



NJ Department of Environmental Protection
Water Monitoring and Standards

COOPERATIVE COASTAL MONITORING PROGRAM
Summary Report for 2009



May 2010

State of New Jersey
Chris Christie, Governor

NJ Department of Environmental Protection
Bob Martin, Commissioner

COOPERATIVE COASTAL MONITORING PROGRAM

Summary Report for 2009

New Jersey Department of Environmental Protection

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Cover Photo – New Jersey Coastline at Seaside Park (photo by Steve Jacobus, NJDEP)

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Summary

The Cooperative Coastal Monitoring Program (CCMP) assesses coastal water quality and investigates sources of water pollution. The information collected under the CCMP assists the DEP in responding to immediate public health concerns arising from contamination in coastal recreational bathing areas. The DEP coordinates this multi-agency program. Its key partners include the USEPA Region 2, the NJ Department of Health and Senior Services, county health agencies and local health departments. Agencies that participate in the CCMP perform sanitary surveys of beach areas and monitor concentrations of bacteria in nearshore ocean and estuarine waters to assess the acceptability of these waters for recreational bathing. These activities and the resulting data are used to respond to immediate public health concerns associated with recreational water quality and to eliminate the sources of fecal contamination that impact coastal waters.

This report summarizes the CCMP activities for the 2009 bathing beach season in New Jersey's marine waters. It is based in part on water quality monitoring that occurred at 177 ocean and 64 bay stations in 2009. Most of these station locations coincided with recreational swimming beaches.

One key message from the report is that NJ has excellent beach quality. The federal Environmental Protection Agency consistently shows New Jersey beach water quality among the best in the nation. The CCMP draws on state, federal and local resources to monitor the beaches and close them if bacteria counts exceed standards. Beaches in New Jersey were open nearly 99.8 percent of the time in 2009, one of the best records on the East Coast. Ocean beaches were closed just nine times for elevated levels of bacteria – six times in Monmouth County related to runoff from heavy rain and three times in Cape May City related to leak in a sewer pipe. Additional beaches were closed as a precaution due to debris and diesel fuel from a pleasure boat that capsized off Long Beach Township last July 27. No beaches were closed due to floatable debris in 2009.

The report also highlights that in 2010 the DEP will be making additional enhancements to the CCMP. DEP will continue to work with the EPA on developing a rapid detection test for the enterococcus bacteria that are used to indicate the sanitary quality of beaches in marine waters. In 2010, DEP acquired the qPCR equipment needed to perform the rapid testing and will work collaboratively with EPA in the development of the rapid methodology for beach testing. Also, if towns issue Bathing Advisories in 2010, these will also be listed along with other beach closure information on the Department's web page (www.njbeaches.org).

Introduction

The Cooperative Coastal Monitoring Program (CCMP) is coordinated by the New Jersey Department of Environmental Protection's Water Monitoring and Standards program. The CCMP assesses coastal water quality and investigates sources of water pollution. The information collected under the CCMP assists the DEP in responding to immediate public health concerns arising from contamination in coastal recreational bathing areas. Agencies that participate in the CCMP perform sanitary surveys of beach areas and monitor concentrations of bacteria in nearshore ocean and estuarine waters to assess the acceptability of these waters for recreational bathing. These activities and the resulting data are used to respond to immediate public health concerns associated with recreational water quality and to eliminate the sources of fecal contamination that impact coastal waters. Funding for the CCMP comes from the NJ Coastal Protection Trust Fund and the United States Environmental Protection Agency (EPA) Beaches Environmental Assessment and Coastal Health (BEACH) Act grants. BEACH Development and Implementation grants were awarded in the years 2001 through 2009. DEP designs the beach sampling and administers the communication, notification and response portion of the CCMP. A portion of the BEACH grant funds are passed through to the four county health departments participating in the CCMP who perform the weekly sample collection and analysis. The participating agencies are:

Atlantic County Health Department
Cape May County Health Department
Monmouth County Health Department
Ocean County Health Department

Additional assistance is provided by the following agencies:

Atlantic City Health Department
Long Beach Township Health Department
Long Branch Health Department
Middletown Health Department
Monmouth County Regional Health Commission
New Jersey Department of Health and Senior Services

As part of this program, DEP routinely inspects the 17 wastewater treatment facilities that discharge to the ocean (Appendix 1). DEP also performs aerial surveillance of New Jersey nearshore coastal waters and the Hudson-Raritan estuaries to observe changing coastal water quality conditions and potential pollution sources.

