985). However, the Enterococcus method detects fewer total species than either the fecal or total coliform methods. The Enterococcus method measures the concentration of bacteria from a group of species within the *Streptococcus* genus, some of which (e.g., *Streptococcus faecalis*) are typically found in human and animal intestines (USEPA, 1985). Because some of the species that are detected by this method are not associated with fecal contamination (USEPA, 1985), this method can produce false-positive results, like the total and fecal coliform methods. In addition, some bacterial pathogens and all viruses are not detected by this method.

In 1986, the USEPA (1986) recommended that Enterococcus be used as an indicator of water quality at marine bathing beaches. This recommendation was based on studies by Cabelli (1983) at three locations (New York, NY; Boston, MA; and Lake Pontchartrain, LA). In these studies, Cabelli (1983) found that gastrointestinal symptoms reported by swimmers were strongly correlated with Enterococcus levels, but not with levels of total or fecal coliforms. Additionally, in 1997 EPA approved and adopted *Method 1600: Membrane Filter Test Method for Enterococci in Water*. This method enabled faster turnaround time for testing of Enterococcus as an indicator of water contamination, thereby making the method practical for local use.

C. HISTORICAL AND CURRENT WATER QUALITY CRITERIA - MARINE

Water quality criteria are guidance concentrations that are used by public health officials to make decisions regarding the health risks associated with swimming. These criteria are typically expressed as the concentration of an indicator in the water above which there is an unacceptable risk for adverse health effects resulting from swimming. The concentrations of a microorganism in water are usually reported as the number of colony forming units (CFU) of indicators per 100 milliliters (ml) of water. For any given measurement of the indicator species in water, the actual health risk from swimming in that water will depend on what pathogens are present in the water. Therefore, to make a decision as to the actual health risk related to a particular beach, other factors in addition to water quality criteria for indicator species should be considered, such as recent rainfall patterns and the number of people who use the beach.

1. Total Coliform

Formerly, the water quality criterion used by the Massachusetts Department of Public Health in the State Sanitary Code was based on the use of total coliforms. Specifically, the total coliform concentration could not exceed 1,000 CFU per 100 ml. After its establishment, this criterion was adopted by the Joint Committee of the American Public Health Association, the State Sanitary Engineers, and many states (Cabelli, 1983).

2. Fecal Coliform

In 1968, fecal coliform replaced total coliform as the recommended indicator species for marine water quality, though fecal coliform is also no longer recommended under state guidelines. At that time, the National Technical Advisory Council (NTAC) of the Federal Water Pollution Control Administration established criteria for the geometric mean of the fecal coliform count over a 30-day period (for a minimum of five samples) at 200 CFU per 100 ml with no more than 10% of the samples exceeding 400 CFU per 100 ml. These values correlated with a level of risk of no more than 19 cases of acute gastrointestinal illness per 1,000 swimmers in marine waters. USEPA adopted this standard in 1976. By 1978, the majority of states and territories had adopted this standard as well (Cabelli, 1983; USEPA, 1986).

3. Enterococcus

In 1986, USEPA published *Ambient Water Quality for Bacteria – 1986*. In this document, USEPA recommended Enterococcus instead of fecal or total coliforms as the indicator of marine water quality and provided a scientific rationale for its use. Enterococcus is currently the mandated indicator organism dictated by the Massachusetts State Sanitary Code (Appendix A).

The recommendation of the use of Enterococcus was based on studies by Cabelli (1983) that tested many different indicator organisms at several beaches in the United States to see which indicator organism correlated best with the incidence of acute gastrointestinal disease among swimmers. These studies showed that the concentration of Enterococcus in marine waters was more strongly correlated with the incidence of swimming-associated gastroenteritis than the concentrations of other indicators, including total and fecal coliforms. From these data, a relationship between the number of cases of swimming-associated disease and the Enterococcus concentration in the water was established. USEPA (1986) used this relationship to establish the criteria for Enterococcus in marine waters at 104 CFU per 100 ml for a single sample and 35 CFU per 100 ml for the geometric mean of at least five samples over a 30-day period. These criteria were set such that the expected incidence of gastrointestinal illness among swimmers would be the same as it had been for the previous USEPA water quality criteria for fecal coliform (i.e., 19 illnesses per 1000 swimmers at marine beaches). MDPH adopted this standard for the 2000 bathing season.

D. HEALTH EFFECTS FROM SWIMMING IN FRESHWATER

Several studies conducted by the USEPA and others (Dufour, 1984; USEPA, 1986; Cabelli, 1989; CDC, 1991-1996) have observed gastrointestinal symptoms (e.g. nausea, vomiting, diarrhea, abdominal pain) as a result of swimming in fresh waters. The results of these studies have suggested that swimmers may be exposed to pathogens while swimming in fresh waters. Pathogens associated with human fecal matter may be present in the fresh waters as a result of system failures in human sewage treatment facilities, or rainfall and resulting surface water runoff and other factors. Leachate from septic systems may be a potential source of microbiological contamination as well as animal wastes due to runoff that is exposed to domestic animal waste (e.g. wastes from dogs or farms). Swimmer-to-swimmer contamination is another potential source for microbiological contamination. Swimmers, bathers, waders, surfers, and others who come into full- or most-body contact may all contribute to contamination (California 1997).

E. BEACH WATER QUALITY TESTING METHODS – FRESHWATER

As indicated in the Massachusetts State Sanitary Code, the indicator organisms for freshwater bathing beaches are *E. coli* and Enterococcus based on recommendations by USEPA (Dufour, 1984; USEPA, 1986). The Enterococcus method has already been discussed (see Section III.C.3).

1. *E. coli* Method

Escherichia coli (*E. coli*) is a species of bacteria that is found exclusively in human and animal intestines (USEPA, 1985). Certain strains of this species are enteric (i.e., intestinal) pathogens (NAS, 1977). While both the total and fecal coliform methods can detect *E. coli* as part of a group of organisms, the *E. coli* method tests specifically for the presence or absence of this particular species. Because *E. coli* is exclusively found in human and animal intestines, this method is a very sensitive indicator of fecal contamination for freshwater beaches (USEPA, 1985).

F. CURRENT WATER QUALITY CRITERIA – FRESHWATER

As noted in Section III. C., for any given measurement of the indicator species in water, the actual health risk from swimming in that water will depend on what pathogens are present in the water. Therefore, to make a decision regarding the health risk related to a particular beach, other factors must be considered in addition to water quality criteria for indicator species, such as recent rainfall patterns and the number people who use the beach.

1. *E. coli*

For freshwater, no single *E. coli* sample shall exceed 235 CFU per 100 ml and the geometric mean of the most recent five *E. coli* samples within the same bathing season shall not exceed 126 CFU per 100 ml. These are the criteria established by the Massachusetts State Sanitary Code (Appendix A).

2. Enterococcus

For freshwater, no single Enterococcus sample shall exceed 61 CFU per 100 ml and the geometric mean of the most recent five Enterococci samples within the same bathing season shall not exceed 33 CFU per 100 ml. These are the criteria established by the Massachusetts State Sanitary Code (Appendix A).

Both E. coli and enterococcus standards are based on studies (Dufour, 1984; USEPA, 1986) that showed a strong correlation between levels of *E. coli* and Enterococcus and rates of swimmer-associated gastrointestinal disease in freshwaters. The values are set to a level of risk of no more than eight cases of acute gastrointestinal disease per 1,000 swimmers in freshwater beaches.

III. METHODS

A. DESCRIPTION

Local boards of health from the cities and towns in Massachusetts that have public and semi-public bathing beaches are required to submit to MDPH beach field data and lab results for bathing beaches under their jurisdiction. The data collected by each

community were based on a field data collection form from the MDPH Bureau of Health Quality Management, Division of Community Sanitation (DCS). Sample collection and testing were required to be in compliance with the *Standard Methods for the Examination of Water and Waste Water* of the American Public Health Association or as approved by the USEPA. This form will be amended in the future to accommodate more information and be used consistently across the state. The information collected varied from town to town, but the basic variables included:

- Name of beach
- Town where beach is located
- Sample identification number
- Date of sample collection
- Time of sample collection
- Weather condition at time of sample collection
- Air temperature
- Wind direction
- Time of last high tide (if applicable)
- Amount of most recent rainfall
- Number of days from end of most recent rainfall to sample collection day
- Sampling agency (i.e., local board of health, MDC, DEM, outside lab, other)
- Known pollution sources (i.e., boats, wildlife, septic systems, outflow pipes, streams)
- Beach type (i.e., marine or freshwater)
- Bather density (i.e., number of people in the water)
- Water temperature
- Water clarity
- Water salinity
- Observations (i.e., trash, sludge deposits, oils, algae, fish die-off, jellyfish, birds)
- Indicator (i.e., Enterococcus for marine, Enterococcus or *E. Coli* for freshwater; note, some towns still use the fecal coliform and total coliform indicators which are not in compliance with the Massachusetts State Sanitation Code)
- Indicator level in colony forming units (CFU) of bacteria per 100 ml of water
- Violation (i.e., indicator levels equal to or greater than 104 CFU / 100 ml for Enterococcus in marine waters, 61 CFU / 100 ml for Enterococcus in fresh waters, or 235 CFU / 100 ml for *E. coli* in fresh waters)
- Comments

B. LIMITATIONS

The beach inventory database and monitoring data are subject to certain limitations. First, the database is only as complete as the data received. For example, during the 2001 bathing season, each city/town used different monitoring techniques. Therefore, the comprehensiveness of the data varies from town to town. The development of the beach inventory and GIS databases should help standardize data reporting across the state.

Second, the accuracy of the data depends on proper sample collecting and testing techniques.

Third, the data are indicator-, not pathogen-, specific. As a result, the data only suggest a potential for the presence of pathogens that can cause human disease. The presence or absence of specific pathogens is not assayed. The use of indicators implies that water meeting the criteria may harbor disease-causing microorganisms and also that water considered unsafe may not carry any disease-causing microorganisms (e.g., Polo *et al.,* 1998; Moore *et al.,* 2001; Prieto *et al.,* 2001; Schindler, 2001). This is an inherent limitation of using indicators as a test of water quality.

Fourth, the criteria developed for each indicator are set at an acceptable level of risk of an adverse health effect, not at a no-risk level. Therefore, levels of indicators considered safe by the guidelines do not imply freedom from risk of adverse health effects for the total population at risk.

Finally, acceptable levels of risk are typically determined by the incidence of gastrointestinal symptoms among swimmers compared to that for non-swimmers. It should be noted, however, that pathogens found in marine and freshwater can cause other symptoms, including respiratory, dermatologic, ophthalmologic, and constitutional. These symptoms are generally not taken into account in determining criteria for the different indicator species.

IV. RESULTS

During the 2001 bathing season, the majority of Massachusetts cities/towns with public and semi-public marine and/or freshwater beaches sent water quality data to MDPH. These data were entered into tabular and Geographic Information System (GIS) databases in order to build an inventory of bathing beaches in Massachusetts and to allow for storage and analysis of field data and testing results. After the data were entered into the computer, the database was verified by someone other than the person who did the data entry. Ten percent of the records entered into the database were checked for quality assurance/quality control, and two percent of these records were found to have errors, which were subsequently corrected.

In total, MDPH received water quality data from 179 Massachusetts cities and towns, representing 879 public and semi-public marine and freshwater beaches and 12,851 water samples. Private marine or private freshwater bathing beaches are not part of this report.

Summaries and analyses of the marine and freshwater bathing beach data are presented in Tables 1 – 18 and Figures 1 – 15. The data are divided by type of beach (marine vs. freshwater) to allow easy comparison to earlier reports that analyzed marine bathing beaches only (e.g., MDPH/BEHA Environmental Toxicology Program (ETP) 1997) and to accommodate the different testing criteria for the two types of beaches (see Background section). The data are analyzed according to type of beach, presence or absence of data, bather density, pollution source, bacterial indicator, frequency of testing, organization that performed testing, violations based on current Massachusetts criteria, and beach postings. Data are grouped either according to town/city, beach, or water

sample, depending on ease of understanding and interpreting the results. For example, bather density at a given beach changes during the day and season, so it makes sense to express these data in terms of water sample (i.e., at times when samples were collected). Alternatively, testing frequency only makes sense in terms of a given beach for a particular indicator. The data are presented in tabular (Tables 1- 18), pie graph (Figures 1 – 11), and map (Figures 12 – 15) forms.

V. DISCUSSION

A. MARINE BEACHES

During the 2001 bathing season, a total of 58 of the 59 Massachusetts coastal cities/towns with public and semi-public marine bathing beaches submitted beach-monitoring data to MDPH. Analysis of these data is provided in Tables 1 - 18 and Figures 1 - 15.

Tables 1 – 3 and Figures 1 - 2 indicate the number of coastal cities/towns with and without public and semi-public marine bathing beaches, broken down by those that reported data (83% of all coastal towns) and those that did not (3% of all coastal towns). The remaining 14% of coastal cities/towns do not have public marine bathing beaches. Table 4 indicates the total number of coastal cities/towns (58), marine beaches (448), and water samples (7,200) included in the 2001 marine bathing beach database. Note that, in contrast to the 1997 Report (MDPH/BEHA/ETP 1997), the number of beaches that were not tested was not included here, as this number could not be determined from the data provided. The total number of marine beaches for which data were available for inclusion in the 1997 report was 325.

Table 5 and Figure 4 provide approximate bather density at public and semi-public marine bathing beaches at the time that samples were taken. It is important to note that almost half (48%) of the samples were taken without noting bather density, making interpretation difficult. However, the available data indicate that about 80% of marine water sampling occurred at a time when only 0-10 people were using the beach. This low bather density might reflect typical beach usage, or indicate that water sampling was not done during peak usage.

Tables 6 – 7 indicate open or obvious sources of pollution at times when samples were taken. Again, these data are largely incomplete, with 99.5% of the reports not indicating whether a pollution source was present (i.e., 99.5% of respondents left this section blank rather than indicating “yes” or “no” with regard to a potential pollution source). Furthermore, for the 0.5% of reports that indicated a pollution source, the majority (69%) indicated “other” rather than identifying a likely source. The little information available from the surveys indicate outflow pipe and septic systems as the most frequently reported sources of pollution. For this reason methods to collect and report complete/accurate information on potential sources of pollution in the beach areas should be further explored.

Tables 8 –9 and Figure 6 summarize bacterial indicator data. Table 8 reports the bacterial indicator for each of the 7,200 marine water samples collected in the 2001 bathing beach season, while Table 9 groups the bacterial indicator by beach. These data indicate that Enterococcus was the indicator used at all public marine bathing beaches that reported water quality data at some time during the 2001 bathing season. However, some of the water samples (about 2%) were inappropriately analyzed for fecal or total coliform, not Enterococcus. Overall, five percent of the beaches tested not only for Enterococcus but also for E. coli, fecal coliform, or total coliform at some point during the 2001 bathing season.

Table 10 and Figure 8 indicate testing frequency of public and semi-public marine bathing beaches in 2001, with the majority of the beaches (93%) tested on a weekly or more frequent basis. Table 11 notes the testing agency that performed the water quality sampling, with the local health department (59%), MDC (20%), and outside laboratories (20%) performing the vast majority of the sampling.

Tables 12 – 14 and Figure 10 provide data regarding water samples that exceeded the Massachusetts single-count criterion (104 CFU per 100 ml for Enterococcus). Table 12 groups the data by water sample (6% (n=444), of the 7,200 water samples exceeded the single-count criterion), Table 13 by beach (35% (n=158), of the 448 public and semi-public marine bathing beaches had at least one sample exceeding the single-count criterion), and Table 14 by indicator. A more detailed evaluation of beaches with more than one exceedance will be prepared in the next annual report (based on 2002 data).

Note that 2% (n=166), of the water samples did not report an indicator, reported an indicator but not a level, or reported an indicator that does not have current Massachusetts guidelines. These samples were placed in an indeterminant category, indicating that the total number of exceedances may be an underestimate of the number of water samples with a potential for bacterial contamination.

Table 15 relates beach postings to exceedances. This table indicates that there are far fewer postings than exceedances. This discrepancy could result from an incomplete database of beach postings due to a lack of reporting by beach communities, or from the possibility that many violations that did not result in postings. Clearly, the latter possibility highlights the need for tighter linkage between exceedances and beach postings.

Table 16 lists the individual coastal cities/towns and beaches included in the database, with separate entries for each bacterial indicator used, as well as number of tests, violations, and non-violations for each. Table 18 lists all Massachusetts towns, indicating type of beach and presence or absence of data. Figures 12 and 14 provide data of city/town and exceedances, respectively, in map form.

B. FRESHWATER BEACHES

During the 2001 bathing season, a total of 145 of the 175 Massachusetts cities and towns with public and semi-public freshwater bathing beaches submitted beach monitoring data to MDPH. Analysis of these data is provided in Tables 1 - 18 and Figures 1 - 15.

Tables 1 – 3 and Figures 1 and 3 indicate the number of cities/towns with and without public and semi-public freshwater bathing beaches. About half of Massachusetts cities/towns have freshwater bathing beaches. Of these, 82% reported data. Table 4 indicates the total number of cities/towns (145), public and semi-public freshwater bathing beaches (431), and water samples (5,651) included in the 2001 freshwater bathing beach database.

Table 5 and Figure 5 provide approximate bather density at public and semi-public freshwater bathing beaches at the time that samples were taken. It is important to note that more than half (57%) of the samples were taken without noting bather density, making interpretation difficult. However, the available data indicate that the majority of samples (70%) were taken at times when only 0-10 people were using the beach. Like that for marine beaches, this observation could reflect typical beach usage or that sampling usually occurred at times of non-peak usage.

Tables 6 – 7 indicate open or obvious sources of pollution at times when samples were taken. Again, these data are largely incomplete, with 99.9% of the samples not indicating whether or not a pollution source was present (i.e., 99.9% of respondents left this section blank rather than indicating "yes" or "no" with regard to a potential pollution source). The five reports that did report an open or obvious source of pollution all indicated septic systems as the pollution source. Better ways to collect and report information on potential sources of pollution in the beach areas are warranted.

Tables 8 –9 and Figure 7 summarize bacterial indicator data. Table 8 reports the bacterial indicator for each of the 5,651 water samples collected in the 2001 bathing beach season, while Table 9 groups the bacterial indicator by beach. These data indicate that about 90% of the freshwater beach samples were analyzed using Enterococcus or *E. coli*, as recommended by state guidelines. When considered from the point of view of beach rather than water sample (Table 9), 94.2% of Massachusetts freshwater beaches use at least Enterococcus or *E. coli* at some point during the 2001 bathing season (some of these beaches may use additional indicators as well).

Table 10 and Figure 9 indicate testing frequency of public and semi-public freshwater bathing beaches in 2001, with 73% of the beaches (403 of 556) tested on a weekly or more frequent basis. Table 11 notes the testing agency that performed the water quality sampling, with the local health departments (45%), private labs (34%), and Department of Environmental Protection (16%) performing the majority of sampling.

Tables 12 – 14 and Figure 11 provide data regarding water samples that exceeded Massachusetts single-count criteria (61 CFU per 100 ml for Enterococcus, 235 CFU per 100 ml for *E. coli*). Table 12 shows that 6% (n= 336), of the 5,651 water samples

exceeded the single-count criteria. Table 13 shows that 30% (n=130), of the 431 freshwater bathing beaches had at least one sample exceeding the single-count criteria. A more detailed evaluation of beaches with more than one exceedance will be prepared in the next annual report (based on 2002 data).

Note that 12% (n=704), of the water samples either did not report an indicator, reported an indicator but not a level, or reported an indicator that does not have current Massachusetts guidelines. These samples were placed in an indeterminant category, indicating that the total number of violations may be an underestimate of the number of samples with violations.

Table 15 relates beach postings to violations. This table indicates that there are far fewer postings than violations. Only 27% of the violations based on Enterococcus and 26% of the violations based on *E. coli* resulted in reported postings. This discrepancy could result from lack of reporting by beach communities, or many violations that did not result in postings. Both of these possibilities warrant further evaluation.

Table 17 lists the individual Massachusetts cities/towns and beaches included in the database, with separate entries for each bacterial indicator used, as well as number of tests, violations, and non-violations for each. Table 18 lists all Massachusetts towns, indicating type of beach and presence or absence of data. Figures 13 and 15 provide data of city/town and violation, respectively, in map form.

VI. FUTURE ACTIVITIES

A. STANDARDIZED REPORTING FORM

In order to be able to effectively compare data from all beaches from year to year, it will be necessary for all Massachusetts cities and towns with public and semi-public bathing beaches to use a standard reporting form when submitting beach monitoring data to MDPH. The MDPH Bureau of Health Quality Management, Division of Community Sanitation**,** has developed a standard reporting form that is readily available on the web. All cities/towns with public and semi-public bathing beaches will use this form to submit beach-monitoring data to MDPH. If data can be submitted electronically, compiling and summarizing the data will be easier and more timely. In addition, electronically reporting postings will expediate postings on the MDPH/BHQM web site, (see section D).

B. GEOGRAPHIC INFORMATION SYSTEM (GIS)

A geographical information system (GIS) beach inventory database showing the location of all the public and semi-public bathing beaches in Massachusetts is currently being developed by MDPH/BEHA ETP based on the beach inventory database. Eventually each beach in the GIS will be assigned a unique identification number that will include codes for the region, city/town, type of beach, and beach name. This number will be provided on future field data collection forms that will be distributed to each city/town to

facilitate data entry into the inventory database and to facilitate linking data for each beach to the GIS beach inventory layer.

C. TIER SYSTEM FOR BEACH CLASSIFICATION

Using data gathered from the local boards of health in cities/towns with public and semi-public bathing beaches, MDPH will set up a tier system for classifying beaches. Developing a tier system will help support variance requests under 105 CMR 445.000. The tier system is also a requirement specified by EPA in awarding funds under the BEACHES ACT.

The three tiered categories will be high, medium and low priority beaches assigned according to specific criteria which may include amount of rainfall in the area, number of known and potential pollution sources, bather density, occurrence of malfunctioning septic systems in the area, public comment, and history of violations for levels of indicator organisms.

A "high" priority beach will receive the most frequent water quality sampling and analysis. Such a beach might be one with high bather volume, high frequency or percentage of violations, problematic sources of pollution, or a combination of these factors. A "medium" priority beach will have less frequent sampling but will still be required to meet water quality standards. Beaches that are tiered "medium" will have any of the factors listed for "high" priority beaches but with less frequency or intensity of any of the three criteria. A "low" priority beach will indicate that sources of pathogens are rare or that few people swim in the water. In this case, water quality monitoring might be limited to an annual survey or conducted only on public complaint, or the local health department might apply for a testing variance. Data from the 2002 bathing season will be analyzed to identify a tier for each beach and to determine if the tier classification system is effective.

D. REPORTING BEACH POSTINGS ON THE WORLD WIDE WEB

MDPH Bureau of Health Quality Management, DCS, is in the process of developing a system that would allow beach postings to be reported on the web and updated regularly. This will enable beach patrons to easily determine which beaches are open on any particular day/week and choose a suitable beach. It will also enable the public to see which beaches are posted and for what reason, and to keep track of a beach and its history of postings.

VII. SUMMARY

This report summarizes beach monitoring and testing data from Massachusetts public and semi-public marine and freshwater bathing beaches in the 2001 season. In total, 179 communities, 879 beaches, and 12,851 water samples were available for analysis. The report highlights the need for a consistent sanitary survey protocol, electronic submission of data, use of appropriate bacterial indicators, and tighter links between violations and beach postings. A beach monitoring inventory and GIS database were created to

organize and analyze the data, as well as to provide a template for future monitoring efforts.

VIII. ACKNOWLEDGMENTS

This study would not have been possible without the efforts and cooperation of the local and county health departments in the Massachusetts cities and towns that are included here. MDPH also received much assistance from many local and regional organizations, including the MDC. Finally, we are grateful to the USEPA for providing financial support for this effort.

IX. REFERENCES

Baron RC, Murphy FD, *et al.*, 1982. Norwalk Gastrointestinal Illness. *American Journal of Epidemiology*. Volume 115 (2) pp. 163-172.

Barrell RA, Hunter PR, Nichols G, 2000. Microbiological standards for water and their relationship to health risk. *Commun Dis Public Health*. March, Volume 3, pp. 8 – 13.

Beaches Environmental Assessment and Coastal Health Act. *Federal Register* 2002 21 March, 67 (55) pp. 13140-13143.

Cabelli VJ, Dufour AP *et al.*, 1979. Relationship of Microbial Indicators to Health Effects at Marine Bathing Beaches. *American Journal of Public Health*, Volume 69 (7) pp. 690-696

Cabelli, VJ, Dufour, A., McCabe, L., and Levin, MA, 1982, Swimming-associated gastroenteritis and water quality, *American Journal of Epidemiology*, Volume 115 (4) pp. 606-616.

Cabelli, VJ, 1983, Health Effects Criteria for Marine Recreational Waters, EPA Document Number EPA-600/1-80-031, Health Effects Research Laboratory, Office of Research and Development, United States Environmental Protection Agency, Research Triangle Park, North Carolina.

Cabelli, VJ, 1989, Swimming-associated illness and recreational water quality criteria, *Water Science Technology*, Volume 21 (2) pp. 13-21.

Calderon RL, Mood EW, Dufour AP, 1991. Health effects of swimmers and nonpoint sources of contaminated water. *International Journal of Environmental Health Research*, Volume 1, pp 21-31.

California Academy of Sciences, 1989. Critical Problems Relating to the Quality of California's Coastal Zone. San Francisco, 1989.

California Department of Health Services, 1997. Draft Guidance for Saltwater Recreational Areas: Assessing Microbiological Contamination and Taking Corrective Action.

California Department of Health Services, 1997. Draft Guidance for Freshwater Recreational Areas: Assessing Microbiological Contamination and Taking Corrective Action.

CDC, 1990, Waterborne disease outbreaks, 1986-1988, *Morbidity and Mortality Weekly Report*, Volume 39 (SS-1), Center for Disease Control and Prevention, pp. 1-13.

CDC, 1991, Waterborne disease outbreaks, 1989-1990, *Morbidity and Mortality Weekly Report*, Volume 40 (SS-3), Center for Disease Control and Prevention, pp. 1-21.

CDC, 1992, Cercarial dermatitis outbreak at a state park-Delaware, 1991, *Morbidity and Mortality Weekly Report*, April 10, 1992, Volume 41, Number 14, Center for Disease Control and Prevention, pp. 225-228.

CDC, 1993, Surveillance for waterborne disease outbreaks-United States, 1991-2, *Morbidity and Mortality Weekly Report*, November 19, 1993, Volume 42 (SS-5), Center for Disease Control and Prevention, pp. 1-22.

CDC, 1996, Surveillance for waterborne disease outbreaks-United States, 1993-4, *Morbidity and Mortality Weekly Report*, April 12, 1996, Volume 45 (SS-1), Center for Disease Control and Prevention, pp. 1-33.

Connecticut Department of Health Services, 1992. Guidelines for Monitoring Bathing Waters and Closure Protocol.

Corbett, SJ, Rubin, GL, Curry, GK, and Kleinbaum, DG, 1993, The health effects of swimming at Sydney beaches, *American Journal of Public Health*, Volume 83 (12) pp. 1701-1706.

