



RHODE ISLAND DEPARTMENT OF HEALTH BEACH MONITORING PROGRAM

2008 Season Report



www.ribeaches.org

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Executive Summary

The Rhode Island Department of Health (HEALTH) is responsible for the licensing and regulating of bathing beach facilities in the State of Rhode Island. With help from the United States Environmental Protection Agency (USEPA), HEALTH monitors all 128 licensed beaches throughout the State. Licensed beaches include salt and freshwater, as well as public and private facilities.

The water quality sampling is carried out at a frequency determined by HEALTH's risk based monitoring plan. Based on this plan, and with funding provided by the USEPA, sampling is conducted by HEALTH throughout the beach season at saltwater beaches. Freshwater beach sampling is not currently funded. Therefore, HEALTH requires monitored freshwater facility managers to sample bathing waters adjacent to their facilities.

From May to September 2008, approximately 2,753 samples were collected from all 78 monitored saltwater bathing beaches. Approximately 289 samples were collected by the 50 monitored freshwater facilities. All samples were analyzed for Enterococci, as required in the federal Beaches Environmental Assessment and Coastal Health (BEACH) Act.

The 2008 bathing season saw a significant increase in beach closures and closure days from the 2007 season. Whereas 96 beach closure days were recorded for 2007, 160 beach closure days were recorded for 2008. The total volume of rainfall was higher during the summer of 2008 (June 1 to August 31) than the summer of 2007. Total rainfall increased from 8.28 inches in 2007 to 9.61 inches in 2008. Significant rainfall instances (>.50" in a 24-hour period from June 1-August 31 at TF Green) were similar, with 6 instances in 2007 and 5 instances in 2008.¹

Furthermore, as HEALTH refines its sampling strategies, monitoring efforts are focused in areas of greatest concern and sample collection is targeted for times when high bacteria counts are most likely to be present. It should be noted that total closure data is based on federally funded saltwater beach sampling *and* privately funded freshwater beach sampling.

¹ <http://www.erh.noaa.gov/box/dailystns.shtml> NOAA Northeast Environmental Climate Data website.

1.0 PROGRAM ACTIVITIES

1.1 *Mission*

The mission of HEALTH's Beach Monitoring Program is to protect the public from illness associated with swimming in contaminated bathing waters. HEALTH licenses recreational bathing beaches throughout the state. This authority has been granted to HEALTH through the General Laws of Rhode Island (**Appendix A**)². Regulations require HEALTH to ensure beach water meets bacteriological standards and if those standards are not met the facility's license can be suspended until bacteria levels are within acceptable limits.

1.2 *Background*

HEALTH began monitoring beaches in the summer of 1995. The majority of bathing beaches monitored under this program are licensed as Recreational Facilities by HEALTH. Prior to 1995, the Rhode Island Department of Environmental Management (RIDEM) was responsible for monitoring beaches. A "bathing beach" is defined by HEALTH as an natural area or tract of land that is used in connection with swimming and/or bathing in any waters of the state provided:

- a) It is open to the public by permit and/or payment of a fee; or
- b) It is maintained as a private club or association requiring membership fees or dues; or
- c) It is maintained with or without charge for the recreation of groups of ten (10) or more children.

Licensing requires facilities to have electrical service; refuse storage and disposal; sewage disposal facilities; adequate toilets, showers, or lavatories with hot and cold running water; a drinkable water supply; and the water adjacent to a bathing beach must meet bacteriological standards. From approximately 1995 to 1999, beach monitoring was inconsistent and most beaches were only monitored once per season.

In 1999, development of a comprehensive beach-monitoring program began under a USEPA Environmental Monitoring for Public Access and Community Tracking (EMPACT) Grant titled Bacterial Water Quality Monitoring at Upper Narragansett Bay Bathing Beaches. This grant enabled HEALTH to establish a public notification system that included a website, telephone hotline, and a beach flagging system. HEALTH also evaluated conditions in Upper Narragansett Bay, which has long been impacted by urban runoff, point source discharges, and combined sewer overflows.

The EMPACT Program provided HEALTH the resources to sample 23 stations in the Upper Narragansett Bay (7 stations were located at licensed beaches) in wet and dry weather. The conclusion of this study determined that additional sampling was needed at the licensed Upper Bay beaches to adequately protect the public. Also, it was determined that areas north of Conimicut Point in Warwick and Nayatt Point in Barrington were not suitable for licensing at this time. Water quality, especially during wet weather, represented an unacceptable risk to public health.

In 2000, Congress enacted the Beaches Environmental Assessment and Coastal Health (BEACH) Act, an amendment to the Federal Water Pollution Control Act (a.k.a. The Clean Water Act),

² R.I.G.L. Chapter 23-21

which authorized USEPA to distribute grants to eligible states and Indian tribes to reduce the risk of disease and illness in the nation's bathing waters. State objectives under this program were published by the USEPA in June 2002. The National Beach Guidance and Required Performance Criteria for Grants document outlined several requirements of the BEACH Act which include: a list and categorization of beaches according to risk, identification and mitigation of sources of pollution that may have an impact on bathing waters, the development of a risk communication plan, and providing USEPA with specific beach monitoring information³.

Since 2000, the USEPA has provided HEALTH with over \$1 million in beach grants to manage Rhode Island's Beach Monitoring Program. These grants have provided HEALTH the resources to vastly improve the beach-monitoring program and to develop a broad base of knowledge at Rhode Island's monitored beaches.

It should be noted that the 2008 beach season, HEALTH expanded its monitoring activities to include several non-licensed facilities throughout the State, which are frequently utilized by the public. Approximately 7 of the 78 saltwater monitored facilities do not currently meet recreational licensing requirements, and 2 freshwater monitored facilities do not currently meet requirements. Sampling at these unlicensed facilities is still preliminary and HEALTH is hoping to develop more thorough sampling strategies at these facilities based on analysis of the results collected during the 2008 season.

1.3 Program Staff

The Beach Monitoring Program currently consists of two full time employees, a Beach Program Coordinator and a Beach Program Assistant. The Chief of the Office of Food Protection, under which the Beach Program Office is designated, as well as the Chief Environmental Health Food Specialist, provide additional oversight and coordination. The Beach Monitoring Program is also aided by a Chief Clerk who helps handle in the ordering of supplies, coordinate travel details, and manage mileage and timesheet reporting with the State of Rhode Island.

Three interns are hired during the summer months to handle sampling efforts. Two interns are designated samplers. The samplers go out each morning to collect samples at beaches determined by the Beach Program Coordinator and/or Beach Program Assistant. After samples have been collected and submitted to the laboratory the samplers come into the office to enter in their daily observations at the beaches into the beaches database system. One intern is stationed in the laboratory and handles all necessary set-up/prep of sample containers and analysis equipment.

1.4 Events

In June of 2008, the Beach Program was asked to report on beach water quality and sampling efforts on the WPRI, Channel 10 Watershed Watch Report. A small segment on the news was dedicated to showing how samples are collected at the beach and discussing beach water quality.

In July 2008, the Beach Program participated in the Governor's Bay Day. During Bay Day, the Governor waives entrance fees to all State beach facilities and there are family activities and educational events at several of the State beaches. The Beach Program managed a table at Goddard Memorial State Park Beach during Bay Day in order to provide information on the Program and educate the public on what they can do to minimize beach closures.

³ 33 U.S.C. 1362 sections 104, 303, 406, 502, and 518(e)

In August 2008, EPA, the City of Warwick, the Beach Program and representatives from HEALTH and RIDEM attended the Grant Award Ceremony at Oakland Beach. During the ceremony, EPA presented HEALTH with a check for funding the Beach Program during the 2009 beach season.

In addition to the abovementioned events, the Beach Program regularly attends and organizes meetings with town managers, public works departments and interested individuals in order to discuss beach issues. Meetings are regularly held with the City of Warren, City of Newport and Town of Middletown.

1.5 Funding and Budget Information for 2008 Beach Season

During the 2008 beach season, EPA provided HEALTH with \$209,650 for the Beach Monitoring Program. These funds support the primary Beach Monitoring Program activities which include: sanitary surveys to identify risk and potential sources of fecal contamination at beaches; development and implementation of a risk based monitoring plan; and bacteriological testing at saltwater beaches. During the 2008 season, 128 bathing beaches met the “bathing beaches” criteria above and were monitored by HEALTH (78 of the bathing beaches were saltwater).

The following table summarizes how funds were spent:

Budget Category	Percentage of Grant
Salaries for Staff	46.17 %
Supplies, Equipment, Database Contract and Laboratory Costs/Fees	20.06 %
Miscellaneous Administrative Costs	18.77%
Interns (including mileage for sampling efforts)	12.50 %
Travel for Full Time Staff (including mileage, conferences, training, etc.)	2.50 %

Currently, USEPA grants do not provide funds to monitor freshwater bathing beaches. Freshwater beach managers are responsible for sampling on a HEALTH approved sampling schedule, submitting the samples for laboratory analysis at a state certified laboratory, and submitting the results to HEALTH in a timely manner.

1.6 Sampling

In 2003, sample frequencies at all beaches were increased to provide HEALTH an expanded view of water quality throughout Rhode Island waters. Beaches previously exempt from monitoring activities were sampled, and beaches with known problems were sampled at a much greater frequency. The sample results were necessary in order to refine HEALTH’s risk based monitoring plan. Several beaches were moved to a Tier I sample schedule, which is the highest risk level and requires a minimum of once per week sampling. Pollution sources were documented and additional sampling was conducted to protect public health. Based on assessment of the 2003 sample results, samples have been collected on a predetermined schedule during subsequent bathing seasons. Continued evaluation of sample results is conducted in order to refine sample frequency. Sample frequencies are updated annually based on previous season sample results.

Lab results are faxed or emailed immediately to HEALTH and the facility operator. If any action is necessary, the beach manager is notified and HEALTH's public notification procedures are followed. Upon closure, the facility is required to test daily until bacteria levels fall within acceptable limits. When it is determined that bacteria levels permit the re-opening of a facility, notification procedures are followed to inform the public of the change of status. Current public notification procedures in place include; a 24 hour hotline, website (www.ribeaches.org), and a standard press release which is faxed to 22 major TV, radio, and print media outlets throughout Rhode Island.

During the 2008 bathing season HEALTH was provided with federal funds to monitor all 78 monitored saltwater bathing beaches. From May to September, approximately 2,753 samples were collected from all 78 monitored saltwater bathing beaches. Approximately 289 samples were collected by the 50 monitored freshwater facilities. All samples were analyzed for Enterococci, as required in the federal Beaches Environmental Assessment and Coastal Health (BEACH) Act.

1.7 Standards

The Rhode Island Department of Environmental Management and USEPA set water quality standards. Rhode Island's current bathing water standards are as follows: saltwater bathing waters must not exceed a single sample standard of 104 Enterococci per 100 milliliters (mL) and freshwaters must not exceed 61 Enterococci per 100 mL.

2.0 PROGRAM DELIVERABLES

2.1 24-Hour Telephone Hotline (401.222.2751)

HEALTH set up a 24-hour telephone hotline so that the public can call anytime to find out about beach closures and advisories. The hotline is updated as needed, but typically daily during the summer months. A typical script for HEALTH's 24-hour telephone hotline can be found below.

“Hello, you have reached the Rhode Island Department of Health’s Bathing Beaches Hotline. The following monitored beaches are closed due to high bacteria levels...(list beaches). Also, there are...(number of advisories) advisories in effect. An advisory has been issued for Upper Narragansett Bay. The Department of Health discourages swimming and other full body contact activities north of Conimicut Point. These waters are directly affected by pollution inputs due to heavy rains and discharges from area wastewater treatment facilities. Water contact should be avoided for a minimum of three days after heavy rainfall. For more information please contact us at 222-2749 or visit our website at www.ribeaches.org. If this is an after hours emergency please call 272-5952.”

2.2 Beach Monitoring Website (www.ribeaches.org)

HEALTH initially created a Beach Monitoring website through an EPA EMPACT grant in 2000. This website has been updated to include current sample data and additional beach related information. The website lists all beach water quality data collected during the bathing season and contains a current list of closures and advisories. The Beach Monitoring website has been expanded to include maps of monitored bathing beaches and sample stations. Over the past year, HEALTH has worked with Garrison Enterprises (the Beach Program Database Contractor and Website Manager) to develop the maps as part of Google's™ mapping system. The public can therefore click on a map for any beach, see where samples are collected and zoom in and out as desired using either a street map, an aerial photograph or a hybrid. Also, being offered since the 2005-bathing season is the RIBeach Watch service, which allows the public to sign up and receive email notifications whenever a sample or closure/opening event occurs at their favorite beach. **Appendix D** shows the www.ribeaches.org homepage for the beach program.

2.3 Sanitary Surveys

In order to adequately assess the risk to bathers and classify saltwater bathing beaches HEALTH developed a Beach Sanitary Survey. Beach surveys were started during the 2002 bathing season and were completed before the start of the 2003 bathing season. Evaluation criteria were derived from the following sources: *National Beach Guidance and Required Performance Criteria for Grants – Appendix G*, materials from the Food and Drug Administration's *Applied Concepts in Sanitation Surveys of Shellfish Growing Areas* course, and materials from the joint DOE/EPA *Water Quality Standards Academy*. Surveys were developed to evaluate and review existing information and current conditions at the beach.

Sanitary Surveys are currently underway at all saltwater beaches throughout the State. HEALTH had hoped to resurvey all saltwater beaches by the end of 2008. Approximately 64% of saltwater facilities were surveyed by the end of the 2008 beach season. HEALTH will continue with surveys through 2009. As surveys are completed, data collected is analyzed and used to determine what changes, if any, need to be made to sample location, frequency, etc. at a particular beach. A more detailed discussion of Sanitary Surveys can be found in Section 3.1.3.

In addition to sanitary surveys, which are conducted a minimum of every five years; beach samplers complete a daily survey at each beach during each sampling event. The data on this form is entered directly into our database system from the field. This survey form provides further information on beach conditions, thereby increasing monitoring effectiveness.

3.0 PERFORMANCE CRITERION

EPA developed nine performance criteria for the implementation of monitoring, assessment and notification programs. In order to be eligible for a beach grant, the states, tribes or local government's monitoring and notification program must be consistent with the performance criteria. The following sections describe the performance criteria, and Rhode Island's compliance with them.

3.1 *Risk-Based Beach Evaluation and Classification Plan (Performance Criterion 1)*

To evaluate and classify risk at Rhode Island's monitored saltwater beaches the following steps were taken: identification of saltwater recreational waters, identification of bathing beaches, beach evaluations – sanitary surveys, water quality evaluations, and procedures for a change in classification.

3.1.1 Identification of Coastal Recreational Waters

The Rhode Island Department of Environmental Management (RIDEM) is responsible for the classification of waters along Rhode Island's 420 miles of coastline⁴. Coastal waters are classified as SA, SB, SB1, or SC. RIDEM's Use Classification definitions are found below:

(a). *Class SA*- These waters are designated for shellfish harvesting for direct human consumption, primary and secondary contact recreational activities, and fish and wildlife habitat. They shall be suitable for aquacultural uses, navigation and industrial cooling. These waters shall have good aesthetic value.*

(b). *Class SB*- These waters are designated for primary and secondary contact recreational activities; shellfish harvesting for controlled relay and depuration; and fish and wildlife habitat. They shall be suitable for aquacultural uses, navigation, and industrial cooling. These waters shall have good aesthetic value.*

(c). *Class SBI*- These waters are designated for primary and secondary contact recreational activities and fish and wildlife habitat. They shall be suitable for aquacultural uses, navigation, and industrial cooling. These waters shall have good aesthetic value. Primary contact recreational activities may be impacted due to pathogens from approved wastewater discharges. However all Class SB criteria must be met.*

(d). *Class SC*- These waters are designated for secondary contact recreational activities, and fish and wildlife habitat. They shall be suitable for aquacultural uses, navigation, and industrial cooling. These waters shall have good aesthetic value.*⁵

No waters of the state are designated as SC. All monitored bathing areas are located in Class SA or SB waters.

