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# SEABROOK HARBOR BEACH

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Water Quality Report  
Summer 2010



**Seabrook Harbor Beach, Seabrook  
Water Quality Report  
Summer 2010**



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## **History of the Beach Program**

The New Hampshire Department of Environmental Services (NHDES) recognizes a public health threat may exist within recreational waters and tests the water at the state's beaches to ensure swimmers are not exposed to disease-causing pathogens or cyanobacteria scums. The NHDES has operated a Public Beach Inspection Program, commonly called the Beach Program, for over 20 years.

The New Hampshire coastal beach monitoring program was initiated in 1989 with the DES inspecting five beaches. In October 2000, the United States Congress amended the Clean Water Act to include the BEACH Act. The Environmental Protection Agency (EPA) was then authorized to award grants to eligible states to develop and implement monitoring and notification programs. These programs protect the public from exposure to pathogenic microorganisms in coastal recreation waters.

The DES first received grant funds in 2002. Since then the New Hampshire Beach Program has successfully met all of the EPA's performance criteria requirements (National Beach Guidance and Required Performance Criteria for Grants) and continues to expand the monitoring and notification program. Weekly summer monitoring throughout the state was conducted at nine beaches in 2002, and has since nearly doubled to 16 by 2010. The Beach program strives to expand sampling to include all coastal New Hampshire beaches.

Coastal beaches are monitored for the presence of the fecal bacteria Enterococci which are present in the intestines of warm-blooded animals including humans. Fecal bacteria, when present in high concentrations and ingested, can commonly cause gastrointestinal illnesses such as nausea, vomiting and diarrhea. These indicator organisms signify the possible presence of other potentially disease-causing organisms in the waterbody.

Beach monitoring and bacteria source tracking have been implemented to protect public health. In a collaborative effort, the NHDES Beach program, towns, beach managers, recreational directors and health inspectors encourage public awareness of sources of pollution and environmental responsibilities. Thank you for your interest and concern in New Hampshire's water quality.

## **Beach Statistics**

Seabrook Harbor Beach, located on the west side of Ocean Boulevard, is owned and maintained by the town of Seabrook. Seabrook Harbor Beach is also referred to as Seabrook Inner Harbor.

Seabrook Harbor Beach is a 1,180-foot long sandy beach. The beach is used by the public for fishing and other recreational activities. One main access point to the beach area is north of the restroom. Other, less stable access points exist at many breaks in the fence line (Figure 1). Lifeguards are not present throughout the summer, but toilet facilities are available.

Waterfowl are frequently observed at the beach. The most commonly observed waterfowl are gulls, although plovers and cormorants are observed occasionally as well. The town of Seabrook restricts dogs from the beach and no dogs were observed by beach inspectors in 2010.



Figure 1. Seabrook Harbor Beach sampling locations, access point and restroom facility

## **Seabrook Town Beach Ordinances**

The Town of Seabrook has the following ordinances that apply to all town beaches:

1. Alcohol is prohibited at town beaches.
2. Dogs are not permitted on town beaches from 8 am to 6 pm from Memorial Day to Labor Day. People with dogs are not to permit the dog to defecate on the beach.
3. Surfing is prohibited at all times at Seabrook Beach except within 100 feet either side of Thompson Rock and within 100 feet either side of Round Rock

## **Assessing Your Beach**

### **Sampling Frequency and Location**

In 2003, the beach program developed a risk-based evaluation process to determine how often a beach should be monitored. Beaches with increased potential impacts to public health are monitored more often than beaches with lesser impacts. Each beach is evaluated annually by the beach program on several criteria within three main categories: beach history, microbial pathogen sources, and beach use. Additionally, a beach that appears on the most recent 303(d) list as “not supporting primary recreational contact” is elevated to a more intense inspection schedule. The Federal Clean Water Act (CWA) requires each state to present a 303(d) list to the EPA every two years that indicates impaired or threatened surface waters due to a pollutant or pollutants. A coastal beach is listed if two or more exceedences of the state standard of 104 Enterococci counts/100 ml are measured during sampling in the last five years. Exceptions to the rule can be made if a large number of recent samples are all within the state standard.