Coye, MJ, and Goldoft, MG, 1989, Microbiological contamination of the ocean and human health, *New Jersey Medicine*, Volume 86 (7) pp. 533-538.

Dufour, AP, 1984, Health Effects Criteria for Fresh Recreational Waters, EPA Document Number EPA-600/1-84-004. Health Effects Research Laboratory, Office of Research and Development, USEPA, Research Triangle Park, NC.

Haile R, 1996. A Health Effect Study of Swimmers in Santa Monica Bay. Santa Monica Bay Restoration Project, Monterey Park, CA.

Koopman JS, Eckert EA *et al.*, 1982. Norwalk Virus Enteric Illness Acquired by Swimming Exposure. *American Journal of Epidemiology*, Volume 115 (2) pp. 173-177.

Kramer MH, Herwaldt BL *et al.*, 1996. Surveillance for Waterborne-Disease Outbreaks – United States, 1993-1994. *Morbidity and Mortality Weekly Report*, Volume 45 (SS-1), pp. 1-23.

Makintubee S, Mallonee J, Istre GR, 1987. Shigellosis Outbreak Associated with Swimming. *American Journal of Public Health*, Volume 77 (2), pp. 166-168.

Massachusetts Department of Public Health Regulations, 105 CMR § 445.000, Minimum Standards for Bathing Beaches (State Sanitary Code Chapter VII).

Massachusetts Department of Public Health, 1997. Marine Beach testing in Massachusetts. April 1997.

MBP, 1995, Massachusetts Bays 1995 Comprehensive Conservation and Management Plan, Draft Final Plan, Massachusetts Bays Program, United States Environmental Protection Agency, Massachusetts Executive Office of Environmental Affairs, June 1995.

MBP, 1995. Evaluation of Chemical contaminant Effects in the Massachusetts Bays; Executive Summary of the Final Report to the Massachusetts Bays Program. January 1995.

Matayas BM, DeMaria A., Microbiologic Evaluation and Safety of Drinking Water (DRAFT) *The Reporter*.

Moore AC, Herwaldt BL *et al.*, 1993. Surveillance for Waterborne Disease Outbreaks – United States, 1991-1992. *Morbidity and Mortality Weekly Report*. Volume 42 (SS-5), pp. 1-22.

Moore JE, Caldwell PS, Millar BC, Murphy PG, 2001. Occurrence of Campylobacter spp. in water in Northern Ireland: implications for public health. *Ulster Med J.* Nov, Volume 70, pp. 102-7.

Moore SL, Gregorio D *et al.*, 2000. Composition and distribution of beach debris in Orange County, California.

NAS, 1977, Drinking Water and Health, Safe Drinking Water Committee, National Academy of Sciences, Washington, D.C., 1977.

NRDC, 1995. Testing the Waters V; Politics and Pollution at U.S. Beaches. National Resources Defense Council, June 1995.

Polo F, Figueras MJ, Inza I, Sala J, Fleisher JM, Guarro J, 1998. Relationship between presence of Salmonella and indicators of fecal pollution in aquatic habitats. *FEMS Microbiol Lett*. March 15, Volume 160, pp. 253-6.

Pruess, A., 1998. Review of epidemiological studies on health effects from exposure to recreational water. *International Journal of Epidemiology*. Volume 27, pp. 1-9.

Rex A and Coughlin K, 1995. Correlation between Fecal Coliform Counts and *Enterococcus* Counts in Boston Harbor and its Tributary Rivers: Variation with Rainfall. Massachusetts Water Resources Authority, Boston, MA, May 1995.

Rose JB, Atlas RM, Gerba CP, Gilchrist MR, LeChevallier MW, Sobsey MD, Yates MV, Cassell GH, Tiedje JM, 1999. *Microbial Pollutants in Our Nation's Water: Environmental and Public Health Issues*. Amercian Society for Microbiology, Washington, D.C.

Schindler PR, 2001. Hygiene of Bathing Waters. *Gesundheitswesen*. Vol. 63, Suppl 2, pp. S142-50.

Seyfried PL, Tobin RS *et al.*, 1985. A Prospective Study of Swimming-Related Illness, Swimming Associated Health Risk. *American Journal of Public Health*. Volume 75 (9) pp. 1068-1070.

Sorvillo FJ, Fujioka K *et al.*, 1992. Swimming-Associated Cryptosporidiosis. *American Journal of Public Health*, Volume 82 (95) pp. 742-744.

U.S. Congress, 2000. Public Law 106-284. Beaches Environmental Assessment and Coastal Health Act of 2000. October 10, 2000.

USEPA, 1984. Health Effects Criteria for Fresh Recreational Waters, EPA document Number EPA 600/1-84-004, Office of Research and Development, U.S. Environmental Protection Agency, Cincinnati, Ohio, August 1984.

USEPA, 1985. Test Methods for *Escherichia coli* and Enterococci in Water by the Membrane Filter Procedure, EPA Document Number EPA-600/4-85/076, Environmental Monitoring and Support Laboratory, U.S. Environmental Protection Agency, Cincinnati, Ohio.

USEPA, 1986. Ambient Water Quality Criteria for Bacteria - 1986, EPA Document Number EPA440/5-84-002, Office of Regulations and Standards, Criteria and Standards Division, United States Environmental Protection Agency, Washington, DC.

USEPA, 1997. Method 1600: Membrane Filter Test Method for Enterococci in Water. EPA Document Number EPA-821-R-97-004, Office of Water, U.S. Environmental Protection Agency, Washington D.C., May 1997.

USEPA, 1999. *Action Plan for Beaches and Recreational Waters*. EPA Document Number EPA-823-D-00-001, Office of Research and Development and Office of Water, Washington, DC.

USEPA, 2002. *National Beach Guidance and Required Performance Criteria for Grants*. EPA Document Number EPA-823-B-02-004, Office of Water, Washington, D.C.

Weiskel PK, Howes BL, Heufelder GR, 1996. Coliform Contamination of a Coastal Embayment: Sources and Transport Pathways. *Environmental Science and Technology*, Volume 30 (6), pp. 1872-1881.

X. TABLES

Table 1: All Massachusetts cities and towns grouped by the presence and/or absence of marine and freshwater public and semi-public bathing beaches.

Type of city/town	Number (#)	Percentage (%)
Marine beach only	35	10
Freshwater beach only	151	43
Marine and freshwater beaches	24	7
No beaches	141	40
Total	351	100

Table 2: All Massachusetts cities and towns grouped according to the presence or absence of data for marine or freshwater public and semi-public bathing beaches.

Type of city/town	Number (#)	Percentage (%)
Marine or freshwater beach, with data[1]	179	51
Marine or freshwater beach, without data	31	9
No beaches	141	40
Total	351	100

1. The data included in this report were submitted from Massachusetts cities/towns through 6/30/02 for the 2001 bathing season.

Table 3: Water quality testing at marine and freshwater public and semi-public bathing beaches in Massachusetts, grouped by town, for the years 2001, 1996, and 1995.

Coastal cities/towns						
Type of city/town	2001		1996		1995	
	#	%	#	%	#	%
Coastal cities/towns with marine bathing beaches	59[1]	86	60[1]	86	60	86
Coastal cities/towns with marine bathing beaches for which data were obtained	58	83	53	76	52	74
Coastal cities/towns with marine bathing beaches for which no data were obtained	2	3	7	10	8	12
Coastal cities/towns without marine bathing beaches	10	14	10	14	10	14
Total number of coastal cities/towns	70	100	70	100	70	100
All cities/towns						
Type of city/town	2001		1996		1995	
	#	%	#	%	#	%
Cities/towns with freshwater bathing Beaches	175	50	N/A	N/A	N/A	N/A
Cities/towns with freshwater bathing beaches for which data were obtained	145	41	N/A	N/A	N/A	N/A
Cities/towns with freshwater bathing beaches for which no data were obtained	30	9	N/A	N/A	N/A	N/A
Cities/towns without freshwater bathing beaches	176	50	N/A	N/A	N/A	N/A
Total number of cities/towns	351	100	N/A	N/A	N/A	N/A

1. The 59 coastal cities/towns with public and semi-public marine beaches in this report differs from the 60 in the 1996 report by the inclusion here of Somerset (mistakenly omitted in the 1996 report), the omission of Pembroke (mistakenly included as marine in the 1996 report), and the omission of Rowley (included in the 1996 report as having public or semi-public marine beaches, when in fact it does not).

Table 4: Water quality testing at marine and freshwater public and semi-public bathing beaches in Massachusetts in 2001, grouped by city/town, beach, and sample.

Type of city/town	# cities/towns (total)	# cities/towns with data	# beaches[1]	# samples
Cities/towns with marine bathing beaches	59	58	448[2]	7,200
Cities/towns with freshwater bathing beaches	175	145	431	5,651
Total	210[4]	179[3,4]	879[3]	12,851[3]

1. Note that this table does not include the number of beaches that were not tested, as data were not compiled to accurately determine this number.
2. This number differs from that in the 1996 report, which indicated a total of 325 marine public and semi-public bathing beaches (296 with data and 29 without data).
3. These numbers represent the total number of cities/towns, beaches, and samples, respectively, for which there are data in 2001.
4. The total number of cities/towns is less than the sum of the number of cities/towns with marine beaches and those with freshwater beaches because there are towns that have both marine and freshwater bathing beaches (24 in total; see Table 1).

Table 5: Bather density at marine and freshwater public and semi-public bathing beaches in Massachusetts in 2001, at times when samples were taken.

Marine beaches		
Bather Density (# people)	#	%
0-10	2,921	41
10-20	315	4
20-50	297	4
>50	209	3
Not indicated	3,458	48
Total	7,200	100
Freshwater beaches		
Bather Density (# people)	#	%
0-10	2,000	35
10-20	191	4
20-50	144	3
>50	71	1
Not indicated	3,245	57
Total	5,651	100

Table 6: Reported existence of open or obvious sources of pollution that might affect the water quality at marine and freshwater public and semi-public bathing beaches in Massachusetts in 2001.

Marine beaches		
Pollution source	#	%
Yes	36	0.5
No	0	0
Not indicated	7,164	99.5
Total	7,200	100
Freshwater beaches		
Pollution source	#	%
Yes	5	0.1
No	0	0
Not indicated	5,646	99.9
Total	5,651	100

Table 7: Reported sources of pollution for marine and freshwater public and semi-public bathing beaches in Massachusetts in 2001 for which a pollution source was specified.

Marine beaches		
Sources	#	%
Boat	0	0
Wildlife	0	0
Septic System	2	6
Outflow pipe	9	25
Stream	0	0
Other	25	69
Total	36	100
Freshwater beaches		
Sources	#	%
Boat	0	0
Wildlife	0	0
Septic System	0	0
Outflow pipe	5	100
Stream	0	0
Other	0	0
Total	5	100

Table 8: Water quality bacterial indicators used to test marine and freshwater public and semi-public bathing beaches in Massachusetts in 2001, grouped by sample.

Marine beaches		
Indicator[1]	#	%
Enterococcus	7,081	98.3
E. coli	1	0.1
Fecal coliform	83	1.2
Total coliform	35	0.5
Fecal streptococcus	0	0.0
Not indicated	0	0.0
Total	7,200	100.0
Freshwater beaches		
Indicator[2]	#	%
Enterococcus	1,211	21
E. coli	3,822	68
Fecal coliform	173	3
Total coliform	360	6
Fecal streptococcus	14	0.3
Not indicated	71	1.7
Total	5,651	100

1. Massachusetts state guidelines indicate that Enterococcus be used to test marine beaches for potential bacterial contamination.
2. Massachusetts state guidelines indicate that Enterococcus or *E. coli* be used to test freshwater beaches for potential bacterial contamination.

Table 9: Water quality bacterial indicators or combinations of indicators used to test marine and freshwater public and semi-public bathing beaches in Massachusetts in 2001, grouped by beach.

Marine beaches		
Indicator(s)	#	%
Enterococcus only	420	95
E. coli only	0	0
Fecal coliform only	0	0
Total coliform only	0	0
Enterococcus and E. coli	1	0.2
Enterococcus and Fecal coliform	20	3.3
Enterococcus and Total coliform	5	1.1
Enterococcus, Fecal coliform, and Total coliform	2	0.2
Not indicated	0	0
Total	448	100
Freshwater beaches		
Indicator(s)	#	%
Enterococcus only	45	10
E. coli only	265	61
Fecal coliform only	0	0
Total coliform only	15	3
Enterococcus and E. coli	42	10
Enterococcus and Fecal coliform	0	0
Enterococcus and Total coliform	4	1
E. coli and Fecal coliform	8	2
E. coli and Total coliform	16	4
E. coli and Fecal streptococcus	3	1
Fecal coliform and total coliform	2	0.5
Enterococcus, E. coli, and Fecal coliform	4	1
Enterococcus, E. coli, and Total coliform	12	3
E. coli, Fecal coliform, and Total coliform	6	1
E. coli, Fecal coliform, Total coliform, and Fecal streptococcus	1	0.2
Fecal coliform and Fecal streptococcus	1	0.2
Not indicated	9	2
Total	431	100

1. Each of the rows in this table is independent of the others (e.g., the number of beaches tested for Enterococcus and *E. coli* together is not included in the number of beaches tested for Enterococcus only).
2. Beaches that use multiple indicators usually do not use them on a consistent basis (e.g., water samples on a given date are tested with one indicator, while those tested on a different date are tested with another indicator).

Table 10: Frequency of water quality testing at marine and freshwater public and semi-public bathing beaches in Massachusetts in 2001, grouped by beach and indicator.

Marine beaches		
Test frequency	#	%
Daily	4	1
Twice per week	10	2
Weekly	432	90
Twice per month	4	1
Monthly	4	1
Three times	0	0
Two times	3	1
One time	21	4
Total	478[1]	100
Freshwater beaches		
Test frequency	#	%
Daily	2	0.5
Twice per week	13	2
Weekly	388	70
Twice per month	29	5
Monthly	46	8
Three times	2	0.5
Two times	14	3
One time	62	11
Total	556[1]	100

1. The total number represents the number of beaches, with some beaches represented several times if multiple indicators were used (see Tables 16, 17, and 18).

Table 11: Groups, agencies, or individuals who performed water sampling at marine and freshwater public and semi-public bathing beaches in Massachusetts in 2001.

Marine beaches		
Testing organization	#	%
Local Health Department	4,242	59
Metropolitan District Commission (MDC)	1,414	20
Department of Environmental Management	72	1
Outside lab	1,472	20
Other	0	0
Total	7,200	100
Freshwater beaches		
Testing organization	#	%
Local Health Department	2,542	45
Metropolitan District Commission (MDC)	281	5
Department of Environmental Management	902	16
Outside lab	1,925	34
Other	1	0
Total	5,651	100

Table 12: The number of samples in which the measured Enterococcus concentration (marine beaches) or Enterococcus or *E. coli* concentration (freshwater beaches) exceeded their respective water quality criteria at public and semi-public bathing beaches in Massachusetts in 2001.

Marine beaches		
Concentration	#	%
Violation[1,2]	444	6
Non-violation	6,590	92
Indeterminant[3]	166	2
Total	7,200	100
Freshwater beaches		
Concentration	#	%
Violation[1,2]	336	6
Non-violation	4,611	82
Indeterminant[3]	704	12
Total	5,651	100

1. For marine beaches, Enterococcus is the indicator species. A sample is said to be in violation if the number of colony forming units (CFU) / 100 ml is more than 104 for a single sample or more than 35 for the average of 5 samples over a 30-day period. For freshwater beaches, either Enterococcus or *E. coli* can be used as indicator species. For Enterococcus, a sample is said to be in violation if the number of CFU / 100 ml is more than 61 for a single sample or more than 33 for the average of 5 samples over a 30-day period. For *E. coli*, a sample is said to be in violation if the number of CFU / 100 ml is more than 235 for a single sample or more than 126 for the average of 5 samples over a 30-day period.
2. These numbers are an underestimate of the number of samples that had the potential for bacterial contamination because many samples used an indicator for which there are no current guidelines or failed to report an indicator or indicator level (see number in the indeterminant category).
3. Indeterminant means that an indicator other than those recommended by current guidelines was used, no indicator was reported, or no level was reported.

Table 13: The number of beaches in which at least one measured Enterococcus concentration (marine beaches) or at least one Enterococcus or *E. coli* concentration (freshwater beaches) exceeded their respective water quality criteria at public bathing beaches in Massachusetts in 2001.

	# beaches with at least one violation	Total # beaches	%
Marine beaches	158	448	35
Freshwater beaches	130	431	30

Table 14: The number of violations at marine and freshwater public and semi-public bathing beaches in Massachusetts in 2001, grouped by indicator species.

Marine beaches			
Indicator	Total # samples collected	Total # samples exceeding criterion	% samples exceeding criterion
Enterococcus	7,081	444	6
E. coli	1	N/A	N/A
Fecal coliform	83	N/A	N/A
Total coliform	35	N/A	N/A
Fecal streptococcus	0	N/A	N/A
Not indicated	0	N/A	N/A
Total	7,200	444	6
Freshwater beaches			
Indicator	Total # samples collected	Total # samples exceeding criterion	% samples exceeding criterion
Enterococcus	1,211	203	17
E. coli	3,822	133	3
Fecal coliform	173	N/A	N/A
Total coliform	360	N/A	N/A
Fecal streptococcus	14	N/A	N/A
Not indicated	71	N/A	N/A
Total	5,651	336	6

Table 15: The number of violations and postings at marine and freshwater public and semi-public bathing beaches in Massachusetts in 2001.

Marine beaches	
Violations, total (Enterococcus)	444
Postings, total	153
Postings, Enterococcus	146
Postings, Preemptive	3
Postings, Rainfall	4
% of violations that resulted in postings	33
Freshwater beaches	
Violations, total	336
Violations, Enterococcus	203
Violations, E. coli	133
Postings, total	136
Postings, Enterococcus	55
Postings, E. coli	34
Postings, Preemptive	3
Postings, Rainfall	44
% of violations that resulted in postings (Enterococcus)	27
% of violations that resulted in postings (E. coli)	26
% of violations that resulted in postings (overall)	40

Table 16: Water quality data for marine public and semi-public bathing beaches in Massachusetts in 2001.

Town	Beach Name	Beach Type	Testing Frequency	Indicator	# Tests	# Violations	Range of Violations (CFU/100 ml)	Range of Non-violations (CFU/100 ml)
Barnstable	Barnstable Town Beach	Marine	Weekly	Enterococci	13	0	N/A	2 – 100
Barnstable	Bone Hill Beach	Marine	Weekly	Enterococci	13	0	N/A	0 - 6
Barnstable	Bridge Street Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 22
Barnstable	Cordwood Road Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 88
Barnstable	Coville Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 6
Barnstable	Craigville Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 22
Barnstable	Crocker's Neck Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 4
Barnstable	Cross Street Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 16
Barnstable	Dowses Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 20
Barnstable	Estey Avenue Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 10
Barnstable	Fifth Avenue Beach	Marine	Weekly	Enterococci	13	0	N/A	0 - 100
Barnstable	Indian Trail Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 14
Barnstable	Kalmus Park Beach	Marine	Weekly	Enterococci	20	1	200	0 - 72
Barnstable	Kennedy Memorial Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 52
Barnstable	Keyes Memorial Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 54
Barnstable	Little River Road Beach	Marine	Weekly	Enterococci	13	1	160	2 - 6
Barnstable	Loops Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 18
Barnstable	Millway Beach	Marine	Weekly	Enterococci	12	0	N/A	2 - 22
Barnstable	Oregon Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 18
Barnstable	Oyster Place Road Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 16
Barnstable	Prince Cove Beach	Marine	Weekly	Enterococci	12	0	N/A	0 - 92
Barnstable	Ropes Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 56
Barnstable	Sandy Neck Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 14
Barnstable	Scudder Lane Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 34
Barnstable	Veterans Memorial Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 44
Barnstable	Wianno Beach	Marine	Weekly	Enterococci	13	0	N/A	2 – 52
Beverly	Brackenbury Beach	Marine	Weekly	Enterococci	14	0	N/A	5 – 60
Beverly	Dane Street Beach	Marine	Weekly	Enterococci	42	2	190 - 315	0 – 70
Beverly	Goat Hill Beach	Marine	Weekly	Enterococci	14	0	N/A	5 – 35

Town	Beach Name	Beach Type	Testing Frequency	Indicator	# Tests	# Violations	Range of Violations (CFU/100 ml)	Range of Non-violations (CFU/100 ml)
Beverly	Independence Park Beach	Marine	Weekly	Enterococci	14	0	N/A	5 - 30
Beverly	Lynch Park Beach	Marine	Weekly	Enterococci	14	0	N/A	5 - 85
Beverly	Mingo Beach	Marine	Weekly	Enterococci	15	1	125	5 - 80
Beverly	Obear Park Beach	Marine	Weekly	Enterococci	14	0	N/A	5 - 55
Beverly	Rices Beach	Marine	Weekly	Enterococci	15	1	105	5 - 65
Beverly	Sandy Point Beach	Marine	Weekly	Enterococci	14	0	N/A	5 - 70
Beverly	West Beach	Marine	Weekly	Enterococci	14	1	190	5 - 75
Beverly	Woodbury Beach	Marine	Weekly	Enterococci	17	2	210 - 430	5 - 95
Boston	Beade's Bridge Beach	Marine	Weekly	Enterococci	11	1	128	4 - 70
Boston	Carson Beach	Marine	Daily	Enterococci	244	27	105 - 1330	1 - 100
Boston	Carson Beach	Marine	Weekly	Fecal Coliform	6	N/A	N/A	60 - 6000
Boston	Constitution Beach	Marine	Daily	Enterococci	243	22	105 - 5360	0 - 100
Boston	Constitution Beach	Marine	Weekly	Fecal Coliform	6	N/A	N/A	280 - 1160
Boston	Lovell's Island Beach	Marine	Weekly	Enterococci	9	0	N/A	0 -14
Boston	Malibu Beach	Marine	Weekly	Enterococci	14	2	170 - 540	1 - 52
Boston	Pleasure Bay Beach	Marine	Weekly	Enterococci	81	6	140 - 2150	1 - 90
Boston	Savin Hill Beach	Marine	Weekly	Enterococci	12	0	N/A	2 - 70
Boston	Tenean Beach	Marine	Daily	Enterococci	225	40	106 - 4280	0 - 100
Boston	Tenean Beach	Marine	Weekly	Fecal Coliform	5	N/A	N/A	425 - 3600
Boston	Tenean Beach	Marine	One Time	Total Coliform	1	N/A	N/A	670
Bourne	Barlow's Landing Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 58
Bourne	Electric Avenue Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 28
Bourne	Gilder Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 14
Bourne	Monument Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 54
Bourne	Patuisset Beach	Marine	Weekly	Enterococci	15	2	122 - 180	2 - 66
Bourne	Sagamore Beach	Marine	Weekly	Enterococci	14	1	122	2 - 14
Bourne	Scenic Park Beach	Marine	Weekly	Enterococci	12	1	124	2 - 84

Town	Beach Name	Beach Type	Testing Frequency	Indicator	# Tests	# Violations	Range of Violations (CFU/100 ml)	Range of Non-violations (CFU/100 ml)
Braintree	Smith Beach	Marine	Weekly	Enterococci	14	1	168	0 - 84
Brewster	Breakwater Beach	Marine	Weekly	Enterococci	13	1	350	2 - 22
Brewster	Cape Cod Sea Camp - Cape Cod Bay	Marine	Weekly	Enterococci	13	1	146	2 - 20
Brewster	Crosby Landing Beach	Marine	Weekly	Enterococci	13	1	110	2 - 40
Brewster	Ellis Landing Beach	Marine	Weekly	Enterococci	12	0	N/A	2 - 18
Brewster	Linnell Landing Beach	Marine	Weekly	Enterococci	12	0	N/A	2 - 14
Brewster	Paine's Creek Beach	Marine	Weekly	Enterococci	10	0	N/A	2 - 14
Brewster	Point of Rocks Beach	Marine	Weekly	Enterococci	12	0	N/A	2 - 76
Brewster	Robins Hill Beach	Marine	Weekly	Enterococci	10	0	N/A	2 - 16
Brewster	Saints Landing Beach	Marine	Weekly	Enterococci	12	0	N/A	2 - 6
Chatham	Bucks Creek Beach	Marine	Weekly	Enterococci	12	1	660	2 - 27
Chatham	Chatham Bars Inn Beach	Marine	Weekly	Enterococci	9	0	N/A	2 - 60
Chatham	Cockle Cove Beach	Marine	Weekly	Enterococci	12	0	N/A	2 - 5
Chatham	Cockle Creek Beach	Marine	Weekly	Enterococci	25	11	110 - 13590	5 - 90
Chatham	Forest Beach	Marine	Weekly	Enterococci	12	0	N/A	2 - 65
Chatham	Hardings Beach - East	Marine	Weekly	Enterococci	11	0	N/A	2 - 5
Chatham	Hardings Beach - West	Marine	Weekly	Enterococci	11	0	N/A	2 - 57
Chatham	Jacknife Harbor Beach	Marine	Weekly	Enterococci	12	1	343	2 - 12
Chatham	Lighthouse Beach	Marine	Weekly	Enterococci	5	0	N/A	2 - 5
Chatham	Oyster Pond Beach	Marine	Weekly	Enterococci	15	1	175	2 - 60
Chatham	Pleasant Street Beach	Marine	Weekly	Enterococci	11	0	N/A	2 - 32
Chatham	Ridgevale Beach	Marine	Weekly	Enterococci	10	0	N/A	2 - 23
Chilmark	Freeman Lake - Playground	Marine	Twice per Month	Enterococci	3	0	N/A	0 - 2
Chilmark	Lucy Vincent Beach - Chilmark Pond	Marine	Weekly	Enterococci	3	0	N/A	2 - 82
Chilmark	Lucy Vincent Beach - Ocean	Marine	Weekly	Enterococci	3	0	N/A	0 - 2
Chilmark	Menemsha Beach	Marine	Twice per Month	Enterococci	3	0	N/A	0 - 28
Cohasset	Bassing Beach	Marine	Weekly	Enterococci	14	4	110 - 235	2 - 100
Cohasset	Bassing Beach	Marine	One Time	Fecal	1	N/A	N/A	5