RIDEM designates all coastal waters of the state as "swimmable". RIDEM has determined 69% of estuarine waters (108.66 square miles) fully support all uses, while 30% of waters (47.57

⁴ "NOAA Coastal Zone Management-Rhode Island Coastal Management Program"

<http://www.ocrm.nos.noaa.gov/czm/czmrhodeisland.html>

⁵ "Water Quality Regulations". State of Rhode Island and Providence Plantations-Department of Environmental Management Water Resources: August 6, 1997 (Regulation EVM 112-88.97-1).

square miles) are considered impaired for one or more uses. RIDEM states 90% of the State's estuarine waters (140.3 square miles) meet their swimming use, while 10 % (15.45 square miles) are considered impaired due to violations of the Fecal Coliform criteria.⁶

3.1.2 Identification of Bathing Beaches

Statutes (R.I.G.L. 23-21-Relating to Licensing of Recreational Facilities & R.I.G.L. 23-21.1 Sanitation Standards for Bathing Beaches) require HEALTH to license recreational facilities, which include bathing beaches. A bathing beach, as found in regulations adopted pursuant to R.I.G.L. 23-21, is defined as:

'Bathing Beach' shall mean any natural area or tract of land, which is used in connection with swimming and/or bathing in any waters of the state provided:

- (a) It is open to the public by permit and/or payment of a fee; or*
- (b) It is maintained as a private club or association requiring membership fees or dues; or*
- (c) It is maintained with or without charge for the recreation of groups of ten or more children⁷*

HEALTH currently licenses 128 bathing beaches; this includes freshwater and saltwater facilities, as well as public and private bathing areas. There are 78 saltwater monitored beaches in 15 different communities.

As required in the BEACH Act, HEALTH has identified beaches and "similar points of access"⁸ which have the potential to be used by the public. HEALTH does not promote or endorse the use of non-monitored beaches for primary contact recreation. These areas are not monitored or inspected for safety. HEALTH always recommends swimming at designated, monitored bathing beaches.

It should be noted that the 2008 beach season, HEALTH expanded its monitoring activities to include several non-licensed facilities throughout the State, which are frequently utilized by the public. Approximately 7 of the 78 saltwater monitored facilities do not currently meet recreational licensing requirements, and 2 freshwater monitored facilities do not currently meet requirements. Sampling at these unlicensed facilities is still preliminary and HEALTH is hoping to develop more thorough sampling strategies at these facilities based on analysis of the results collected during the 2008 season.

3.1.3 Beach Evaluations – Sanitary Surveys

In order to adequately assess the risk to bathers and classify saltwater bathing beaches HEALTH developed a Beach Sanitary Survey. Beach surveys were started during the 2002 bathing season and were completed before the start of the 2003 bathing season. Evaluation criteria were derived

⁶ *State of Rhode Island and Providence Plantations: 2004 Section 305(b) State of the State's Waters Report* State of Rhode Island and Providence Plantations, Department of Environmental Management Office of Water Resources.

⁷ "Rules and Regulations for Licensing of Recreational Facilities (R23-21-RF)". State of Rhode Island and Providence Plantations-Department of Health: June 1983 (as amended).

⁸ As identified in the Beaches Environmental Assessment and Coastal Health Act (P.L. 106-284)

from the following sources: *National Beach Guidance and Required Performance Criteria for Grants – Appendix G*, materials from the Food and Drug Administration’s *Applied Concepts in Sanitation Surveys of Shellfish Growing Areas* course, and materials from the joint DOE/EPA *Water Quality Standards Academy*. Surveys were developed to evaluate and review existing information and current conditions at the beach.

Point values were assigned to each criteria and the total value was recorded. High point values were given to direct known sources of pollution (i.e. CSOs), high usage (>10,000 bathers), and to facilities that have exhibited poor water quality in the past (past closures).

Preliminary risk groups were given according to survey scores. Scores ranging from 0-75 were classified as Tier 3 (low risk); scores ranging from 76-100 were classified as Tier 2 (moderate risk); and scores greater than 101 were classified as Tier 1 (high risk). Additional sampling was conducted by HEALTH during the 2002-bathing season to better characterize water quality at the 78 saltwater beaches. Prior to 2002, 37 bathing areas were exempt from sampling. Additional sampling was required at these and other bathing areas to adequately assess conditions. Using best professional judgment HEALTH evaluated the results of this sample information and preliminary risk groups, then assigned final risk classifications. HEALTH continuously monitors each of the beaches to ensure that the Tier Classification and associated sample frequency adequately addresses potential health risks.

Sanitary Surveys are currently underway at all saltwater beaches throughout the State. HEALTH had hoped to resurvey all saltwater beaches by the end of 2008. Approximately 64% of saltwater facilities were surveyed by the end of the 2008 beach season. HEALTH will continue with surveys through 2009. As surveys are completed, data collected is analyzed and used to determine what changes, if any, need to be made to sample location, frequency, etc. at a particular beach. **Appendix B** includes a copy of the sanitary survey form currently used by HEALTH.

In addition to sanitary surveys, which are conducted a minimum of every five years; beach samplers complete a daily survey form at each beach during each sampling event. A copy of this form can be found in **Appendix C**. The data on this form is entered directly into our database system from the field. This survey form provides further information on beach conditions, thereby increasing monitoring effectiveness.

3.1.4 Water Quality Evaluations

HEALTH conducted sampling during the 2002-bathing season to evaluate water quality at all of Rhode Island’s saltwater monitored beaches. Water quality samples were collected from monitored saltwater beaches and tested for both Fecal Coliform and Enterococci. All sampling was conducted consistent with HEALTH’s EPA approved Quality Assurance Project Plan. A more thorough description of HEALTH’s monitoring strategy can be found in Section 3.0 (Tiered Monitoring Plan) of this document. HEALTH continuously evaluates water quality conditions at all monitored facilities. Since 2002, some monitored beaches have closed and/or opened. As beaches change their status, the water quality is evaluated at each new facility in order to determine the appropriate Tier Classification and associated public health risk.

3.1.5 Change in Classification

Sample results are reviewed annually to determine if a change in classification is needed. If sample results show an increased frequency of violations, an increase in the number of closure days, or a general deterioration of water quality in the area, the bathing area may require an

increase in sampling effort. In addition, if water quality has improved and known/suspected sources of bacterial contamination have been eliminated, a less stringent sample schedule may be implemented. HEALTH will determine if a change in classification is considered necessary, either an increase or decrease in monitoring effort. EPA will be notified of the change electronically.

Furthermore, Sanitary Surveys will be conducted on all monitored saltwater beaches at least every five (5) years. A comprehensive evaluation of conditions at saltwater bathing beaches in Rhode Island will be conducted at this time. Surveys will allow HEALTH to evaluate program advancement toward minimizing the risk to bathers and the elimination of known or potential sources of contamination. An increase or decrease of water quality standard violations, closures, and general degradation/improvements in water quality will be documented.

3.2 Tiered Monitoring Plan (Criterion 2)

To develop a tiered monitoring plan HEALTH had to identify the following factors: the period and extent of use, the frequency of monitoring needed, the location of monitoring, the methods to be used, and assessment procedures for short term increases in pathogen indicators.

3.2.1 Period and Extent of Recreational Use

Rhode Island's bathing season generally runs from two weeks before Memorial Day to two weeks after Labor Day. The time of heaviest usage at bathing facilities is between July 4th and Labor Day. At some facilities, user populations swell to over 10,000 users per day⁹. According to the Rhode Island Economic Development Corporation, tourism and hospitality is Rhode Island's second largest industry, supporting 63,368 jobs and \$5 billion in spending in 2006.¹⁰ It should be noted that surfing and other water activities are common at many of Rhode Island beaches, and these activities continue throughout the entire year.

3.2.2 Frequency of Monitoring

Sampling of recreational beaches occurs two weeks before Memorial Day and concludes two weeks after Labor Day. Sample frequencies were established upon completion of the extensive Beach Surveys, both the Review of Existing Information and the Field Sanitary Survey. Sample frequencies, according to risk classification, will be as follows; Tier I will be sampled at a minimum weekly frequency, Tier II bathing areas will be sampled at a minimum monthly frequency, and Tier III bathing areas will be sampled at a minimum bi-yearly frequency. These sample frequencies may be increased if HEALTH determines a more stringent sample schedule is appropriate. An increased monitoring effort will be required if known or potential sources of pollution have been documented, HEALTH will determine if the minimum sample schedule does not adequately protect public health.

If testing results violate the recreational water quality standard for Enterococci during the bathing season, the bathing area will be sampled daily until indicator organism levels fall within acceptable limits. Furthermore, if the bathing area is not already classified as high risk, it will be tested on a Tier I risk level for four (4) weeks. If after four weeks test results do not show

⁹ HEALTH Beach Facility Questionnaire, 1999 Bathing Season.

¹⁰ Rhode Island Economic Development Corporation Tourism and Hospitality
<http://www.riedc.com/industry-sectors/tourism-and-hospitality>

additional violations of Rhode Island's water quality standards, the bathing area will revert to its original sample schedule. If sample results reveal further violations of the standard, the bathing area will remain on a Tier I sample schedule for the remainder of the bathing season and the risk classification will be reevaluated at the end of the season.

3.2.3 Location of Monitoring

All monitored saltwater beaches are sampled for Enterococci. The number of samples collected on a beach is dependent on the length of coastline and the presence of physical barriers to circulation (jetties, groins, etc.). Furthermore, streams and pipes are sampled as needed (wet weather events, investigations, etc).

Beaches that are less than 300 linear feet of shoreline are required to take a minimum of one sample. If only one sample is collected, it is taken from the center of that bathing area. Beaches that are between 300 and 700 linear feet of shoreline are required to take a minimum of two water samples. Samples are collected with approximately equal distances between stations and the ends of the beach. Beaches that are greater than 700 linear feet of shoreline require a minimum of three water samples. Samples are collected with approximately equal distances between stations and the ends of the beach.

3.2.4 Methods

To assess the presence of harmful levels of pathogen indicators in Rhode Island's bathing waters, HEALTH uses the IDEXX Enterolert™ method for the enumeration of Enterococci. Through an EMPACT project, HEALTH was able to evaluate the EPA Method 1600 (M-1600) and the Enterolert™ method. Based on HEALTH's findings, the EPA M-1600 was less sensitive; often producing false negatives, and required an additional 24-hour validation period to provide accurate results.¹¹ Because of these factors, HEALTH has questioned M-1600 reliability as a "real-time" indicator. Enterolert™ provides HEALTH a range of Enterococci from <10 to >24,192.

3.2.5 Assessment Procedures for Short-term Increases

Assessment procedures for short-term increases in pathogen indicators in recreational waters are found in Table 1. If HEALTH's assessment procedures do not identify the source of pollution; RIDEM, through a Memorandum of Agreement (MOA), will assist in the identification and elimination of pollution sources.

¹¹ "Bacterial Water Quality Monitoring at Upper Narragansett Bay Bathing Beaches." Davis and Freestone; Rhode Island Department of Health, May 2001.

Table 1. Assessment Procedures for Short Term Increases

Type of Pollution	Assessment Procedures
Point Source of Pollution (storm water run-off point, pipe, etc.)	<ol style="list-style-type: none"> 1. Sample discharge, end of pipe, etc. 2. Bracket point source. Radiate from point source in 50 foot increments 3. Close area affected by pollution 4. Identify any “up-stream” sources of pollution through a sanitary survey. 5. If a sanitary survey does not reveal pollution source, contact RIDEM for assistance.
Unknown Source of Pollution	<ol style="list-style-type: none"> 1. Close affected area of bathing beach. 2. Perform a sanitary survey to identify possible sources of pollutants. 3. If a sanitary survey does not reveal pollution source, contact RIDEM for assistance.

3.3 Monitoring Report Submission (Criterion 3)

As required by Criterion 3 of the Performance Manual, HEALTH provides the public and EPA all monitoring data. The public has access to all monitoring data through HEALTH’s beach monitoring website (www.ribeaches.org). The website is updated daily to provide the public real-time beach water quality information. EPA can also access data through the public website and are given a year data report of all sample result findings.

3.4 Methods and Assessment Procedures (Criterion 4)

Methods to be used and assessment procedures were developed through the tiered monitoring plan.

3.4.1 Methods

To assess the presence of harmful levels of pathogen indicators in Rhode Island’s bathing waters, HEALTH uses the IDEXX Enterolert™ method for the enumeration of Enterococci. Through an EMPACT project, HEALTH was able to evaluate the EPA Method 1600 (M-1600) and the Enterolert™ method. Based on HEALTH’s findings, the EPA M-1600 was less sensitive; often producing false negatives, and required an additional 24-hour validation period to provide accurate results.¹² Because of these factors, HEALTH has questioned M-1600 reliability as a “real-time” indicator. Enterolert™ provides HEALTH a range of Enterococci from <10 to >24,192.

3.4.2 Assessment Procedures

Assessment procedures for short-term increases in pathogen indicators in recreational waters are found in Table 1 (above). If HEALTH’s assessment procedures do not identify the source of pollution; RIDEM, through a Memorandum of Agreement (MOA), will assist in the identification and elimination of pollution sources.

¹² “Bacterial Water Quality Monitoring at Upper Narragansett Bay Bathing Beaches.” Davis and Freestone; Rhode Island Department of Health, May 2001.

3.5 Public Notification and Risk Communication Plan (Criterion 5)

HEALTH's public notification plan includes a beach flagging/signage system, a 24-hour telephone hotline, a website, and a press release. The purpose of this plan is to quickly notify the public of potential risk associated with swimming in contaminated bathing waters. These notification procedures are detailed in Section 3.7

3.6 Measures to Notify EPA and Local Governments/Beach Managers (Criterion 6)

EPA will be notified of all beach closures and openings through HEALTH's web-based management system. Every time a beach is opened/closed a press releases will be emailed to HEALTH Region 1 contact. Furthermore, EPA will receive an end of season report of all violations and closures/openings during that year's bathing season.

Beach managers will be notified immediately by telephone and emailed/faxed a press release after the decision to close a beach is made. The beach manager/operator will inform bathers, post any signs, raise a closure flag, or perform any other duties necessary to inform beach users that the bathing area does not currently meet water quality standards. Beach managers and the locally affected government will receive a faxed press release prior to general distribution of the closure notice.

3.7 Measures to Notify the Public (Criterion 7)

HEALTH has employed several methods to notify the public of beach closures; including a 24-hour telephone hotline, a daily updated website, signs posted at the impacted beach and a standard formatted press release. All notification methods are employed for each beach closure.

3.7.1 24-Hour Telephone Hotline (401.222.2751)

HEALTH set up a 24-hour telephone hotline so that the public can call anytime to find out about beach closures and advisories. The hotline is updated as needed, but typically daily during the summer months. A typical script for HEALTH's 24-hour telephone hotline can be found below.