Based on the evaluations, beaches are assigned a Tier I, Tier II, or Tier III status. Tier I beaches are considered “high priority” and have an increased potential to impact public health due to heavy beach use, previous elevated bacteria levels, potential bacteria sources to the beach, inclusion on the 303(d) list, or a combination of these factors. Tier II beaches are “medium priority” and Tier III are “low priority” beaches that have less potential to impact public health. Beach sample frequency is based on Tier status; Tier I beaches are sampled twice per week, Tier II beaches are sampled once per week, and Tier III beaches are sampled every other week.

The number of samples collected at each beach is determined by beach length. Beaches less than 100 feet are sampled at left and right locations one-third of the distance from either end of the beach. Beaches greater than 100 feet are bracketed into thirds and sampled at left, center and right locations. Routine sample collection may be enhanced by sampling known or suspected pollution sources to the beach area. Storm event sampling may be conducted at beaches where watershed runoff resulting from wetfall is expected to impact beach water quality.

Seabrook Harbor Beach is listed on the 303(d) list as impaired for primary recreational contact since five samples exceeded the Enterococci state standard for public beaches during the last assessment period. Based on the past beach use, sample results, and 303(d) assessment, Seabrook Harbor Beach is classified as a Tier I beach indicating high priority and sampling is conducted twice a week. The frequency of sampling at Seabrook Harbor has

increased since the launch of the beach evaluation process implemented in the 2003 sampling season. The beach sampling increased from once every other week to once a week in 2004 due to increased beach data and identification of potential bacteria sources. Sampling frequency changed again in 2006, when the beach was reclassified as an impaired beach due to exceedences in 2005. Since 2006, Seabrook Harbor has been sampled twice each week throughout the summer. Seabrook Harbor Beach samples are collected at the left, center, and right stations regularly (Table 1). All stations are evenly distributed along the shoreline and can be accessed via the parking lot (Figure 1).

Table 1. Seabrook Harbor Beach Station Descriptions and Latitude/Longitude Points.

Station Description	Latitude	Longitude
<b>Left Sample Station:</b> Access the station by the path located at the south end of beach. The sample is collected out from the access point.	42.888419°	-70.819165°
<b>Center Sample Station:</b> Access the station between the fifth & sixth wooden post south of the restroom facilities. The sample is collected straight out from the access point.	42.888977°	-70.818727°
<b>Right Sample Station:</b> Access the station by the path located at the north end of beach. The sample is collected straight out from the access point.	42.889654°	-70.818685°

## Coastal Water Quality Standards and 2010 Results

Beaches are monitored to ensure compliance with state water quality standards. Marine waters are analyzed for the presence of the fecal bacteria *Enterococci*. *Enterococci* are known as indicator organisms, meaning their presence may indicate the presence of other pathogenic organisms. The state standard for *Enterococci* at coastal public beaches is 104 counts/100 ml of water in one sample. The protocol for issuing coastal beach advisories was implemented in 2003 with the establishment of the formal coastal Beach Program in New Hampshire. According to protocol, when either two or more samples collected at a beach exceed the standard or when one sample exceeds 174 counts/100 ml, a beach advisory is issued. At that time, the advisory is posted on the beach website, beach managers are notified, and signs are placed at the entrances to the beach to warn the public of the potential health threat posed by water contact at the beach. Beach advisories remain in effect until subsequent beach sampling reflects results below the state standard.

The 2010 sampling season began June 1. The summer sampling season encompassed 92 days. Sampling at coastal beaches concluded on September 1. Precipitation was recorded on 35 days during the summer sampling season, based on precipitation recorded at the Seabrook Power Station. Wetfall during the June sampling totaled 1.83 inches. July and August yielded 2.1 and 4.65 inches of wetfall respectively.

Twenty four routine inspections were conducted at Seabrook Harbor Beach during the summer of 2010. Seventy-two samples were collected and tested for *Enterococci* (Appendix B). No samples collected in 2010 had results exceeding the *Enterococci* state standard at Seabrook Harbor (Figure 2) and no advisories were issued. Nine violations have occurred at Seabrook Harbor Beach in the eight years since the beach evaluation and advisory process was started in New Hampshire (Figure 3).