Town	Beach Name	Beach Type	Testing Frequency	Indicator	# Tests	# Violations	Range of Violations (CFU/100 ml)	Range of Non-violations (CFU/100 ml)
				Coliform				
Cohasset	Black Rock Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 84
Cohasset	Black Rock Beach	Marine	One Time	Fecal Coliform	1	N/A	N/A	0
Cohasset	Little Harbor Beach	Marine	Weekly	Enterococci	14	0	N/A	2 - 92
Cohasset	Little Harbor Beach	Marine	One Time	Fecal Coliform	1	N/A	N/A	5
Cohasset	Sandy Beach	Marine	Weekly	Enterococci	26	0	N/A	2 - 48
Cohasset	Sandy Beach	Marine	Weekly	Fecal Coliform	14	N/A	N/A	0 - 120
Cohasset	Sandy Cove Beach	Marine	Weekly	Enterococci	13	1	186	2 - 94
Cohasset	Sandy Cove Beach	Marine	One Time	Fecal Coliform	1	N/A	N/A	0
Cohasset	Yacht Club Beach	Marine	Weekly	Enterococci	13	3	150 - 460	4 - 90
Cohasset	Yacht Club Beach	Marine	One Time	Fecal Coliform	1	N/A	N/A	10
Danvers	Sandy Beach	Marine	Weekly	Enterococci	11	3	160 - 1600	10 - 80
Dartmouth	Anthony's Beach	Marine	Weekly	Enterococci	15	0	N/A	2 - 20
Dartmouth	Apponagansett Town Beach	Marine	Weekly	Enterococci	15	0	N/A	2 - 54
Dartmouth	Barney's Joy Beach	Marine	Weekly	Enterococci	14	0	N/A	2 - 6
Dartmouth	Bayview Beach	Marine	Weekly	Enterococci	15	0	N/A	2 - 36
Dartmouth	Demarest Lloyd Beach	Marine	Weekly	Enterococci	14	5	150 - 200	2 - 18
Dartmouth	Demarest Lloyd Beach	Marine	Two Times	Total Coliform	2	N/A	N/A	90 - 200
Dartmouth	Hidden Bay Beach	Marine	Weekly	Enterococci	15	2	148 - 500	2 - 14
Dartmouth	Jone's Park Town Beach	Marine	Weekly	Enterococci	15	0	N/A	2 - 26
Dartmouth	Little River Beach	Marine	Weekly	Enterococci	14	1	174	2 - 44
Dartmouth	Mishaum Point Beach	Marine	Weekly	Enterococci	15	0	N/A	2 - 30
Dartmouth	Moses Smith Creek Beach	Marine	Weekly	Enterococci	15	2	152 - 172	4 - 52
Dartmouth	Nonquitt Beach	Marine	Weekly	Enterococci	15	0	N/A	2 - 8
Dartmouth	Oak Hill Shores Beach	Marine	Weekly	Enterococci	15	0	N/A	2 - 22
Dartmouth	Round Hill Condo Beach	Marine	Weekly	Enterococci	15	0	N/A	2 - 20

Town	Beach Name	Beach Type	Testing Frequency	Indicator	# Tests	# Violations	Range of Violations (CFU/100 ml)	Range of Non-violations (CFU/100 ml)
Dartmouth	Round Hill Town Beach	Marine	Weekly	Enterococci	15	0	N/A	2 - 8
Dartmouth	Salter's Point Beach - East	Marine	Weekly	Enterococci	15	0	N/A	2 - 4
Dartmouth	Salter's Point Beach - South	Marine	Weekly	Enterococci	15	0	N/A	2 - 52
Dennis	Bayview Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 6
Dennis	Chapin Memorial Beach	Marine	Weekly	Enterococci	12	1	266	2 - 50
Dennis	Cold Storage Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 36
Dennis	Corporation Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 42
Dennis	Glendon Road Beach	Marine	Weekly	Enterococci	14	1	400	2 - 98
Dennis	Haigis Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 80
Dennis	Harborview Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 66
Dennis	Howe's Street Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 10
Dennis	Inman Road Beach	Marine	Weekly	Enterococci	15	1	330	0 - 56
Dennis	Mayflower Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 6
Dennis	Raycroft Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 18
Dennis	Sea Street Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 14
Dennis	South Village Beach	Marine	Weekly	Enterococci	14	0	N/A	0 - 22
Dennis	Sullivan Beach	Marine	Weekly	Enterococci	14	0	N/A	2 - 22
Dennis	Trotting Park Beach	Marine	Weekly	Enterococci	14	0	N/A	2 - 28
Dennis	West Dennis Beach	Marine	Weekly	Enterococci	30	2	252 - 254	2 - 46
Duxbury	Duxbury Beach	Marine	Weekly	Enterococci	14	0	N/A	2 - 98
Duxbury	Hardin Hill Beach	Marine	Weekly	Enterococci	15	1	126	2 - 104
Duxbury	Howlands Landing Beach	Marine	Weekly	Enterococci	14	1	650	2 - 104
Duxbury	Island Creek Beach	Marine	Weekly	Enterococci	14	0	N/A	2 - 40
Duxbury	Landing Road Beach	Marine	Weekly	Enterococci	16	2	130 - 150	2 - 58
Duxbury	Residents Beach	Marine	Weekly	Enterococci	15	1	184	2 - 82
Duxbury	Ship Yard Beach	Marine	Weekly	Enterococci	15	1	214	2 - 62
Duxbury	West End Beach	Marine	Weekly	Enterococci	15	1	560	2 - 70
Eastham	Boat Meadow Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 32
Eastham	Campground Beach	Marine	Weekly	Enterococci	14	1	110	2 - 62
Eastham	Cole Road Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 16

Town	Beach Name	Beach Type	Testing Frequency	Indicator	# Tests	# Violations	Range of Violations (CFU/100 ml)	Range of Non-violations (CFU/100 ml)
Eastham	Cook's Brook Beach	Marine	Weekly	Enterococci	14	1	124	2 - 10
Eastham	Dyer Prince Beach	Marine	Weekly	Enterococci	16	2	200 - 400	2 - 66
Eastham	First Encounter Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 16
Eastham	Kingsbury Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 82
Eastham	Sunken Meadow Beach	Marine	Weekly	Enterococci	14	1	150	2 - 10
Eastham	Thumpertown Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 90
Eastham	Town Cove Beach	Marine	Weekly	Enterococci	13	1	400	2 - 50
Edgartown	Bend-In-The-Road Beach	Marine	Weekly	Enterococci	13	0	N/A	0 - 20
Edgartown	Chappaquiddick Point Beach	Marine	Weekly	Enterococci	12	0	N/A	0 - 12
Edgartown	East Beach	Marine	Weekly	Enterococci	12	0	N/A	0 - 8
Edgartown	Hering Creek Beach	Marine	One Time	Enterococci	1	0	N/A	2
Edgartown	Red Beach	Marine	One Time	Enterococci	1	0	N/A	0
Edgartown	South Beach State Park	Marine	Twice per Week	Enterococci	22	0	N/A	0 -12
Edgartown	Wasque Swimming Beach	Marine	Weekly	Enterococci	10	0	N/A	0 - 18
Edgartown	Wilfred's Pond Beach	Marine	Weekly	Enterococci	12	2	114 - 1162	0 - 8
Essex	Clammer's Beach	Marine	Weekly	Enterococci	16	0	N/A	10 - 50
Essex	Front Beach	Marine	Weekly	Enterococci	16	1	300	10 - 50
Fairhaven	Fort Phoenix Beach	Marine	Twice per Week	Enterococci	20	3	106 - 300	2 - 78
Fairhaven	Manhattan Avenue Beach	Marine	Weekly	Enterococci	13	3	151 - 268	2 - 74
Fairhaven	Nakata Avenue Beach	Marine	Weekly	Enterococci	11	1	112	2 - 40
Fairhaven	Nonquitt Avenue Beach	Marine	Weekly	Enterococci	13	2	192 - 240	2 - 42
Fairhaven	Raymond Street/Reservation Road Beach	Marine	Weekly	Enterococci	11	1	166	2 - 66
Fairhaven	Raymond Street/Sunrise Court Beach	Marine	Weekly	Enterococci	15	3	136 - 504	2 - 96
Fairhaven	Seaview Avenue Beach	Marine	Weekly	Enterococci	13	3	212 - 572	1 - 36
Fairhaven	Silver Shell Beach	Marine	Weekly	Enterococci	11	1	500	2 - 66
Fairhaven	West Island Causeway Beach	Marine	Weekly	Enterococci	13	3	132 - 632	2 - 12
Fairhaven	West Island Town Beach	Marine	Weekly	Enterococci	12	1	206	2 - 4
Falmouth	Bristol Beach 1	Marine	Weekly	Enterococci	13	0	N/A	2 - 16

Town	Beach Name	Beach Type	Testing Frequency	Indicator	# Tests	# Violations	Range of Violations (CFU/100 ml)	Range of Non-violations (CFU/100 ml)
Falmouth	Bristol Beach 2	Marine	Weekly	Enterococci	10	0	N/A	2 - 22
Falmouth	Chappaquoit Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 68
Falmouth	Falmouth Heights Beach 1	Marine	Weekly	Enterococci	12	0	N/A	2 - 22
Falmouth	Falmouth Heights Beach 2	Marine	Weekly	Enterococci	11	1	120	2 - 10
Falmouth	Megansett	Marine	Weekly	Enterococci	12	0	N/A	2 - 72
Falmouth	Menauhant Beach 1	Marine	Weekly	Enterococci	12	0	N/A	2 - 10
Falmouth	Menauhant Beach 2	Marine	Weekly	Enterococci	11	0	N/A	2 - 8
Falmouth	Mill Road Beach	Marine	Weekly	Enterococci	11	1	158	2 - 16
Falmouth	Old Silver Beach 1	Marine	Weekly	Enterococci	12	0	N/A	2 - 30
Falmouth	Old Silver Beach 2	Marine	Weekly	Enterococci	12	0	N/A	2 - 64
Falmouth	Stoney Beach	Marine	Weekly	Enterococci	14	1	122	2 - 18
Falmouth	Surf Drive Beach	Marine	Weekly	Enterococci	17	2	118 - 130	0 - 44
Falmouth	Wood Neck Beach	Marine	Weekly	Enterococci	12	0	N/A	2 - 8
Falmouth	Wood Neck River	Marine	Weekly	Enterococci	12	0	N/A	2 - 100
Gay Head	Moshup Beach	Marine	Weekly	Enterococci	11	0	N/A	0 - 100
Gloucester	Cressy's Beach	Marine	Weekly	Enterococci	9	0	N/A	0 - 20
Gloucester	Good Harbor Beach	Marine	Weekly	Enterococci	14	0	N/A	0 - 40
Gloucester	Half Moon Beach	Marine	Weekly	Enterococci	9	0	N/A	0 - 40
Gloucester	Niles Beach	Marine	Weekly	Enterococci	9	0	N/A	10 - 30
Gloucester	Pavillion Beach	Marine	Weekly	Enterococci	9	0	N/A	10 - 40
Gloucester	Plum Cove Beach	Marine	Twice per Month	Enterococci	5	0	N/A	10 - 30
Gloucester	Wingearsheek Beach	Marine	Twice per Month	Enterococci	4	0	N/A	0 - 10
Harwich	Atlantic Avenue Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 22
Harwich	Bank Street Beach	Marine	Weekly	Enterococci	7	0	N/A	2 - 36
Harwich	Bellmont Rd. Beach	Marine	Weekly	Enterococci	7	1	126	2 - 32
Harwich	Brooks Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 48
Harwich	Earle St. Beach	Marine	Weekly	Enterococci	12	0	N/A	2 - 60
Harwich	Grey Neck Beach	Marine	Weekly	Enterococci	12	0	N/A	2 - 96
Harwich	Merkel Beach	Marine	Weekly	Enterococci	12	0	N/A	2 - 36
Harwich	Neel Rd. Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 38

Town	Beach Name	Beach Type	Testing Frequency	Indicator	# Tests	# Violations	Range of Violations (CFU/100 ml)	Range of Non-violations (CFU/100 ml)
Harwich	Pleasant Bay Beach	Marine	Weekly	Enterococci	12	0	N/A	2 - 30
Harwich	Pleasant Rd. Beach	Marine	Weekly	Enterococci	12	0	N/A	2 - 62
Harwich	Red River Beach	Marine	Weekly	Enterococci	18	2	118 - 146	2 - 60
Harwich	Riverside Harbor Beach	Marine	Weekly	Enterococci	15	2	140 - 400	2 - 56
Harwich	Sea St. Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 64
Harwich	WahWah Taysee Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 38
Harwich	Wyndmere Bluffs Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 14
Harwich	Zylpha Rd. Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 40
Hingham	Belair Beach	Marine	Weekly	Enterococci	14	0	N/A	2 - 80
Hingham	Cliff Road Beach	Marine	Weekly	Enterococci	15	1	272	2 - 84
Hingham	Kimball Beach	Marine	Weekly	Enterococci	14	0	N/A	2 - 94
Hingham	Melville Beach	Marine	Weekly	Enterococci	16	1	1800	2 - 96
Hingham	North Beach	Marine	Weekly	Enterococci	16	1	450	2 - 98
Hingham	Seal Cove Beach	Marine	Weekly	Enterococci	14	0	N/A	2 - 24
Hingham	Town Beach	Marine	Weekly	Enterococci	15	0	N/A	0 - 60
Hingham	Wompatuck Beach	Marine	Weekly	Enterococci	14	1	192	2 - 28
Hingham	Yacht Club Beach	Marine	Weekly	Enterococci	15	0	N/A	2 - 22
Hull	A St. Bay Beach	Marine	Weekly	Enterococci	14	0	N/A	2 - 74
Hull	A St. Ocean Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 20
Hull	Darcy's Beach	Marine	Weekly	Enterococci	13	1	780	2 - 48
Hull	Edgewater Beach	Marine	Weekly	Enterococci	6	0	N/A	2 - 102
Hull	Gunrock Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 62
Hull	Helen St. Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 42
Hull	Kenberma Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 58
Hull	Nantasket Beach	Marine	Weekly at 4 locations	Enterococci	44	0	N/A	1 - 60
Hull	Newport Beach	Marine	Weekly	Enterococci	13	1	164	2 - 92
Hull	Phipps St. Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 24
Hull	Spring St. Beach	Marine	Weekly	Enterococci	15	2	158 - 180	2 - 104
Hull	XYZ Beach	Marine	Weekly	Enterococci	13	1	540	2 - 10

Town	Beach Name	Beach Type	Testing Frequency	Indicator	# Tests	# Violations	Range of Violations (CFU/100 ml)	Range of Non-violations (CFU/100 ml)
Ipswich	Clark Beach	Marine	Weekly	Enterococci	9	0	N/A	10
Ipswich	Cranes Beach	Marine	Weekly at 2 locations	Enterococci	26	0	N/A	10 - 60
Ipswich	Little Neck Beach	Marine	Weekly	Enterococci	13	0	N/A	10 - 40
Ipswich	Pavillion Beach	Marine	Weekly at 2 locations	Enterococci	30	0	N/A	10 - 80
Kingston	Grey's Beach	Marine	Weekly	Enterococci	13	0	N/A	5 - 60
Kingston	Grey's Beach	Marine	Weekly	Total Coliform	13	N/A	N/A	5 - 300
Kingston	Rocky Nook Beach	Marine	Weekly	Enterococci	13	0	N/A	5 - 60
Kingston	Rocky Nook Beach	Marine	Weekly	Total Coliform	13	N/A	N/A	20 - 640
Lynn	King's Beach	Marine	Weekly at 3 locations	Enterococci	37	10	106 - 870	1 - 90
Lynn	Lynn Beach	Marine	One Time	Enterococci	1	0	N/A	2
Manchester	Black Beach	Marine	Weekly	Enterococci	13	0	N/A	10 - 80
Manchester	Magnolia Bath & Tennis Club Beach	Marine	Weekly	Enterococci	10	0	N/A	10 - 100
Manchester	Magnolia Beach	Marine	Weekly	Enterococci	13	0	N/A	10 - 80
Manchester	Singing Beach	Marine	Weekly at 3 locations	Enterococci	26	0	N/A	10 - 90
Manchester	Tucks Point Beach	Marine	Weekly	Enterococci	14	1	3000	10 - 90
Manchester	West Manchester Beach	Marine	Weekly	Enterococci	14	3	390 - 2200	10 - 50
Manchester	White Beach	Marine	Weekly	Enterococci	13	0	N/A	10 - 100
Marblehead	Corinthian Beach	Marine	Weekly	Enterococci	9	0	N/A	2 - 58
Marblehead	Corinthian Beach	Marine	Weekly	Fecal Coliform	4	N/A	N/A	125 - 205
Marblehead	Crocker Park Beach	Marine	One Time	Enterococci	1	0	N/A	4
Marblehead	Crocker Park Beach	Marine	One Time	Fecal Coliform	1	N/A	N/A	5
Marblehead	Devereaux Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 36
Marblehead	Devereaux Beach	Marine	Weekly	Fecal Coliform	5	N/A	N/A	5 - 65

Town	Beach Name	Beach Type	Testing Frequency	Indicator	# Tests	# Violations	Range of Violations (CFU/100 ml)	Range of Non-violations (CFU/100 ml)
Marblehead	Eastern Beach	Marine	Weekly	Enterococci	9	0	N/A	4 - 90
Marblehead	Eastern Beach	Marine	Weekly	Fecal Coliform	4	N/A	N/A	5 - 140
Marblehead	Gas House Beach	Marine	Weekly	Enterococci	9	1	126	2 - 88
Marblehead	Gas House Beach	Marine	Two Times	Fecal Coliform	4	N/A	N/A	5 - 65
Marblehead	Grace Oliver's Beach	Marine	Weekly	Enterococci	14	0	N/A	2 - 100
Marblehead	Grace Oliver's Beach	Marine	Weekly	Fecal Coliform	6	N/A	N/A	10 - 110
Marblehead	Mid Harbor Beach	Marine	One Time	Enterococci	1	0	N/A	16
Marblehead	Mid Harbor Beach	Marine	One Time	Fecal Coliform	1	N/A	N/A	10
Marblehead	Naugus Ave Beach	Marine	One Time	Enterococci	1	0	N/A	2
Marblehead	Naugus Ave Beach	Marine	One Time	Fecal Coliform	1	N/A	N/A	5
Marblehead	Stramski Beach	Marine	Weekly	Enterococci	11	1	140	2 - 80
Marblehead	Stramski Beach	Marine	Weekly	Fecal Coliform	4	N/A	N/A	15 - 90
Marblehead	Sunset Road Beach	Marine	Weekly	Enterococci	7	2	166 - 180	2 - 90
Marblehead	Sunset Road Beach	Marine	Weekly	Fecal Coliform	4	N/A	N/A	5 - 290
Marblehead	Village St. Beach	Marine	Weekly	Enterococci	8	1	280	2 - 70
Marblehead	Village St. Beach	Marine	Weekly	Fecal Coliform	3	N/A	N/A	5 - 730
Marion	Island Wharf Beach	Marine	Weekly	Enterococci	13	1	334	2 - 52
Marion	Planting Island Beach	Marine	Weekly	Enterococci	12	0	N/A	2 - 20
Marion	Silvershell Beach North	Marine	Weekly	Enterococci	12	0	N/A	2 - 92
Marion	Silvershell Beach South	Marine	Weekly	Enterococci	12	0	N/A	2 - 74
Marion	Tabor Beach	Marine	Weekly	Enterococci	7	0	N/A	2 - 32
Marshfield	9th Road Beach	Marine	Weekly	Enterococci	11	1	295	2 - 72
Marshfield	Brant Rock Beach	Marine	Weekly	Enterococci	10	0	N/A	2 - 36

Town	Beach Name	Beach Type	Testing Frequency	Indicator	# Tests	# Violations	Range of Violations (CFU/100 ml)	Range of Non-violations (CFU/100 ml)
Marshfield	Fieldston Beach	Marine	Weekly	Enterococci	19	0	N/A	2 - 38
Marshfield	Green Harbor Beach	Marine	Weekly	Enterococci	10	0	N/A	4 - 72
Marshfield	Rexhame Beach	Marine	Weekly	Enterococci	10	0	N/A	2 - 40
Mashpee	Poponesst Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 32
Mashpee	Poponesst Spit Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 80
Mashpee	South Cape Beach	Marine	Twice per Week	Enterococci	20	1	334	2 - 18
Mashpee	South Cape Beach	Marine	One Time	Total Coliform	1	N/A	N/A	10
Mattapoisett	Antassawomak Beach	Marine	Weekly	Enterococci	10	0	N/A	2 - 16
Mattapoisett	Aucoot Beach	Marine	Weekly	Enterococci	9	0	N/A	2 - 26
Mattapoisett	Bryant Beach	Marine	Weekly	Enterococci	10	0	N/A	2 - 12
Mattapoisett	Crescent Beach	Marine	Weekly	Enterococci	10	0	N/A	2 - 24
Mattapoisett	Harbor Beach	Marine	Weekly	Enterococci	10	0	N/A	2 - 32
Mattapoisett	Leisure Shores Beach	Marine	Weekly	Enterococci	9	0	N/A	2 - 42
Mattapoisett	Mattapoisett Shores Beach	Marine	Weekly	Enterococci	9	0	N/A	2 - 10
Mattapoisett	Ned's Point Beach	Marine	Weekly	Enterococci	10	0	N/A	2 - 52
Mattapoisett	Peases Point Beach	Marine	Weekly	Enterococci	10	0	N/A	2 - 32
Mattapoisett	Point Connett Beach	Marine	Weekly	Enterococci	11	0	N/A	2 - 26
Mattapoisett	Reservation Beach	Marine	Weekly	Enterococci	10	0	N/A	2 - 14
Mattapoisett	Town Beach	Marine	Weekly	Enterococci	10	0	N/A	2 - 20
Nahant	Nahant Beach	Marine	Weeky at 3 locations	Enterococci	42	5	136 - 670	1 - 86
Nantucket	Childrens Beach	Marine	Weekly	Enterococci	9	0	N/A	2 - 64
Nantucket	Cisco Beach	Marine	Weekly	Enterococci	9	0	N/A	2 - 6
Nantucket	Cliffside Beach	Marine	Weekly	Enterococci	9	0	N/A	2 - 72
Nantucket	Dionis Beach 1	Marine	Weekly	Enterococci	9	1	400	2 - 52
Nantucket	Dionis Beach 2	Marine	Weekly	Enterococci	9	1	400	2 - 36
Nantucket	Jettes Beach	Marine	Weekly	Enterococci	4	0	N/A	2 - 34
Nantucket	Madaket Beach	Marine	Weekly	Enterococci	9	0	N/A	2 - 6
Nantucket	Miacomet Beach	Marine	Weekly	Enterococci	9	0	N/A	2 - 6
Nantucket	Sconset Beach 1	Marine	Weekly	Enterococci	8	0	N/A	2 - 6

Town	Beach Name	Beach Type	Testing Frequency	Indicator	# Tests	# Violations	Range of Violations (CFU/100 ml)	Range of Non-violations (CFU/100 ml)
Nantucket	Sconset Beach 2	Marine	Weekly	Enterococci	8	0	N/A	2 - 12
Nantucket	Seltes Beach	Marine	Weekly	Enterococci	5	0	N/A	2
Nantucket	Sewerbeds Beach	Marine	Weekly	Enterococci	9	0	N/A	2 - 34
Nantucket	Surfside Beach 1	Marine	Weekly	Enterococci	9	0	N/A	2 - 46
Nantucket	Surfside Beach 2	Marine	Weekly	Enterococci	8	0	N/A	2 - 24
Nantucket	Warrens Landing Beach	Marine	Weekly	Enterococci	9	0	N/A	2 - 24
Nantucket	Washington Pond Beach	Marine	Weekly	Enterococci	9	1	400	2 - 68
Nantucket	Washington Street Beach	Marine	Weekly	Enterococci	9	1	400	2 - 52
New Bedford	Davey's Locker Beach	Marine	Weekly	Enterococci	15	0	N/A	2 - 40
New Bedford	J. Beach	Marine	Weekly	Enterococci	15	0	N/A	2- 34
New Bedford	Kid's Beach	Marine	Weekly	Enterococci	15	0	N/A	0 - 14
New Bedford	North 400 Beach	Marine	Weekly	Enterococci	15	0	N/A	2 - 42
New Bedford	O'Tools Beach	Marine	Weekly	Enterococci	15	0	N/A	2 - 22
New Bedford	South 400 Beach	Marine	Weekly	Enterococci	15	0	N/A	2 - 70
New Bedford	South Pier Beach	Marine	Weekly	Enterococci	15	0	N/A	2 - 42
New Bedford	Squid Beach	Marine	Weekly	Enterococci	15	0	N/A	0 - 38
New Bedford	Taber Park North Beach	Marine	Weekly	Enterococci	7	0	N/A	2 - 14
New Bedford	Taber Park South Beach	Marine	Weekly	Enterococci	8	1	130	2 - 42
New Bedford	Tower Beach	Marine	Weekly	Enterococci	62	2	260-634	1-78
New Bedford	Turtle Park North Beach	Marine	Weekly	Enterococci	8	0	N/A	1 - 70
New Bedford	Turtle Park South Beach	Marine	Weekly	Enterococci	7	0	N/A	1 - 62
Newbury	Plum Island Beach	Marine	Weekly	Enterococci	13	0	N/A	10 - 30
Oak Bluffs	Lagoon Pond Herring Run Beach	Marine	Weekly	Enterococci	10	2	140 - 270	0 - 104
Oak Bluffs	Marinelli's Beach Beach	Marine	Weekly	Enterococci	10	0	N/A	0 - 20
Oak Bluffs	Pay Beach	Marine	Weekly	Enterococci	10	0	N/A	0 - 20
Orleans	Hilbourne House Beach	Marine	Weekly	Enterococci	7	1	1000	2 - 4
Orleans	Kent's Point Beach	Marine	Weekly	Enterococci	14	1	122	2 - 12
Orleans	Meetinghouse Pond Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 90
Orleans	Nauset Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 86
Orleans	Pleasant Bay Beach	Marine	Weekly	Enterococci	15	1	400	2 - 24

Town	Beach Name	Beach Type	Testing Frequency	Indicator	# Tests	# Violations	Range of Violations (CFU/100 ml)	Range of Non-violations (CFU/100 ml)
Orleans	Skaket Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 16
Orleans	Town Cove Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 36
Plymouth	Plymouth Beach	Marine	Weekly	Enterococci	14	0	N/A	5 - 55
Plymouth	White Horse Beach	Marine	Weekly	Enterococci	14	0	N/A	5 - 25
Provincetown	Atlantic Avenue Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 71
Provincetown	Breakwater Landing Beach	Marine	Weekly	Enterococci	14	1	130	2 - 56
Provincetown	Johnson Street Beach	Marine	Weekly	Enterococci	14	1	106	2 - 98
Provincetown	Kendall Street Beach	Marine	Weekly	Enterococci	14	1	140	2 - 44
Provincetown	Provincetown Inn Beach	Marine	Weekly	Enterococci	12	0	N/A	2 - 12
Provincetown	Ryder Street Beach	Marine	Weekly	Enterococci	17	4	110 - 400 *	18 - 97
Provincetown	Snail Road Landing Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 80
Provincetown	West End Lot Beach	Marine	Weekly	Enterococci	13	1	158	2 - 84
Quincy	Avalon Avenue Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 90
Quincy	Broady-Baker Beach	Marine	Weekly	Enterococci	15	2	132 - 180	2 - 100
Quincy	Chicatawbut Road Beach	Marine	Weekly	Enterococci	17	4	112 - 188	2 - 92
Quincy	Edgewater Drive Beach	Marine	Weekly	Enterococci	17	4	122 - 950	2 - 58
Quincy	Heron/Post Island Beach	Marine	Weekly	Enterococci	14	1	174	2 - 92
Quincy	Mound Street Beach	Marine	Weekly	Enterococci	15	2	108 - 186	2 - 92
Quincy	Nickerson Beach	Marine	Weekly	Enterococci	17	5	120 - 4040	2 - 56
Quincy	Orchard Street Beach	Marine	Weekly	Enterococci	14	1	2400	2 - 100
Quincy	Parkhurst Street Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 90
Quincy	Rhoda Street Beach	Marine	Weekly	Enterococci	21	8	116 - 250	4 - 80
Quincy	Wollaston Beach	Marine	Daily	Enterococci	331	51	105 - 4160	1 - 104
Quincy	Wollaston Beach	Marine	Monthly	Fecal Coliform	8	N/A	N/A	20 - 535
Revere	Revere Beach	Marine	Weekly at 4 locations	Enterococci	51	7	122 - 420	1 - 102
Revere	Short Beach	Marine	Weekly	Enterococci	19	5	112 - 670	2 - 100
Rockport	Back Beach	Marine	Twice per Week	Enterococci	25	0	N/A	0 - 30
Rockport	Cape Hedge Beach	Marine	Twice per Week	Enterococci	25	0	N/A	0 - 50