"Hello, you have reached the Rhode Island Department of Health's Bathing Beaches Hotline. The following monitored beaches are closed due to high bacteria levels...(list beaches). Also, there are...(number of advisories) advisories in effect. An advisory has been issued for Upper Narragansett Bay. The Department of Health discourages swimming and other full body contact activities north of Conimicut Point. These waters are directly affected by pollution inputs due to heavy rains and discharges from area wastewater treatment facilities. Water contact should be avoided for a minimum of three days after heavy rainfall. For more information please contact us at 222-2749 or visit our website at www.ribeaches.org. If this is an after hours emergency please call 272-5952."

3.7.2 Beach Monitoring Website (www.ribeaches.org)

HEALTH initially created a Beach Monitoring website through an EPA EMPACT grant in 2000. This website has been updated to include current sample data and additional beach related information. The website lists all beach water quality data collected during the bathing season and contains a current list of closures and advisories. The Beach Monitoring website has been expanded to include maps of monitored bathing beaches and sample stations. Over the past year, HEALTH has worked with Garrison Enterprises (the Beach Program Database Contractor and

Website Manager) to develop the maps as part of Google's™ mapping system. The public can therefore click on a map for any beach, see where samples are collected and zoom in and out as desired using either a street map, an aerial photograph or a hybrid. Also, being offered since the 2005-bathing season is the RIBeach Watch service, which allows the public to sign up and receive email notifications whenever a sample or closure/opening event occurs at their favorite beach. **Appendix D** shows the www.ribeaches.org homepage for the beach program.

3.7.3 Beach Flagging/Signage System

HEALTH created a beach flagging system through the EMPACT Program in 2000. The flagging system was designed to have beaches use blue flags to indicate the beach is open to swimming and red flags to indicate the beach is closed to swimming. Unfortunately, the flagging system was never fully utilized by the majority of the beaches, and the Beach Program felt the flagging system was not informative enough to warn the public about not swimming. Based on inconsistency that the beach managers have had with appropriate beach closure signage and complaints from the public, the Beach Program recently requested some EPA Beach Grant money be used to purchase signs for beaches throughout the state. The beach closure signs are currently being produced and will be distributed to beach owners and managers prior to the 2009 beach season. The signs are approximately 2' x 2' and state the beach is closed to swimming per order of the Rhode Island Department of Health in both English and Spanish. The sign also contains both the HEALTH and USEPA logos.

3.7.4 Standard Format Press Release

During the 2001 bathing season, HEALTH developed a standard press release for beach openings/closures; these procedures were updated in April of 2003 and again in 2008. The Beach Program Coordinator distributes the press release to Rhode Island's 32 major media outlets; which include television, newspapers, and radio stations. The standard format press release is distributed within 30 minutes of a beach closure.

3.8 Notification Report Data Submission Plan (Criterion 8)

The BEACH Program requires HEALTH to submit all beach monitoring and notification data to EPA. Currently, HEALTH submits information yearly through EPA's central data exchange (CDX). To collect and submit this information HEALTH has hired a contractor to manage a web-based data system. The following outlines the collection, storage, and transmission of beach monitoring information.

HEALTH, through our database, has created a BEACH run scheduling system based upon our Tiered Monitoring Plan. The system schedules sampling runs consistent with sample frequency and number outlined in the Tiered Monitoring Plan. Also, comprehensive real-time updates of all trip information, station visit information and field activity information are made to HEALTH'S beach database.

Water samples are delivered to the HEALTH Laboratories, consistent with handling and storage procedures outlined in HEALTH's QAPP. After the completion of the testing process, laboratory results are reported to the Beach Program and results are entered into the HEALTH Beach Database. Samples are then reviewed by HEALTH staff to determine if any change in status is required (opening/closing). If a change in status is required, public notification procedures are followed. The database records all monitoring and notification data required by EPA. A four-

stage process is undertaken prior to submission of data to EPA. First, the data is reviewed to ensure compliance with EPA requirements. Second, the data is normalized (if applicable). Third, the data is migrated into the EPA approved XML schema. Finally, the XML file undergoes conformance testing, and then is submitted to CDX.

As required by EPA, HEALTH maintains geographic information for all beaches and sample locations in Geographic Information System. This information has already been sent to EPA and updates will be provided as required. Additional information is collect through RI's Beach GIS system such as stormwater runoff points, discharge pipes, etc. HEALTH currently provides maps of all the monitored beaches through the website at www.ribeaches.org.

In addition to required information, HEALTH collects the following data: daily beach surveys, sanitary surveys, daily rainfall totals and one hour maximums, daily temperature information, and reported illness information.

All beach data resides in a web accessible, open database complaint relational database schema. The data structure allows for permission based on facility access and is stored in redundancy. The public is granted access to monitoring and beach status information through HEALTH's Beach Monitoring website. This site allows the public to search, query, and extract data for their use.

3.9 Public Evaluation of Program (Criterion 9)

HEALTH conducted two public comment periods for this program. First, EPA, DEM, and all licensed beach managers were given the opportunity to evaluate the sanitary survey procedures. Comments from this group were used to better classify risk at licensed bathing beaches in Rhode Island. Second, the public was given an opportunity to comment on the full monitoring and public notification plans. Notice was sent out to all licensed beaches, the HEALTH public hearing mailing list, and a general online notification for an informal public hearing. The informal public hearing was held at HEALTH and the public was given additional time to comment electronically or in writing.

During the distribution of the new beach signs prior to the 2009 beach season, HEALTH will take the opportunity to question beach owners and managers on their views of the Beach Program. HEALTH will also allow for questions and comments as well.

4.0 FLAGSHIP BEACHES

The USEPA defines flagship beaches as high-use beaches that were selected for targeted attention. HEALTH and the USEPA chose beaches for flagship designations based on three criteria: the beach had a history of closures; extended periods of poor water quality were recorded for that beach; and the beach served a diverse socioeconomic user group. During the 2002 season, Goddard Park in Warwick, Warren Town Beach in Warren, and King Park Swim Area in Newport were designated as Rhode Island's Flagship Beaches. However, due to the closure of King Park in 2004 by the City of Newport, Scarborough State Beach in Narragansett was designated as a flagship beach. The USEPA expects to see marked improvement in water quality and a reduction in flagship beach closures in the next five years. A detailed description of recent activities and a summary of improvement strategies at these beaches can be found in **Appendix E**. Note: This appendix also covers those beaches that have been identified as "priority beaches" by Governor Carcieri as discussed in Section 5.1.

5.0 2008 BEACH SEASON DATA SUMMARY

5.1 Sample Results

HEALTH’s Beach Program conducted sampling and monitoring activities under the USEPA BEACH Grant Program at all monitored saltwater beaches.

The total number of samples collected provides a benchmark, which indicates the level of public protection offered by the Beach Monitoring Program. The number of samples collected by HEALTH has increased, from 281 in 1995 to 1,655 in 2008. An additional 1,387 saltwater samples and 289 freshwater samples were collected by Beach Owners and Managers and non-profit groups under Beach Program guidance. The number of facilities tested has increased from 82 in 1997 to 128 in 2008, 78 of which are saltwater beaches. This number is constantly in flux due to the definition of “a beach”. Eliminating sampling exemptions for open ocean beaches accounts for the increase in the number of facilities monitored; however, several facilities have been eliminated because they no longer operate as a bathing beach.

It should be noted that the 2008 beach season, HEALTH expanded its monitoring activities to include several non-licensed facilities throughout the State, which are frequently utilized by the public. Approximately 7 of the 78 saltwater monitored facilities do not currently meet recreational licensing requirements, and 2 freshwater monitored facilities do not currently meet requirements. Sampling at these unlicensed facilities is still preliminary and HEALTH is hoping to develop more thorough sampling strategies at these facilities based on analysis of the results collected during the 2008 season.

The EPA does not currently fund freshwater beach sampling. Therefore, sampling at freshwater beach facilities in the State of Rhode Island is the responsibility of the beach manager, typically a town representative, or facility owner. HEALTH receives results from either the beach manager or directly from the laboratory.

5.2 Tier Classifications for 2008

As part of the performance criteria established by EPA, Rhode Island developed a tiered monitoring plan for licensed beaches throughout the State. The plan addresses the frequency and location of monitoring based on the periods of recreational use of the beach, the nature and extent of use during certain periods, the proximity of beach waters to known point sources and non-point sources of pollution, and any effect storm events may have on the beach waters. In general beaches classified as Tier I in Rhode Island are sampled at least once a week, Tier II beaches are sampled a minimum of once per month, and Tier III beaches are typically sampled less than once per month. The following tables illustrate the classification of each of Rhode Island’s beaches during the 2008 beach season:

Table 2. Tier Classification and Monitoring Frequency for Rhode Island Saltwater Beaches

Beach Name	County	Tier Classification	Monitoring Frequency
BARRINGTON TOWN BEACH	Bristol County	I	10x/mo
NORTH KINGSTOWN TOWN BEACH	Washington County	I	10x/mo

Beach Name	County	Tier Classification	Monitoring Frequency
WARREN TOWN BEACH	Bristol County	I	10x/mo
CAMP ST. DOROTHY	Bristol County	I	1x/wk
CAPT ROGER WHEELER	Washington County	I	1x/wk
EASTON'S POINT	Newport County	I	1x/wk
ELM STREET PIER	Newport County	I	1x/wk
KING PARK SWIM AREA	Newport County	I	1x/wk
MARINES BEACH	Newport County	I	1x/wk
OCHRE POINT	Newport County	I	1x/wk
SAUNDERSTOWN YACHT CLUB	Washington County	I	1x/wk
BONNET SHORES BEACH CLUB	Washington County	I	2x/mo
CITY PARK BEACH	Kent County	I	2x/mo
MISQUAMICUT STATE BEACH	Washington County	I	2x/mo
EASTON'S BEACH	Newport County	I	2x/wk
SCARBOROUGH STATE BEACH NORTH	Washington County	I	2x/wk
SCARBOROUGH STATE BEACH SOUTH	Washington County	I	2x/wk
BRISTOL TOWN BEACH	Bristol County	I	3x/wk
CAMP GROSVENOR	Washington County	I	3x/wk
CONIMICUT POINT BEACH	Kent County	I	3x/wk
FORT ADAMS STATE PARK	Newport County	I	3x/wk
GODDARD MEMORIAL STATE PARK	Kent County	I	3x/wk
OAKLAND BEACH	Kent County	I	3x/wk
THIRD BEACH	Newport County	I	3x/wk
ATLANTIC BEACH CLUB BEACH	Newport County	I	4x/wk
NARRAGANSETT TOWN BEACH	Washington County	I	6x/yr
ALFIES	Washington County	II	1x/mo
ANDREA HOTEL	Washington County	II	1x/mo
ATLANTIC BEACH CASINO RESORT	Washington County	II	1x/mo
ATLANTIC BEACH PARK	Washington County	II	1x/mo
ATLANTIC PIZZA AND GRILL	Washington County	II	1x/mo

Beach Name	County	Tier Classification	Monitoring Frequency
BLUE SHUTTERS BEACH	Washington County	II	1x/mo
BRIGGS BEACH	Newport County	II	1x/mo
CHARLESTOWN TOWN BEACH	Washington County	II	1x/mo
DUNES PARK	Washington County	II	1x/mo
GALILEE BEACH CLUB ASSOCIATION	Washington County	II	1x/mo
GOOSEBERRY BEACH	Newport County	II	1x/mo
GOOSEWING BEACH	Newport County	II	1x/mo
HAZARDS BEACH	Newport County	II	1x/mo
JIMS TRAILER PARK	Washington County	II	1x/mo
MACKEREL COVE BEACH	Newport County	II	1x/mo
MATUNUCK TOWN BEACH	Washington County	II	1x/mo
MISQUAMICUT CLUB	Washington County	II	1x/mo
MISQUAMICUT FIRE DISTRICT BEACH	Washington County	II	1x/mo
PADDY'S BEACH	Washington County	II	1x/mo
PLEASANT VIEW INN	Washington County	II	1x/mo
PULASKI STATE PARK BEACH	Providence County	II	1x/mo
ROY CARPENTER'S BEACH	Washington County	II	1x/mo
SAM'S BEACH	Washington County	II	1x/mo
SANDY SHORE MOTEL	Washington County	II	1x/mo
SEASIDE BEACH CLUB	Washington County	II	1x/mo
SOUTH SHORE BEACH	Newport County	II	1x/mo
SPOUTING ROCK BEACH ASSOCIATION	Newport County	II	1x/mo
WARRENS POINT BEACH CLUB	Newport County	II	1x/mo
WEEKAPAUG FIRE DISTRICT	Washington County	II	1x/mo
WESTERLY TOWN BEACH-NEW	Washington County	II	1x/mo
WESTERLY TOWN BEACH-OLD	Washington County	II	1x/mo
WILLOW DELL BEACH CLUB	Washington County	II	1x/mo
CAMP FULLER-YMCA BEACH	Washington County	II	2x/mo
DUNES CLUB	Washington County	II	2x/mo

Beach Name	County	Tier Classification	Monitoring Frequency
FOGLAND BEACH	Newport County	II	2x/mo
GRINELLS BEACH	Newport County	II	2x/mo
PEABODYS BEACH	Newport County	II	2x/mo
PLUM BEACH CLUB	Washington County	II	2x/mo
SACHUEST BEACH	Newport County	II	2x/mo
SANDY POINT BEACH	Newport County	II	2x/mo
BALLARDS INN	Washington County	III	2x/yr
CHARLESTOWN BREACHWAY	Washington County	III	2x/yr
EAST BEACH	Washington County	III	2x/yr
EAST MATUNUCK STATE BEACH	Washington County	III	2x/yr
FRED BENSON TOWN BEACH	Washington County	III	2x/yr
OCEAN HOUSE	Washington County	III	2x/yr
SALTY BRINE BEACH	Washington County	III	2x/yr
SURF HOTEL	Washington County	III	2x/yr
ANNAWAMSCUTT BEACH	Bristol County	III	N.M.
BAIA BEACH	Bristol County	III	N.M.
BARRINGTON UNNAMED #1	Bristol County	III	N.M.
BARRINGTON UNNAMED #2	Bristol County	III	N.M.
BARRINGTON UNNAMED #3	Bristol County	III	N.M.
BARRINGTON UNNAMED #4	Bristol County	III	N.M.
BLOCK ISLAND UNNAMED #1	Washington County	III	N.M.
BLOCK ISLAND UNNAMED #10	Washington County	III	N.M.
BLOCK ISLAND UNNAMED #11	Washington County	III	N.M.
BLOCK ISLAND UNNAMED #12	Washington County	III	N.M.
BLOCK ISLAND UNNAMED #2	Washington County	III	N.M.
BLOCK ISLAND UNNAMED #3	Washington County	III	N.M.
BLOCK ISLAND UNNAMED #4	Washington County	III	N.M.
BLOCK ISLAND UNNAMED #5	Washington County	III	N.M.
BLOCK ISLAND UNNAMED #6	Washington County	III	N.M.