## Concerns

Boats moored in the harbor continue to be a concern. Between 10 and 20 boats were moored in the harbor during the 2010 beach season. Some boats contain onboard toilet facilities, and although discharging waste into the harbor is illegal, documented cases of sewer discharges in other coastal regions have been recorded. The New Hampshire DES Shellfish Program has also expressed concerns about the threat that boat sewage poses to the shellfish beds in the harbor. If a boat is observed discharging to the harbor, please notify the DES, Clean Vessel Act Program, the Coast Guard, or Marine Patrol. There are sufficient boat pump-out facilities located along the coast and mobile pump-out boats where boat sewage can be pumped out in a safe and legal manner.

## Seabrook Harbor Adopt-a-Beach Program

In response to growing concern over the amount of litter and marine debris impacting visual and environmental aspects of Hampton Beach, the beach program partnered with the Blue Ocean Society for Marine Protection (BOS) from Portsmouth, N.H. Both parties met to discuss the development of an Adopt-a-Beach Program at Hampton Beach in the spring of 2005. A formal Memorandum of Agreement stated that the Blue Ocean Society would add Hampton Beach to their Adopt-a-Beach Program and that the beach program would supply materials such as gloves, garbage bags, scales and pencils to volunteers who clean Hampton Beach.

In the fall of 2009, the Memorandum of Agreement between the DES and the BOS was revised to acknowledge the 16 mainland coastal beaches monitored by DES and divided into 22 sections available for adoption through the BOS. Previously, only five sections at Hampton Beach State Park were recognized. Currently, 19 sections are adopted including the Seabrook Inner Harbor beach. The NextEra Energy Seabrook Station employees are the current stewards of Seabrook Inner Harbor.

Volunteers conduct beach clean-ups monthly. All litter washed up or left behind at the beach is weighed, categorized and recorded for analysis by the BOS. The most numerous items found at Seabrook Inner Harbor Beach in past years were cigarette butts, beverage containers, bottle caps and rope. In 2010, volunteers removed 535 pounds of garbage during ten clean up events. The BOS produces an annual summary of clean-ups and litter collected at coastal areas in New Hampshire and Maine. The 2010 report will be available for downloading in early 2011 on the BOS website:

**[www.blueoceansociety.org/Research/pollution\\_research.html](http://www.blueoceansociety.org/Research/pollution_research.html)**

Please contact Sonya Carlson, beach program coordinator, or Jen Kennedy, (603) 431-0260 or [jen@blueoceansociety.org](mailto:jen@blueoceansociety.org) for information about adopting orphaned beach sections.

## Future Projects

No future plans beyond regular sampling are scheduled for Seabrook Harbor Beach. If you have questions or concerns about this beach, any other NH beach or the beach program in general, please contact Sonya Carlson at (603) 271-0698 or [sonya.carlson@des.nh.gov](mailto:sonya.carlson@des.nh.gov).