Town	Beach Name	Beach Type	Testing Frequency	Indicator	# Tests	# Violations	Range of Violations (CFU/100 ml)	Range of Non-violations (CFU/100 ml)
Rockport	Front Beach	Marine	Twice per Week	Enterococci	26	1	140	10 - 80
Rockport	Long Beach	Marine	Twice per Week	Enterococci	47	1	260	10 - 90
Rockport	Old Garden Beach	Marine	Twice per Week	Enterococci	26	2	180 - 530	10 - 70
Rockport	Pebble Beach	Marine	Twice per Week	Enterococci	26	1	190	10 - 70
Rockport	Saratoga Creek Beach	Marine	Monthly	Enterococci	6	0	N/A	10 - 30
Salem	Bay View Beach	Marine	One Time	Enterococci	1	0	N/A	75
Salem	Collins Beach	Marine	Weekly	Enterococci	16	2	290 - 305	4 - 85
Salem	Forest River Point Beach	Marine	Weekly	Enterococci	10	0	N/A	4 - 25
Salem	Juniper Point Beach	Marine	Weekly	Enterococci	17	4	125 - 730	4 - 60
Salem	Mackey Beach	Marine	Weekly	Enterococci	11	0	N/A	5 - 30
Salem	Memorial Drive Beach	Marine	Weekly	Enterococci	17	2	170 - 180	4 - 85
Salem	Ocean Avenue Beach	Marine	Weekly	Enterococci	13	0	N/A	4 - 35
Salem	Osgood Beach	Marine	Weekly	Enterococci	13	0	N/A	4 - 25
Salem	Pickman Beach	Marine	Weekly	Enterococci	15	0	N/A	4 - 65
Salem	Pioneer Beach	Marine	Weekly	Enterococci	16	4	160 - 368	4 - 70
Salem	Steps Beach	Marine	Weekly	Enterococci	14	2	262 - 1140	4 - 80
Salem	Willow Avenue Beach	Marine	Weekly	Enterococci	13	1	110	4 - 95
Salem	Willows Pier Beach	Marine	Weekly	Enterococci	17	4	125 - 275	4 - 85
Salem	Winter Island Beach	Marine	Weekly	Enterococci	16	2	130 - 205	4 - 45
Salisbury	Salisbury Beach	Marine	Weekly	Enterococci	10	0	N/A	3 - 27
Salisbury	Salisbury Beach	Marine	Two Times	Fecal Coliform	2	N/A	N/A	8 - 9
Salisbury	Salisbury Beach	Marine	Monthly	Total Coliform	3	N/A	N/A	9 - 99
Sandwich	East Sandwich Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 16
Sandwich	Scusset Beach	Marine	Weekly	Enterococci	7	0	N/A	2 - 56
Sandwich	Town Neck Boardwalk	Marine	Weekly	Enterococci	13	0	N/A	2 - 10
Sandwich	Town Neck Horizons Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 32
Scituate	Egypt Beach	Marine	Weekly	Enterococci	10	0	N/A	2 - 34
Scituate	Humarock Beach	Marine	Weekly	Enterococci	10	0	N/A	2 - 18
Scituate	Minot Beach	Marine	Weekly	Enterococci	10	0	N/A	2 - 58

Town	Beach Name	Beach Type	Testing Frequency	Indicator	# Tests	# Violations	Range of Violations (CFU/100 ml)	Range of Non-violations (CFU/100 ml)
Scituate	Peggotty Beach	Marine	Weekly	Enterococci	10	0	N/A	2 - 98
Scituate	Sand Hills Beach	Marine	Weekly	Enterococci	11	1	182	2 - 76
Somerset	Pierce Beach	Marine	Weekly	Enterococci	9	2	270 - 480	10 - 90
Swampscott	Eismans Beach	Marine	Weekly	Enterococci	13	1	174	2 - 56
Swampscott	Fishermans Beach	Marine	Weekly	Enterococci	13	1	124	2 - 88
Swampscott	Kings Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 75
Swampscott	Phillips Beach	Marine	Weekly	Enterococci	13	1	630	2 - 74
Swampscott	Preston Beach	Marine	Weekly	Enterococci	13	1	1600	2 - 32
Swampscott	Stacey Beach	Marine	Weekly	Enterococci	13	2	147 - 280	2 - 100
Swampscott	Whales Beach	Marine	Weekly	Enterococci	14	2	290 - 740	2 - 60
Tisbury	Black Dog Tavern Beach	Marine	Weekly	Enterococci	12	2	166 - 214	4 - 102
Tisbury	Lagoon Pond Beach	Marine	Weekly	Enterococci	25	1	108	0 - 43
Tisbury	Lake Tashmoo Beach	Marine	Weekly	Enterococci	26	4	118 - 540	0 - 22
Tisbury	Owen Little Way Yacht Club Beach	Marine	Weekly	Enterococci	13	1	114	2 - 86
Tisbury	Owen Park Beach	Marine	Weekly	Enterococci	14	2	206 - 914	2 - 100
Tisbury	Steamship Authority Beach	Marine	Weekly	Enterococci	11	2	154 - 320	6 - 100
Truro	Ballston Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 16
Truro	Coast Guard Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 8
Truro	Cold Storage Pond Village Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 36
Truro	Corn Hill Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 6
Truro	Fisher Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 18
Truro	Great Hollow Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 24
Truro	Head of the Meadow Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 61
Truro	Lawrence Pond Beach	Marine	One Time	Enterococci	1	0	N/A	2
Truro	Long Nook Beach	Marine	Weekly	Enterococci	12	0	N/A	2 - 8
Truro	Pamet Harbor Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 56
Truro	Ryder Beach	Marine	Weekly	Enterococci	13	0	N/A	2
Truro	Shore Road Beach	Marine	Weekly	Enterococci	5	0	N/A	2 - 14
Truro	Town Landing Beach	Marine	Weekly	Enterococci	13	0	N/A	2 - 88
Truro	Town Landing Point Beach	Marine	Weekly	Enterococci	14	1	112	2 - 44

Town	Beach Name	Beach Type	Testing Frequency	Indicator	# Tests	# Violations	Range of Violations (CFU/100 ml)	Range of Non-violations (CFU/100 ml)
Wareham	Briarwood Beach	Marine	Weekly	Enterococci	12	1	284	4 - 76
Wareham	Independence Point Beach	Marine	Weekly	Enterococci	5	0	N/A	2 - 96
Wareham	Little Harbor Beach	Marine	Weekly	Enterococci	11	0	N/A	2 - 52
Wareham	Minot Forest Beach	Marine	Weekly	Enterococci	12	1	400	2 - 42
Wareham	Onset Beach	Marine	Weekly	Enterococci	11	0	N/A	2 - 46
Wareham	Parkwood Beach	Marine	Weekly	Enterococci	11	0	N/A	2 - 26
Wareham	Pinehurst Beach	Marine	Weekly	Enterococci	14	2	336 - 400	2 - 40
Wareham	Riverside Beach	Marine	Weekly	Enterococci	11	1	400	2 - 98
Wareham	Sandalwood Beach	Marine	Weekly	Enterococci	4	0	N/A	2 - 8
Wareham	Shangrila Beach	Marine	Weekly	Enterococci	12	1	1168	4 - 24
Wareham	Sunset Beach	Marine	Weekly	Enterococci	12	1	1164	4 - 72
Wareham	Swifts Beach	Marine	Weekly	Enterococci	12	1	132	2 - 20
Wareham	Swifts Neck Beach	Marine	Weekly	Enterococci	12	0	N/A	2 - 90
Wellfleet	Burton Baker Beach	Marine	Weekly	Enterococci	11	0	N/A	2 - 16
Wellfleet	Cahoon Hollow Beach	Marine	Weekly	Enterococci	11	0	N/A	2 - 4
Wellfleet	Coast Guard Beach	Marine	Weekly at 2 locations	Enterococci	25	0	N/A	0 - 74
Wellfleet	Duck Harbor Beach	Marine	Weekly	Enterococci	9	0	N/A	1 - 2
Wellfleet	Head of the Mea Beachdow	Marine	Weekly	Enterococci	10	0	N/A	0 - 40
Wellfleet	Herring Cove Beach	Marine	Weekly at 2 locations	Enterococci	20	0	N/A	2 - 54
Wellfleet	Indian Neck Beach	Marine	One Time	E. coli	1	0	N/A	18
Wellfleet	Indian Neck Beach	Marine	Weekly	Enterococci	10	1	110	2
Wellfleet	Maguires Landing Beachng	Marine	Weekly	Enterococci	11	0	N/A	2 - 12
Wellfleet	Marconi Beach	Marine	Weekly at 3 locations	Enterococci	30	0	N/A	2 - 52
Wellfleet	Mayo Beach	Marine	Weekly	Enterococci	11	0	N/A	2 - 18
Wellfleet	Nauset Light Beach	Marine	Weekly at 3 locations	Enterococci	33	0	N/A	0 - 14
Wellfleet	Newcomb Hollow Beach	Marine	Weekly	Enterococci	11	0	N/A	2 - 4
Wellfleet	Omaha Road Beach	Marine	Weekly	Enterococci	11	0	N/A	2 - 12

Town	Beach Name	Beach Type	Testing Frequency	Indicator	# Tests	# Violations	Range of Violations (CFU/100 ml)	Range of Non-violations (CFU/100 ml)
Wellfleet	Powers Landing Beach	Marine	Weekly	Enterococci	11	0	N/A	2
Wellfleet	Race Point Beach	Marine	Weekly at 3 locations	Enterococci	30	0	N/A	0 - 28
Wellfleet	White Crest Beach	Marine	Weekly	Enterococci	11	0	N/A	2 - 4
West Tisbury	Lambert's Cove Beach 1	Marine	Weekly	Enterococci	10	0	N/A	0 - 4
West Tisbury	Lambert's Cove Beach 2	Marine	Weekly	Enterococci	10	0	N/A	0 - 8
West Tisbury	Long Point Beach	Marine	Weekly	Enterococci	10	0	N/A	0 - 11
West Tisbury	Long Point Tisbury Great Pond Beach	Marine	Weekly	Enterococci	10	1	200	0 - 90
West Tisbury	Sepiessa Point Beach	Marine	Weekly	Enterococci	22	0	N/A	0 - 45
Westport	Beach next to Yacht Club	Marine	One Time	Enterococci	1	0	N/A	62
Westport	Cherry & Webb Beach	Marine	Weekly	Enterococci	13	1	142	2 - 62
Westport	East Beach	Marine	Weekly	Enterococci	14	1	500	2 - 82
Westport	Horseneck Beach	Marine	Twice per Week	Enterococci	26	2	120 - 152	2 - 74
Westport	Horseneck Beach	Marine	Monthly	Total Coliform	2	N/A	N/A	10
Westport	Town Beach	Marine	Weekly	Enterococci	8	1	170	2 - 80
Weymouth	New Wessagussett Beach	Marine	Weekly	Enterococci	17	1	730	2 - 96
Weymouth	Old Wessagussett Beach	Marine	Weekly	Enterococci	16	0	N/A	2 - 70
Winthrop	Winthrop Beach	Marine	Weekly	Enterococci	15	1	1080	1-92
Yarmouth	Bass River Beach	Marine	Weekly	Enterococci	15	0	N/A	2 - 34
Yarmouth	Bay Road Beach	Marine	Weekly	Enterococci	18	1	152	2 - 66
Yarmouth	Bayview Street Beach	Marine	Weekly	Enterococci	20	2	106 - 400	2 - 82
Yarmouth	Colonial Acres Beach	Marine	Weekly	Enterococci	42	24	128-1110	2-78
Yarmouth	Columbus Avenue Beach	Marine	Weekly	Enterococci	18	1	400	2 - 50
Yarmouth	Englewood Beach	Marine	Weekly	Enterococci	15	0	N/A	2 - 56
Yarmouth	Follins Pond Beach	Marine	Weekly	Enterococci	15	1	270	2 - 82
Yarmouth	Gray's Beach	Marine	Weekly	Enterococci	14	0	N/A	2 - 48
Yarmouth	Parkers River Beach	Marine	Weekly	Enterococci	15	0	N/A	2 - 12
Yarmouth	Seagull Beach	Marine	Weekly	Enterococci	15	0	N/A	2 - 4
Yarmouth	Seaview Beach	Marine	Weekly	Enterococci	15	0	N/A	2 - 74

Town	Beach Name	Beach Type	Testing Frequency	Indicator	# Tests	# Violations	Range of Violations (CFU/100 ml)	Range of Non-violations (CFU/100 ml)
Yarmouth	South Middle Beach	Marine	Weekly	Enterococci	15	0	N/A	0 - 44
Yarmouth	Springer Lane Beach	Marine	One Time	Enterococci	2	0	N/A	2
Yarmouth	Thatcher Town Park Beach	Marine	Weekly	Enterococci	15	0	N/A	2 - 24
Yarmouth	Wilbur Park Beach	Marine	Weekly	Enterococci	15	0	N/A	2 - 34
Yarmouth	Windmill Beach	Marine	Weekly	Enterococci	15	0	N/A	2 - 46

Table 17: Water quality data for freshwater public and semi-public bathing beaches in Massachusetts in 2001.

Town	Beach Name	Beach Type	Testing Frequency	Indicator	#Tests	# Violations	Range of Violations (CFU/100 ml)	Range of Non-violations (CFU/100 ml)
Abington	Island Grove Beach	Fresh	Weekly	Enterococci	7	0	N/A	2 - 8
Acton	NARA Park Pond Beach	Fresh	Weekly	E. coli	16	1	600	0 - 170
Agawam	Robinson Pond Beach One	Fresh	Weekly	E. coli	3	0	N/A	2 - 120
Agawam	Robinson Pond Beach One	Fresh	Weekly	Enterococci	13	1	180	2 - 30
Agawam	Robinson Pond Beach Two	Fresh	Weekly	E. coli	3	1	600	2 - 80
Agawam	Robinson Pond Beach Two	Fresh	Weekly	Enterococci	13	1	78	2 - 32
Amesbury	Camp Bauercrest	Fresh	Weekly	E. coli	8	0	N/A	10 - 30
Amesbury	Camp Bauercrest	Fresh	Weekly	Fecal Coliform	8	N/A	N/A	10 - 30
Amesbury	Camp Kent	Fresh	Weekly	E. coli	12	3	240 - 2200	10 - 230
Amesbury	Camp Kent	Fresh	Weekly	Fecal Coliform	12	N/A	N/A	10 - 2200
Amesbury	Lake Attitash Beach	Fresh	Weekly	E. coli	26	0	N/A	10 - 90
Amesbury	Lake Attitash Beach	Fresh	Weekly	Fecal Coliform	26	N/A	N/A	10 - 90
Amesbury	Lake Gardner Beach	Fresh	Weekly	E. coli	15	1	300	10 - 200
Amesbury	Lake Gardner Beach	Fresh	Weekly	Fecal Coliform	15	N/A	N/A	10 - 300
Andover	Pomps Pond Baby Beach	Fresh	Weekly	E. coli	12	1	1200	0 - 192
Andover	Pomps Pond Town Beach	Fresh	Weekly	E. coli	13	0	N/A	0 - 84
Arlington	Arlington Reservoir Beach	Fresh	Weekly	E. coli	2	0	N/A	2 - 3
Arlington	Arlington Reservoir Beach	Fresh	Weekly	Fecal Coliform	3	N/A	N/A	0 - 12
Arlington	Arlington Reservoir Beach	Fresh	Weekly	Fecal Streptococci	2	N/A	N/A	0
Arlington	Arlington Reservoir Beach	Fresh	Weekly	Total Coliform	5	N/A	N/A	0 - 280
Ashby	Damon Pond Beach	Fresh	Weekly	E. coli	4	0	N/A	30 - 220
Ashby	Damon Pond Beach	Fresh	Weekly	Enterococci	10	2	70 - 216	0 - 50
Ashby	Damon Pond Beach	Fresh	Weekly	Total Coliform	1	N/A	N/A	50
Ashland	Ashland Main Beach	Fresh	Weekly	E. coli	4	1	340	0 - 40
Ashland	Ashland Main Beach	Fresh	Weekly	Enterococci	10	2	108 - 240	0 - 28
Ashland	Ashland Main Beach	Fresh	Weekly	Total Coliform	1	N/A	N/A	0
Ashland	Hopkinton State Park Main Beach	Fresh	Twice per Month	E. coli	5	1	300	140 - 220
Ashland	Hopkinton State Park Main Beach	Fresh	Twice per Month	Enterococci	7	0	N/A	0 - 52

Town	Beach Name	Beach Type	Testing Frequency	Indicator	#Tests	# Violations	Range of Violations (CFU/100 ml)	Range of Non-violations (CFU/100 ml)
Ashland	Hopkinton State Park Main Beach	Fresh	One Time	Total Coliform	1	N/A	N/A	0
Ashland	Hopkinton State Park Upper Beach	Fresh	Twice per Month	E. coli	5	0	N/A	10 - 200
Ashland	Hopkinton State Park Upper Beach	Fresh	Twice per Month	Enterococci	8	1	152	0 - 34
Ashland	Hopkinton State Park Upper Beach	Fresh	One Time	Total Coliform	1	N/A	N/A	200
Athol	Lake Ellis Beach	Fresh	Weekly	E. coli	15	0	N/A	10 - 220
Athol	Lake Ellis Beach	Fresh	Two Times	Not Indicated	2	N/A	N/A	0
Athol	Silver Lake Beach	Fresh	Weekly	E. coli	18	1	300	0-70
Athol	Silver Lake Beach	Fresh	Two Times	Not Indicated	2	N/A	N/A	0
Athol	South Athol Pond Beach	Fresh	Weekly	E. coli	11	0	N/A	0 - 16
Ayer	Ayer Town Beach	Fresh	Weekly	E. coli	8	0	N/A	2 - 118
Barnstable	Bearses Pond Beach	Fresh	Weekly	E. coli	13	0	N/A	4 - 40
Barnstable	Crystal Lake Beach	Fresh	Weekly	E. coli	13	1	304	4 - 52
Barnstable	Garret's Pond Beach	Fresh	Weekly	E. coli	13	0	N/A	4 - 96
Barnstable	Gooseberry Pond Beach	Fresh	Weekly	E. coli	13	0	N/A	4 - 24
Barnstable	Hamblin Pond Beach	Fresh	Weekly	E. coli	14	1	800	4 - 24
Barnstable	Hathaway Pond Beach	Fresh	Weekly	E. coli	13	0	N/A	4 - 28
Barnstable	Joshua's Pond Beach	Fresh	Weekly	E. coli	13	0	N/A	4
Barnstable	Long Pond Beach	Fresh	Weekly	E. coli	13	0	N/A	4 - 56
Barnstable	Lovell's Pond Beach	Fresh	Weekly	E. coli	13	0	N/A	4 - 16
Barnstable	Middle Pond Beach	Fresh	Weekly	E. coli	13	0	N/A	4 - 12
Barnstable	Mystic Lake Race Lane Beach	Fresh	Weekly	E. coli	13	0	N/A	4 - 80
Barnstable	Mystic Lake Town Beach	Fresh	Weekly	E. coli	13	0	N/A	4 - 20
Barnstable	Shallow Pond Beach	Fresh	Weekly	E. coli	13	0	N/A	4 - 124
Barnstable	Shubael Pond Beach	Fresh	Weekly	E. coli	13	0	N/A	4 - 20
Barnstable	Wequaquet Town Beach	Fresh	Weekly	E. coli	13	0	N/A	4 - 20
Barnstable	Wequaquet Yacht Club	Fresh	Weekly	E. coli	13	0	N/A	4 - 12
Becket	Center Pond Beach	Fresh	Weekly	E. coli	17	0	N/A	10 - 50
Belchertown	Lake Arcadia Beach	Fresh	Weekly	E. coli	8	0	N/A	10 - 60
Bellingham	Silver Lake Beach	Fresh	Weekly	Total Coliform	8	N/A	N/A	0 - 2000

Town	Beach Name	Beach Type	Testing Frequency	Indicator	#Tests	# Violations	Range of Violations (CFU/100 ml)	Range of Non-violations (CFU/100 ml)
Billerica	Micozzi Beach	Fresh	Weekly	Fecal Coliform	3	N/A	N/A	210 - 300
Billerica	Micozzi Beach	Fresh	Weekly	Fecal Streptococci	6	N/A	N/A	0
Bolton	Bolton Town Beach	Fresh	Weekly	E. coli	10	0	N/A	2 - 144
Bourne	Picture Lake Beach	Fresh	Weekly	E. coli	14	0	N/A	4 - 48
Bourne	Queen Sewell Pond Beach	Fresh	Weekly	E. coli	14	0	N/A	4 - 92
Braintree	Sunset Lake Beach	Fresh	Weekly	E. coli	13	0	N/A	5 - 180
Brewster	Blueberry Pond Beach	Fresh	Weekly	E. coli	8	0	N/A	4 - 28
Brewster	Camp Favorite - Long Pond	Fresh	Weekly	E. coli	4	0	N/A	4 - 52
Brewster	Camp Favorite - Long Pond	Fresh	Weekly	Enterococci	8	0	N/A	4 - 16
Brewster	Cliff Pond Beach	Fresh	Weekly	Enterococci	8	0	N/A	2 - 14
Brewster	Flax Pond Beach	Fresh	Weekly	Enterococci	8	0	N/A	1 - 16
Brewster	Greenland Pond Beach	Fresh	Weekly	E. coli	8	0	N/A	4 - 16
Brewster	Little Cliff Pond Beach	Fresh	Weekly	Enterococci	9	1	68	2 - 52
Brewster	Long Pond Beach	Fresh	Weekly	E. coli	13	0	N/A	4
Brewster	Seymour Pond Beach	Fresh	Weekly	E. coli	13	0	N/A	2 - 4
Brewster	Sheep Pond Beach	Fresh	Weekly	E. coli	16	0	N/A	4 - 16
Brewster	Slough Pond Beach	Fresh	Weekly	E. coli	18	1	400	4 - 24
Brewster	Upper Mill Pond Beach	Fresh	Weekly	E. coli	13	0	N/A	4 - 92
Brewster	Walkers Pond Beach	Fresh	One Time	E. coli	1	0	N/A	4
Brimfield	Dean Pond Beach	Fresh	Weekly	Enterococci	14	0	N/A	2 - 36
Brookfield	South Pond Beach	Fresh	Weekly	E. coli	11	1	236	10 - 50
Carver	Barrett Pond Beach	Fresh	Twice per Month	Enterococci	5	0	N/A	2 - 38
Carver	Charge Pond Beach	Fresh	Weekly	Enterococci	5	0	N/A	2 - 48
Carver	College Pond Beach	Fresh	Weekly	Enterococci	5	0	N/A	2 - 6
Carver	Cooper's Pond Beach	Fresh	Monthly	E. coli	6	0	N/A	10 - 20
Carver	Crystal Lake Beach	Fresh	Monthly	E. coli	5	0	N/A	10 -60
Carver	Curlew Pond	Fresh	Weekly	Enterococci	5	1	246	2 - 26
Carver	Fearing Pond Beach	Fresh	Weekly	Enterococci	5	0	N/A	2 - 40
Carver	John's Pond Beach	Fresh	Monthly	E. coli	6	0	N/A	10 - 60

Town	Beach Name	Beach Type	Testing Frequency	Indicator	#Tests	# Violations	Range of Violations (CFU/100 ml)	Range of Non-violations (CFU/100 ml)
Carver	Sampson Pond Beach	Fresh	Monthly	E. coli	6	0	N/A	10 - 80
Carver	Wenham Pond Beach	Fresh	Monthly	E. coli	4	0	N/A	10 - 40
Charlemont	Cold River Beach	Fresh	Weekly	Enterococci	15	3	80 - 600	2 - 54
Charlton	YMCA Camp Foskett Beach	Fresh	Three times	Enterococci	3	2	110 - 210	0 - 10
Charlton	YMCA Camp Foskett Beach	Fresh	Weekly	E. coli	11	0	N/A	0 - 40
Charlton	YMCA Camp Foskett Beach	Fresh	Two Times	Fecal Coliform	5	N/A	N/A	2 - 36
Chatham	Goose Pond Beach	Fresh	Weekly	Enterococci	12	1	82	2 - 17
Chatham	Lovers Lake Beach	Fresh	One Time	Not Indicated	3	N/A	N/A	0
Chatham	Pilgrim Village Beach	Fresh	Weekly	Enterococci	7	0	N/A	2 - 30
Chatham	Schoolhouse Pond Beach	Fresh	Weekly	Enterococci	15	0	N/A	4 - 43
Chatham	White Pond Town Landing Beach	Fresh	Weekly	Enterococci	15	2	78 - 940	1 - 39
Chelmsford	Baptist Pond Beach - Dock	Fresh	Weekly	E. coli	9	2	600	2 - 154
Chelmsford	Baptist Pond Beach - Ramp	Fresh	Weekly	E. coli	9	1	600	2 - 200
Chelmsford	Freeman Lake - Playground	Fresh	Weekly	E. coli	11	4	600	30 - 224
Chelmsford	Freeman Lake - Playground	Fresh	One Time	Enterococci	1	1	132	N/A
Chelmsford	Freeman Lake -Downs	Fresh	Weekly	E. coli	11	3	600	8 - 118
Chelmsford	Freeman Lake -Downs	Fresh	One Time	Enterococci	1	1	96	N/A
Chicopee	Chicopee Beach	Fresh	Weekly	E. coli	8	0	N/A	2 - 32
Chicopee	Chicopee Beach	Fresh	Weekly	Enterococci	18	5	70 - 600	2 - 52
Clarksburg	Mauserts Pond Beach	Fresh	Weekly	E. coli	3	1	600	4 - 106
Clarksburg	Mauserts Pond Beach	Fresh	Twice per Week	Enterococci	24	10	62 - 600	2 - 52
Concord	Annursnac Hill Beach	Fresh	Weekly	E. coli	11	0	N/A	2 - 40
Concord	Elm Brook - Lexington Road	Fresh	Monthly	E. coli	4	1	544	8 - 180
Concord	Elm Brook - Virginia Road	Fresh	Monthly	E. coli	4	1	280	28 - 200
Concord	Kennedy Pond Beach	Fresh	Monthly	E. coli	5	0	N/A	0 - 50
Concord	Silver Hill Beach	Fresh	Weekly	E. coli	11	0	N/A	0 - 80
Concord	Walden Pond Beach - Main	Fresh	Weekly	E. coli	27	0	N/A	0 - 160
Concord	Walden Pond Beach - Red Cross	Fresh	Weekly	E. coli	25	0	N/A	0 - 100
Concord	Warner's Pond Beach	Fresh	Monthly	E. coli	3	1	300	20 - 210