Beach Name	County	Tier Classification	Monitoring Frequency
BLOCK ISLAND UNNAMED #7	Washington County	III	N.M.
BLOCK ISLAND UNNAMED #8	Washington County	III	N.M.
BLOCK ISLAND UNNAMED #9	Washington County	III	N.M.
BOLD POINT	Providence County	III	N.M.
BRISTOL UNNAMED #1	Bristol County	III	N.M.
BRISTOL UNNAMED #2	Bristol County	III	N.M.
BROWNING BEACH	Washington County	III	N.M.
BULLOCKS NECK	Providence County	III	N.M.
BUTTONWOODS BEACH	Kent County	III	N.M.
CAFE PASTURE BEACH	Washington County	III	N.M.
CAMP CROSBY	Bristol County	III	N.M.
CAMP NARROW RIVER	Washington County	III	N.M.
CAPTAIN ZAKS RESTAURANT & GRILLE	Washington County	III	N.M.
CEDAR TREE POINT	Kent County	III	N.M.
CHARLESTOWN BEACH	Washington County	III	N.M.
CHARLESTOWN UNNAMED #1	Washington County	III	N.M.
CHARLESTOWN UNNAMED #2	Washington County	III	N.M.
CHEPIWANOXET	Kent County	III	N.M.
COLE FARM BEACH	Kent County	III	N.M.
COLLINS BEACH	Newport County	III	N.M.
CONIMICUT POINT NORTH	Kent County	III	N.M.
CRANSTON UNNAMED #1	Providence County	III	N.M.
CRANSTON UNNAMED #2	Providence County	III	N.M.
CRESCENT BEACH	Providence County	III	N.M.
DEEP HOLE BEACH	Washington County	III	N.M.
EAST PROVIDENCE UNNAMED #1	Providence County	III	N.M.
EAST PROVIDENCE UNNAMED #2	Providence County	III	N.M.
FORT GETTY	Newport County	III	N.M.
FORT WEATHERILL	Newport County	III	N.M.

Beach Name	County	Tier Classification	Monitoring Frequency
GASPEE POINT	Kent County	III	N.M.
GREEN HILL BEACH	Washington County	III	N.M.
HOPEWORTH BEACH	Bristol County	III	N.M.
ISLAND PARK	Newport County	III	N.M.
JAMESTOWN UNNAMED #1	Newport County	III	N.M.
JAMESTOWN UNNAMED #2	Newport County	III	N.M.
JAMESTOWN UNNAMED #3	Newport County	III	N.M.
JAMESTOWN UNNAMED #4	Newport County	III	N.M.
JUNIPER BEACH	Bristol County	III	N.M.
KELLY BEACH	Washington County	III	N.M.
KINGS BEACH	Newport County	III	N.M.
LATHAM PARK	Bristol County	III	N.M.
LITTLE COMPTON UNNAMED #1	Newport County	III	N.M.
LITTLE COMPTON UNNAMED #10	Newport County	III	N.M.
LITTLE COMPTON UNNAMED #11	Newport County	III	N.M.
LITTLE COMPTON UNNAMED #2	Newport County	III	N.M.
LITTLE COMPTON UNNAMED #3	Newport County	III	N.M.
LITTLE COMPTON UNNAMED #4	Newport County	III	N.M.
LITTLE COMPTON UNNAMED #5	Newport County	III	N.M.
LITTLE COMPTON UNNAMED #6	Newport County	III	N.M.
LITTLE COMPTON UNNAMED #7	Newport County	III	N.M.
LITTLE COMPTON UNNAMED #8	Newport County	III	N.M.
LITTLE COMPTON UNNAMED #9	Newport County	III	N.M.
LONGMEADOW	Kent County	III	N.M.
MCCORRIE POINT	Newport County	III	N.M.
MIDDLETOWN UNNAMED #1	Newport County	III	N.M.
MIDDLETOWN UNNAMED #2	Newport County	III	N.M.
MILL COVE BEACH	Kent County	III	N.M.
MOONSTONE BEACH	Washington County	III	N.M.

Beach Name	County	Tier Classification	Monitoring Frequency
NAPA TREE POINT BEACH	Washington County	III	N.M.
NARRAGANSETT UNNAMED #1	Washington County	III	N.M.
NARRAGANSETT UNNAMED #10	Washington County	III	N.M.
NARRAGANSETT UNNAMED #11	Washington County	III	N.M.
NARRAGANSETT UNNAMED #3	Washington County	III	N.M.
NARRAGANSETT UNNAMED #4	Washington County	III	N.M.
NARRAGANSETT UNNAMED #5	Washington County	III	N.M.
NARRAGANSETT UNNAMED #6	Washington County	III	N.M.
NARRAGANSETT UNNAMED #7	Washington County	III	N.M.
NARRAGANSETT UNNAMED #8	Washington County	III	N.M.
NARRAGANSETT UNNAMED #9	Washington County	III	N.M.
NARRAGANSETT UNNAMED #2	Washington County	III	N.M.
NEWPORT UNNAMED #1	Newport County	III	N.M.
NEWPORT UNNAMED #2	Newport County	III	N.M.
NORTH KINGSTOWN UNNAMED #1	Washington County	III	N.M.
NORTH KINGSTOWN UNNAMED #10	Washington County	III	N.M.
NORTH KINGSTOWN UNNAMED #11	Washington County	III	N.M.
NORTH KINGSTOWN UNNAMED #12	Washington County	III	N.M.
NORTH KINGSTOWN UNNAMED #13	Washington County	III	N.M.
NORTH KINGSTOWN UNNAMED #2	Washington County	III	N.M.
NORTH KINGSTOWN UNNAMED #3	Washington County	III	N.M.
NORTH KINGSTOWN UNNAMED #4	Washington County	III	N.M.
NORTH KINGSTOWN UNNAMED #5	Washington County	III	N.M.
NORTH KINGSTOWN UNNAMED #6	Washington County	III	N.M.
NORTH KINGSTOWN UNNAMED #7	Washington County	III	N.M.
NORTH KINGSTOWN UNNAMED #8	Washington County	III	N.M.
NORTH KINGSTOWN UNNAMED #9	Washington County	III	N.M.
PATIENCE ISLAND UNNAMED #1	Newport County	III	N.M.
PORTSMOUTH UNNAMED #1	Newport County	III	N.M.

Beach Name	County	Tier Classification	Monitoring Frequency
PORTSMOUTH UNNAMED #10	Newport County	III	N.M.
PORTSMOUTH UNNAMED #11	Newport County	III	N.M.
PORTSMOUTH UNNAMED #12	Newport County	III	N.M.
PORTSMOUTH UNNAMED #13	Newport County	III	N.M.
PORTSMOUTH UNNAMED #14	Newport County	III	N.M.
PORTSMOUTH UNNAMED #2	Newport County	III	N.M.
PORTSMOUTH UNNAMED #3	Newport County	III	N.M.
PORTSMOUTH UNNAMED #4	Newport County	III	N.M.
PORTSMOUTH UNNAMED #5	Newport County	III	N.M.
PORTSMOUTH UNNAMED #6	Newport County	III	N.M.
PORTSMOUTH UNNAMED #7	Newport County	III	N.M.
PORTSMOUTH UNNAMED #8	Newport County	III	N.M.
PORTSMOUTH UNNAMED #9	Newport County	III	N.M.
POTOWOMUT	Kent County	III	N.M.
PRUDENCE ISLAND UNNAMED #1	Newport County	III	N.M.
PRUDENCE ISLAND UNNAMED #10	Newport County	III	N.M.
PRUDENCE ISLAND UNNAMED #11	Newport County	III	N.M.
PRUDENCE ISLAND UNNAMED #2	Newport County	III	N.M.
PRUDENCE ISLAND UNNAMED #3	Newport County	III	N.M.
PRUDENCE ISLAND UNNAMED #4	Newport County	III	N.M.
PRUDENCE ISLAND UNNAMED #5	Newport County	III	N.M.
PRUDENCE ISLAND UNNAMED #6	Newport County	III	N.M.
PRUDENCE ISLAND UNNAMED #7	Newport County	III	N.M.
PRUDENCE ISLAND UNNAMED #8	Newport County	III	N.M.
PRUDENCE ISLAND UNNAMED #9	Newport County	III	N.M.
QUONOCOTAUG BEACH	Washington County	III	N.M.
ROCKY BEACH	Newport County	III	N.M.
ROCKY POINT	Kent County	III	N.M.
RUGGLES BEACH	Newport County	III	N.M.

Beach Name	County	Tier Classification	Monitoring Frequency
RUMSTICK POINT	Bristol County	III	N.M.
SABINS POINT	Providence County	III	N.M.
SAPOWET BEACH	Newport County	III	N.M.
SEASIDE BEACH	Newport County	III	N.M.
SOUTH KINGSTOWN UNNAMED #1	Washington County	III	N.M.
SOUTH KINGSTOWN UNNAMED #2	Washington County	III	N.M.
SOUTH KINGSTOWN UNNAMED #3	Washington County	III	N.M.
SOUTH KINGSTOWN UNNAMED #4	Washington County	III	N.M.
SOUTH KINGSTOWN UNNAMED #5	Washington County	III	N.M.
TEDDYS BEACH	Newport County	III	N.M.
TIVERTON UNNAMED #1	Newport County	III	N.M.
TIVERTON UNNAMED #10	Newport County	III	N.M.
TIVERTON UNNAMED #11	Newport County	III	N.M.
TIVERTON UNNAMED #12	Newport County	III	N.M.
TIVERTON UNNAMED #2	Newport County	III	N.M.
TIVERTON UNNAMED #3	Newport County	III	N.M.
TIVERTON UNNAMED #4	Newport County	III	N.M.
TIVERTON UNNAMED #5	Newport County	III	N.M.
TIVERTON UNNAMED #6	Newport County	III	N.M.
TIVERTON UNNAMED #7	Newport County	III	N.M.
TIVERTON UNNAMED #8	Newport County	III	N.M.
TIVERTON UNNAMED #9	Newport County	III	N.M.
TOUISSET BEACH	Bristol County	III	N.M.
TRUSTOM BEACH	Washington County	III	N.M.
WARREN UNNAMED #1	Bristol County	III	N.M.
WARREN UNNAMED #2	Bristol County	III	N.M.
WARWICK UNNAMED #1	Kent County	III	N.M.
WARWICK UNNAMED #2	Kent County	III	N.M.
WEST BEACH	Newport County	III	N.M.

Beach Name	County	Tier Classification	Monitoring Frequency
WESTERLY UNAMED # 1	Washington County	III	N.M.
WESTERLY UNAMED # 2	Washington County	III	N.M.
WESTERLY UNAMED # 3	Washington County	III	N.M.
WESTERLY UNAMED # 4	Washington County	III	N.M.
WESTQUAGE BEACH	Washington County	III	N.M.

N.M. – Not Monitored

Table 3. Tier Classification and Monitoring Frequency for Rhode Island Freshwater Beaches

Beach Name	County	Tier Classification	Monitoring Frequency
GORTON POND BEACH	Kent County	I	1x/wk
KENT COUNTY YMCA	Kent County	I	1x/wk
LINCOLN WOODS STATE PARK BEACH	Providence County	I	1x/wk
WORLD WAR II MEMORIAL STATE PARK BEACH	Providence County	I	1x/wk
AQUAPAUG SCOUT RESERVATION	Washington County	II	1x/mo
BEACH POND BEACH	Washington County	II	1x/mo
BOWDISH LAKE CAMPGROUND	Providence County	II	1x/mo
BRIAR POINT BEACH	Kent County	II	1x/mo
BROWNING MILL POND BEACH	Washington County	II	1x/mo
BUCK HILL CAMPGROUND	Providence County	II	1x/mo
BURLINGAME STATE PARK CAMPGROUND	Washington County	II	1x/mo
BURLINGAME STATE PARK PICNIC AREA	Washington County	II	1x/mo
CAMP ALDERSGATE	Providence County	II	1x/mo
CAMP CANONICUS	Washington County	II	1x/mo
CAMP COOKIE	Providence County	II	1x/mo
CAMP DAVIS	Washington County	II	1x/mo
CAMP HOFFMAN	Washington County	II	1x/mo
CAMP MEEHAN	Providence County	II	1x/mo
CAMP NOKEWA	Washington County	II	1x/mo
CAMP RUGGLES	Providence County	II	1x/mo

Beach Name	County	Tier Classification	Monitoring Frequency
CAMP SHEPARD	Providence County	II	1x/mo
CAMP WATCHAUG	Washington County	II	1x/mo
CAMP WATCHAUG WOHELO	Washington County	II	1x/mo
CAMP WATMOUGH	Providence County	II	1x/mo
COLWELL'S CAMPGROUND	Kent County	II	1x/mo
DIFONZO RECREATION AREA	Providence County	II	1x/mo
DYER WOODS NUDIST CAMPGROUND	Providence County	II	1x/mo
ECHO LAKE CAMPS	Providence County	II	1x/mo
EPISCOPAL CONFERENCE CENTER BEACH	Providence County	II	1x/mo
GEORGE WASHINGTON CAMPGROUND	Providence County	II	1x/mo
GEORGIAVILLE POND BEACH	Providence County	II	1x/mo
GINNY-B CAMPGROUND BEACH	Providence County	II	1x/mo
GLOCESTER COUNTRY CLUB BEACH	Providence County	II	1x/mo
GOVERNOR NOTTE PARK BEACH	Providence County	II	1x/mo
HARMONY HILL SCHOOL	Providence County	II	1x/mo
HOLIDAY ACRES CAMPGROUND	Providence County	II	1x/mo
HOPE COMMUNITY SERVICES BEACH	Providence County	II	1x/mo
KINGSTONS CAMP	Washington County	II	1x/mo
LARKIN'S POND BEACH	Washington County	II	1x/mo
MARION IRONS BEACH	Providence County	II	1x/mo
MATER SPEI DAY CAMP	Providence County	II	1x/mo
PASTORE LEISURE CENTER-LADD SCHOOL CAMP	Washington County	II	1x/mo
PULASKI STATE PARK BEACH	Providence County	II	1x/mo
SLACK'S POND BEACH	Providence County	II	1x/mo
SPRING LAKE BEACH	Providence County	II	1x/mo
W ALTON JONES BEACH	Kent County	II	1x/mo
WESTWOOD YMCA BEACH	Kent County	II	1x/mo
YAWGOOG SCOUT RESERVATION	Washington County	II	1x/mo

Beach Name	County	Tier Classification	Monitoring Frequency
CAMP MASSASOIT	Providence County	II	2x/mo
NINIGRET PARK BEACH	Washington County	II	2x/mo
BREEZY LAKE BEACH	Kent County	III	N.M.
CAMP AYOHO	Kent County	III	N.M.
LITTLE BEACH	Washington County	III	N.M.
LITTLE POND BEACH	Kent County	III	N.M.
SAND POND BEACH	Kent County	III	N.M.
WHISPERING PINES CAMPGROUND	Washington County	III	N.M.
WORDEN POND FAMILY CAMPGROUND BEACH	Washington County	III	N.M.

N.M. - Not Monitored

Table 4. Summary of Tier Classifications

Classification	Number of Freshwater Beaches	Number of Saltwater Beaches
Tier I	5	26
Tier II	45	39
Tier III	7	165

5.3 Closures

There were 63-recorded closures totaling 160 closure days during the 2008 season. This represents a 40% increase in closure days from the 2007-bathing season (there were 43 closures totaling 96 closure days in 2007). Even though significant rainfall (>.50" in a 24-hour period from June 1-August 31 at the TF Green) decreased from 6 instances in 2007 to 5 instances in 2008, overall rainfall increased 16% from 8.28" in 2007 to 9.61" in 2008¹³. Based on historical data, a direct connection between rainfall and beach closures is evident.

In addition, the USEPA BEACH grants allow HEALTH to more comprehensively study areas where water quality exceeds the bacterial standard. For example: because of known bacteria issues in the upper regions of the Narragansett Bay, areas located north of Prudence Island were sampled several times weekly during the 2008 bathing season. Intensive sampling allowed HEALTH to precisely define areas of higher bacteria concentrations in an effort to more easily delineate bacterial sources. Enhanced monitoring activities further protect public health; however, they also have resulted in an increase in the number of beach closures. It should be noted that closure data is based on federally funded saltwater beach sampling *and* privately funded freshwater beach sampling. Table 5 summarizes 2008 closure days at each beach.