CCMP Procedures

Chapter IX of the State Sanitary Code N.J.A.C. 8:26 and the DEP *Field Sampling Procedures*

Manual prescribe the sampling techniques and beach opening and closing procedures the agencies use for the CCMP. The agencies perform routine sampling from mid-May through mid-September on Mondays. Samples are analyzed for enterococci concentrations using DEP-certified laboratories for EPA approved methods; analyses provide results within 24 hours of sampling. Counties submit water monitoring data to DEP in electronic format after each sampling event through the use of DEP's web-based Beach Monitoring System. In 2008, DEP began transferring monitoring and beach closing notification data to EPA via the new WQX data system.

The CCMP included water quality monitoring at 177 ocean and 64 bay stations in 2009. Most station locations coincided with lifeguarded swimming beaches. However, 6 ocean stations and 21 bay stations were not located at lifeguarded beaches. These monitoring stations have been used to assess general water quality trends only. In 2007, the Cape May County Health Department removed all non-bathing bay monitoring stations from the program in order to focus limited sampling resources on recreational bathing sites. Recreational stations are sampled to assess trends and to protect recreational bathers from potentially polluted water. Most ocean stations are sampled to evaluate the water quality at several lifeguarded beaches in an area rather than just one lifeguarded beach. These areas consist of contiguous, similar beaches with no likely pollution sources. Individual beaches are assigned monitoring stations when effects from potential pollution sources are possible. A monitoring station is assigned at each recreational bay beach because of their noncontiguous locations.

Recreational beaches, both ocean and bay, are subject to opening and closing procedures of the State Sanitary Code and, therefore, must be resampled when, during routine sampling, bacteria concentrations exceed the primary contact standard. In the years prior to 2004, the primary contact standard was 200 fecal coliforms per 100 mL of sample. Studies performed by EPA determined that enterococci bacteria have a greater correlation with swimming-associated gastrointestinal illness in marine waters than fecal coliform bacteria. In 2004, the State Sanitary Code was amended and the primary contact standard changed to 104 enterococci bacteria per 100 mL of sample. Consecutive samples that exceed the standard require the closing of the beach until a sample is obtained that is within the standard. When high bacteria concentrations are recorded at an ocean station, the sampling is extended linearly along the beach to determine the extent of the problem and the pollution source. This "bracket sampling" can result in an extension of the beach closing to contiguous lifeguarded beaches. Sampling is always performed in conjunction with a sanitary survey, which includes identifying possible pollution sources and observing water and shoreline conditions. Health or enforcement agencies may close beaches at any time at their discretion to protect the public's health and safety.

2009 Beach Closings

The participating health agencies closed 124 ocean and 56 bay beaches in the 2009 summer season. These beach closings were either based on measured bacteria levels exceeding the

standard or were made as a precautionary measure in response to an environmental condition. On August 23, 2009, the Monmouth County Health Department and the Monmouth County Regional Health Commission implemented a beach advisory policy. Advisories were posted at beaches when first sample results exceeded the water quality standard. Beach conditions, advisories and beach closings, and the reasons for beach closings were posted on the DEP web page (www.njbeaches.org) and on the DEP Sandline (800-648-SAND) each day. Additionally, when beach closings were necessary, the county or local health agency posted “No Swimming” signs at the beach. Signs remained posted until the swimming ban was lifted. Detailed beach closing information, including the specific beaches closed and reasons for the closings for this period are presented in Appendix 2. Table 1 below presents the number of closings from 1999 through 2009.

Table 1: Number of Ocean and Bay Beach Closings

<u>Ocean Closings</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u> ¹	<u>2003</u>	<u>2004</u> ²	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u> ³	<u>2009</u>
for bacteria	8	8	16	0	9	17	7	18	0	1	9
Wreck Pond rain precautionary				16	58	42	45	79	84	44	108
# Wreck Pond Beaches Involved	(0)	(0)	(0)	(2)	(2)	(2)	(3)	(3)	(4)	(4)	(4)
Precautionary (e.g. spills)	6	3	24	0	0	0	5	0	1	1	7
for floatables	0	0	0	0	13	0	0	0	4	120 ³	0
Total closings	14	11	40	16	80	59	57	97	89	166	124