Town	Beach Name	Beach Type	Testing Frequency	Indicator	#Tests	# Violations	Range of Violations (CFU/100 ml)	Range of Non-violations (CFU/100 ml)
Concord	White Pond Beach	Fresh	Weekly	E. coli	15	0	N/A	0 - 60
Conway	Conway Swimming Hole	Fresh	Weekly	E. coli	11	0	N/A	1 - 23
Dartmouth	Hidden Bay Stream	Fresh	Monthly	Enterococci	5	4	248 - 944	40
Dartmouth	Lake Noquochoke Beach	Fresh	Weekly	Enterococci	15	5	92 - 176	2 - 41
Dennis	Flax Pond Beach	Fresh	Weekly	E. coli	12	0	N/A	4 - 12
Dennis	Princess Path Beach	Fresh	Weekly	E. coli	12	0	N/A	4 - 12
Dennis	Scargo Lake Beach	Fresh	Weekly	E. coli	14	0	N/A	4 - 180
Douglas	Breezy Picnic Grounds	Fresh	Weekly	E. coli	14	0	N/A	2 - 169
Douglas	Manchaug Lake Beach	Fresh	Weekly	E. coli	15	1	295	2 - 47
Douglas	Wallum Lake Park Beach	Fresh	Weekly	E. coli	17	0	N/A	2 - 235
Douglas	Wallum Lake Park Beach	Fresh	Weekly	Enterococci	8	0	N/A	0 - 40
Douglas	Wallum Lake Park Beach	Fresh	Weekly	Fecal Coliform	3	N/A	N/A	0 - 10
Dracut	Fleur De Lis Beach	Fresh	Twice per Month	E. coli	4	0	N/A	10 - 70
Dracut	Fleur De Lis Beach	Fresh	Twice per Month	Total Coliform	3	N/A	N/A	10 - 440
Dracut	Grove Beach	Fresh	Twice per Month	E. coli	4	0	N/A	10 - 80
Dracut	Grove Beach	Fresh	Twice per Month	Total Coliform	3	N/A	N/A	10 - 120
Dracut	Hilltop Beach	Fresh	Twice per Month	E. coli	4	0	N/A	0 - 30
Dracut	Hilltop Beach	Fresh	Twice per Month	Total Coliform	3	N/A	N/A	10 - 80
Dracut	Mascuppic Lake Beach	Fresh	Twice per Month	E. coli	4	0	N/A	0 - 50
Dracut	Mascuppic Lake Beach	Fresh	Twice per Month	Total Coliform	3	N/A	N/A	0 - 250
Dracut	Passaconoway Beach	Fresh	Twice per Month	E. coli	4	0	N/A	0 - 70
Dracut	Passaconoway Beach	Fresh	Twice per Month	Total Coliform	3	N/A	N/A	10 - 70
Dracut	Peters Pond Beach	Fresh	Twice per Month	E. coli	4	0	N/A	0 - 30
Dracut	Peters Pond Beach	Fresh	Twice per Month	Total Coliform	3	N/A	N/A	0 - 80
Dracut	Richardson Beach	Fresh	Twice per Month	E. coli	4	0	N/A	10 - 50
Dracut	Richardson Beach	Fresh	Twice per Month	Total Coliform	3	N/A	N/A	0 - 100
Eastham	Great Pond Beach	Fresh	Weekly	E. coli	13	0	N/A	4 - 8
Eastham	Herring Pond Beach	Fresh	Weekly	E. coli	13	0	N/A	4 - 12
Eastham	Long Pond Beach	Fresh	Weekly	E. coli	13	0	N/A	4 - 8

Town	Beach Name	Beach Type	Testing Frequency	Indicator	#Tests	# Violations	Range of Violations (CFU/100 ml)	Range of Non-violations (CFU/100 ml)
Eastham	Minister Pond Beach	Fresh	Weekly	E. coli	13	0	N/A	2 - 48
Eastham	Wiley Park Beach	Fresh	Weekly	E. coli	13	0	N/A	4 - 188
Easton	Town Swimming Beach	Fresh	Weekly	E. coli	6	0	N/A	10
Egremont	Prospect Lake Park Beach	Fresh	Weekly	E. coli	13	0	N/A	10 - 160
Erving	Laurel Lake Beach	Fresh	Two Times	E. coli	2	0	N/A	2
Erving	Laurel Lake Beach	Fresh	Weekly	Enterococci	15	0	N/A	2 - 60
Essex	Camp Menorah Beach	Fresh	Weekly	E. coli	10	1	250	10 - 90
Essex	Centennial Grove Beach	Fresh	Weekly	E. coli	17	0	N/A	10 - 160
Falmouth	Coonamessett Pond Beach	Fresh	One Time	E. coli	1	0	N/A	4
Falmouth	Grew's Pond	Fresh	Weekly	E. coli	12	0	N/A	4 - 16
Framingham	Lake Cochituate Beach	Fresh	Weekly	E. coli	10	1	300	2 - 184
Framingham	Lake Waushaqum Beach	Fresh	Weekly	E. coli	10	2	366 - 600	2 - 176
Framingham	Learned Pond Beach	Fresh	Weekly	E. coli	11	3	250 - 600	2 - 160
Franklin	Chilson Beach	Fresh	Weekly	E. coli	14	4	510 - 2000	10 - 230
Freetown	Town Beach	Fresh	Weekly	E. coli	14	3	250 - 560	10 - 190
Gardner	Dunn Pond Beach	Fresh	Weekly	Enterococci	17	2	68 - 136	2 - 50
Gardner	Kendall Pond Beach	Fresh	Weekly	Fecal Coliform	8	N/A	N/A	0 - 320
Gardner	Kendall Pond Beach	Fresh	Weekly	Total Coliform	8	N/A	N/A	4 - 1280
Georgetown	American Legion Park Beach	Fresh	One Time	E. coli	1	1	800	N/A
Georgetown	Lakeshore Beach	Fresh	One Time	E. coli	1	0	N/A	10
Georgetown	Pentucket Pond Beach	Fresh	Weekly	E. coli	14	3	480 - 1050*	10 - 210
Goshen	Highland Beach	Fresh	Monthly	E. coli	2	0	N/A	4 - 8
Goshen	Highland Beach	Fresh	Twice per Week	Enterococci	35	3	72 - 600	2 - 34
Grafton	Silver Lake Beach	Fresh	Monthly	Fecal Coliform	11	N/A	N/A	0 - 5
Grafton	Silver Lake Beach	Fresh	Monthly	Total Coliform	4	N/A	N/A	0 - 20
Great Barrington	Lake Mansfield Beach	Fresh	Weekly	E. coli	8	0	N/A	0 - 69
Greenfield	Nashs Mill Road Beach	Fresh	Twice per Week	E. coli	16	0	N/A	15 - 227
Greenfield	Nashs Mill Road Beach	Fresh	Two Times	Fecal Coliform	2	N/A	N/A	90 - 115
Groton	Grotonwood Lake Beach	Fresh	Weekly	E. coli	13	0	N/A	2 - 180

Town	Beach Name	Beach Type	Testing Frequency	Indicator	#Tests	# Violations	Range of Violations (CFU/100 ml)	Range of Non-violations (CFU/100 ml)
Halifax	Annawon Dr. Beach	Fresh	Weekly	E. coli	9	0	N/A	5 - 150
Halifax	Boat Landing Beach	Fresh	Weekly	E. coli	8	0	N/A	5 - 85
Halifax	Cook's Beach	Fresh	Weekly	E. coli	12	0	N/A	5- 20
Halifax	Crystal Lake Beach	Fresh	One Time	E. coli	1	0	N/A	5
Halifax	Furnace St Beach	Fresh	One Time	E. coli	1	0	N/A	50
Halifax	Halifax Beach	Fresh	Weekly	E. coli	12	0	N/A	5 - 85
Halifax	Holmes Landing Beach	Fresh	Twice per Month	E. coli	4	0	N/A	5- 15
Halifax	Holmes St. Beach	Fresh	Weekly	E. coli	8	0	N/A	5 - 45
Halifax	Lake St. Beach	Fresh	Weekly	E. coli	16	1	450	5 - 220
Halifax	Lingan St. Beach	Fresh	Weekly	E. coli	12	0	N/A	5 - 200
Halifax	Ocean Avenue Beach	Fresh	Weekly	E. coli	4	0	N/A	15 - 80
Halifax	Wamsutta Beach	Fresh	Weekly	E. coli	11	0	N/A	5 - 235
Hanson	Arlene St. Beach	Fresh	Weekly	E. coli	9	0	N/A	5 - 90
Hanson	Camp Kiwanee Beach	Fresh	Weekly	E. coli	9	1	260	5 - 165
Hanson	Cranberry Cove Beach	Fresh	Weekly	E. coli	9	0	N/A	2 - 200
Hanson	Ocean Avenue Beach	Fresh	Weekly	E. coli	9	1	4800	5 - 110
Hanson	Wilkey's Beach	Fresh	Weekly	E. coli	9	0	N/A	5 - 95
Harvard	Harvard Town Beach	Fresh	Weekly	E. coli	12	0	N/A	2 - 130
Harvard	Mirror Lake Beach	Fresh	Weekly	E. coli	13	1	300	2 - 196
Harwich	Aunt Edies Pond Beach	Fresh	Weekly	E. coli	8	1	236	2 - 24
Harwich	Buck Pond Beach	Fresh	Weekly	E. coli	13	0	N/A	4 - 24
Harwich	Hinkley's Pond Beach	Fresh	Weekly	E. coli	12	0	N/A	4 - 64
Harwich	John Josephs Pond Beach	Fresh	Weekly	E. coli	7	0	N/A	4 - 8
Harwich	Long Pond Beach 1	Fresh	Weekly	E. coli	12	0	N/A	4 - 8
Harwich	Long Pond Beach 2	Fresh	Weekly	E. coli	12	0	N/A	4 - 40
Harwich	Robbins Pond Beach	Fresh	Weekly	E. coli	12	0	N/A	4 - 20
Harwich	Sand Pond Beach	Fresh	Weekly	E. coli	12	0	N/A	4 - 84
Harwich	Seymore Pond Beach	Fresh	Weekly	E. coli	6	0	N/A	4 - 16
Haverhill	Plugs Pond Beach	Fresh	Weekly	E. coli	9	0	N/A	0 - 12

Town	Beach Name	Beach Type	Testing Frequency	Indicator	#Tests	# Violations	Range of Violations (CFU/100 ml)	Range of Non-violations (CFU/100 ml)
Hinsdale	Plunkett Reservoir Beach	Fresh	Weekly	E. coli	11	0	N/A	10 - 150
Holden	Eagle Lake Beach	Fresh	Weekly	E. coli	13	3	200 - 380	10 - 60
Holliston	Pleasure Point Beach	Fresh	Weekly	E. coli	13	0	N/A	10 - 144
Holliston	Stoddard Park Beach	Fresh	Weekly	E. coli	13	0	N/A	10 - 50
Hopkinton	Lake Maspenock Sandy Beach	Fresh	Weekly	E. coli	26	0	N/A	5 - 235
Hubbardston	Asnacomet Pond Beach	Fresh	3 Times a Week	E. coli	33	1	653	0 - 171
Hubbardston	Asnacomet Pond Beach	Fresh	3 Times a Week	Fecal Coliform	33	N/A	N/A	0 - 850
Huntington	Westfield River Beach	Fresh	One Time	E. coli	1	0	N/A	46
Huntington	Westfield River Beach	Fresh	Twice per Week	Enterococci	22	9	76 - 600	6 - 60
Ipswich	Hood Pond Beach	Fresh	Weekly	Enterococci	15	1	100	10 - 60
Kingston	Camp Mish Beach	Fresh	One Time	E. coli	1	0	N/A	5
Kingston	Camp Mish Beach	Fresh	One Time	Total Coliform	1	N/A	N/A	20
Lakeville	Clear Pond Beach	Fresh	Monthly	Enterococci	5	0	N/A	2 - 4
Lakeville	Long Pond Beach	Fresh	Monthly	Enterococci	6	0	N/A	2 - 48
Lakeville	Ted Williams Camp Beach	Fresh	Monthly	Enterococci	6	0	N/A	2 - 4
Lancaster	Lancaster Town Beach	Fresh	Weekly	E. coli	12	0	N/A	2 - 88
Lanesborough	Camp Mohawk Beach	Fresh	Weekly	E. coli	9	0	N/A	10 - 80
Lee	Lee Sandy Beach	Fresh	Weekly	E. coli	10	0	N/A	0 - 7
Lee	Leisure Lee Beach	Fresh	Weekly	E. coli	10	0	N/A	0 - 2
Lenox	Lenox Town Beach	Fresh	Weekly	E. coli	10	0	N/A	0 - 24
Lexington	Old Reservoir Beach	Fresh	Weekly at 2 locations	Enterococci	22	5	74 - 270	2 - 58
Littleton	Littleton Town Beach	Fresh	Weekly	E. coli	12	1	240	2 - 88
Lowell	Merrimack River Boat House	Fresh	Daily	Total Coliform	110	N/A	N/A	0 - 9800
Ludlow	Haviland Pond Beach	Fresh	Weekly at 3 locations	E. coli	21	0	N/A	10 - 100
Ludlow	Haviland Pond Beach	Fresh	One Time at 3 locations	Fecal Coliform	3	N/A	N/A	50 - 70
Lunenburg	Lunnenburg Town Beach	Fresh	Weekly	E. coli	8	0	N/A	2 - 38
Lynn	Flax Pond Beach	Fresh	Monthly at 2	E. coli	6	4	250 - 570	37 - 127

Town	Beach Name	Beach Type	Testing Frequency	Indicator	#Tests	# Violations	Range of Violations (CFU/100 ml)	Range of Non-violations (CFU/100 ml)
			locations					
Lynn	Flax Pond Beach	Fresh	Monthly	Fecal Coliform	2	N/A	N/A	3500 - 7100
Lynn	Flax Pond Beach	Fresh	Monthly at 2 locations	Total Coliform	8	N/A	N/A	140 - 2830
Lynn	Sluice Pond Beach	Fresh	Monthly	E. coli	4	0	N/A	10 - 200
Lynn	Sluice Pond Beach	Fresh	Two Times	Fecal Coliform	2	N/A	N/A	7500 - 8800
Lynn	Sluice Pond Beach	Fresh	Two Times	Total Coliform	4	N/A	N/A	303 - 15500
Lynn	Sluice Pond Four Winds Beach	Fresh	Monthly	E. coli	3	0	N/A	2 - 10
Lynn	Sluice Pond Four Winds Beach	Fresh	Two Times	Fecal Coliform	2	N/A	N/A	2100 - 2800
Lynn	Sluice Pond Four Winds Beach	Fresh	Weekly	Total Coliform	4	N/A	N/A	164 - 11500
Marlborough	Memorial Beach	Fresh	Weekly	E. coli	17	0	N/A	5 - 55
Marlborough	Memorial Beach	Fresh	Weekly at 3 locations	Enterococci	15	6	74 - 620	2 - 15
Mashpee	Ashumet Pond Beach North	Fresh	Weekly	E. coli	11	0	N/A	4 - 64
Mashpee	Ashumet Pond Beach South	Fresh	Weekly	E. coli	11	0	N/A	4 - 12
Mashpee	Ashumet Pond Fisherman's Cove Beach	Fresh	Weekly	E. coli	12	0	N/A	4 - 64
Mashpee	Dean's Pond Beach	Fresh	Weekly	E. coli	14	1	572	4 - 216
Mashpee	Fells Pond Beach	Fresh	Weekly	E. coli	13	0	N/A	4 - 24
Mashpee	John's Pond Beach North	Fresh	Weekly	E. coli	13	0	N/A	4 - 16
Mashpee	John's Pond Beach Public	Fresh	Weekly	E. coli	13	0	N/A	4 - 8
Mashpee	John's Pond Briarwood Beach	Fresh	Weekly	E. coli	13	0	N/A	4 - 8
Mashpee	Santuit Pond Beach	Fresh	Weekly	E. coli	13	0	N/A	4 - 114
Mashpee	Wakeby Pond Attaquin Beach	Fresh	Weekly	E. coli	13	0	N/A	4 - 24
Mashpee	Wakeby Pond Camp Farley Beach	Fresh	Weekly	E. coli	12	0	N/A	4 - 32
Mashpee	Wakeby Pond Pickerel Cove Beach	Fresh	One Time	E. coli	1	0	N/A	4
Medfield	Town Beach	Fresh	Monthly	E. coli	6	0	N/A	0 - 190
Medfield	Town Beach	Fresh	Monthly	Enterococci	12	2	80 - 300	0 - 40
Medford	Wrights Pond Beach Deep End	Fresh	Weekly	E. coli	11	0	N/A	4 - 55
Medford	Wrights Pond Beach Shallow End	Fresh	Weekly	E. coli	11	0	N/A	5 - 215

Town	Beach Name	Beach Type	Testing Frequency	Indicator	#Tests	# Violations	Range of Violations (CFU/100 ml)	Range of Non-violations (CFU/100 ml)
Medway	Choate Park Pond Beach	Fresh	Weekly	E. coli	7	2	380 - 470	50 - 180
Mendon	Nipmuc Lake Beach	Fresh	One Time	E. coli	1	0	N/A	30
Mendon	Town Beach	Fresh	Weekly	E. coli	14	2	260 - 400	10 - 160
Mendon	Town Beach	Fresh	One Time	Total Coliform	1	N/A	N/A	50
Methuen	Methuen Public Beach	Fresh	Weekly at 2 locations	E. coli	8	0	N/A	20 - 120
Middleborough	Camp Avoda Tispaquin Pond Beach	Fresh	One Time	E. coli	1	0	N/A	10
Middleborough	Camp Avoda Tispaquin Pond Beach	Fresh	One Time	Fecal Coliform	1	N/A	N/A	20
Middleborough	Camp Avoda Tispaquin Pond Beach	Fresh	One Time	Total Coliform	1	N/A	N/A	10
Middleborough	Camp Yomechas Tispaquin Pond Beach	Fresh	Weekly	E. coli	8	0	N/A	5 - 75
Middleborough	Family Campground Tispaquin Pond Beach	Fresh	Monthly	E. coli	2	0	N/A	10
Middleton	Thunderbridge Beach	Fresh	Weekly	E. coli	16	3	252 - 1900	3 - 210
Milton	Houghton's Pond Beach	Fresh	Weekly	Enterococci	18	0	N/A	1 - 54
Monterey	Benedict Pond Beach	Fresh	Weekly	Enterococci	19	1	64	2 - 58
Nantucket	Miacomet Pond Beach	Fresh	Weekly	E. coli	8	3	288 - 800	4 - 92
Nantucket	Miacomet Pond Beach	Fresh	One Time	Enterococci	1	1	92	N/A
Nantucket	Sesachacha Pond Beach	Fresh	Weekly	E. coli	8	0	N/A	4 - 40
Natick	Camp Nonesuch Beach	Fresh	Weekly	E. coli	9	1	740	5 - 100
Natick	Dug Pond Beach	Fresh	Weekly at 3 locations	E. coli	46	0	N/A	5 - 225
Natick	Lake Cochituate Camp Arrowhead Beach	Fresh	Weekly	E. coli	12	0	N/A	5 - 130
Natick	North Beach	Fresh	Twice per Month	E. coli	4	0	N/A	10 - 150
Natick	North Beach	Fresh	Weekly	Enterococci	9	1	80	4 - 24
Natick	North Beach	Fresh	One Time	Total Coliform	1	N/A	N/A	50
Natick	River Day Camp Beach	Fresh	One Time	E. coli	1	0	N/A	5
Natick	South Beach	Fresh	Twice per Month	E. coli	4	1	440	70 - 128
Natick	South Beach	Fresh	Weekly	Enterococci	9	1	400	0 - 58

Town	Beach Name	Beach Type	Testing Frequency	Indicator	#Tests	# Violations	Range of Violations (CFU/100 ml)	Range of Non-violations (CFU/100 ml)
Natick	South Beach	Fresh	One Time	Total Coliform	1	N/A	N/A	0
Natick	Unguarded Swimming Area	Fresh	Twice per Month	E. coli	5	1	310	80 - 106
Natick	Unguarded Swimming Area	Fresh	Weekly	Enterococci	8	0	N/A	0 - 44
Natick	Unguarded Swimming Area	Fresh	One Time	Total Coliform	1	N/A	N/A	0
Newton	Crystal Lake Beach	Fresh	Twice per Month	E. coli	4	0	N/A	5 - 60
Newton	Crystal Lake Beach	Fresh	Twice per Month	Enterococci	5	0	N/A	8 - 42
North Adams	Windsor Lake Beach	Fresh	Weekly	E. coli	7	0	N/A	10 - 180
North Andover	Berry Pond Beach	Fresh	Weekly	Enterococci	12	4	68 - 1700	18 - 20
North Andover	Berry Pond Beach	Fresh	One Time	Total Coliform	1	N/A	N/A	0
North Andover	Fry Pond Beach	Fresh	Weekly	Enterococci	6	1	80	9 - 40
North Andover	Stevens Pond Beach	Fresh	Weekly at 3 locations	E. coli	36	0	N/A	1 - 79
Northamptom	Clear Falls Beach	Fresh	Weekly	Enterococci	8	1	104	3 - 14
Northamptom	Clear Falls Beach	Fresh	Twice per Month	Total Coliform	3	N/A	N/A	104 - 560
Northamptom	Musante Beach	Fresh	Weekly	E. coli	8	0	N/A	2 - 51
Northbridge	Girl Scout Camp Beach	Fresh	Weekly	E. coli	4	1	1000	10 - 150
Northbridge	Heritage Park Beach	Fresh	Weekly	E. coli	12	1	400	10 - 180
Northbridge	Memorial Beach	Fresh	Weekly	E. coli	11	0	N/A	10 - 70
Oakham	Dean Pond Beach	Fresh	Weekly	E. coli	14	0	N/A	5 - 80
Oakham	Lake Dean Pine Acres Beach	Fresh	Weekly	E. coli	11	0	N/A	10 - 60
Orange	Town Beach	Fresh	Weekly	E. coli	15	1	310	10 - 80
Orange	Town Beach	Fresh	Weekly	Total Coliform	1	N/A	N/A	1200
Orleans	Bakers Pond Beach	Fresh	Weekly	E. coli	13	0	N/A	4 - 16
Orleans	Crystal Lake Beach	Fresh	Weekly	E. coli	13	0	N/A	4 - 16
Orleans	Pilgrim Lake Beach	Fresh	Weekly	E. coli	13	0	N/A	4 - 16
Otis	Otis Reservation Beach	Fresh	Weekly	Enterococci	17	0	N/A	2 - 48
Pembroke	Finnish Camp Beach	Fresh	Weekly	E. coli	9	0	N/A	10 - 65
Pembroke	Furnace Colony Beach	Fresh	Weekly	E. coli	10	0	N/A	2 - 115
Pembroke	Hobomoc Beach	Fresh	Weekly	E. coli	11	0	N/A	5 - 80
Pembroke	Little Sandy Beach	Fresh	Weekly	E. coli	11	0	N/A	2 - 180

Town	Beach Name	Beach Type	Testing Frequency	Indicator	#Tests	# Violations	Range of Violations (CFU/100 ml)	Range of Non-violations (CFU/100 ml)
Pembroke	Stetson Beach	Fresh	Weekly	E. coli	11	0	N/A	2 - 125
Pembroke	Wampatuck Beach	Fresh	Weekly	E. coli	11	1	520	2 - 36
Pittsfield	Lulu Brook Beach	Fresh	One Time	E. coli	1	0	N/A	8
Pittsfield	Lulu Brook Beach	Fresh	Weekly	Enterococci	15	4	70 - 260	2 - 56
Pittsfield	Lulu Pond Beach	Fresh	One Time	Enterococci	1	0	N/A	2
Plymouth	Bartlett Pond Beach	Fresh	One Time	E. coli	1	0	N/A	5
Plymouth	Bloody Pond Beach	Fresh	Weekly	E. coli	11	0	N/A	5 - 65
Plymouth	Camp Bournedale Great Pond Beach	Fresh	Weekly	E. coli	8	0	N/A	5 - 170
Plymouth	Camp Dennen Beach	Fresh	Weekly	E. coli	9	0	N/A	5 - 40
Plymouth	Camp Massasoit Elbow Pond Beach	Fresh	Twice per Month	E. coli	6	0	N/A	5
Plymouth	Camp Squanto Beach	Fresh	Monthly	Total Coliform	7	N/A	N/A	0 - 49
Plymouth	Clear Pond Motel Beach	Fresh	Weekly	E. coli	14	0	N/A	5 - 40
Plymouth	Curlew Pond Beach	Fresh	Weekly	E. coli	15	0	N/A	5 - 10
Plymouth	Elbow Pond Beach	Fresh	One Time	E. coli	1	0	N/A	5
Plymouth	Ellis Haven Beach	Fresh	Weekly	E. coli	14	0	N/A	5 - 90
Plymouth	Ellis Haven Swimming Hole	Fresh	Weekly	E. coli	11	0	N/A	5 - 115
Plymouth	Fresh Pond Beach	Fresh	Weekly	E. coli	14	0	N/A	5 - 60
Plymouth	Gallows Pond Beach	Fresh	Weekly	E. coli	18	0	N/A	5 - 50
Plymouth	Indian Head Beach	Fresh	Weekly	E. coli	10	0	N/A	5 - 120
Plymouth	Micajah Pond Beach	Fresh	One Time	E. coli	1	0	N/A	25
Plymouth	Morton Park Beach	Fresh	Weekly	E. coli	14	0	N/A	5 - 135
Plymouth	Pinewood Camp Long Pond Camphouse Beach	Fresh	Weekly	E. coli	7	0	N/A	5
Plymouth	Pinewood Camp Round Pond Pinecones Dock	Fresh	Weekly	E. coli	7	0	N/A	5 - 10
Plymouth	Pinewood Lodge Fresh Meadow Beach	Fresh	Weekly	E. coli	9	0	N/A	5 - 30
Plymouth	Sandy Pond Beach	Fresh	Weekly	E. coli	14	0	N/A	5 - 20
Plymouth	YMCA Camp Clark Hyles Pond Beach	Fresh	Weekly	E. coli	5	0	N/A	5 - 50
Randolph	Ponkapoag Pond Beach	Fresh	Weekly	E. coli	5	1	275	2 - 20
Richmond	Camp Marion White Beach	Fresh	Weekly	E. coli	7	0	N/A	10 - 80