¹³ <http://www.erh.noaa.gov/box/dailystns.shtml> NOAA Northeast Environmental Climate Data website

Table 5. 2008 Beach Closures

Beach Name	Days Closed	Problems
Atlantic Beach Club	12	Stormwater, Pump station, Newport CSO?
Barrington Town Beach	3	Run-off, Providence CSO?
Bristol Town Beach	4	Run-off, Wildlife, Providence CSO?
Camp Grosvenor	25	Run-off, Wildlife
City Park	15	Run-off, Boats, Wildlife
Conimicut Point	19	Providence CSO?, Wildlife, Run-off
Dunes Club	1	Run-off
Easton's Beach	4	Stormwater, Pump station, Newport CSO?
Echo Lake Campground	6	Run-off, Wildlife
Fort Adams	1	Run-off, Wildlife
Goddard Park	1	Run-off, Boats, Wildlife
Gorton Pond	22	Run-off, Wildlife
Governor Notte Park	4	Wildlife
Kent County YMCA	1	Run-off, Wildlife
Lincoln Woods State Park Beach	3	Run-off, Wildlife
Mackerel Cove Beach	5	Run-off
Ninigret Park	1	Run-off, wildlife
Oakland Beach	15	Run-off, Wildlife
Saunderstown Yacht Club Beach	2	Stormwater Run-off
Scarborough State Beach - North	1	Stormwater Run-off
Scarborough State Beach - South	1	Stormwater Run-off
Third Beach	2	Run-off, Boats
Warren Town Beach	9	Sewer Issues, Stormwater Run-off, Boats
Westwood YMCA Beach	2	Run-off, Wildlife
WWII Memorial Park Beach	1	Run-off, Wildlife
Total:	160	

The following tables and charts document the percentage of closures attributed to each town. Note: all saltwater closure days occurred within ten of Rhode Island's coastal towns and all freshwater closure days occurred within six of Rhode Island's towns.

Table 6. Percentage of Saltwater Beach Closure Days By Town for the 2008 Bathing Season

Percentage of Total Saltwater Closure Days	City/Town	Number of Closure Days	Facilities Closed
8	Warren	9	Warren Town Beach
42	Warwick	50	City Park Beach, Conimicut Point Beach, Goddard State Park Beach, Oakland Beach
12	Middletown	14	Atlantic Beach Club Beach, Third Beach
23	North Kingstown	27	Camp Grosvenor Beach, North Kingstown Town Beach, Plum Beach Club Beach
2	Barrington	3	Barrington Town Beach
3	Bristol	4	Bristol Town Beach
2	Narragansett	3	Dunes Beach Club, Scarborough State Beach North, Scarborough State Beach South
4	Newport	5	Easton's Beach
4	Jamestown	5	Mackerel Cove Beach
100		120	

Chart 6a. Saltwater Beach Closure Days By Town for the 2008 Bathing Season

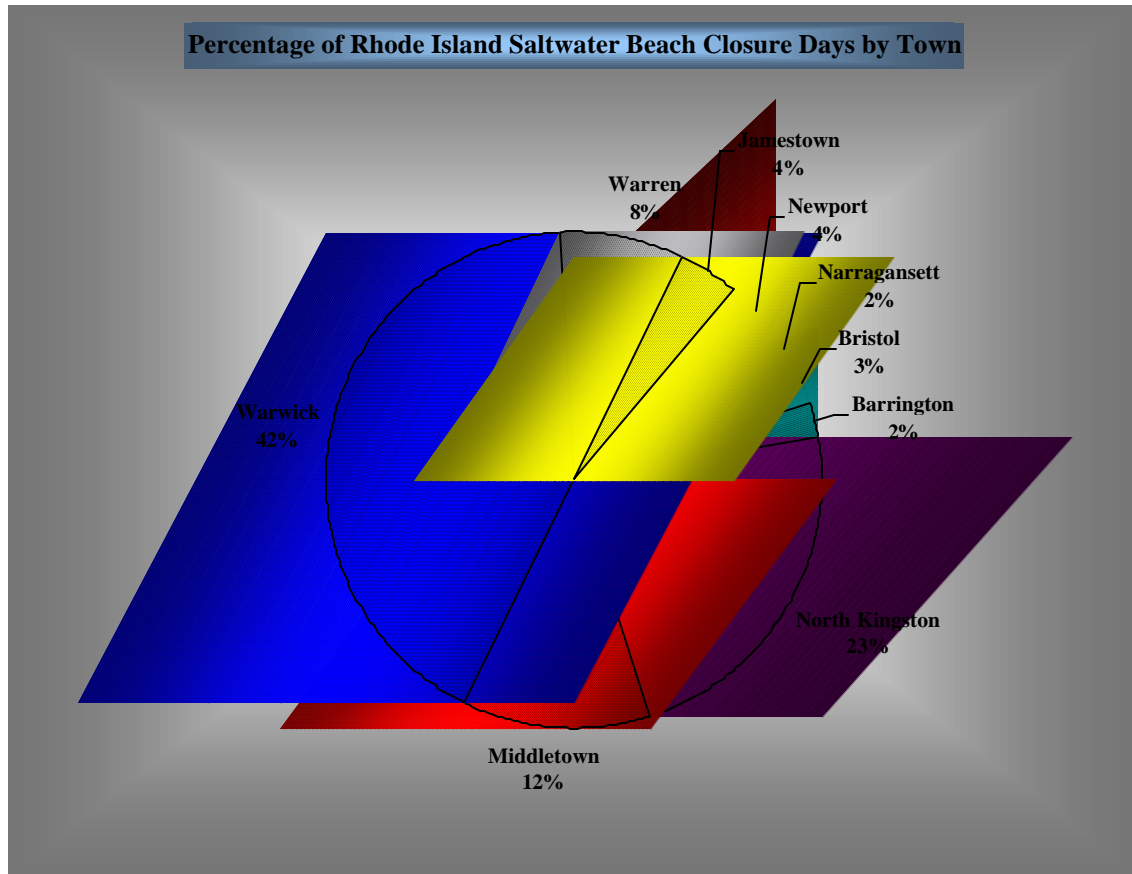


Table 7. Percentage of Freshwater Beach Closure Days By Town for the 2008 Bathing Season

Percentage of Total Freshwater Closure Days	City/Town	Number of Closure Days	Facilities Closed
15	Burrville	6	Echo Lake Campground
8	Lincoln	3	Lincoln Woods State Park Beach
5	Coventry	2	Westwood YMCA Beach
10	North Providence	4	Governor Notte Park
58	Warwick	23	Gorton Pond Beach, Kent County YMCA
2	Charlestown	1	Ninigret Park Beach
2	Woonsocket	1	World War II Memorial Park Beach
100		40	

Chart 7a. Freshwater Beach Closure Days By Town for the 2008 Bathing Season

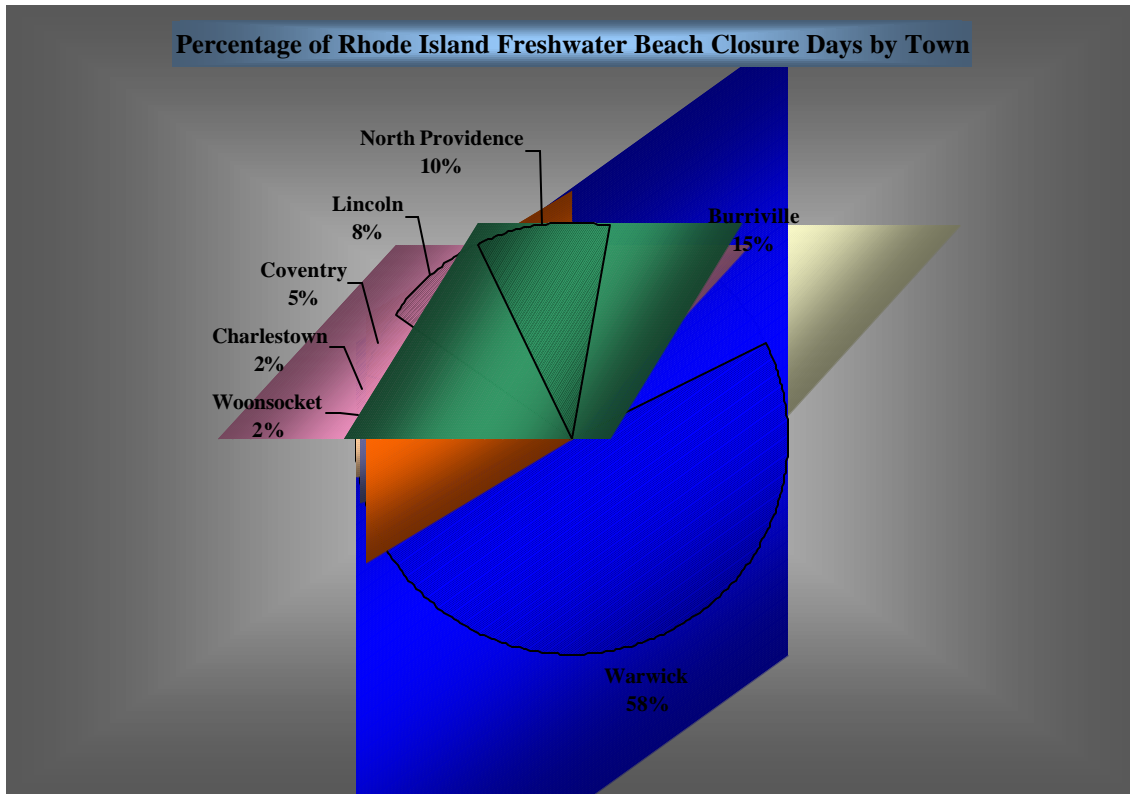


Table 8. Summary and Evaluation of Trends (2000-2008) in Regards to Rainfall and Sampling Data

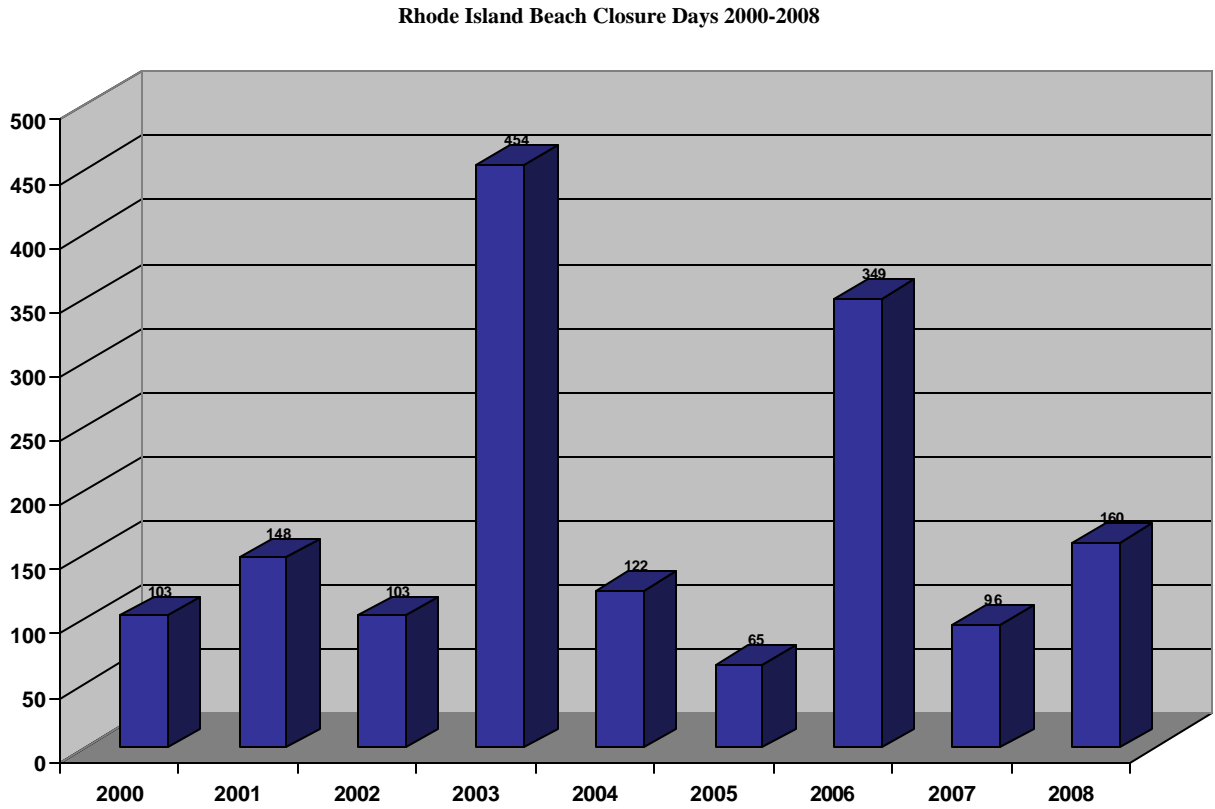
	2000	2001	2002	2003	2004	2005	2006	2007	2008
Number of Monitored Freshwater Beaches	51	51	49	51	47	50	53	49	50
Number of Monitored Saltwater Beaches	31	31	70	72	71	69	69	69	78
Total Number of Monitored Beaches	82	82	128	123	118	128	122	118	128
Sample Count* (RIDOH - EPA Funded Sampling Only)	515	976	1,779	2,567	2,701	3,211	2,769	1,718	1,655

	2000	2001	2002	2003	2004	2005	2006	2007	2008
Rainfall Total - As recorded at TF Green between June 1st and Aug 31st (inches)	Not Recorded	13.3	5.67	14.96	10.99	6.24	14.65	8.28	9.61
Significant Rain Events (>0.5" in 24-hr)	4	7	5	11	9	4	5	6	5
Closure Events	13	26	27	67	41	30	91	43	63
Closure Days	103	148	103	459	122	65	351	96	160

* Sample count estimates do not include approximately 1,400 samples submitted by Beach Operators on an annual basis, which are reviewed by RIDOH.

Chart 8a. Closure Data Trends (2000-2008)

A table detailing beach closure days for each beach, from 2000 to 2008, is included in **Appendix F**.



6.0 SPECIAL STUDIES/SUCCESS STORIES

6.1 Governor's Priority Beaches

During the summer of 2003, the environmental health of Narragansett Bay was questioned because of several unfortunate events. In particular, Rhode Islanders experienced the highest number of recorded beach closures and Greenwich Bay experienced the worst fish kill in the State in the last 50 years. In response to these events, Governor Carcieri formed the Governor's Narragansett Bay and Watershed Planning Commission to coordinate and plan for the environmental and economic health of the Bay. Ten study panels were formed with experts from state and federal government, academia, non-governmental organizations, private firms and the public.

In March of 2004, the Commission issued a report detailing recommendations to improve the health of Narragansett Bay. On July 22, 2004, Governor Carcieri responded to the report, charging HEALTH, Department of Environmental Management (DEM) and the Department of Transportation (DOT) with developing an improvement strategy for 10 priority beaches. In December 2004, HEALTH, DEM and DOT issued the *Joint Improvement Strategy for 10 Priority Beaches* report outlining the next steps to be taken to identify and correct pollution problems at 10 priority beaches. A table illustrating the issues facing the priority beaches and outlining improvement strategies currently in progress and/or planned at each of the priority beaches can be found in **Appendix E**.