<u>Bay Closings</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>
for bacteria	21	22	114	7	82	89	4	27	35	30	32
precautionary	0	0	4	8	26	20	18	10	18	13	24
# Bay/River Beaches Involved	(0)	(0)	(0)	(1)	(1)	(1)	(1)	(1)	(1)	(2)	(2)
for floatables	0	0	0	0	0	0	0	0	0	0	0
Total closings	21	22	118	15	108	109	22	37	53	43	56

¹ 2002 - Precautionary rainfall-related beach closing policy implemented for two Spring Lake beaches. Two additional ocean and two bay beaches added to policy in subsequent years.

² 2004 - Indicator changed from fecal coliform to enterococci in 2004

³ 2008 - A criminal medical waste dumping event was responsible for 120 ocean beach closings

Closings include those required for consecutive high fecal coliform or enterococci concentrations and by health agency discretion due to public health concerns. The large majority of the closings in the above-listed years were related to contaminated stormwater (actual or potential). Beach closings due to wash-ups of floatable debris were fairly uncommon. In 1990, floatable debris was responsible for a total of 10 separate beach closings. In the following 12 years, no closings had been due to floatables; however, in 2003, 13 separate closings and, in 2007, four closings were due to reported wash ups of trash and debris. In 2008, a criminal medical waste dumping event was responsible for 120 ocean beach closings. In 2009, there were no closings due to floatable debris.

In 2002, the Monmouth County Health Department implemented a precautionary rainfall beach closing procedure which is in effect at two beaches with known and identified sources of potential contamination. Since 2002, two additional ocean beaches, and two bay beaches in Monmouth County have been identified as rain provisional beaches, which is the primary factor contributing to the increase in total statewide beach closing numbers at ocean and bay beaches over the last ten years. Precautionary beach closings after significant rainfall at these locations are more protective of public health since there is no need to wait for laboratory results from water quality sampling. The bathing public is protected from exposure to potentially contaminated stormwater by this approach.

The CCMP does not record closings related to rough seas, beach maintenance projects, shark sitings, and fish and clam wash ups. The CCMP also does not include those closings that are briefly in effect during the assessment of water conditions by local officials.

The ocean beaches of Spring Lake were particularly affected by the stormwater impact on the Wreck Pond discharge. The affected beaches extended through the 2 1/2 miles of Spring Lake for two days in August 2001. As mentioned above, in 2002, a precautionary beach closing plan was implemented in Spring Lake. It requires that the two beaches north of the Wreck Pond outfall, Brown Avenue and York Avenue, close for a specified time period following a rain event. The bathing areas of these two beaches are automatically closed for 24 hours after the end of all rainfalls greater than 0.1 inch or that cause an increased flow in storm drains; and for 48 hours from the end of all rainfalls greater than 2.8 inches within a 24 hour period. In addition, lifeguards (or staff as designated by Spring Lake) will prohibit swimming near any parts of these beaches where the stormwater plume is observed to be mixing within the swimming area. In 2005, the Terrace beach and in 2007, Beacon Boulevard beach (both beaches in Sea Girt just south of the Wreck Pond outfall) were added to the precautionary beach closing plan.