Town	Beach Name	Beach Type	Testing Frequency	Indicator	#Tests	# Violations	Range of Violations (CFU/100 ml)	Range of Non-violations (CFU/100 ml)
Richmond	Camp Russell Beach	Fresh	Weekly	E. coli	8	0	N/A	10 - 10
Richmond	Camp Russell Beach	Fresh	Two Times	Fecal Streptococci	2	N/A	N/A	10 - 40
Richmond	Richmond Shores Beach	Fresh	Weekly	E. coli	8	0	N/A	10 - 20
Richmond	Richmond Shores Beach	Fresh	Two Times	Fecal Streptococci	2	N/A	N/A	10 - 10
Richmond	Town Beach	Fresh	Weekly	E. coli	8	0	N/A	10 - 20
Richmond	Town Beach	Fresh	Two Times	Fecal Streptococci	2	N/A	N/A	10 - 10
Rowe	Pelham Lake Beach	Fresh	Weekly at 3 locations	E. coli	30	0	N/A	10 - 190
Rutland	Rutland Beach	Fresh	Weekly	E. coli	4	0	N/A	60 - 200
Rutland	Rutland Beach	Fresh	Weekly	Enterococci	9	2	124	0 - 2
Rutland	Rutland Beach	Fresh	One Time	Total Coliform	1	N/A	N/A	200
Sandisfield	York Lake Beach	Fresh	One Time	E. coli	1	0	N/A	20
Sandisfield	York Lake Beach	Fresh	Weekly	Enterococci	15	1	130	2 - 18
Sandwich	Camp Burgess Beach	Fresh	One Time	E. coli	1	0	N/A	5
Sandwich	Camp Hayward Beach	Fresh	One Time	E. coli	1	0	N/A	5
Sandwich	Hoxie Pond Beach	Fresh	Weekly	E. coli	13	0	N/A	4 - 44
Sandwich	Lawrence Pond Beach	Fresh	Weekly	E. coli	14	1	400	4 - 24
Sandwich	Lawrence Pond Beach	Fresh	One Time	Enterococci	1	0	N/A	20
Sandwich	Peter's Pond Beach	Fresh	Weekly	E. coli	13	0	N/A	4 - 132
Sandwich	Pimlico Pond Beach	Fresh	Weekly	E. coli	13	0	N/A	4 - 20
Sandwich	Shawme Pond Beach	Fresh	Weekly	E. coli	13	3	276 - 800	4 - 144
Sandwich	Snake Pond Beach	Fresh	Weekly	E. coli	13	0	N/A	4 - 52
Sandwich	Spectacle Pond Beach	Fresh	Weekly	E. coli	13	0	N/A	4 - 192
Sandwich	Triangle Pond Beach	Fresh	Weekly	E. coli	12	0	N/A	4 - 20
Sandwich	Wakeby Pond Beach	Fresh	Weekly	E. coli	13	0	N/A	4 - 8
Saugus	Pearce Lake Beach	Fresh	Weekly	Enterococci	20	3	62 - 150	1 - 44
Saugus	Peckham Pond Beach	Fresh	Weekly at 3	Enterococci	37	23	66 - 770	2 - 60

Town	Beach Name	Beach Type	Testing Frequency	Indicator	#Tests	# Violations	Range of Violations (CFU/100 ml)	Range of Non-violations (CFU/100 ml)
			Locations					
Savoy	North Pond Beach	Fresh	One Time	E. coli	1	0	N/A	36
Savoy	North Pond Beach	Fresh	Weekly	Enterococci	16	0	N/A	2 - 28
Savoy	South Pond Beach	Fresh	Weekly	Enterococci	18	3	86 - 600	2 - 12
Sharon	Camp Gannett Beach	Fresh	Weekly	E. coli	14	0	N/A	0 - 69
Sharon	Camp Wonderland Beach	Fresh	Weekly	E. coli	12	0	N/A	0 - 21
Sharon	Community Center Beach	Fresh	Weekly	E. coli	22	0	N/A	2 - 49
Sharon	Horizons For Youth Beach	Fresh	Weekly	E. coli	13	0	N/A	0 - 32
Sharon	Sharon Country Day Camp Brook	Fresh	Weekly	E. coli	9	0	N/A	0 - 8
Sharon	Sharon Country Day Camp Pond Beach	Fresh	Weekly	E. coli	9	0	N/A	0 - 26
Sharon	Sturges Livingstone Road Cove Beach	Fresh	Monthly	E. coli	5	0	N/A	1 - 9
Sharon	Sucker Brook Beach	Fresh	Weekly	E. coli	11	0	N/A	1 - 39
Sharon	Town Beach	Fresh	Twice per Week at 4 locations	E. coli	88	0	N/A	1 - 69
Sherborn	Farm Pond Swimming Area	Fresh	Weekly	E. coli	11	0	N/A	0 - 90
Sherborn	Farm Pond Swimming Area	Fresh	Two Times	Enterococci	2	0	N/A	0
Sherborn	Farm Pond Swimming Area	Fresh	One Time	Total Coliform	1	N/A	N/A	0
Shrewsbury	Brookside Place Beach	Fresh	Weekly	Total Coliform	11	N/A	N/A	100 - 6900
Shrewsbury	Dean Pond Beach	Fresh	Weekly	Total Coliform	11	N/A	N/A	100 - 12300
Shrewsbury	Eaglehead Cove Beach	Fresh	Weekly	Total Coliform	11	N/A	N/A	50 - 520
Shrewsbury	Gauch Park Beach	Fresh	Weekly	Total Coliform	11	N/A	N/A	100 - 600
Shrewsbury	Harvey Place Beach	Fresh	Weekly	Total Coliform	11	N/A	N/A	320 - 4300
Shrewsbury	Jordan Pond Inlet Beach	Fresh	Weekly	Total Coliform	11	N/A	N/A	100 - 6400
Shrewsbury	King's Point Beach	Fresh	One Time	Total Coliform	1	N/A	N/A	60
Shrewsbury	Newton Pond Beach	Fresh	Weekly	Total Coliform	11	N/A	N/A	50 - 70
Shrewsbury	Norton Way Beach	Fresh	One Time	E. coli	1	0	N/A	50
Shrewsbury	Norton Way Beach	Fresh	One Time	Total Coliform	1	N/A	N/A	720
Shrewsbury	Oak Island Beach	Fresh	Weekly	Total Coliform	11	N/A	N/A	300 - 1300
Shrewsbury	Old Mill Pond Beach	Fresh	Weekly	Total Coliform	11	N/A	N/A	5 - 1150

Town	Beach Name	Beach Type	Testing Frequency	Indicator	#Tests	# Violations	Range of Violations (CFU/100 ml)	Range of Non-violations (CFU/100 ml)
Shrewsbury	Sunset Beach	Fresh	Weekly	E. coli	11	0	N/A	10 - 80
Shrewsbury	Sunset Beach	Fresh	Weekly	Total Coliform	11	N/A	N/A	50 - 180
Southwick	South Pond Beach Park North	Fresh	Weekly	Total Coliform	8	N/A	N/A	9 - 55
Southwick	South Pond Beach Park South	Fresh	Weekly	Total Coliform	8	N/A	N/A	14 - 45
Spencer	Cranberry Meadow Pond Beach	Fresh	Weekly	E. coli	2	2	400 - 2000	10 - 220
Spencer	Howe Pond Beach	Fresh	One Time	E. coli	1	0	N/A	34
Spencer	Spencer Beach	Fresh	Weekly	Enterococci	9	0	N/A	0 - 42
Spencer	Spencer Beach	Fresh	Twice per Month	E. coli	4	0	N/A	20 - 128
Spencer	Spencer Beach	Fresh	One Time	Total Coliform	1	N/A	N/A	0
Spencer	Stiles Pond Beach	Fresh	Weekly	E. coli	11	0	N/A	0 - 140
Spencer	Sugden Pond Beach	Fresh	Weekly	E. coli	11	0	N/A	1 - 220
Spencer	Thompson Pond Beach	Fresh	Weekly	E. coli	12	1	400	10 - 80
Spencer	Whittemore Pond Beach	Fresh	Weekly	E. coli	11	1	280	1 - 430
Springfield	Lake Lorraine Beach	Fresh	Monthly	E. coli	11	0	N/A	2 - 210
Springfield	Lake Lorraine Beach	Fresh	Weekly at 2 Locations	Enterococci	26	10	120 - 600	8 - 54
Sterling	Town Beach	Fresh	Weekly at 3 Locations	E. coli	33	2	280 - 2000	10 - 190
Stockbridge	Beachwood Lake Mahkeenac Beach	Fresh	Weekly	E. coli	10	0	N/A	0 - 26
Stockbridge	Berkshire Country Day School Beach	Fresh	Weekly	E. coli	8	0	N/A	10 - 150
Stockbridge	Camp Mahkeenac Lake Mahkeenac Beach	Fresh	Weekly	E. coli	9	0	N/A	1 - 38
Stockbridge	Kripalu Lake Mahkeenac Beach	Fresh	Weekly	E. coli	10	0	N/A	0 - 29
Stockbridge	Sports Day Camp Lake Mahkeenac Beach	Fresh	Weekly	E. coli	6	0	N/A	0 - 6
Stockbridge	Tanglewood Lake Mahkeenac Beach	Fresh	Weekly	E. coli	10	0	N/A	0 - 6
Stockbridge	Town Beach Lake Mahkeenac Beach	Fresh	Weekly	E. coli	10	0	N/A	0 - 18
Stockbridge	White Pines Lake Mahkeenac Beach	Fresh	Weekly	E. coli	9	0	N/A	1 - 45
Sturbridge	East Brimfield Reservoir Beach	Fresh	Weekly	Enterococci	16	2	100 - 600	2 - 56
Sturbridge	East Brimfield Reservoir Beach	Fresh	Two Times	E. coli	2	0	N/A	2 - 70

Town	Beach Name	Beach Type	Testing Frequency	Indicator	#Tests	# Violations	Range of Violations (CFU/100 ml)	Range of Non-violations (CFU/100 ml)
Sturbridge	Outdoor World Beach	Fresh	Two Times	E. coli	2	0	N/A	30
Sturbridge	Outdoor World Beach	Fresh	Three Times	Fecal Coliform	3	N/A	N/A	10 - 30
Sturbridge	Outdoor World Beach	Fresh	One Time	Enterococci	1	0	N/A	30
Sturbridge	Sturbridge Beach	Fresh	One Time	E. coli	1	0	N/A	0
Sturbridge	Sturbridge Beach	Fresh	One Time	Enterococci	1	0	N/A	40
Sturbridge	Walker Pond Beach	Fresh	Monthly	E. coli	2	0	N/A	2 - 14
Sturbridge	Walker Pond Beach	Fresh	Weekly	Enterococci	17	1	600	2 - 70
Sutton	Camp Blanchard Beach	Fresh	Weekly	Not Indicated	11	N/A	N/A	10 - 60
Sutton	Kings Campground Beach	Fresh	Weekly	Not Indicated	11	N/A	N/A	10 - 2000
Sutton	Marions Camp Beach	Fresh	Weekly	Not Indicated	6	N/A	N/A	10 - 20
Sutton	Sutton Falls Beach	Fresh	Weekly	Not Indicated	11	N/A	N/A	10 - 180
Sutton	The Old Holbrook Place Beach	Fresh	Weekly	Not Indicated	10	N/A	N/A	10 - 100
Sutton	Welsh Campground Beach	Fresh	Weekly	Not Indicated	11	N/A	N/A	10 - 2000
Taunton	Campers Beach	Fresh	Weekly	Enterococci	7	0	N/A	2 - 8
Taunton	Campers Beach	Fresh	Monthly	Total Coliform	3	N/A	N/A	100 - 3900
Taunton	Watsons Pond Beach	Fresh	Weekly	Enterococci	7	1	92	2 - 12
Taunton	Watsons Pond Beach	Fresh	Weekly	Total Coliform	1	N/A	N/A	500
Templeton	Beamans Pond Beach	Fresh	Monthly	E. coli	3	0	N/A	2 - 60
Templeton	Beamans Pond Beach	Fresh	Weekly	Enterococci	16	2	216 - 600	2 - 60
Templeton	Beamans Pond Campground Beach	Fresh	Monthly	E. coli	3	0	N/A	2 - 84
Templeton	Beamans Pond Campground Beach	Fresh	Weekly	Enterococci	16	3	80 - 600	2 - 42
Topsfield	Hood's Pond Beach	Fresh	Weekly	E. coli	10	0	N/A	30-Oct
Topsfield	Hood's Pond Beach	Fresh	Weekly	Fecal Coliform	10	N/A	N/A	10 - 30
Townsend	Pearl Hill Beach	Fresh	Weekly	E. coli	4	0	N/A	10 - 80
Townsend	Pearl Hill Beach	Fresh	Weekly	Enterococci	8	0	N/A	0 - 14
Townsend	Pearl Hill Beach	Fresh	One Time	Total Coliform	1	N/A	N/A	50
Townsend	Townsend VFW Beach	Fresh	Weekly	E. coli	14	2	600	2 - 210
Townsend	Townsend VFW Beach	Fresh	One Time	Enterococci	1	1	110	N/A
Townsend	Townsend VFW Beach	Fresh	One Time	Fecal Coliform	1	N/A	N/A	70

Town	Beach Name	Beach Type	Testing Frequency	Indicator	#Tests	# Violations	Range of Violations (CFU/100 ml)	Range of Non-violations (CFU/100 ml)
Tyringham	Tyringham Park Beach	Fresh	Weekly	E. coli	13	0	N/A	10 - 190
Upton	Pratt Pond Kiwanis Beach	Fresh	Weekly	E. coli	14	1	450	4 - 76
Upton	Taft Pond Beach	Fresh	Weekly	E. coli	14	1	600	2 - 64
Upton	Wildwood Pond Beach	Fresh	Weekly	E. coli	14	2	600	2 - 52
Uxbridge	Conservation Beach	Fresh	Weekly	E. coli	6	0	N/A	30 - 80
Uxbridge	Fairwoods Pond Beach	Fresh	Weekly	E. coli	16	3	240 - 2000	0 - 160
Uxbridge	Fairwoods Pond Beach	Fresh	One Time	Fecal Coliform	2	N/A	N/A	10
Uxbridge	Fairwoods Pond Beach	Fresh	One Time	Total Coliform	2	N/A	N/A	10
Uxbridge	Pout Pond Beach	Fresh	Weekly	E. coli	15	1	500	3 - 190
Uxbridge	Pout Pond Beach	Fresh	One Time	Enterococci	1	0	N/A	0
Uxbridge	Winter Hill Park-West River Beach	Fresh	Twice per Week	E. coli	24	9	236 - 800	0 - 210
Uxbridge	Winter Hill Park-West River Beach	Fresh	Monthly	Enterococci	5	2	69 - 160	11 - 36
Uxbridge	Winter Hill Park-West River Beach	Fresh	One Time	Total Coliform	1	N/A	N/A	0
Warren	Comins Pond Beach	Fresh	Weekly	E. coli	11	0	N/A	10 - 60
Wayland	Town Beach	Fresh	Weekly at 4 locations	E. coli	52	0	N/A	2 - 56
Webster	Bates Point Beach	Fresh	One Time	E. coli	1	0	N/A	40
Webster	Beacon Park Beach	Fresh	Weekly	E. coli	18	1	880	0 - 220
Webster	Birch Island Beach	Fresh	Weekly	E. coli	3	0	N/A	0 - 40
Webster	Colonial Park Beach	Fresh	Weekly	E. coli	14	0	N/A	0 - 100
Webster	Indian Ranch Beach	Fresh	Weekly	E. coli	11	0	N/A	0 - 60
Webster	Kildeer Island Beach	Fresh	Weekly	E. coli	12	0	N/A	0 - 140
Webster	Lakeside Beach	Fresh	Weekly	E. coli	15	1	260	0 - 140
Webster	Memorial Beach	Fresh	Weekly	E. coli	18	0	N/A	0 - 100
Webster	Merino Pond-Dudley Beach	Fresh	Weekly	E. coli	13	0	N/A	0 - 100
Webster	Merino Pond-Dudley Beach	Fresh	Monthly	Total Coliform	4	N/A	N/A	160 - 2530
Webster	Point Breeze Beach	Fresh	Weekly	E. coli	10	0	N/A	0 - 140
Webster	Treasure Island Beach	Fresh	Weekly	E. coli	14	0	N/A	0 - 100
Wellfleet	Duck Pond Beach	Fresh	Weekly	E. coli	8	0	N/A	4
Wellfleet	Duck Pond Beach	Fresh	Weekly	Enterococci	5	0	N/A	2 - 4

Town	Beach Name	Beach Type	Testing Frequency	Indicator	#Tests	# Violations	Range of Violations (CFU/100 ml)	Range of Non-violations (CFU/100 ml)
Wellfleet	Dyer Pond Beach	Fresh	Weekly	E. coli	9	0	N/A	4
Wellfleet	Dyer Pond Beach	Fresh	Monthly	Enterococci	2	0	N/A	4
Wellfleet	Great Pond Beach	Fresh	Weekly	E. coli	9	0	N/A	4
Wellfleet	Great Pond Beach	Fresh	Monthly	Enterococci	2	0	N/A	4
Wellfleet	Gull Pond Beach	Fresh	Weekly	E. coli	9	0	N/A	4 - 16
Wellfleet	Gull Pond Beach	Fresh	Monthly	Enterococci	2	0	N/A	4
Wellfleet	Herring Pond Beach	Fresh	Weekly	E. coli	9	0	N/A	1 - 8
Wellfleet	Herring Pond Beach	Fresh	Monthly	Enterococci	2	0	N/A	4
Wellfleet	Higgins Pond Beach	Fresh	Weekly	E. coli	9	0	N/A	4 - 40
Wellfleet	Higgins Pond Beach	Fresh	Monthly	Enterococci	2	0	N/A	4
Wellfleet	Long Pond Beach	Fresh	Weekly	E. coli	9	0	N/A	4 - 12
Wellfleet	Long Pond Beach	Fresh	Monthly	Enterococci	2	0	N/A	4
Wellfleet	Turtle Pond Beach	Fresh	One Time	E. coli	1	0	N/A	4
Wendell	Lake Wyola Beach	Fresh	Monthly	E. coli	2	0	N/A	2 - 12
Wendell	Lake Wyola Beach	Fresh	Weekly	Enterococci	16	3	84 - 240	2 - 42
Wendell	Ruggles Pond Beach	Fresh	Monthly	E. coli	2	0	N/A	2 - 24
Wendell	Ruggles Pond Beach	Fresh	Weekly	Enterococci	13	0	N/A	2 - 40
West Brookfield	Wichaboag Beach	Fresh	Weekly	E. coli	29	3	236 - 2000	0 - 150
West Brookfield	Wichaboag Beach	Fresh	One Time	Total Coliform	1	N/A	N/A	250
West Brookfield	Wichaboag Cottages Beach	Fresh	Weekly	E. coli	12	1	236	1 - 190
West Brookfield	Wichaboag Cottages Beach	Fresh	One Time	Total Coliform	1	N/A	N/A	50
West Tisbury	Coca-Cola Brook Beach	Fresh	Weekly	Enterococci	12	20	66 - 517	N/A
West Tisbury	Long Cove Beach	Fresh	Weekly	Enterococci	10	0	N/A	0 - 6
West Tisbury	Seth's Pond Beach 1	Fresh	Weekly	Enterococci	26	0	N/A	0 - 56
West Tisbury	Seth's Pond Beach 2	Fresh	Weekly	Enterococci	26	0	N/A	0 - 70
Westborough	Lake Chauncy Beach	Fresh	Twice per Week	E. coli	11	0	N/A	2 - 190

Town	Beach Name	Beach Type	Testing Frequency	Indicator	#Tests	# Violations	Range of Violations (CFU/100 ml)	Range of Non-violations (CFU/100 ml)
Westborough	Lake Chauncy Beach	Fresh	Twice per Week	Enterococci	11	1	64	2 - 26
Westfield	Kingsley Beach	Fresh	Twice per Month	E. coli	7	0	N/A	2 - 30
Westfield	Kingsley Beach	Fresh	Twice per Week	Enterococci	20	3	70 - 600	2 - 58
Westfield	Lamberts Beach	Fresh	Weekly	E. coli	10	0	N/A	2 - 108
Westfield	Lamberts Beach	Fresh	Twice per Week	Enterococci	18	4	139 - 176	2 - 48
Westminster	Leominster State Forest Beach	Fresh	Weekly	E. coli	6	0	N/A	0 - 50
Westminster	Leominster State Forest Beach	Fresh	Weekly	Enterococci	10	1	84	0 - 12
Westminster	Town of Westminster Swimming Area	Fresh	One Time	E. coli	1	0	N/A	6
Westminster	Town of Westminster Swimming Area	Fresh	One Time	Total Coliform	1	N/A	N/A	1280
Westminster	Wyman Pond Beach	Fresh	Weekly	E. coli	6	0	N/A	0 - 24
Westport	Devol Pond Beach	Fresh	Weekly	Enterococci	11	3	70 - 370	2 - 34
Westport	Sawdy Pond Beach	Fresh	Weekly	Enterococci	13	3	66 - 420	2 - 44
Westport	South Watuppa Pond Beach	Fresh	Weekly	Enterococci	13	4	76 - 484	2 - 48
Westwood	Grossman Beach	Fresh	Weekly	Enterococci	8	0	N/A	2 - 28
Westwood	Hale Membership Beach	Fresh	Weekly	Enterococci	9	0	N/A	0 - 20
Westwood	North Beach	Fresh	Weekly	Enterococci	8	0	N/A	0 - 12
Westwood	Powisett Beach	Fresh	Weekly	Enterococci	7	0	N/A	3 - 19
Weymouth	Whitman's Pond Beach	Fresh	Weekly	E. coli	18	4	300 - 1120	5 - 200
Wilbraham	Nine Mile Pond Beach	Fresh	Weekly	E. coli	6	0	N/A	20 - 60
Wilbraham	Spec Pond Beach	Fresh	Weekly	E. coli	9	0	N/A	20 - 60
Wilbraham	Spec Pond Camp Beach	Fresh	Weekly	E. coli	9	0	N/A	10 - 80
Wilmington	Baby Beach	Fresh	Weekly	E. coli	13	1	380	0 - 120
Wilmington	Town Beach	Fresh	Weekly	E. coli	14	2	319 - 360	10 - 122
Winchendon	Lake Dennison Beach	Fresh	Monthly	E. coli	3	0	N/A	1 - 4
Winchendon	Lake Dennison Beach	Fresh	Weekly	Enterococci	13	0	N/A	2 - 50
Winchendon	Lake Dennison East Camp Beach	Fresh	Monthly	E. coli	3	0	N/A	0 - 2
Winchendon	Lake Dennison East Camp Beach	Fresh	Weekly	Enterococci	14	1	76	2 - 44
Winchendon	Lake Dennison North Camp Beach	Fresh	Weekly	E. coli	3	0	N/A	2 - 6
Winchendon	Lake Dennison North Camp Beach	Fresh	Weekly	Enterococci	16	1	120	2 - 38

Town	Beach Name	Beach Type	Testing Frequency	Indicator	#Tests	# Violations	Range of Violations (CFU/100 ml)	Range of Non-violations (CFU/100 ml)
Winchester	Sandy Beach	Fresh	Daily	Enterococci	33	13	62 - 690	2 - 50
Winchester	Wedge Pond Beach	Fresh	Monthly at 3 locations	E. coli	12	0	N/A	0 - 43
Winchester	Wedge Pond Beach	Fresh	Monthly at 3 locations	Fecal Coliform	18	N/A	N/A	26 - 4900
Winchester	Wedge Pond Beach	Fresh	Monthly at 3 locations	Total Coliform	18	N/A	N/A	200 - 11000
Windsor	Westfield River Beach	Fresh	One Time	E. coli	1	0	N/A	42
Windsor	Westfield River Beach	Fresh	Twice per Week	Enterococci	20	3	90 - 200	2 - 58
Worcester	Bell Pond Beach	Fresh	Weekly	E. coli	8	0	N/A	10 - 58
Worcester	Coes Pond Lake Side Beach	Fresh	Weekly	E. coli	8	0	N/A	10 - 105
Worcester	Coes Pond Mill St. Beach	Fresh	Weekly	E. coli	10	2	320 - 327	10 - 230
Worcester	Indian Lake Public Beach	Fresh	Weekly	E. coli	10	1	440	15 - 175
Worcester	Indian Lake Shore Park Beach	Fresh	Weekly	E. coli	10	0	N/A	2 - 203
Worcester	Lake Park Beach	Fresh	Weekly	Enterococci	6	1	240	2 - 26
Worcester	Regatta Point Beach	Fresh	Weekly	Enterococci	8	3	88 - 134	6 - 54
Wrentham	Archer Beach	Fresh	Weekly	E. coli	13	0	N/A	10 - 80
Wrentham	Lake Pearl Beach	Fresh	Weekly	E. coli	29	2	1000 - 1300	10 - 70
Wrentham	Mirror Beach	Fresh	Weekly	E. coli	14	1	660	10 - 190
Wrentham	Sweatt Beach	Fresh	Weekly	E. coli	12	1	350	10 - 130
Yarmouth	Big Sandy Beach	Fresh	Weekly	E. coli	12	0	N/A	0 - 4
Yarmouth	Dennis Pond Beach	Fresh	Weekly	E. coli	19	0	N/A	4 - 44
Yarmouth	Flax Pond Beach	Fresh	Weekly	E. coli	25	1	400	4 - 170
Yarmouth	Follins Pond Beach	Fresh	Weekly	E. coli	1	0	N/A	4
Yarmouth	Greenough Beach	Fresh	Weekly	E. coli	13	0	N/A	0 - 4
Yarmouth	Little Sandy Pond Beach	Fresh	Weekly	E. coli	16	0	N/A	1 - 52
Yarmouth	Long Pond Indian Memorial Drive Beach	Fresh	Weekly	E. coli	20	1	412	0 - 124
Yarmouth	Long Pond Lyman Beach	Fresh	Weekly	E. coli	22	2	260 - 360	4 - 120
Yarmouth	The Run Beach	Fresh	One Time	E. coli	1	0	N/A	24

Town	Beach Name	Beach Type	Testing Frequency	Indicator	#Tests	# Violations	Range of Violations (CFU/100 ml)	Range of Non-violations (CFU/100 ml)
Yarmouth	Windgate Beach	Fresh	Weekly	E. coli	12	0	N/A	4 - 84

Table 18: Cities/towns in Massachusetts, indicating type of beach and the presence or absence of data in 2001.