6.2 Easton's and Atlantic Beach Club

During the 2008 beach season, Easton's Beach in Newport, Rhode Island was closed for 4 days and Atlantic Beach Club Beach in Middletown, Rhode Island (located adjacent to Easton's) was closed for 12 days. Compared to 4 closure days for Easton's Beach and 8 closure days at Atlantic Beach Club Beach in 2007, this represents a significant decrease. In the winter of 2008, the City of Newport granted money to a local Aquidneck Island volunteer organization, Clean Ocean Access (COA), to continue sampling Easton's Beach during the off-season when surfers utilize the beach area. This study is unique since HEALTH does not generally sample any of Rhode Island's beaches during the off-season (with the exception of short-term special studies). The City of Newport agreed to pay for sample analysis from January through December, and COA agreed to provide all necessary manpower.

COA's involvement parallels the sentiment of many citizens of Middletown and Newport to get involved with issues affecting the water they swim in. The City of Newport and Town of Middletown have also demonstrated a dedicated effort to work collectively towards methods to eradicate local water pollution problems. After petitioning the City of Newport, COA was able to convince Newport officials to support continued funding of these off-season sampling efforts as well as sampling year round through 2008 at several non-licensed swimming areas on Aquidneck Island. Sampling efforts by COA will be targeted towards after rain events.

HEALTH will continue to work with COA to provide support and technical assistance. HEALTH plans to conduct surveys at the non-licensed swimming areas being sampled by COA in order to reconsider these areas for sampling under the Beach Program. HEALTH will also supplement sampling efforts of COA as needed at some of these locations during the upcoming beach season.

During the summer of 2008 Easton's Beach purchased a seaweed harvester to be used for the summer of 2009. The harvester will run along the water's edge and collect seaweed that has

washed up on shore. CRMC approved the machine in 2008. HEALTH is hoping to see improved water quality results at Easton's beach with the implementation of the harvester

6.3 Greenwich Bay

Beaches located in the City of Warwick have accounted for the largest percentage of closures by city/town over the last several years. From 2007 to 2008, closures in Warwick increased dramatically from 16 to 73 closure days. A portion of this increase can be attributed to the increased rainfall in 2008. However, this significant increase may also be attributed to the delay in collecting a subsequent clean water sample in order to re-open the beach by the City of Warwick.

HEALTH is currently working with RIDEM to determine if combined sewer overflows (CSOs) in the upper bay may be contributing to beach closures at Conimicut Point. Additionally, RIDEM's Total Maximum Daily Load (TMDL) Program for Greenwich Bay details comprehensive management actions that will be taken, but their benefit will not be known for several years. In cooperation with the TMDL Program, the Coastal Resource Management Council's (CRMC's) Greenwich Bay Special Area Management Plan (SAMP) will focus on all aspects of pollution sources within the Greenwich Bay watershed.

As part of the EPA New England Beach Strategy, HEALTH is working with EPA, RIDEM and the City of Warwick to identify sources of contamination at Warwick's beaches, coordinate efforts in monitoring and data exchange and working to correct issues facing these beaches. All parties have met several times and are working to develop an action plan that will detail the next steps to be taken to continue improvement at Warwick's beaches and end beach closures at these facilities.

EPA's National Epidemiological and Environmental Assessment of Recreational (NEEAR) Water Study was conducted at Goddard State Park Beach from June 23rd through Labor Day on weekends and holidays during the 2008 beach season. The main goals of the study were to determine new ways of analyzing water samples to provide real-time water quality measurements (i.e. rapid 2-hour tests), and to help gain a better understanding between water pollution, swimming at the beach, and peoples' health (through interviews regarding illness, exposure, etc.). Representatives from EPA, the Center for Disease Control (CDC) and Westat (EPA's contractor) conducted interviews of beach goers and collected water samples throughout the beach season. Results should be ready for viewing by late spring of 2008.

The NEEAR Study website, <http://www.epa.gov/nheerl/near>, provides more in-depth information. This study drew more attention to the water quality within Greenwich Bay, and particularly at Goddard State Park Beach, which is a very popular summer destination for Rhode Islanders.

6.4 Marketing Internship

During the 2008 beach season a marketing intern from Bryant University College of Business assisted HEALTH in a program evaluation. The objective of the internship was to assist the Beach Program in more efficiently serving the needs of the public and providing a higher level of customer satisfaction and service to beach owners. Extensive research was used to track the program's performance in providing effective monitoring information and helpful support throughout the summer season to beach owners and to the public.

Beach owners using a detailed survey, evaluated the Beach Program. A copy of the survey can be found in **Appendix G**. Beach owners and managers were first called and asked if they would be willing to participate in the Programs evaluation and study. Individuals were made aware of the privacy and confidentiality of the study during this phone call as well. If the beach owner was willing to participate they had the option to complete the survey over the phone, via email, have the survey mailed to their home address or complete the survey on a free survey website. If the Beach Program was unable to contact the beach owner subsequent tries were made up to 5 times. After all willing participants completed and returned their surveys the results were analyzed.

The following Charts depict results from 2 key questions on the Beach Program Evaluation Survey. All subsequent data and results can be found in the [Rhode Island Department of Health Marketing Internship Evaluation, Spring 2008](#).

Chart 9. Question 10 from the Beach Program Evaluation Survey

Have you ever visited the Beach Program Website, www.ribeaches.org? If so, how often?

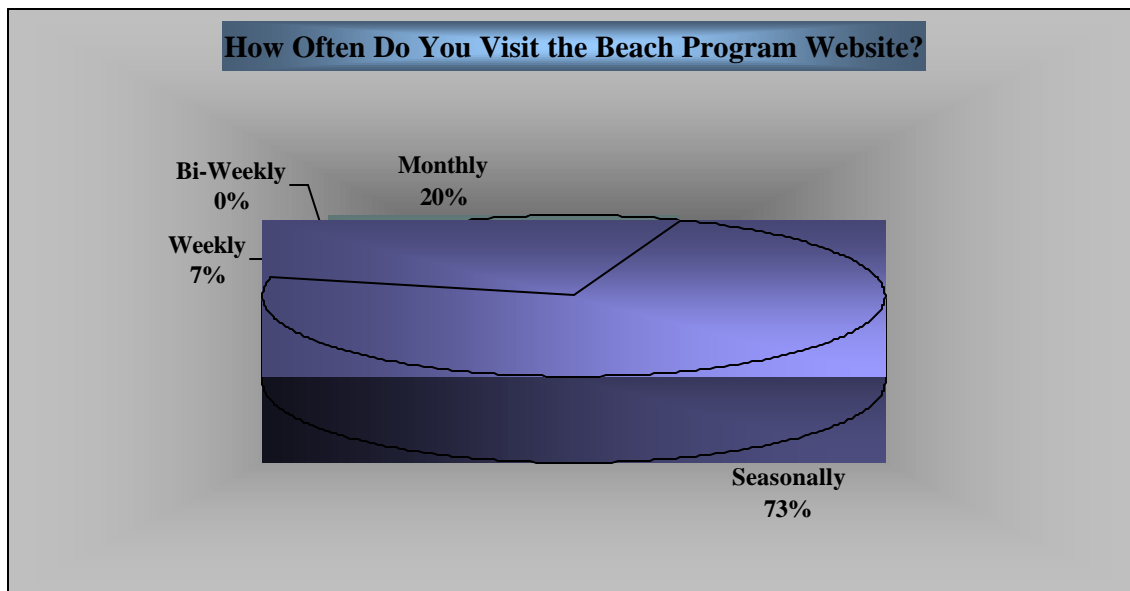
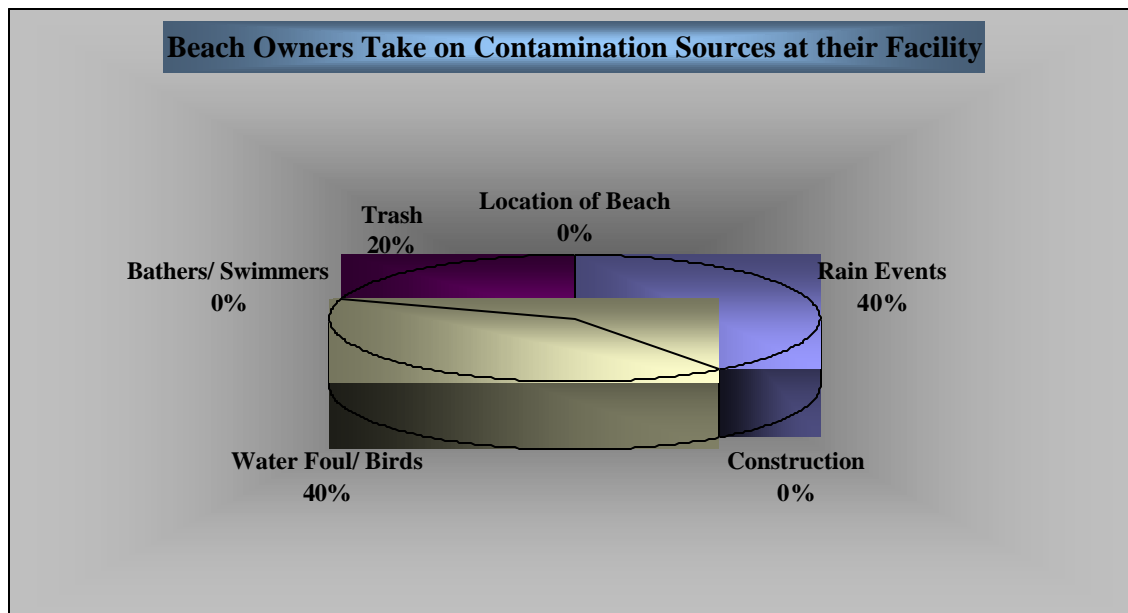


Chart 10. Question 22 from the Beach Program Evaluation Survey

What do you think is the greatest source of contamination at your bathing facility?



One major finding of the survey was the correlation between a beach owner’s active participation with the Beach Program and their knowledge of beach issues such as sources of contamination and beach protocols. “This demonstrates the importance of maintaining active communication between facilities and the Program”¹⁴.

The following suggestions and recommendations were made upon conclusion of the Program’s evaluation by the intern; “ First, ensure all beach owners and managers are contacted and made aware of protocol prior to the beach season. This can be done through updating facility packets, and more persistent calling and emailing contacts prior to beach opening. Next, consistent contact must be maintained with facilities throughout the beach season to ensure the facilities are specifically aware of the Program’s role in beach water quality and know the best way to reach the Beach Program. Next, managers and owners are seldom fully aware about beach protocol, contamination, and program information. Additional programs must be put in place to educate beach owners and managers and compel them to be actively involved in maintaining beach water quality. Two recommendations for new programs is regional on-site meetings with beach owners and managers to familiarize contacts with the Program, contact information, role with the beaches, and Program and facility protocol among other things. Additionally, starting a weekly email newsletter to all beach owners and managers can serve as promotional and informational resource for the Program.

14. Rhode Island Department of Health Marketing Internship Evaluation. Spring 2008. Johnson, Heather.

The Program's website can be promoted through this newsletter among other sources. Lastly, the signage on beaches and ways to notify the public about beach water quality is not consistent between facilities. This doesn't send a clear message to the public, and must be updated. With these Program updates in place, the facilities as well as the beach-going public will be more aware of the Program and the state's role in active beach water quality monitoring and prevention¹⁴.

The Beach Program is already striving to implement some of these changes prior to the 2009 beach season. A beach owner and manager meeting is currently being setup to discuss this year's procedures, protocols, pass out valuable information, distribute facility packets, and distribute the Beach Program Signs. The new beach signs were purchased using EPA funds and will be distributed to every beach. The sign is a standard 2'x 2'. It contains both the HEALTH and EPA logos. The Beach Program is hoping the signs will eliminate discrepancies between HEALTH, the beach facility, and the public and be more professional.

The Beach Program is very pleased with the outcome of having a marketing intern evaluate the Program. We are now more aware of the real needs of the Program and ways to improve the existing Program.

7.0 FUTURE ACTIVITIES

7.1 Geographic Information Systems (GIS)

GIS has improved monitoring efficiency and accuracy; the system has assisted in identifying known sources of pollution and is assisting in the development of a beach closure model based on rainfall. The Beach Monitoring Program staff feels strongly that GIS capabilities will continue to greatly improve the ability to protect the public from swimming in contaminated bathing waters. Additionally, HEALTH has been utilizing GIS capabilities to update the beaches database. HEALTH is in the process of generating GIS data for each of the saltwater and freshwater beaches monitored in Rhode Island. Surveys are currently underway of all saltwater beaches and will be utilized to revise and improve the GIS saltwater database. Additionally, HEALTH plans to reevaluate beaches that are currently not licensed and not monitored in order to determine if some of these beaches should actually be part of the beach monitoring program (i.e. beaches utilized regularly by the public and/or beaches with potential for health risks).

7.2 Web Based Data/Public Notification System

HEALTH has developed a web-based management system to manage all beach related data and perform statistical analysis. This system provides the public with sample data, open/closed status, and general beach information. Public notification procedures have been streamlined and are conducted at the touch of a button from any computer with an Internet connection. A 24 hour telephone hotline, website, and a pre-approved list of media outlets is notified instantaneously after the decision to close a beach has been made.

This system also allows HEALTH to transmit beach related data, as required under the BEACH Act, with incredible ease. The alternative to this system is the entering of data into the USEPA's current system STORET. Press releases are now issued in a much more timely manner, and staff time is not wasted traveling to the HEALTH's Cannon Building to conduct after hours notifications. HEALTH will continue to perfect this system. **Appendix D** includes the homepage for HEALTH's Beach Monitoring Program.

7.3 Web Based Data/Laboratory Results and Sample Schedule Integration

As discussed above, HEALTH has developed a web-based management system to manage all beach related data. HEALTH is continuing to improve this system by developing an automated sampling schedule system. Sample schedules will be entered into the system on a daily basis. All sample submittal forms and sample container labels will be generated through the sample scheduler. This system will save valuable time spent by the interns. Additionally, the system will soon be updated to allow results received from the laboratory to be sent directly to the web-based management system upon approval from the beach program manager.

Therefore, interns will be spending less time on data entry and their time can be spent on more useful tasks. HEALTH will continue to work with our database manager to adapt the system in order to improve its capabilities.

7.4 Improved Freshwater Beach Monitoring

The EPA does not currently fund freshwater beach sampling. Therefore, sampling at freshwater beach facilities in the State of Rhode Island is the responsibility of the beach manager, typically a town representative, or facility owner. HEALTH receives results from either the beach manager or directly from the laboratory. To date, freshwater beach sampling has been sporadic. Results

have not been submitted to HEALTH on a timely basis, and in some instances, not at all. As stated in Section 5.1, freshwater beach surveys were conducted at Rhode Island's 50 monitored freshwater facilities. Additionally, HEALTH found several beach facilities operating without a license. HEALTH plans to develop a complete GIS database of surveyed beaches, and plans to initiate a tracking system in order to measure freshwater facilities compliance with applicable monitoring schedules. During the 2008 beach season, HEALTH tracked sample compliance for freshwater beaches by looking at the required number of samples and whether or not freshwater facilities conducted this sampling on time at the required frequency. HEALTH determined that only 44% of freshwater beaches actually complied with their required sampling schedules. HEALTH will continue to track compliance and hopes to improve the compliance rate. However, due to lack of funding, improved freshwater monitoring cannot be considered a priority at this time.

7.5 Predictive Modeling

During the 2008 season, HEALTH began to utilize predictive measures at Scarborough State Beach and Easton's Beach in Rhode Island that tend to have high closure rates. Since sampling has increased steadily over the past several years, there is more data available to create these models. Comparing past results to such variables as rainfall and observed wildlife/boat activity has also created useful data that can be incorporated. Currently, the turn around time for sampling results is 24 hours. Due to this fact, HEALTH's goal is to utilize past data to create a system that will dictate appropriate closing/opening measures in a timelier manner to ensure better public health. However, the development of predictive models is dependent upon large sample data sets, and therefore there is a definite need for further collection of samples after rain events, etc. and continued development of models.