Bacteria Related Closings at Wreck Pond Beaches

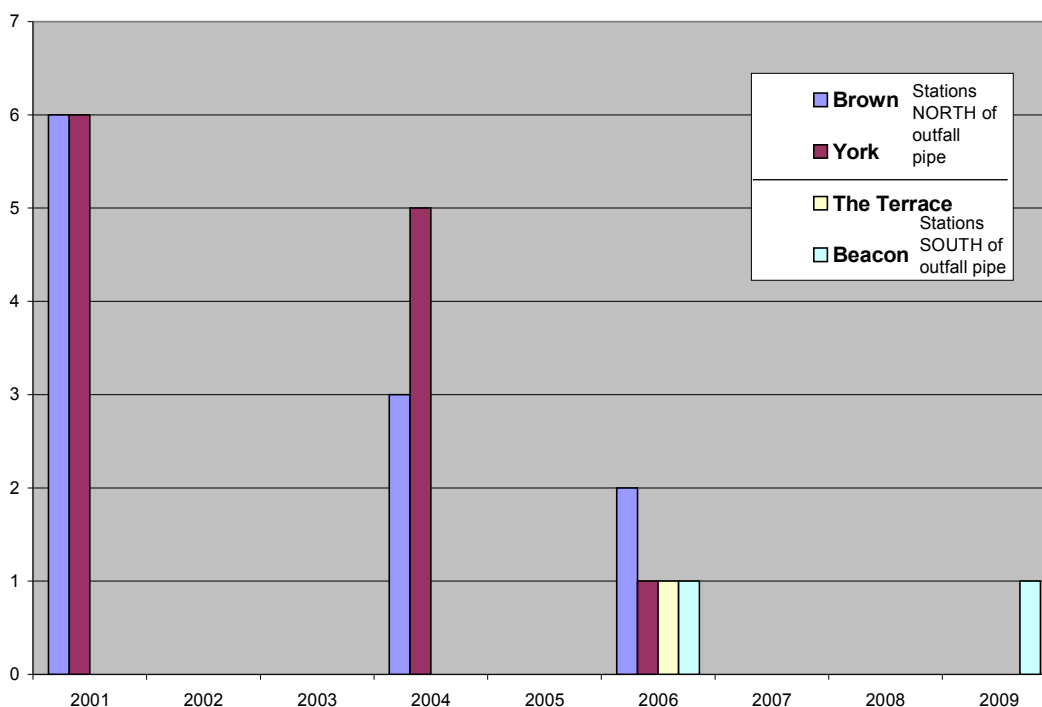


Figure 1. Beach closings caused by bacteria exceeding the standard at the four beaches surrounding the Wreck Pond outfall in the years 2001-2009.

Intensive source trackdown has identified that sources of pollution to Wreck Pond include stormwater discharges directly to the pond and suspected failing infrastructure in the communities immediately adjacent to the pond. These factors contribute to the elevated levels of enterococcus bacteria discharged to the ocean during rain events. The Department is moving ahead with steps to alleviate these sources of contamination. In 2006, DEP completed a 300-foot extension to the Wreck Pond ocean discharge outfall pipe in order to carry contaminated stormwater further out into the ocean and reduce the impact to bathing beaches. In general, the total number of closings related to high bacterial test results (Figure 1) have been lower in the years after 2006. This is influenced by the fact that there were more numerous precautionary closings at the four “rain provisional” beaches (Figure 2) precluded the need for test results to close the beach. These rain closing numbers vary as they are dependent on the amount of rainfall in any given summer season. DEP continues to monitor ocean water quality at the affected beaches and is currently analyzing past data in order to evaluate the effectiveness of the rainfall policy.