City/town name	Marine beach	Marine beach with data	Marine beach without data	Freshwater beach	Freshwater beach with data	Freshwater beach without data	No beach	Marine or freshwater beach	Marine and freshwater beach
ABINGTON				x	X			x	
ACTON				x	x			x	
ACUSHNET				x		x		x	
ADAMS							x		
AGAWAM				x	x			x	
ALFORD							x		
AMESBURY				x	x			x	
AMHERST				x		x		x	
ANDOVER				x	x			x	
ARLINGTON				x	x			x	
ASHBURNHAM							x		
ASHBY				x	x			x	
ASHFIELD							x		
ASHLAND				x	x			x	
ATHOL				x	x			x	
ATTLEBORO							x		
AUBURN				x		x		x	
AVON							x		
AYER				x	x			x	
BARNSTABLE	x	x		x	x			x	x
BARRE				x		x		x	
BECKET				x	x			x	
BEDFORD				x		x		x	
BELCHERTOWN				x	x			x	
BELLINGHAM				x	x			x	
BELMONT							x		
BERKLEY							x		
BERLIN							x		

City/town name	Marine beach	Marine beach with data	Marine beach without data	Freshwater beach	Freshwater beach with data	Freshwater beach without data	No beach	Marine or freshwater beach	Marine and freshwater beach
BERNARDSTON							x		
BEVERLY	x	x						x	
BILLERICA				x	x			x	
BLACKSTONE							x		
BLANDFORD							x		
BOLTON				x	x			x	
BOSTON	x	x						x	
BOURNE	x	x		x	x			x	x
BOXBOROUGH							x		
BOXFORD				x		x		x	
BOYLSTON							x		
BRAINTREE	x	x		x	x			x	x
BREWSTER	x	x		x	x			x	x
BRIDGEWATER							x		
BRIMFIELD				x	x			x	
BROCKTON							x		
BROOKFIELD				x	x			x	
BROOKLINE							x		
BUCKLAND							x		
BURLINGTON							x		
CAMBRIDGE							x		
CANTON							x		
CARLISLE							x		
CARVER				x	x			x	
CHARLEMONT				x	x			x	
CHARLTON				x	x			x	
CHATHAM	x	x		x	x			x	x
CHELMSFORD				x	x			x	
CHELSEA							x		

City/town name	Marine beach	Marine beach with data	Marine beach without data	Freshwater beach	Freshwater beach with data	Freshwater beach without data	No beach	Marine or freshwater beach	Marine and freshwater beach
CHESHIRE							x		
CHESTER							x		
CHESTERFIELD							x		
CHICOPEE				x	x			x	
CHILMARK	x	x						x	
CLARKSBURG				x	x			x	
CLINTON							x		
COHASSET	x	x						x	
COLRAIN							x		
CONCORD				x	x			x	
CONWAY				x	x			x	
CUMMINGTON							x		
DALTON							x		
DANVERS	x	x						x	
DARTMOUTH	x	x		x	x			x	x
DEDHAM							x		
DEERFIELD							x		
DENNIS	x	x		x	x			x	x
DIGHTON							x		
DOUGLAS				x	x			x	
DOVER							x		
DRACUT				x	x			x	
DUDLEY				x		x		x	
DUNSTABLE							x		
DUXBURY	x	x						x	
EAST BRIDGEWATER							x		
EAST BROOKFIELD				x		x		x	
EAST LONGMEADOW							x		
EASTHAM	x	x		x	x			x	x

City/town name	Marine beach	Marine beach with data	Marine beach without data	Freshwater beach	Freshwater beach with data	Freshwater beach without data	No beach	Marine or freshwater beach	Marine and freshwater beach
EASTHAMPTON							x		
EASTON				x	x			x	
EDGARTOWN	x	x						x	
EGREMONT				x	x			x	
ERVING				x	x			x	
ESSEX	x	x		x	x			x	x
EVERETT							x		
FAIRHAVEN	x	x						x	
FALL RIVER							x		
FALMOUTH	x	x		x	x			x	x
FITCHBURG							x		
FLORIDA							x		
FOXBOROUGH							x		
FRAMINGHAM				x	x			x	
FRANKLIN				x	x			x	
FREETOWN				x	x			x	
GARDNER				x	x			x	
GAY HEAD	x	x						x	
GEORGETOWN				x	x			x	
GILL							x		
GLOUCESTER	x	x						x	
GOSHEN				x	x			x	
GOSNOLD							x		
GRAFTON				x	x			x	
GRANBY							x		
GRANVILLE							x		
GREAT BARRINGTON				x	x			x	
GREENFIELD				x	x			x	
GROTON				x	x			x	

City/town name	Marine beach	Marine beach with data	Marine beach without data	Freshwater beach	Freshwater beach with data	Freshwater beach without data	No beach	Marine or freshwater beach	Marine and freshwater beach
GROVELAND							x		
HADLEY							x		
HALIFAX				x	x			x	
HAMILTON							x		
HAMPDEN							x		
HANCOCK							x		
HANOVER							x		
HANSON				x	x			x	
HARDWICK							x		
HARVARD				x	x			x	
HARWICH	x	x		x	x			x	x
HATFIELD							x		
HAVERHILL				x	x			x	
HAWLEY							x		
HEATH							x		
HINGHAM	x	x						x	
HINSDALE				x	x			x	
HOLBROOK							x		
HOLDEN				x	x			x	
HOLLAND							x		
HOLLISTON				x	x			x	
HOLYOKE							x		
HOPEDALE				x		x		x	
HOPKINTON				x	x			x	
HUBBARDSTON				x	x			x	
HUDSON							x		
HULL	x	x						x	
HUNTINGTON				x	x			x	
IPSWICH	x	x		x	x			x	x

City/town name	Marine beach	Marine beach with data	Marine beach without data	Freshwater beach	Freshwater beach with data	Freshwater beach without data	No beach	Marine or freshwater beach	Marine and freshwater beach
KINGSTON	x	x		x	x			x	x
LAKEVILLE				x	x			x	
LANCASTER				x	x			x	
LANESBOROUGH				x	x			x	
LAWRENCE							x		
LEE				x	x			x	
LEICESTER							x		
LENOX				x	x			x	
LEOMINSTER				x		x		x	
LEVERETT							x		
LEXINGTON				x	x			x	
LEYDEN							x		
LINCOLN							x		
LITTLETON				x	x			x	
LONGMEADOW							x		
LOWELL				x	x			x	
LUDLOW				x	x			x	
LUNENBURG				x	x			x	
LYNN	x	x		x	x			x	x
LYNNFIELD							x		
MALDEN							x		
MANCHESTER	x	x						x	
MANSFIELD							x		
MARBLEHEAD	x	x						x	
MARION	x	x						x	
MARLBOROUGH				x	x			x	
MARSHFIELD	x	x						x	
MASHPEE	x	x		x	x			x	x
MATTAPOISETT	x	x						x	

City/town name	Marine beach	Marine beach with data	Marine beach without data	Freshwater beach	Freshwater beach with data	Freshwater beach without data	No beach	Marine or freshwater beach	Marine and freshwater beach
MAYNARD							x		
MEDFIELD				x	x			x	
MEDFORD				x	x			x	
MEDWAY				x	x			x	
MELROSE							x		
MENDON				x	x			x	
MERRIMAC				x		x		x	
METHUEN				x	x			x	
MIDDLEBOROUGH				x	x			x	
MIDDLEFIELD							x		
MIDDLETON				x	x			x	
MILFORD							x		
MILLBURY							x		
MILLIS							x		
MILLVILLE							x		
MILTON				x	x			x	
MONROE							x		
MONSON							x		
MONTAGUE							x		
MONTEREY				x	x			x	
MONTGOMERY							x		
MOUNT WASHINGTON				x		x		x	
NAHANT	x	x						x	
NANTUCKET	x	x		x	x			x	x
NATICK				x	x			x	
NEEDHAM							x		
NEW ASHFORD							x		
NEW BEDFORD	x	x						x	
NEW BRAINTREE							x		

City/town name	Marine beach	Marine beach with data	Marine beach without data	Freshwater beach	Freshwater beach with data	Freshwater beach without data	No beach	Marine or freshwater beach	Marine and freshwater beach
NEW MARLBOROUGH							x		
NEW SALEM							x		
NEWBURY	x	x						x	
NEWBURYPORT	x		x					x	
NEWTON				x	x			x	
NORFOLK							x		
NORTH ADAMS				x	x			x	
NORTH ANDOVER				x	x			x	
NORTH ATTLEBOROUGH				x		x		x	
NORTH BROOKFIELD				x		x		x	
NORTH READING							x		
NORTHAMPTON				x	x			x	
NORTHBOROUGH							x		
NORTHBRIDGE				x	x			x	
NORTHFIELD							x		
NORTON				x		x		x	
NORWELL							x		
NORWOOD							x		
OAK BLUFFS	x	x						x	
OAKHAM				x	x			x	
ORANGE				x	x			x	
ORLEANS	x	x		x	x			x	x
OTIS				x	x			x	
OXFORD				x		x		x	
PALMER							x		
PAXTON							x		
PEABODY							x		
PELHAM							x		
PEMBROKE				x	x			x	

City/town name	Marine beach	Marine beach with data	Marine beach without data	Freshwater beach	Freshwater beach with data	Freshwater beach without data	No beach	Marine or freshwater beach	Marine and freshwater beach
PEPPERELL							x		
PERU							x		
PETERSHAM							x		
PHILLIPSTON							x		
PITTSFIELD				x	x			x	
PLAINFIELD				x		x		x	
PLAINVILLE							x		
PLYMOUTH	x	x		x	x			x	x
PLYMPTON							x		
PRINCETON							x		
PROVINCETOWN	x	x						x	
QUINCY	x	x						x	
RANDOLPH				x	x			x	
RAYNHAM							x		
READING							x		
REHOBOTH							x		
REVERE	x	x						x	
RICHMOND				x	x			x	
ROCHESTER				x		x		x	
ROCKLAND				x		x		x	
ROCKPORT	x	x						x	
ROWE				x	x			x	
ROWLEY							x		
ROYALSTON				x		x		x	
RUSSELL				x		x		x	
RUTLAND				x	x			x	
SALEM	x	x						x	
SALISBURY	x	x						x	
SANDISFIELD				x	x			x	

City/town name	Marine beach	Marine beach with data	Marine beach without data	Freshwater beach	Freshwater beach with data	Freshwater beach without data	No beach	Marine or freshwater beach	Marine and freshwater beach
SANDWICH	x	x		x	x			x	x
SAUGUS				x	x			x	
SAVOY				x	x			x	
SCITUATE	x	x						x	
SEEKONK							x		
SHARON				x	x			x	
SHEFFIELD							x		
SHELBURNE							x		
SHERBORN				x	x			x	
SHIRLEY							x		
SHREWSBURY				x	x			x	
SHUTESBURY							x		
SOMERSET	x	x						x	
SOMERVILLE							x		
SOUTH HADLEY							x		
SOUTHAMPTON							x		
SOUTHBOROUGH							x		
SOUTHBRIDGE							x		
SOUTHWICK				x	x			x	
SPENCER				x	x			x	
SPRINGFIELD				x	x			x	
STERLING				x	x			x	
STOCKBRIDGE				x	x			x	
STONEHAM							x		
STOUGHTON				x		x		x	
STOW				x		x		x	
STURBRIDGE				x	x			x	
SUDBURY							x		
SUNDERLAND							x		

City/town name	Marine beach	Marine beach with data	Marine beach without data	Freshwater beach	Freshwater beach with data	Freshwater beach without data	No beach	Marine or freshwater beach	Marine and freshwater beach
SUTTON				x	x			x	
SWAMPSCOTT	x	x						x	
SWANSEA							x		
TAUNTON				x	x			x	
TEMPLETON				x	x			x	
TEWKSBURY							x		
TISBURY	x	x						x	
TOLLAND							x		
TOPSFIELD				x	x			x	
TOWNSEND				x	x			x	
TRURO	x	x						x	
TYNGSBOROUGH							x		
TYRINGHAM				x	x			x	
UPTON				x	x			x	
UXBRIDGE				x	x			x	
WAKEFIELD				x		x		x	
WALES				x		x		x	
WALPOLE				x		x		x	
WALTHAM							x		
WARE							x		
WAREHAM	x	x						x	
WARREN				x	x			x	
WARWICK							x		
WASHINGTON							x		
WATERTOWN							x		
WAYLAND				x	x			x	
WEBSTER				x	x			x	
WELLESLEY				x		x		x	
WELLFLEET	x	x		x	x			x	x

City/town name	Marine beach	Marine beach with data	Marine beach without data	Freshwater beach	Freshwater beach with data	Freshwater beach without data	No beach	Marine or freshwater beach	Marine and freshwater beach
WENDELL				x	x			x	
WENHAM							x		
WEST BOYLSTON							x		
WEST BRIDGEWATER							x		
WEST BROOKFIELD				x	x			x	
WEST NEWBURY							x		
WEST SPRINGFIELD							x		
WEST STOCKBRIDGE							x		
WEST TISBURY	x	x		x	x			x	x
WESTBOROUGH				x	x			x	
WESTFIELD				x	x			x	
WESTFORD				x		x		x	
WESTHAMPTON				x		x		x	
WESTMINSTER				x	x			x	
WESTON							x		
WESTPORT	x	x		x	x			x	x
WESTWOOD				x	x			x	
WEYMOUTH	x	x		x	x			x	x
WHATELY							x		
WHITMAN							x		
WILBRAHAM				x	x			x	
WILLIAMSBURG							x		
WILLIAMSTOWN				x		x		x	
WILMINGTON				x	x			x	
WINCHENDON				x	x			x	
WINCHESTER				x	x			x	
WINDSOR				x	x			x	
WINTHROP	x	x						x	
WOBURN							x		

City/town name	Marine beach	Marine beach with data	Marine beach without data	Freshwater beach	Freshwater beach with data	Freshwater beach without data	No beach	Marine or freshwater beach	Marine and freshwater beach
WORCESTER				x	x			x	
WORTHINGTON							x		
WRENTHAM				x	x			x	
YARMOUTH	x	x		x	x			x	x
Total	**59**	**58**	**1**	**175**	**145**	**30**	**141**	**210**	**24**

XI. FIGURES

Figure 1
All Massachusetts cities/towns grouped by type of public/semi-public bathing beach

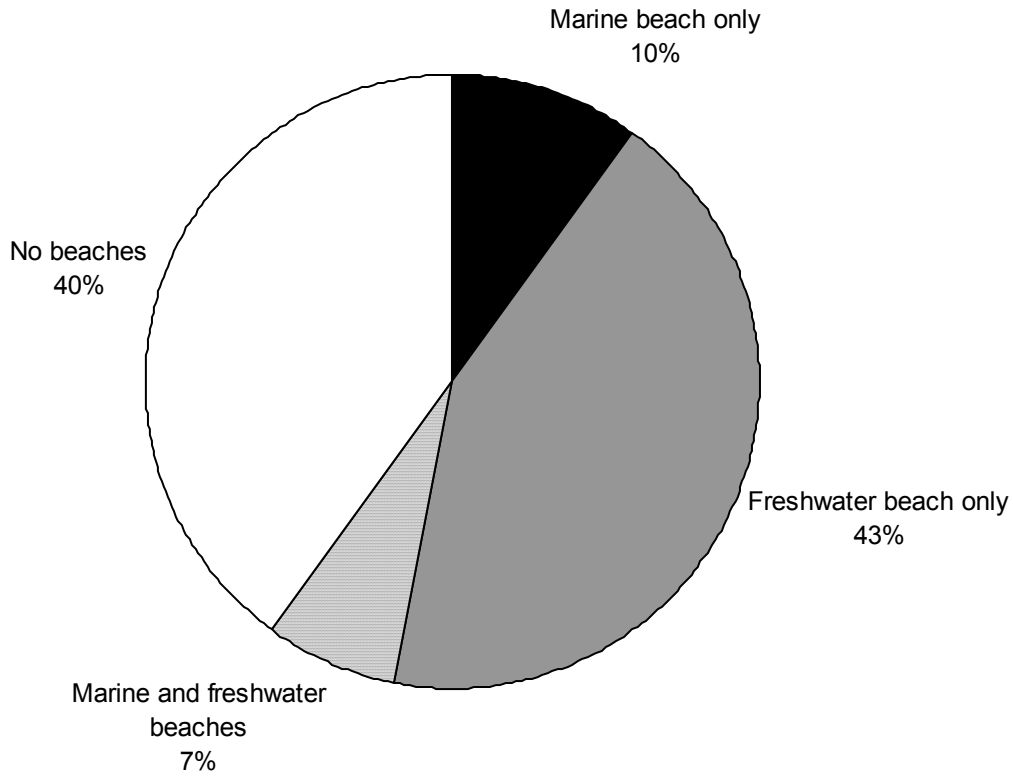


Figure 2
Coastal cities/towns in Massachusetts grouped by presence or absence of public/semi-public marine beaches and testing data 2001

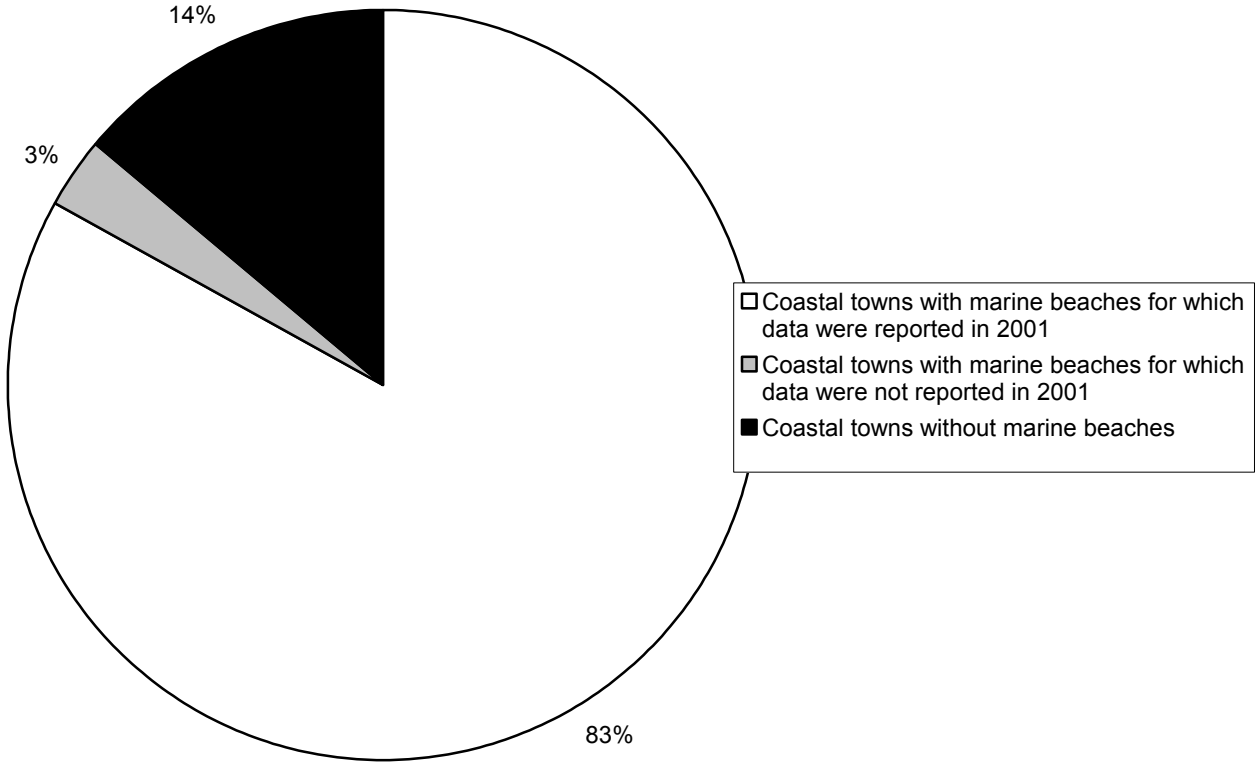


Figure 3
Cities/towns in Massachusetts grouped by presence or absence of public/semi-public freshwater bathing beaches and testing data 2001

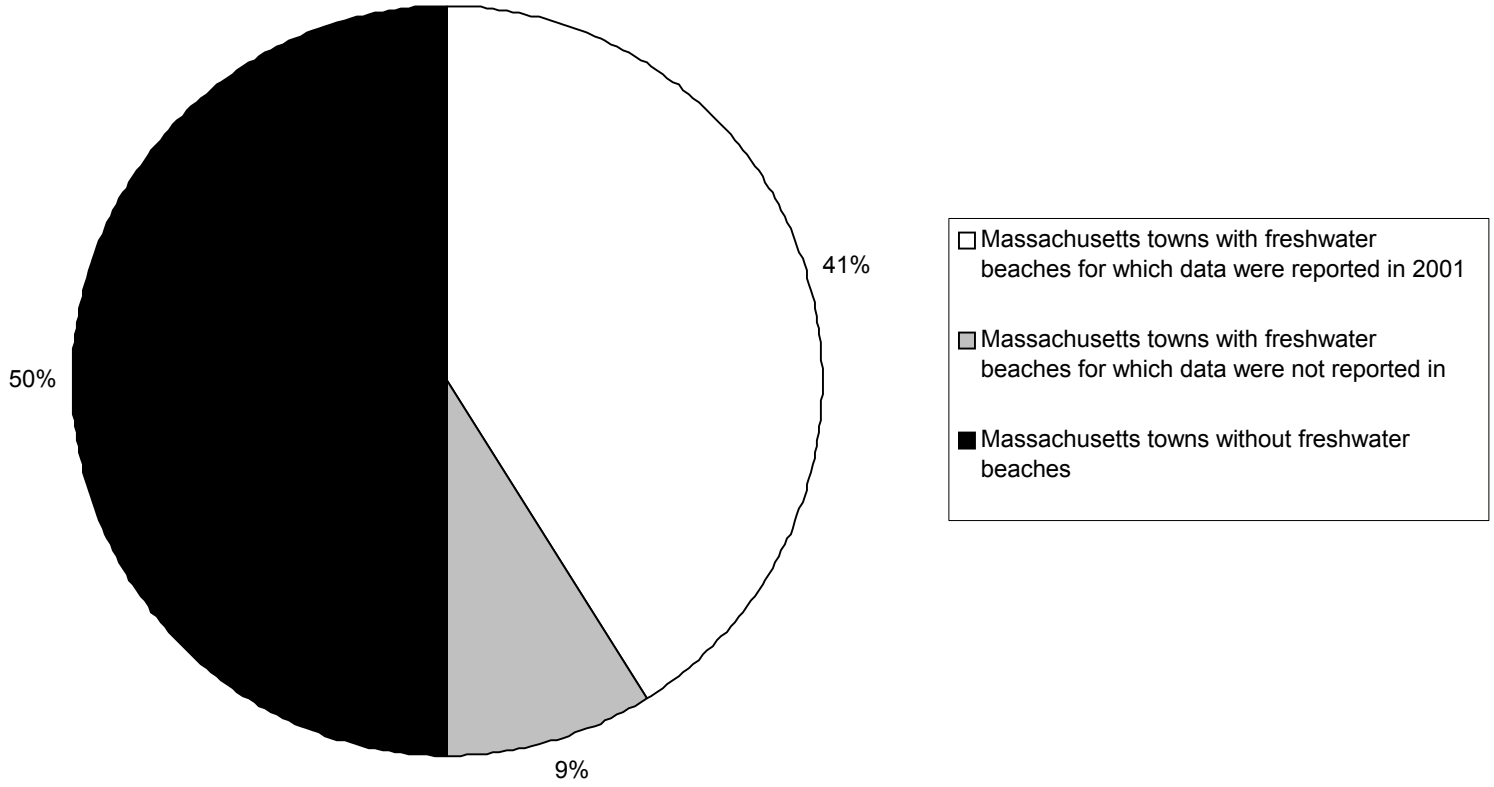


Figure 4
Bather density at public and semi-public marine bathing beaches at times of water sampling 2001

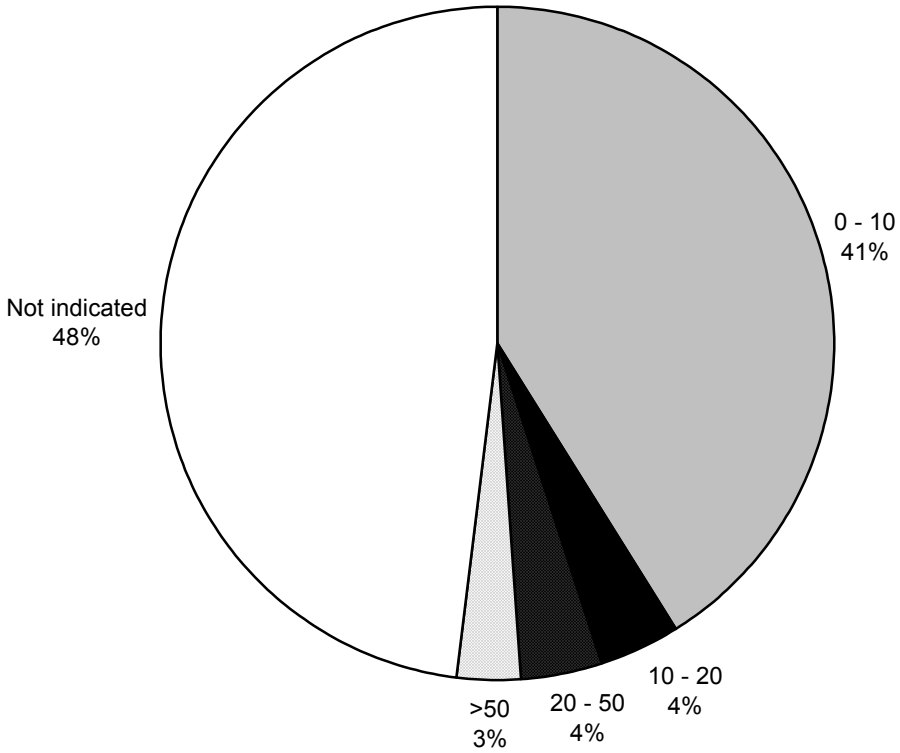


Figure 5
Bather density at public and semi-public freshwater bathing beaches at times of water sampling
2001

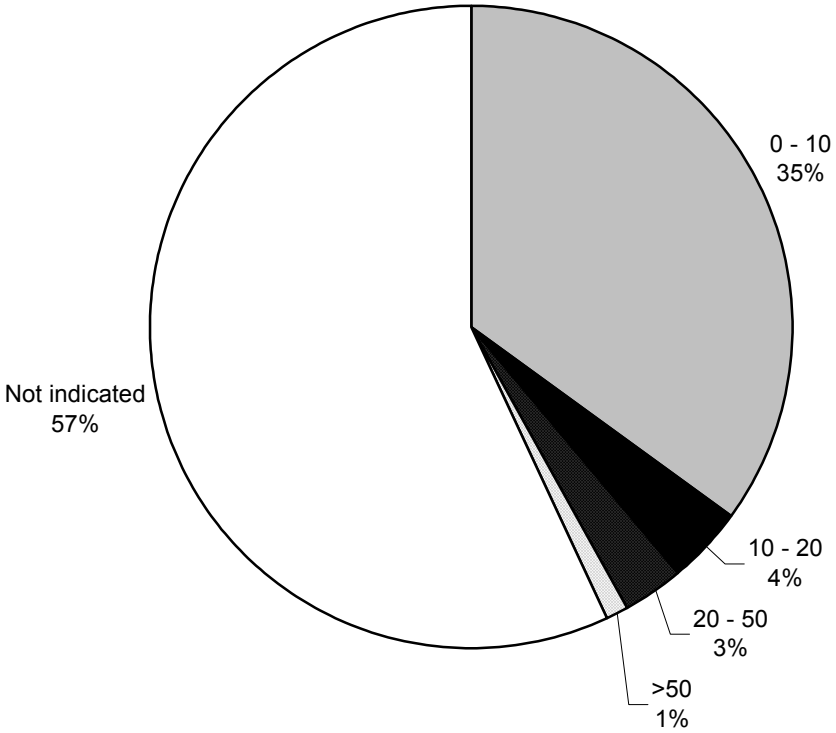


Figure 6
Water quality indicators used to test public and semi-public marine bathing beaches in Massachusetts 2001