HEALTH is currently in the process of reviewing all data that has been inputted into the beach database to ensure quality of reported results. Upon completion of the data evaluation, HEALTH plans to assess rainfall and sample data for beaches with chronic closures in order to look for trends that may help in the development of closure protocols for each beach.

Appendix A

Rules and Regulations for Licensing of Recreational Facilities

Appendix B

Sanitary Survey Form



Rhode Island Department of Health Beach Monitoring Program



BEACH NAME:

DATE OF SURVEY:

Beach Contact Information

Narrative

Beach Monitoring Activities

Closure History (Last 5-years)



Rhode Island Department of Health Beach Monitoring Program



BEACH NAME:

DATE SURVEY COMPLETED:

Is beach area marked (i.e. roped off, etc.)? Describe.	
Lat/Long of ends of beach area (N/S or E/W boundaries)	
Length of swimming area	
Lat/Long of Sample Stations	
Length of entire beach	
Location of storm water run-off points? Describe and/or get lat/long	
Comments	



Rhode Island Department of Health Beach Monitoring Program



BEACH NAME:
COMPLETED:

DATE

SURVEY

Beach History and Known Sources of Contamination:

Does the Beach meet its use classification?	YES/NO (if no, high risk)						
303d Listed?	YES/NO (add 1 point per impairment)						
Confirmed Illness Reports?	YES/NO (if yes, add 5 points)						
Closed during the 2006 Bathing Season?	1-5days 1 Point	6-10days 2 Points	11-15days 3 Points	16-20days 4 Points	21-25days 5 Points	26-30days 6 Points	
Closed during the 2005 Bathing Season?	1-5days 1 Point	6-10days 2 Points	16-20days 4 Points	21-25days 5 Points	26-30days 6 Points	31-35days 7 Points	
Is the beach located in an UA or DPA?	YES/NO (if yes, add 10 points)						
Number of PS Discharges within a 5 mile radius?	(1 point per discharge)						
Is the area subject to CSO's or SSO's?	YES/NO (if yes, add 25 points)						
Is the area subject to Agricultural run-off?	YES/NO						
The nearest POTW is _____miles away?	0-1 mile 15 points	1-2 miles 10 points	2-3 miles 5 points	3-4 miles 3 points	4-5 miles 1 point		
Number of POTW's within 5 miles?	(1 point per POTW)						
Level of Private Septic Systems?	High 10 points		Medium 5 points		Low 1 point		
Is there a TMDL in progress?	YES/NO (if yes, subtract 5 points)						
Ave. # of times the single sample standard was violated?	(1 point per exceedance)						
How important is this beach to the local economy?	High 10 points		Medium 5 points		Low 1 point		
Number of Marine Pump -Outs within 5 miles?	(Subtract 1 point per facility)						

Field Survey:

Sanitary facilities located at Beach?	YES/NO (if no, add 5 points)			
Number of Marinas to likely have an effect on the beach?	(1 point per marina)			
Level of boat traffic?	High 10 points	Medium 5 points	Low 1 point	
Wild animals present on/near beach?	YES/NO (if yes, add 5 points)			

Domestic animals on/near beach?	YES/NO (if yes, add 5 points)					
Approx. # of Birds on a typical 100ft. section of beach?	(.25 points per bird)					
Ave. # of users during peak beach season?	1-500 5 points	501-1500 10 points	1500-5000 15 points	5001-10000 20 points	>10001 25 points	
Ave # of off-peak users (primary contact)?	1-25 1 point		26-50 5 points		>50 10 points	
Density of susceptible population?	0-33% 5 points		34-67% 10 points		68-100% 15 points	
Visible stormwater run-off?	YES/NO (if yes, 5 points per occurrence)					
Pipes at/adjacent to beach?	YES/NO (if yes, pipe <12" -1 point, >12" -2 points)					
Presence of floatable debris?	YES/NO (if yes, add 5 points)					
Presence of scum/oil sheen?	YES/NO (if yes, add 5 points)					

General Information:

Length of beach			
Location of pipes?			
Location of sampling points?			
Location of stormwater run-off points?			
Distance to stream/river?			
Wrack present?	YES/NO	Width:	Do they rake? YES/NO

Grand Total:	
--------------	--

Comments:

Appendix C

Daily Survey Form

Bathing Beach Survey

Name of Beach: _____ Date: _____ Time: _____ Water Temp: _____

Weather Conditions:

Sunny & Clear _____ Cloudly & Overcast _____ Rainy _____ Foggy _____ Windy _____

Tidal Conditions:

Slow _____ Moderate _____ High _____ High Tide _____ Low Tide _____

Activity on Beach:

Approx.# of People _____ Adults _____ Children _____
Swimming _____ Sunbathing _____ Fishing _____ Boating _____ Walking _____ Other _____

Conditions of the Beach:

Overall Appearance _____ Debris on Beach _____ Debris in Water _____

Vegetation in Water: 1 2 3 4 5
 <25% 25% 50% 75% 100% Cover in 1 meter quadrat

Vegetation on Shore: 1 2 3 4 5
 <25% 25% 50% 75% 100% Cover in 1 meter quadrat

Width of Wrack on shore (in meters) _____

Visible sewage or sewage odor _____

Conditions of Water:

Clear _____ Cloudy & Murky _____ Oily Film _____

Sources of Pollution:

Waterfowl Approx.#- Seagulls _____ Ducks _____ Geese _____ Swans _____

Approx. # of Boats _____

Wind and Weather Conditions:

Additional Comments:

Appendix D

Homepage for HEALTH's Beach Monitoring Program

Rhode Island Department of Health - Beach Monitoring - Windows Internet Explorer

http://www.ribeaches.org/

File Edit View Favorites Tools Help

Rhode Island Department of Health - Beach Monitoring

Rhode Island Department of Health
David R. Gifford, MD, MPH, *Director*
Donald L. Carcieri, *Governor*

HOME HEALTH TOPICS NEWS DATA PROGRAMS PUBLICATIONS SITE MAP

Beach Monitoring Home **Beach Water Quality Monitoring** News and Publications Closures and Advisories Water Quality Information Fact Sheets for Beach Goers Illness Complaint Form Related Links RIBeach Watch Login Content Syndication Beach Owners and Managers

The purpose of the Rhode Island Department of Health Beach Monitoring Program is to provide real-time water quality and safety information concerning all 127 monitored bathing facilities. Through effective management of these beaches, the Department of Health can minimize public health risks associated with swimming in contaminated waters.

For information regarding Recent Beach Closures and/or Openings please see the "RECENT BEACH CLOSURES" section in the right-hand menu. Alternatively you can use the "SEARCH BEACH RESULTS" feature on the right-hand menu to search for a specific beach by beach name or by town to see a full water quality monitoring history for that beach.

- Recent Closures and Advisories
- Recent Press Releases
- Fact Sheets for Beach Goers

If you have any questions, comments or suggestions for the Bathing Beaches Monitoring Program website, please contact us at: ribeaches@health.ri.gov

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For questions or comments on the Bathing Beaches Monitoring Program site, please e-mail RIBeaches@health.ri.gov

Today is January 09 2009
Today's weather and ozone forecast

SEARCH BEACH RESULTS
Any Beach
Select a Beach or Select a Town
Any Town
Search Click Search

BEACH SEARCH TIPS
Select a Beach or Town to search. When complete you will be presented with an alphabetical list of all beaches that match your search criteria.

RECENT PRESS RELEASES
No Recent Press Releases Available.
More ...

RECENT BEACH CLOSURES
No Recent Beach Closures Available.
More ...

Internet 100%

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Appendix E

Status Of Flagship Beaches and Governor's Priority Beaches

Status of Flagship Beaches and Governor's Priority Beaches

BEACH NAME	LOCATION	PROBLEM/ IMPACTS	PROPOSED SOLUTIONS	CURRENT STATUS
<p>Barrington Town Beach</p>	<p>Bay Road, Barrington</p>	<p>Wildlife/Birds, Potential CSO/SSO Impacts</p>	<p>Cover trashcans and empty cans regularly in order to control waterfowl/bird populations. Conduct a comprehensive site assessment to identify storm water impacts and any correctable sources of pollution. Refocus sampling efforts in the Upper Narragansett Bay to study the contrast between existing offshore data and existing bathing beach data.</p>	<p>HEALTH conducted a comprehensive survey with RIDEM in the summer of 2006 to study storm water impacts to the beach area and collect beach data. HEALTH is hoping to conduct a follow up survey during the 2009 beach season.</p> <p>HEALTH has met with RIDEM and NBC to discuss and coordinate wet weather sampling activities at Barrington. HEALTH is planning to collect beach samples while NBC collects offshore samples in the vicinity of the beach during a four-day wet weather event. HEALTH, RIDEM and NBC are ready to mobilize when weather cooperates.</p> <p>As of the 2007-2008-beach season, Barrington has been showing improved sample results compared to previous years.</p>
<p>Bristol Town Beach</p>	<p>Asylum Road, Bristol</p>	<p>Storm water, Wildlife/Birds, Potential CSO/SSO Impacts</p>	<p>Cover trashcans and empty cans regularly in order to control waterfowl/bird populations. Conduct a comprehensive site assessment to identify storm water impacts and any correctable sources of pollution. Determine the source of high bacteria in the wetland swale, which discharges to the beach. Refocus sampling efforts in the Upper Narragansett Bay to study the contrast between existing offshore data and existing bathing beach data.</p>	<p>HEALTH conducted a comprehensive survey with RIDEM in the summer of 2006 to study storm water impacts to the beach area. HEALTH is hoping to conduct a follow-up of the 2006 survey during the 2009 beach season.</p> <p>HEALTH has met with RIDEM and NBC to discuss and coordinate wet weather sampling activities at Barrington. HEALTH is planning to collect beach samples while NBC collects offshore samples in the vicinity of the beach during a four-day wet weather event. HEALTH, RIDEM and NBC are ready to mobilize when weather cooperates.</p>

Status of Flagship Beaches and Governor's Priority Beaches

BEACH NAME	LOCATION	PROBLEM/ IMPACTS	PROPOSED SOLUTIONS	CURRENT STATUS
				<p>During the 2008 beach season the town of Bristol started their "Go Green" campaign. With the beach in need of a new parking lot Bristol has been investigating various infrastructures to replace a tar or cement parking lot. They are discussing installing a porous or impervious pavement. This would minimize or even eliminate runoff caused by the current lot thereby improving water quality. If the new lot is installed Bristol will be one of the first places in the country to do this.</p> <p>HEALTH met with the Director of Bristol Parks and Recreation, EPA, and RIDEM to discuss stormwater improvement strategies including day-lighting two large stormwater culverts, the possibility of adding Smart sponge material to existing Stormwater drains in the vicinity of the beach, and implementing the new "green" parking lot.</p>
<p>City Park Beach</p>	<p>Asylum Road, Warwick</p>	<p>Storm water, Boater Discharge, Wildlife/Birds</p>	<p>Cover trashcans and empty cans regularly in order to control waterfowl/bird populations. Implement Greenwich Bay Total Maximum Daily Load (TMDL) water quality restoration</p>	<p>Based on preliminary data, it appears that Greenwich Bay beaches are typically impacted by rain events greater than 2-inches, but appear to flush within a 24-hour dry period. Maintenance staff increased efforts to empty trash bins and remove all potential sources that might attract wildlife.</p>

Status of Flagship Beaches and Governor's Priority Beaches

BEACH NAME	LOCATION	PROBLEM/ IMPACTS	PROPOSED SOLUTIONS	CURRENT STATUS
			<p>plan and the Special Area Management Plan (SAMP). Implement the State's "No Discharge Law".</p>	<p>A comprehensive survey was conducted at City Park during the 2008 beach season to investigate possible sources of contamination and collect beach data.</p> <p>As of the 2008 beach season the City of Warwick has connected over 4000 homes to sewer throughout the city and around Greenwich Bay. The connections seem to be showing an improvement in beach water quality.</p> <p>As part of the EPA New England Beach Strategy, HEALTH is working with EPA, RIDEM and the City of Warwick to identify sources of contamination at Warwick's beaches, coordinate efforts in monitoring and data exchange and working to correct issues facing these beaches.</p>
<p>Conimicut Point Beach</p>	<p>Point Avenue, Warwick</p>	<p>Wildlife/Birds, Potential CSO/SSO Impacts</p>	<p>Cover trashcans and empty cans regularly in order to control waterfowl/bird populations. Conduct sampling in vicinity of Mill Cove area to ensure no bacteria from this area is contributing to beach closures.</p>	<p>HEALTH conducted a comprehensive survey in the Spring of 2006 to study storm water impacts to the beach area, and in the vicinity of Mill Cove. A follow-up survey was also conducted during the 2008 beach season to update all information. HEALTH has met with RIDEM and NBC to discuss and coordinate wet weather sampling activities at Conimicut.</p>

Status of Flagship Beaches and Governor's Priority Beaches				
BEACH NAME	LOCATION	PROBLEM/ IMPACTS	PROPOSED SOLUTIONS	CURRENT STATUS
			<p>Refocus sampling efforts in the Upper Narragansett Bay to study the contrast between existing offshore data and existing bathing beach data.</p>	<p>HEALTH will collect beach samples while NBC collects offshore samples in the vicinity of the beach during a four-day wet weather event. HEALTH, RIDEM and NBC are ready to mobilize when weather cooperates.</p> <p>RIDEM's Total Maximum Daily Load (TMDL) Program for Greenwich Bay details comprehensive management actions that will be taken, but their benefit will not be known for several years. In cooperation with the TMDL Program, the Coastal Resource Management Council's (CRMC's) Greenwich Bay Special Area Management Plan (SAMP) will focus on all aspects of pollution sources within the Greenwich Bay watershed.</p> <p>As part of the EPA New England Beach Strategy, HEALTH is working with EPA, RIDEM and the City of Warwick to identify sources of contamination at Warwick's beaches, coordinate efforts in monitoring and data exchange and working to correct issues facing these beaches.</p> <p>As of the 2008 beach season the City of Warwick has connected over 4000 homes to sewer throughout the city and around Greenwich Bay. The connections seem to be showing an improvement in beach water quality.</p>

Status of Flagship Beaches and Governor's Priority Beaches

BEACH NAME	LOCATION	PROBLEM/ IMPACTS	PROPOSED SOLUTIONS	CURRENT STATUS
<p style="text-align: center;">Easton's Beach</p>	<p style="text-align: center;">Memorial Boulevard, Newport</p>	<p style="text-align: center;">Storm water, CSO/SSO</p>	<p>Investigate sources of pollution in the Newport and Middletown storm water drainage systems impacting the stream that discharges between Easton's Beach and the Atlantic Beach Club Beach. Correct any sewage disposal violations found. DOT will identify any State owned drains that may be contributing to the pollution problem. Remove excessive amounts of seaweed from Easton's Beach under an approved CRMC permit.</p>	<p>During the 2008 beach season, Easton's Beach in Newport, Rhode Island was closed for 4 days and Atlantic Beach Club Beach in Middletown, Rhode Island (located adjacent to Easton's) was closed for 12 days. Compared to 4 closure days for Easton's Beach and 8 closure days at Atlantic Beach Club Beach in 2007, this represents comparable results for Easton's Beach and a decrease for Atlantic Beach Club. Numerous studies conducted in the vicinity of Easton's Beach have determined that storm water from several outfalls; a stream, pump station overflows and seaweed are all sources impacting the water quality in this area.</p> <p>The Town of Middletown is currently upgrading the sewer infrastructure in the vicinity of Easton's Beach, and has completed the renovations of the Wave Avenue Pump Station. Upgrades for the majority of this system in the vicinity of Easton's Beach were completed by May 2007. The pump station was completed in the summer of 2008. The Town of Middletown is also studying potential solutions to storm water issues in the vicinity of the beach area.</p> <p>HEALTH met with Town of Middletown and City of Newport officials, RIDEM and local environmental groups several times over the 2008 beach season to work on strategies to improve water quality and to keep an open dialogue between all those involved.</p>