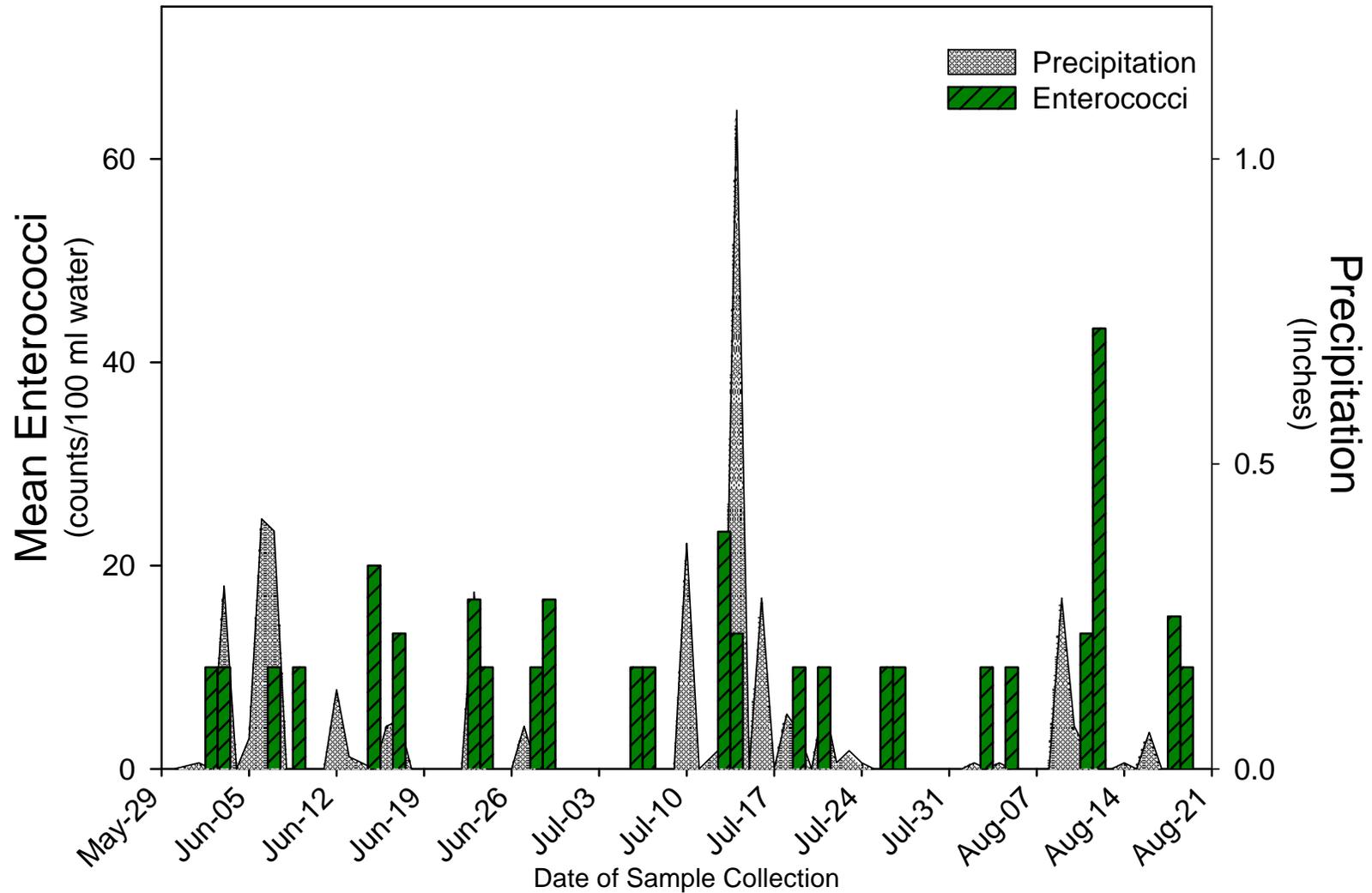


Figure 2. Seabrook Harbor Beach 2010 Enterococci Data. Enterococci values are the mean of the three samples collected at the beach during each inspection. No samples were above the state standard for Enterococci in 2010 so no advisories were posted. See Appendix B for all results from all stations for the 2010 sampling season.