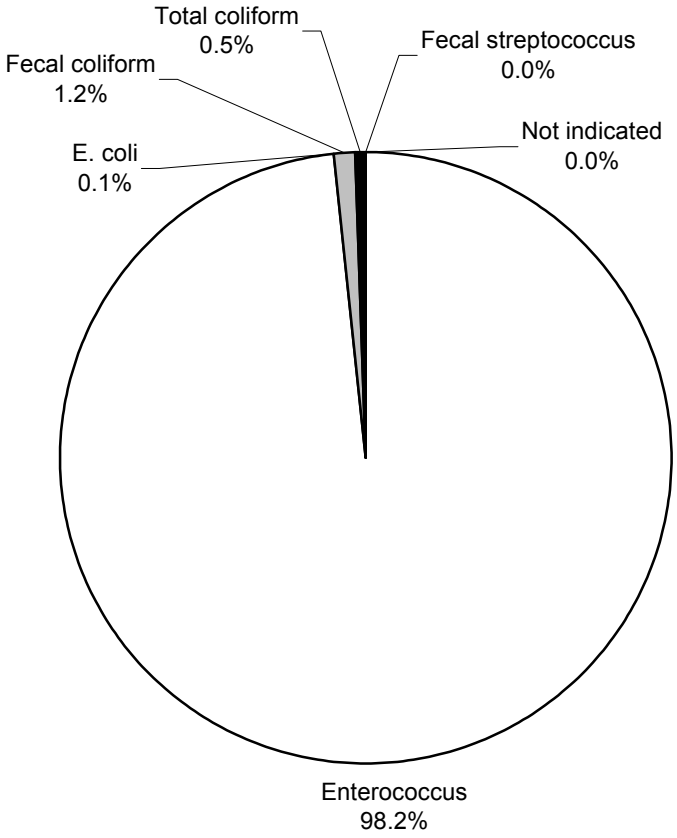


Figure 7
Water quality indicators used to test public and semi-public freshwater bathing beaches in Massachusetts 2001

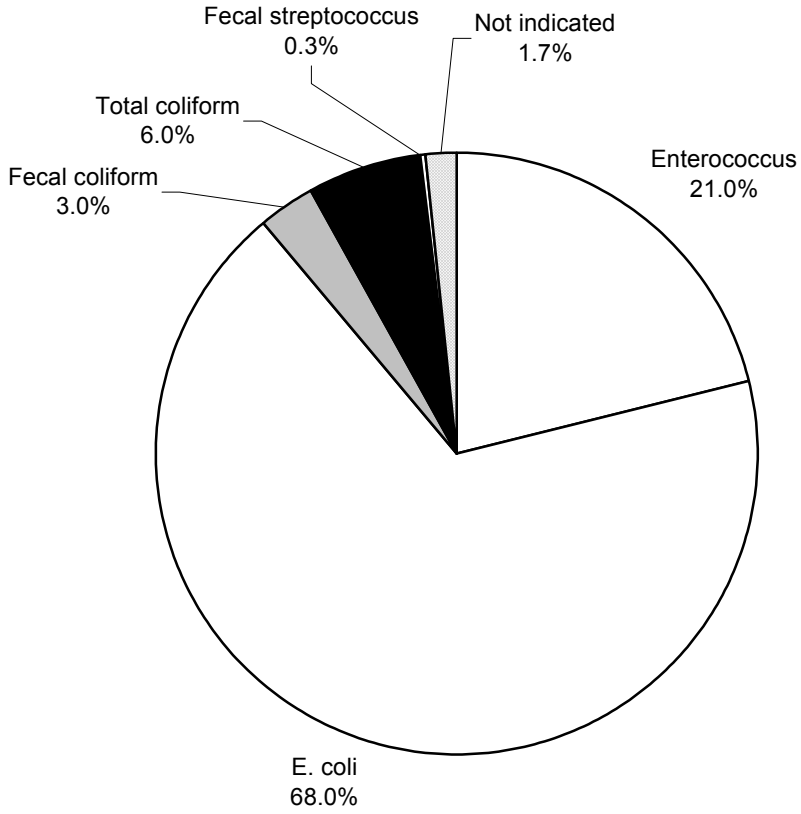


Figure 8
Frequency of water quality testing at public and semi-public marine beaches in Massachusetts 2001

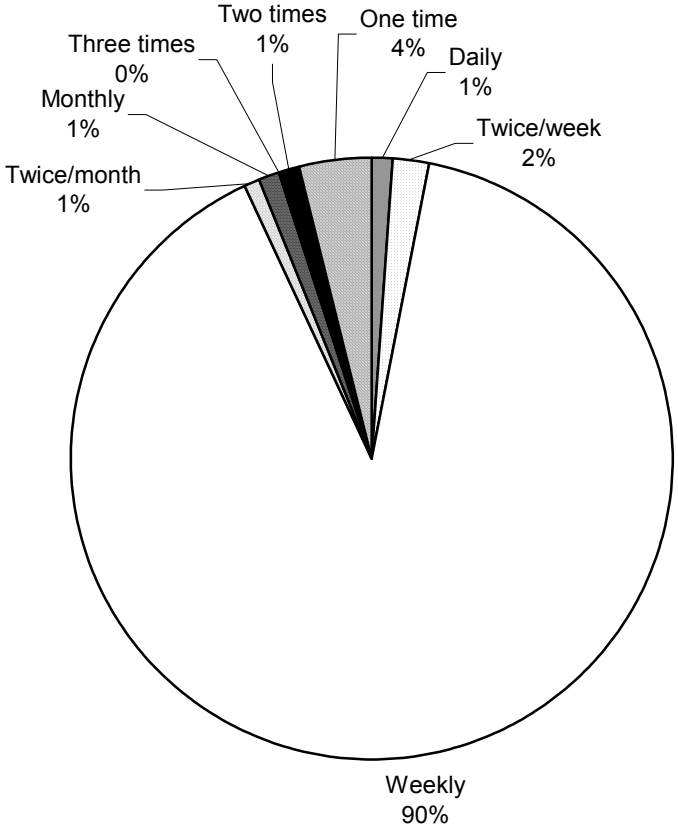


Figure 9
Frequency of water quality testing at public and semi-public freshwater bathing beaches in Massachusetts 2001

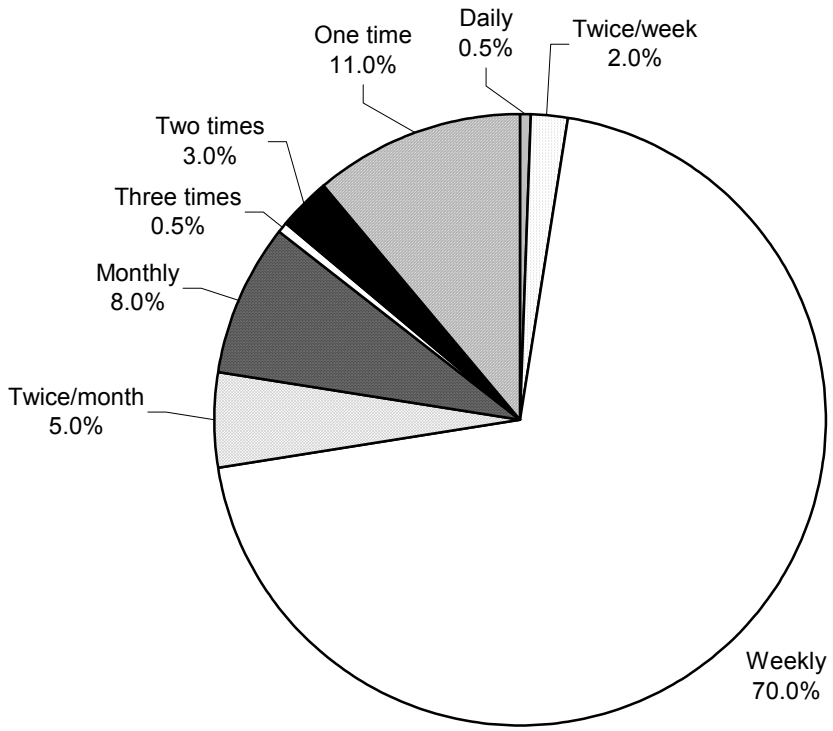


Figure 10
Water quality at public and semi-public marine bathing beaches in Massachusetts
2001

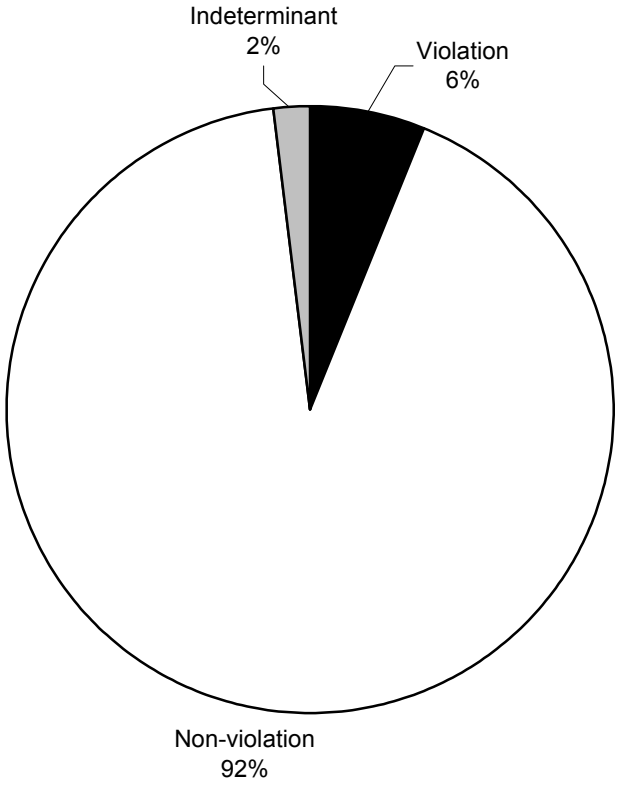
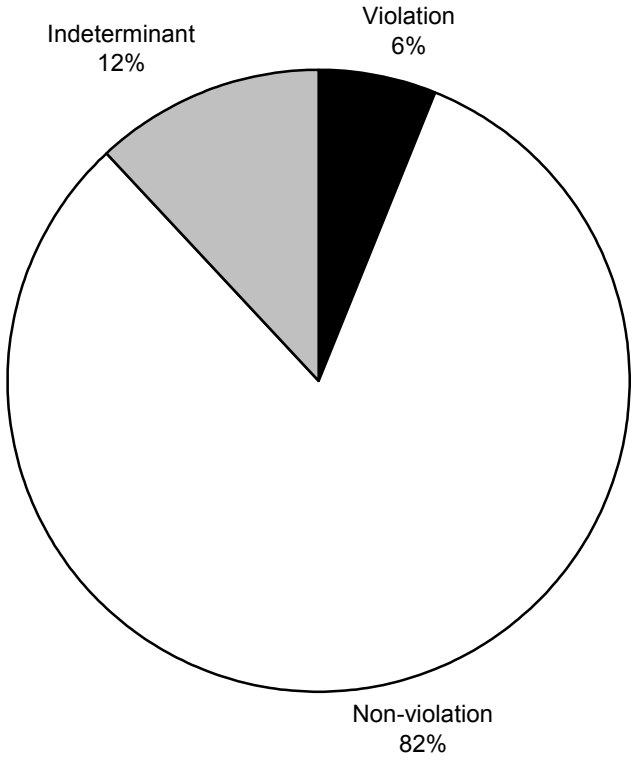
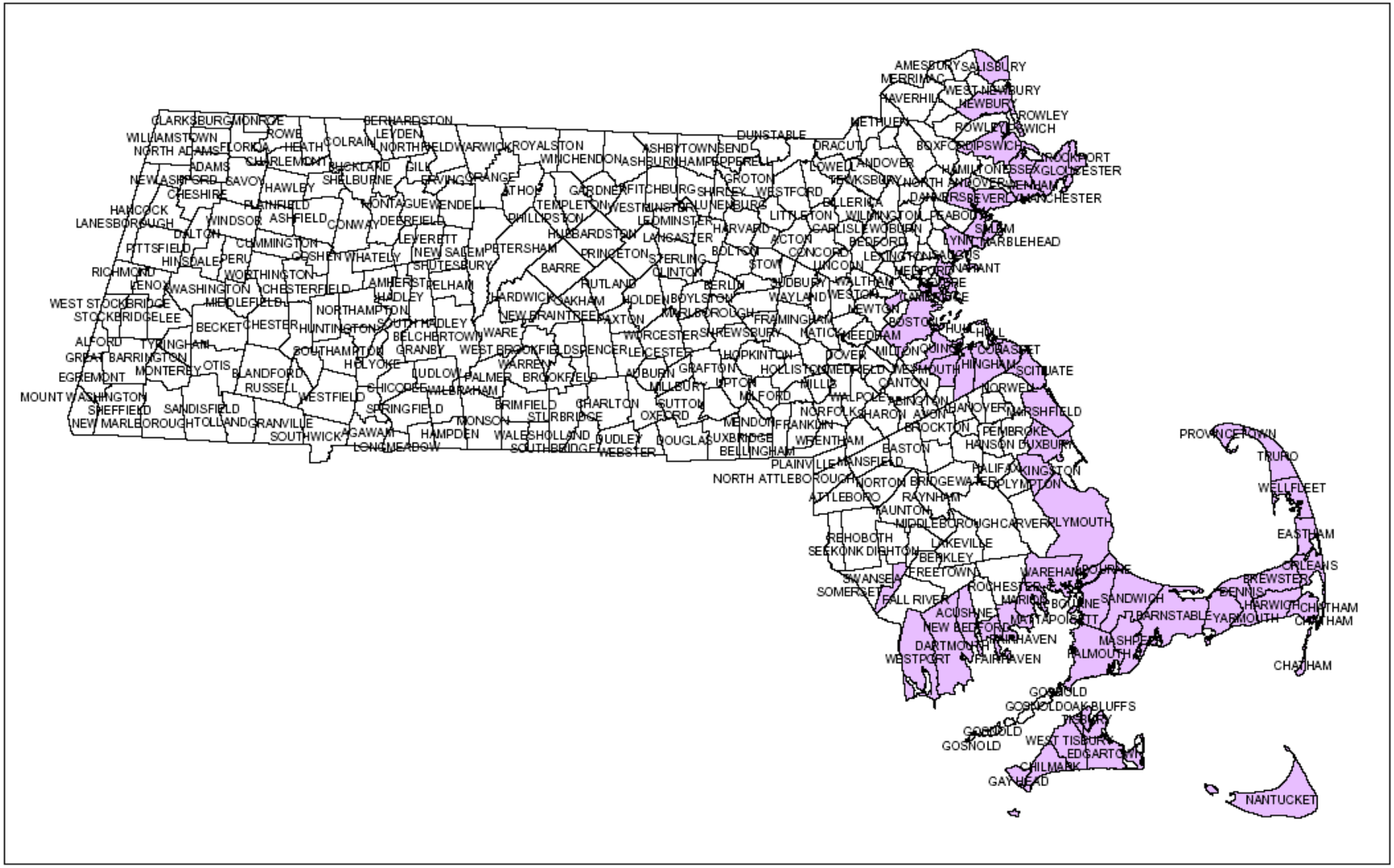


Figure 11
Water quality at public and semi-public freshwater beaches in Massachusetts
2001



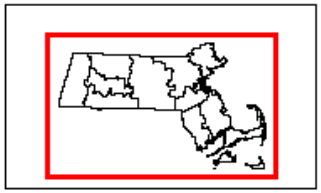


100 Miles

Figure 12. Marine Beach Towns that Reported Data in 2001

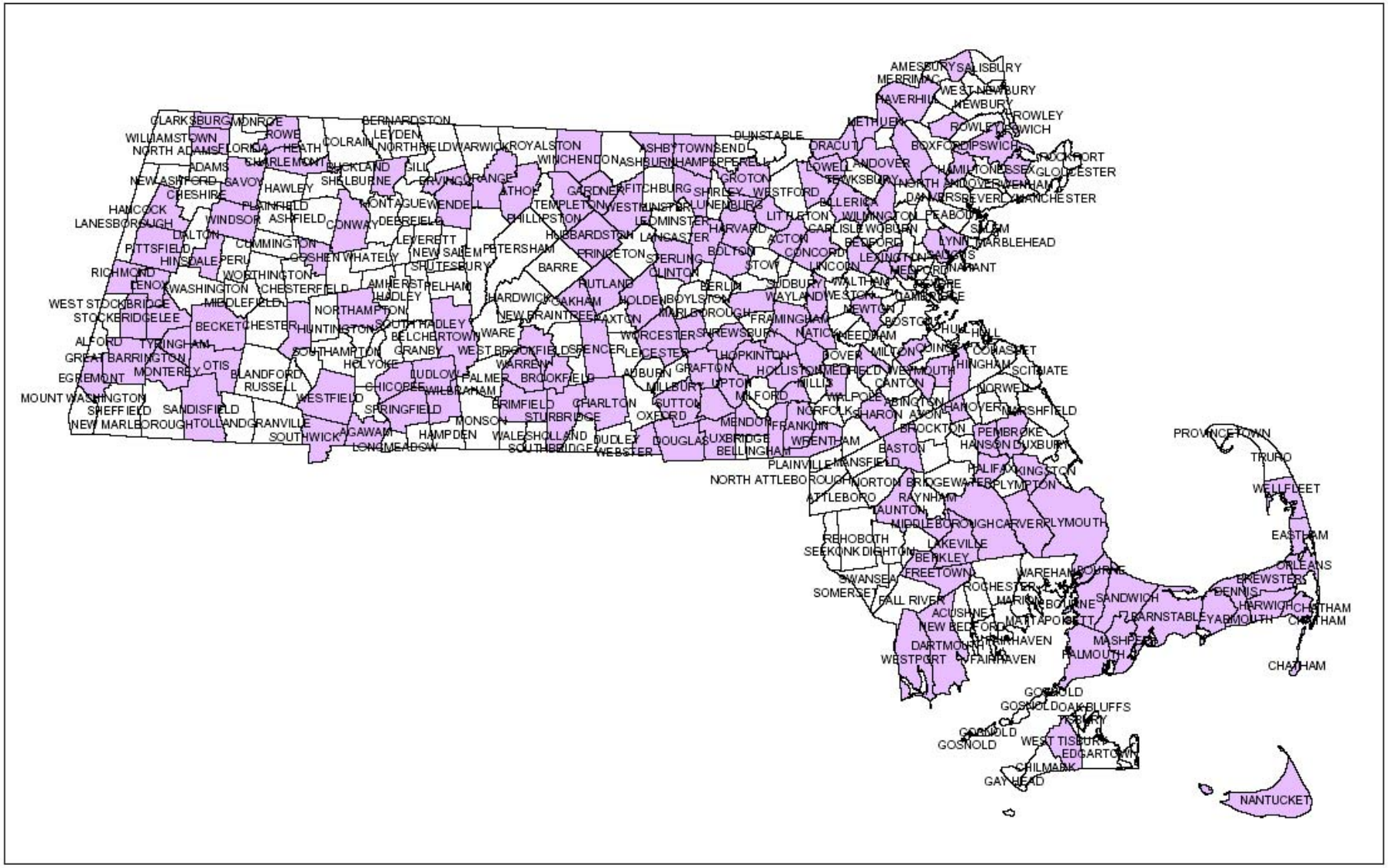
Legend

- Massachusetts Towns
- Marine Towns



MASS GIS

Bureau of Environmental BEHA Health Assessment



100 Miles

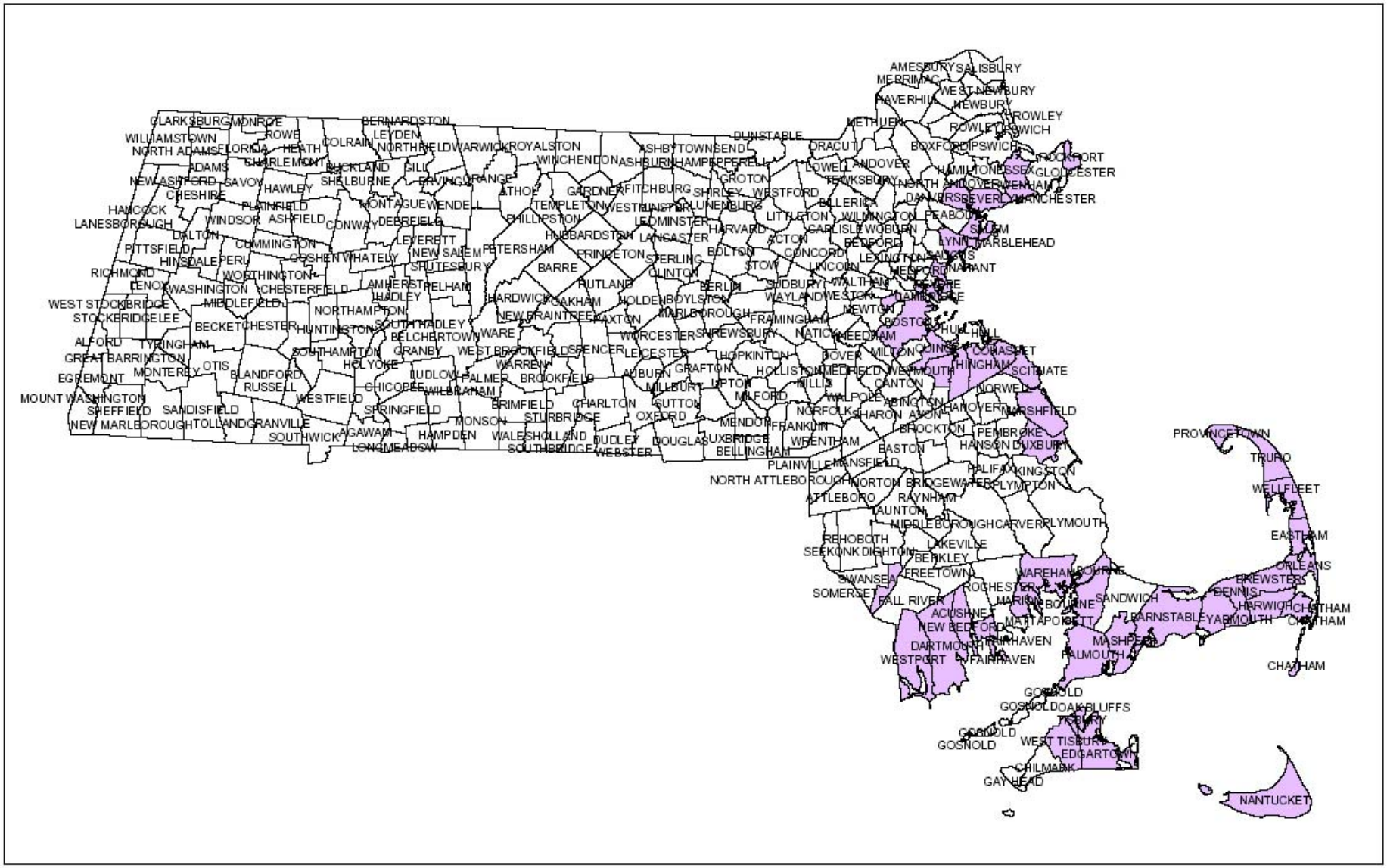
Legend

- Massachusetts Towns
- Freshwater Towns

Figure 13. Freshwater Beach Towns that Reported Data in 2001

MASS GIS

Bureau of Environmental Health Assessment BEHA



100 Miles

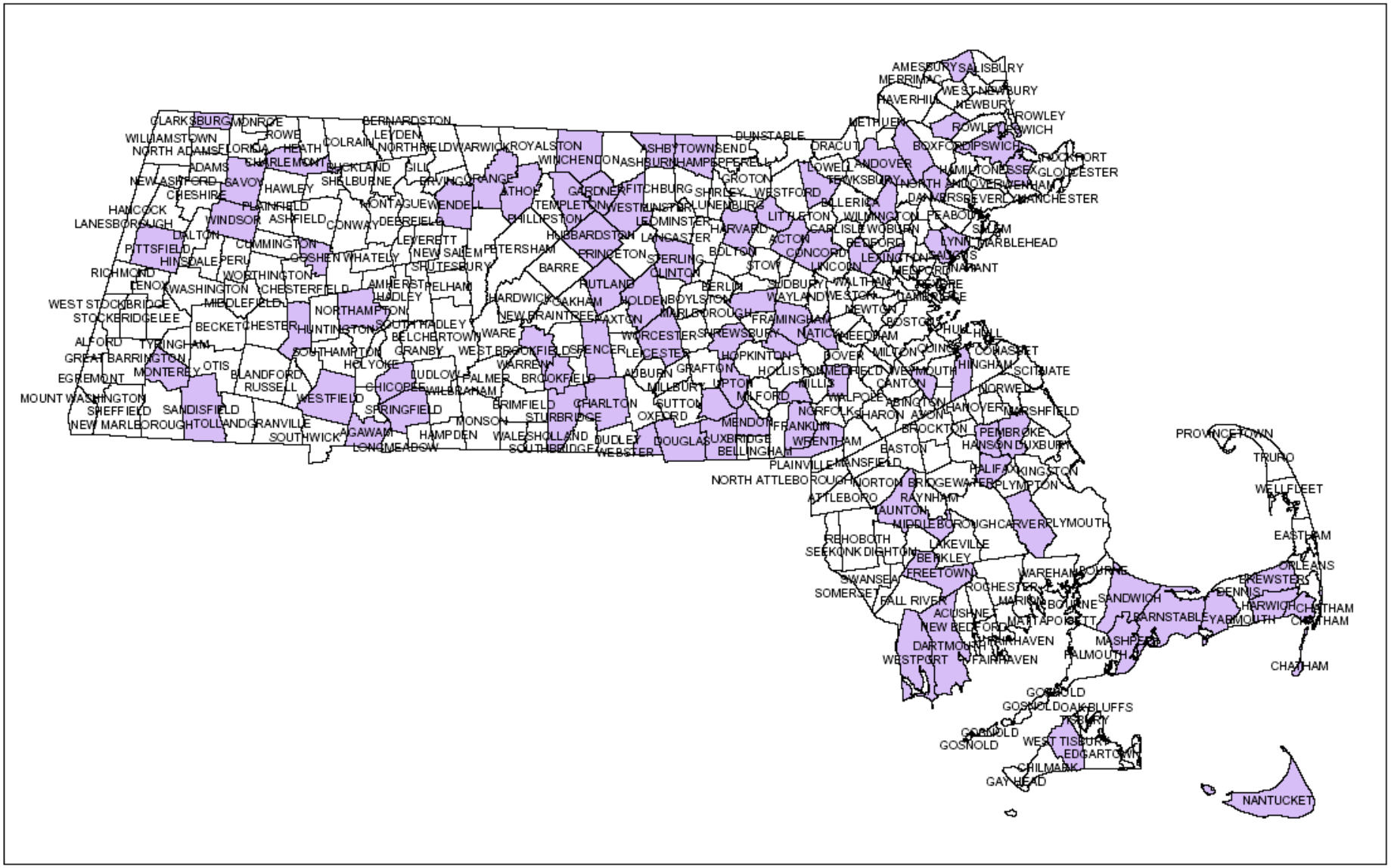
Legend

- Massachusetts Towns
- Marine Violations

Figure 14. Marine Beach Towns with at Least One Water Sample Exceeding Criteria in 2001

MASS GIS

Bureau of Environmental BEHA Health Assessment



100 Miles

Legend

- Massachusetts Towns
- Freshwater Violations

Figure 15. Freshwater Beach Towns with at Least One Water Sample Exceeding Criteria in 2001

MASS GIS

Bureau of Environmental BEHA Health Assessment

XII. APPENDICES

A. MASSACHUSETTS STATE REGULATIONS

http://www.state.ma.us/dph/dcs/bb4_01.pdf

B. FEDERAL BEACH ACT

http://www.epa.gov/ost/beaches/beachbill.pdf