Status of Flagship Beaches and Governor's Priority Beaches				
BEACH NAME	LOCATION	PROBLEM/ IMPACTS	PROPOSED SOLUTIONS	CURRENT STATUS
				<p>In the winter of 2007, the City of Newport granted money to a local Aquidneck Island volunteer organization, Clean Ocean Access (COA), to continue sampling Easton's Beach and 5 other area beaches including King Park during the off-season when surfers utilize the beach area. This study is unique since HEALTH does not generally sample any of Rhode Island's beaches during the off-season (with the exception of short-term special studies). The City of Newport agreed to pay for sample analysis from January through December, and COA agreed to provide all necessary manpower.</p> <p>COA's involvement parallels the sentiment of many citizens of Middletown and Newport to get involved with issues affecting the water they swim in. The City of Newport and Town of Middletown have also demonstrated a dedicated effort to work collectively towards methods to eradicate local water pollution problems. COA is targeting sampling to after rain events. HEALTH will continue to work with COA to provide support and technical assistance. HEALTH plans to conduct surveys at the non-licensed swimming areas to reconsider these areas for sampling under the Beach Program.</p> <p>During the summer of 2008 Easton's Beach purchased a seaweed harvester to be used for the summer of 2009. The harvester will run along the water's edge and collect seaweed that has washed up on shore.</p>

Status of Flagship Beaches and Governor's Priority Beaches

BEACH NAME	LOCATION	PROBLEM/ IMPACTS	PROPOSED SOLUTIONS	CURRENT STATUS
				<p>CRMC approved the machine in 2008. HEALTH is hoping to see improved water quality results at Easton's beach with the implementation of the harvester.</p> <p>The City of Newport is also in the works to secure funding for the installation of a UV Treatment system to treat Easton's stream during rain events. Full details of the project are still in the works.</p>
<p>Goddard Memorial Park State Beach</p>	<p>Ives Road, Warwick</p>	<p>Storm water, Boater Discharge, Wildlife/Birds</p>	<p>Cover trashcans and empty cans regularly in order to control waterfowl/bird populations. Conduct wet weather sampling to determine the impact of storm water drains onto the beach. If bacteria loadings are significant, DEM will conduct a feasibility study to evaluate abatement measures for the runoff. Implement Greenwich Bay Total Maximum Daily Load (TMDL) water quality restoration plan and the Special Area Management Plan (SAMP). Implement the State's "No Discharge Law".</p>	<p>Based on preliminary data, it appears that Greenwich Bay beaches are typically impacted by rain events greater than 2-inches, but appear to flush within a 24-hour dry period. Maintenance staff increased efforts to empty trash bins and remove all potential sources that might attract wildlife.</p> <p>RIDEM's Total Maximum Daily Load (TMDL) Program for Greenwich Bay details comprehensive management actions that will be taken, but their benefit will not be known for several years. In cooperation with the TMDL Program, the Coastal Resource Management Council's (CRMC's) Greenwich Bay Special Area Management Plan (SAMP) will focus on all aspects of pollution sources within the Greenwich Bay watershed.</p>

Status of Flagship Beaches and Governor's Priority Beaches

BEACH NAME	LOCATION	PROBLEM/ IMPACTS	PROPOSED SOLUTIONS	CURRENT STATUS
				<p>As part of the EPA New England Beach Strategy, HEALTH is working with EPA, RIDEM and the City of Warwick to identify sources of contamination at Warwick's beaches, coordinate efforts in monitoring and data exchange and working to correct issues facing these beaches.</p> <p>EPA's National Epidemiological and Environmental Assessment of Recreational (NEEAR) Water Study was conducted at Goddard State Park Beach from June 23rd through Labor Day on weekends and holidays during the 2007 beach season. The main goals of the study were to determine new ways of analyzing water samples to provide real-time water measurements (i.e. rapid 2-hour tests), and to help gain a better understanding between water pollution, swimming at the beach, and peoples' health (through interviews regarding illness, exposure, etc.) Representatives from EPA, the Center for Disease Control (CDC) and Westat (EPA's Contractor) conducted interviews of beach goers and collected water samples throughout the beach season.</p>
<p>King Park Beach</p>	<p>Wellington Avenue, Newport</p>	<p>Storm water, Boater Discharge, Wildlife/Birds, CSO/SSO</p>	<p>In 2004, the City of Newport closed this facility due to budget constraints. However, many bathers still use this facility during summer months and therefore,</p>	<p>Over the 2008 beach season, HEALTH conducted a comprehensive survey at this facility to see if people were swimming at the beach area, and to observe the amount of wildlife.</p>

Status of Flagship Beaches and Governor's Priority Beaches

BEACH NAME	LOCATION	PROBLEM/ IMPACTS	PROPOSED SOLUTIONS	CURRENT STATUS
				<p>On all occasions, no people were in the water, and wildlife was limited to just a few gulls. Conditions at this facility should continue to improve as the "No Discharge Law" is enforced, and the City of Newport improves its sewer and storm water infrastructure.</p> <p>The City of Newport has decided to look into the option of re-opening King Park Beach as a licensed facility. They hope to have the beach opened for the 2009 beach season. HEALTH worked out a pre-opening sampling schedule with the city to see if conditions have improved and if water quality is within expectable limits. After pre-opening sampling has been conducted the City of Newport and HEALTH will meet to discuss the possibility of re-opening the beach.</p> <p>In the winter of 2008, the City of Newport granted money to a local Aquidneck Island volunteer organization, Clean Ocean Access (COA), to continue sampling at 5 area beaches including King Park during the off-season when surfers utilize the beach area. This study is unique since HEALTH does not generally sample any of Rhode Island's beaches during the off-season (with the exception of short-term special studies). The City of Newport agreed to pay for sample analysis from January through December, and COA agreed to provide all necessary manpower.</p>

Status of Flagship Beaches and Governor's Priority Beaches

BEACH NAME	LOCATION	PROBLEM/ IMPACTS	PROPOSED SOLUTIONS	CURRENT STATUS
Oakland	Oakland Beach Avenue, Warwick	Storm water, Boater Discharge, Wildlife/Birds	Cover trashcans and empty cans regularly in order to control waterfowl/bird populations. Implement Greenwich Bay Total Maximum Daily Load (TMDL) water quality restoration plan and the Special Area Management Plan (SAMP). Implement the State's "No Discharge Law".	<p>Based on preliminary data, it appears that Greenwich Bay beaches are typically impacted by rain events greater than 2-inches, but appear to flush within a 24-hour dry period. Maintenance staff increased efforts to empty trash bins and remove all potential sources that might attract wildlife.</p> <p>A comprehensive survey was conducted at City Park during the 2008 beach season to investigate possible sources of contamination and collect beach data.</p> <p>As of the 2008 beach season the City of Warwick has connected over 4000 homes to sewer throughout the city and around Greenwich Bay. The connections seem to be showing an improvement in beach water quality.</p> <p>As part of the EPA New England Beach Strategy, HEALTH is working with EPA, RIDEM and the City of Warwick to identify sources of contamination at Warwick's beaches, coordinate efforts in monitoring and data exchange and working to correct issues facing these beaches.</p>
Scarborough State Beach	Ocean Road, Newport	Storm water, Wildlife/Birds	Sewer the Black Point Area. Sewer Knowles Campground.	During the Spring 2007, RIDOT installed Smart Sponge in the Burnside Avenue Outfall to determine if the Smart Sponge could effectively treat low flow storm water.

Status of Flagship Beaches and Governor's Priority Beaches

BEACH NAME	LOCATION	PROBLEM/ IMPACTS	PROPOSED SOLUTIONS	CURRENT STATUS
			<p>Additional measures needed to treat storm water and/or remove sources from beach area. Smart Sponge Plus Material, (a bacteria reduction system) was inserted into three of the storm water outfalls on the beach by an engineering company in cooperation with DOT.</p>	<p>The Smart Sponge was maintained and monitored throughout the beach season by RIDOT. Additional research was performed during 2007 on the Ocean Road and Burnside Avenue drainage systems. The research also included the sub-drain and closed drainage within the parking lot on the southwest corner of the intersection of Burnside Avenue and Ocean Road. The research and sampling of the drainage systems was to attempt to identify the sources of bacteria discharging at the Burnside Outfall.</p> <p>An analysis of flushing and circulation patterns is planned to aid in identifying possible measures for alternative storm water outfall design. HEALTH will continue to research solutions and collaborate with RIDOT and RIDEM to implement new strategies at Scarborough State Beach, one of the most highly visited beaches by the public in Rhode Island.</p> <p>HEALTH met during the 2008 beach season and plans on meeting again prior to the 2009 beach season.</p>
<p>Warren Town Beach</p>	<p>Water Street, Warren</p>	<p>Storm water, Boater Discharge</p>	<p>DEM will work with the Town of Warren to use the 319 Grant Program,</p>	<p>In 2008 Warren Town Beach was closed for 9 days. In 2007 the beach was closed for a total of 15 days. This shows a significant decrease in beach closures.</p>

Status of Flagship Beaches and Governor's Priority Beaches

BEACH NAME	LOCATION	PROBLEM/ IMPACTS	PROPOSED SOLUTIONS	CURRENT STATUS
			<p>to fund additional storm water remediation efforts at the Warren Town Beach and in the upstream Palmer River watershed. HEALTH will conduct additional wet weather sampling to ensure all local pollution sources have been addressed.</p>	<p>HEALTH believes this decrease can be attributed to continued time and energy from the Town of Warren.</p> <p>In September 2007, the Town of Warren hired a consulting firm (Fuss & O'Neill) to conduct a study in the vicinity of the beach to determine what is once again affecting water quality. Fuss & O'Neill completed the study by the beginning of December. The study included installation of groundwater monitoring wells in the vicinity of the beach, flow studies and conducting wet weather sampling at the beach and just offshore.</p> <p>Preliminary results indicate sewage is seeping into groundwater in the vicinity of the beach, and making its way into the bathing water. Potential contributors of sanitary wastewater near the beach are the sanitary sewer line on Water Street and the pump out tank at Blount Shipyard (to the north). No indication of contamination from offshore sources was found.</p> <p>High levels of Enterococci were also found in the storm water, but not at concentrations, which could escalate the beach water to such high levels. Proposed recommendations from Fuss & O'Neill included: addressing the groundwater quality in the vicinity of the beach, conducting dye testing of each sewer to determine whether it has a hydraulic connection to the beach and</p>

Status of Flagship Beaches and Governor's Priority Beaches				
BEACH NAME	LOCATION	PROBLEM/ IMPACTS	PROPOSED SOLUTIONS	CURRENT STATUS
				<p>installing an additional monitoring well east and upgradient of the beach to determine if groundwater upgradient of the sewer lines is clean.</p> <p>In the summer of 2008 the Beach Program attended a city council meeting to discuss Fuss and O'Neil's finding over the past year and a half. Studies concluded century old brick pipes are no longer sufficient to sustain the amount of water flow through water street. The pipes are showing to be the number one cause of contamination at Warren Town Beach. Fuss and O'Neil's recommendation was to replace the entire sewer infrastructure of Water Street. The town council agreed and is now waiting to finalize funding for the project.</p> <p>The sewer lines were televised and the storage tank at Blount Shipyard was inspected visually. A crack was found in the tank, but no visual signs of leakage were observed, and two breaks in the sanitary lateral that runs perpendicular to Water Street and serves Blount were observed.</p> <p>Fuss and O'Neil concluded in the summer of 2008 that the entire underground drainage and sewer systems need to be replaced. They brought their finding to the Warren town council meeting where HEALTH attended. The Town of Warren believes this is the best possible solution to eliminate the problems at the beach. Currently, Warren is seeking funding and permits to begin the project as soon as possible.</p>

Appendix F

Rhode Island Beach Closure Days 1998 to 2008

Appendix G

Beach Program Evaluation Survey



Rhode Island Department of Health
Beach Program
3 Capital Hill Rm. 203
Providence, RI 02908
401-222-2749
www.ribeaches.org

Beach Program Survey

Beach Name:

Beach Contact: (optional)

I am the: (optional) Beach Owner Beach Manager Other

How long have you had this association with the facility? (Check One)

Less than 1 Year 1-3 Years 3-5 Years Over 5 Years

This facility is: Private Public **This facility is:** Licensed Unlicensed

What audience does your facility primarily cater to? (Check One)

Children Teens Adults Families

A: Department of Health Beach Program: Personnel

Have you ever verbally spoken to someone in the program? Yes No

Have you ever been in contact with the program via email? Yes No

Have you ever physically met with someone in the program? Yes No

How often do you have any contact with the beach program?

Weekly Bi-Weekly Monthly Seasonally

B: Department of Health Beach Program: Information Quality www.ribeaches.org

Have you ever visited the program website? Yes No

If so, how often? (Check one) Weekly Bi-Weekly Monthly Seasonally

Please indicate your satisfaction with the website on each of the following:

	Very Unsatisfied	Unsatisfied	Neutral	Satisfied	Very Satisfied	Not Applicable
Appearance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ease of Use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Helpfulness of Material	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Accuracy of Material	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

What do you use The Beach Program website for? (Check all that apply)

<input type="checkbox"/> Beach Results	<input type="checkbox"/> Fact Sheets
<input type="checkbox"/> Beach Closures and Advisories	<input type="checkbox"/> Water Quality Information
<input type="checkbox"/> Press Releases	<input type="checkbox"/> I do not use the website

C: Department of Health Beach Program: Closure Protocol

Has your beach ever been closed due to high bacterial levels? Yes No

How do you notify beach goers of unsafe swimming conditions? (Check all that apply)

<input type="checkbox"/> Private website postings	<input type="checkbox"/> Posted signs (facility entrance)
<input type="checkbox"/> E-mail notifications	<input type="checkbox"/> Posted signs (water entrance)
<input type="checkbox"/> Town press release	<input type="checkbox"/> This facility has never been closed

Are you aware of / familiar with the following:

- Yes No ... the Beach Program Closure and Opening protocol?
 Yes No ... the sample history of your bathing facility?
 Yes No ...standard press releases distributed to the media upon beach closure?
 Yes No ...Governor's Priority Beaches?

What do you think is the greatest source of contamination at your bathing facility? (Check one)

<input type="checkbox"/> Water foul / birds	<input type="checkbox"/> Rain events
<input type="checkbox"/> Trash	<input type="checkbox"/> Bathers and swimmers
<input type="checkbox"/> Construction	<input type="checkbox"/> Location of beach



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Is there any information / feature that you would like to see be added to the website?

Have you had any trouble using the website? Please explain .

What do you think that your facility could do to improve water conditions at your bathing facility?

What do you think The Department of Health could do to better serve your bathing facility?

If possible, please name a way in which The Department of Health Beach Program has met or exceeded your expectations.

If possible, please name a way in which The Department of Health Beach Program has fallen short of your expectations.