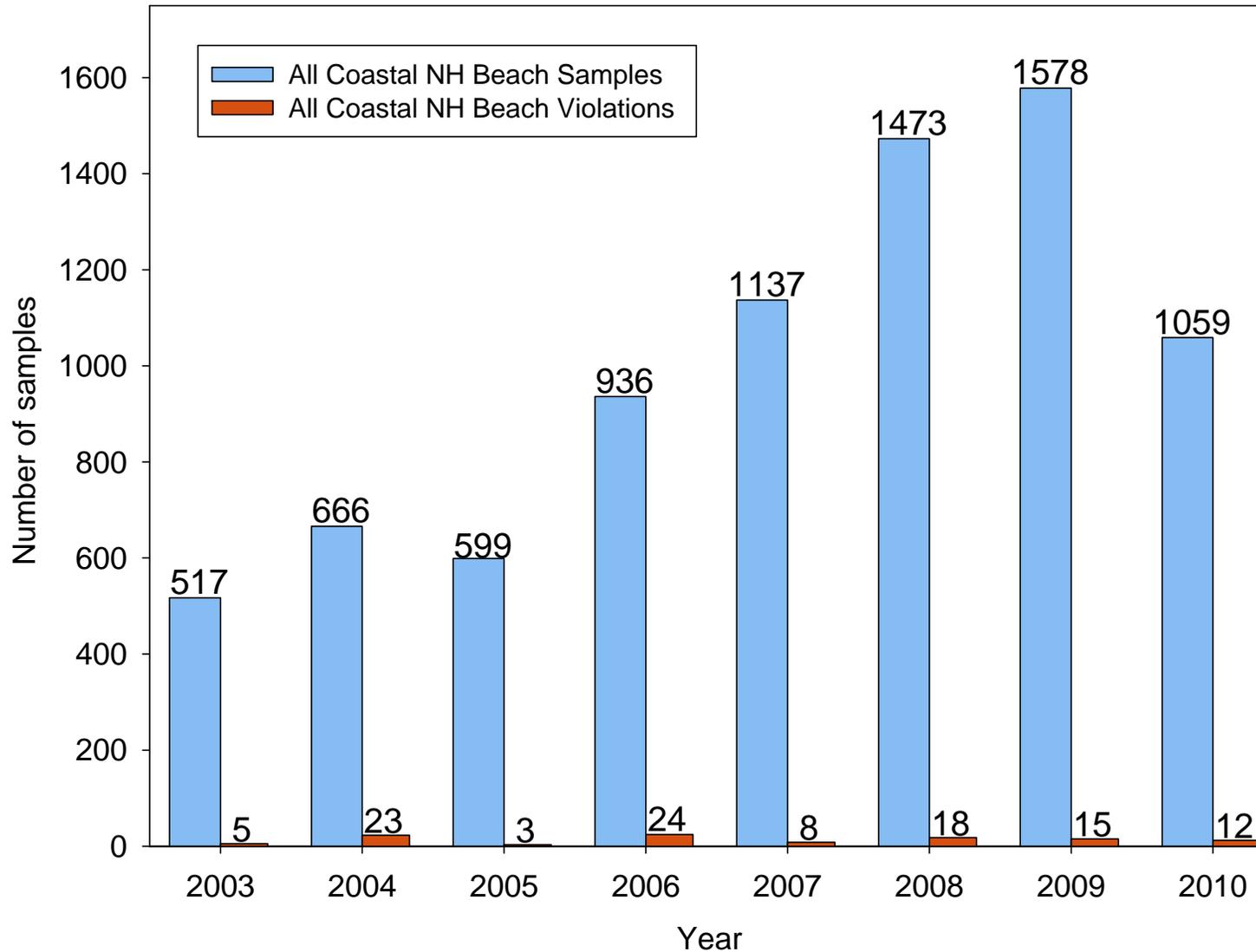


Figure 3. Annual Enterococci samples collected and violations recorded at coastal beaches. An exceedence of the state standard for Enterococci bacteria is a violation. Since the beach evaluation and advisory protocols were implemented in the 2003 sampling season, Seabrook Harbor Beach has had nine violations: two in 2003 & 2005, one in 2006 and four in 2009. Three advisories were posted at Seabrook Harbor Beach: one in 2005 and two in 2009.

## Appendix A: Special Topic 2010 – New Hampshire is First in Beach Water Quality

The water quality at coastal New Hampshire beaches was recognized by the National Resources Defense Council (NRDC) as one of the best coastal beaches in the United States for 2010. New Hampshire Public Coastal Beach water bacteria results were compared to results from coastal and Great Lake beaches in the United States and its territories. Less than 1% of the 1,712 samples collected at coastal New Hampshire beaches exceeded the NH Designated Public Beach bacteria standard. In addition to recognizing all NH coastal waters, the NRDC recognized both Hampton Beach State Park and Wallis Sands at Wallis Road with a five star rating for less than 5% of the bacteria samples exceeding standards, frequent sampling, and speedy reporting of results and advisories to the public<sup>1</sup>. Of the 359 popular beaches rated in the United States, only 19 received a five star rating.