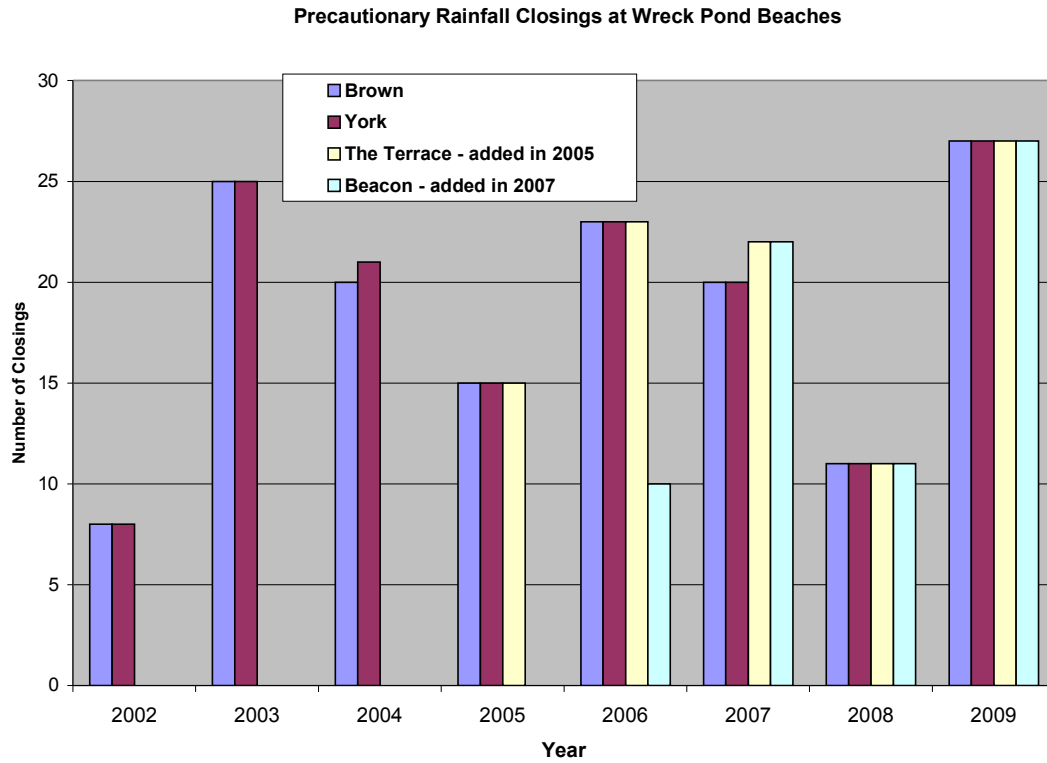


Figure 2. Beach closings at the four “rain provisional” beaches surrounding the Wreck Pond outfall in the years 2002-2009. The rainfall closing policy went into effect in 2002. The Terrace Beach was added in 2005. Beacon Beach had rain provisional closings in 2006 but was not officially added to the policy until 2007.

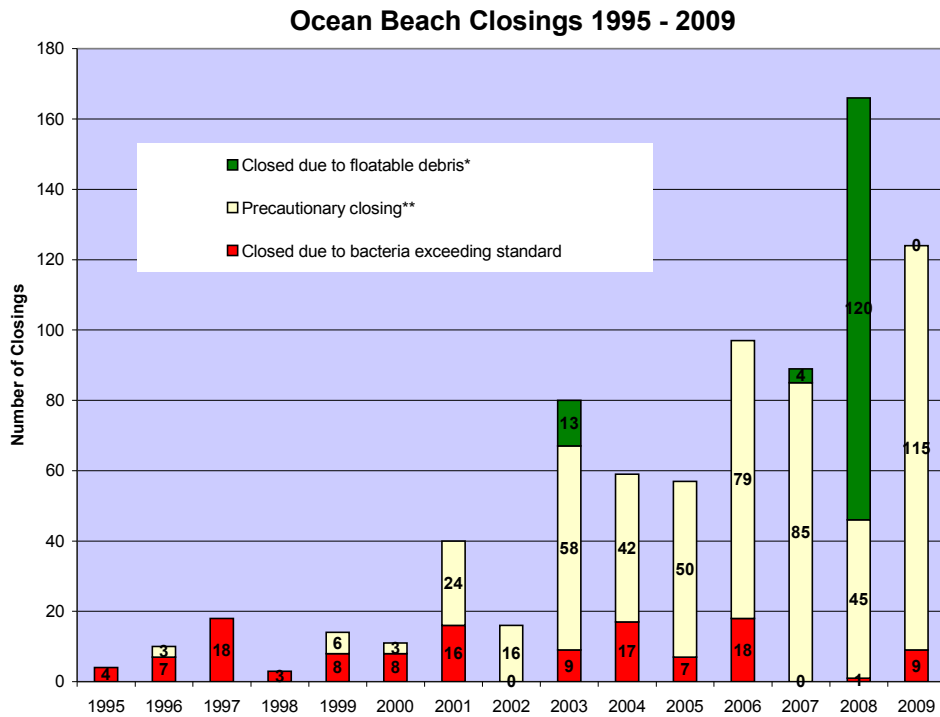


Figure 3. Trends in NJ ocean beach closings.