The NRDC is “an international nonprofit environmental organization with more than 1.3 million members and online activists. Since 1970, [NRDC] lawyers, scientists, and other environmental specialists have worked to protect the world’s natural resources, public health, and the environment.”<sup>2</sup>

Also highlighted by the NRDC report was New Hampshire’s low percentage of violations since 2006. In 2006, only 3% of samples collected exceeded the state standard for designated public beaches. In all subsequent years, only 1% of samples collected surpassed the state water quality standards. In 2010, violations were recorded in only 12 of the 1,155 samples collected at coastal beaches.

Funded by the EPA BEACH Act grant, DES samples, monitors and provides timely reporting for all designated public beaches. The top water quality assessment and five star ranking of New Hampshire coastal beaches demonstrates how well New Hampshire residents, local town officials and state organizations work cooperatively to keep our beaches and coastal waters clean. New Hampshire residents should be proud of our coastal beach water quality and strive to maintain these levels. Currently, the DES Beach Program is completing management plans for two coastal watersheds. Management plans will contain specific recommendations regarding septic systems, pet waste, and other sources to reduce bacteria loads at tidal beaches. Cooperative efforts will identify pollution sources, determine sources of contamination, and then develop and implement bacteria management plans to reduce beach pollution.

By following these 4 simple steps everyone throughout the coastal watershed can work to minimize beach pollution:

- Pick up and dispose of pet waste properly
- Maintain septic systems
- Put swim diapers with plastic covers on babies
- Keep trash off the beach

Together, everyone can work to maintain New Hampshire’s top rated beaches.

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<sup>1</sup> NRDC: Testing the Waters 2010 website. Accessed December 14, 2010, <http://www.nrdc.org/water/oceans/ttw/200beaches.asp>

<sup>2</sup> M. Dorfman and K.S. Rosselot. Testing the Waters: A Guide to Water Quality at Vacation Beaches Twentieth Annual Report. July 2010

## Appendix B: Seabrook Harbor Beach 2010 Data by Date

Data collected during inspections of Seabrook Harbor Beach in 2010.

Date	Enterococci (count/100 ml)			Inspection Type	Rainfall in previous 24 hours (inches)	Number of bathers	Animal Presence
	Left	Center	Right				
6/2/10	<10	<10	<10	Routine	0.01	0	16 birds
6/3/10	<10	<10	<10	Routine	0	0	24 birds
6/7/10	<10	<10	<10	Routine	0.41	0	15 birds
6/9/10	10	<10	<10	Routine	0	0	12 birds
6/15/10	40	<10	<10	Routine	0.01	0	10 birds
6/17/10	10	20	<10	Routine	0.08	0	9 birds
6/23/10	<10	<10	30	Routine	0	0	0
6/24/10	<10	<10	<10	Routine	0.29	0	44 birds
6/28/10	10	10	10	Routine	0.07	0	45 birds
6/29/10	<10	30	<10	Routine	0	0	11 birds
7/6/10	<10	<10	<10	Routine	0	0	5 birds
7/7/10	<10	<10	<10	Routine	0	0	7 birds
7/13/10	<10	20	40	Routine	0.02	0	25 birds
7/14/10	20	<10	10	Routine	0.04	0	31 birds
7/19/10	<10	<10	<10	Routine	0.09	0	2 birds
7/21/10	<10	<10	<10	Routine	0	2	0
7/26/10	<10	10	<10	Routine	0	2	2 birds
7/27/10	10	<10	<10	Routine	0	0	13 birds
8/3/10	<10	<10	<10	Routine	0.01	0	57 birds
8/5/10	<10	10	<10	Routine	0.01	0	147 birds
8/11/10	<10	<10	20	Routine	0.07	0	48 birds
8/12/10	30	20	80	Routine	0.03	0	8 birds
8/18/10	30	<5	<10	Routine	0	0	17 birds
8/19/10	10	10	<10	Routine	0	0	14 birds