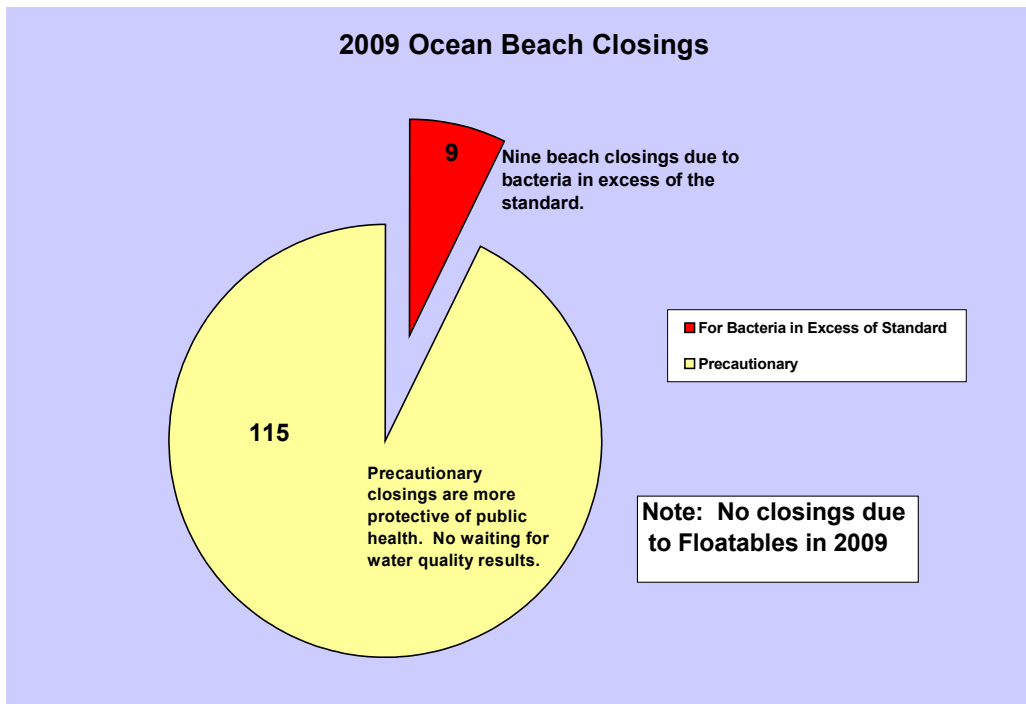


Figure 4. 2009 Ocean beach closings and reasons for closure

Bay Beach Closings 1995 - 2009

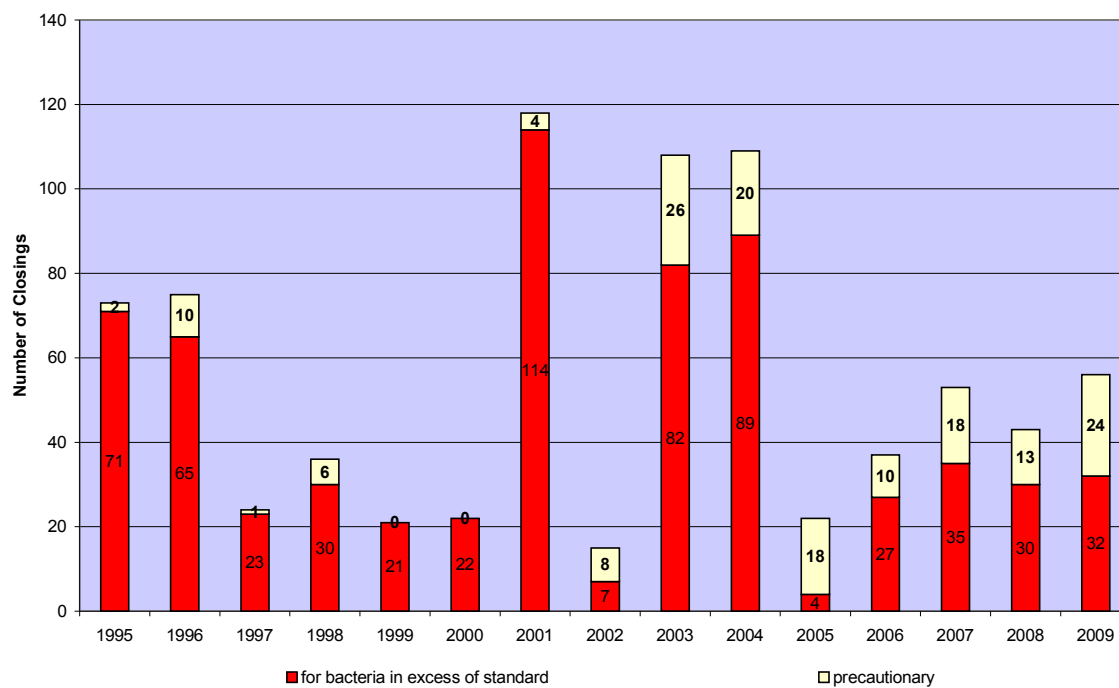


Figure 5. Trends in NJ bay beach closings.

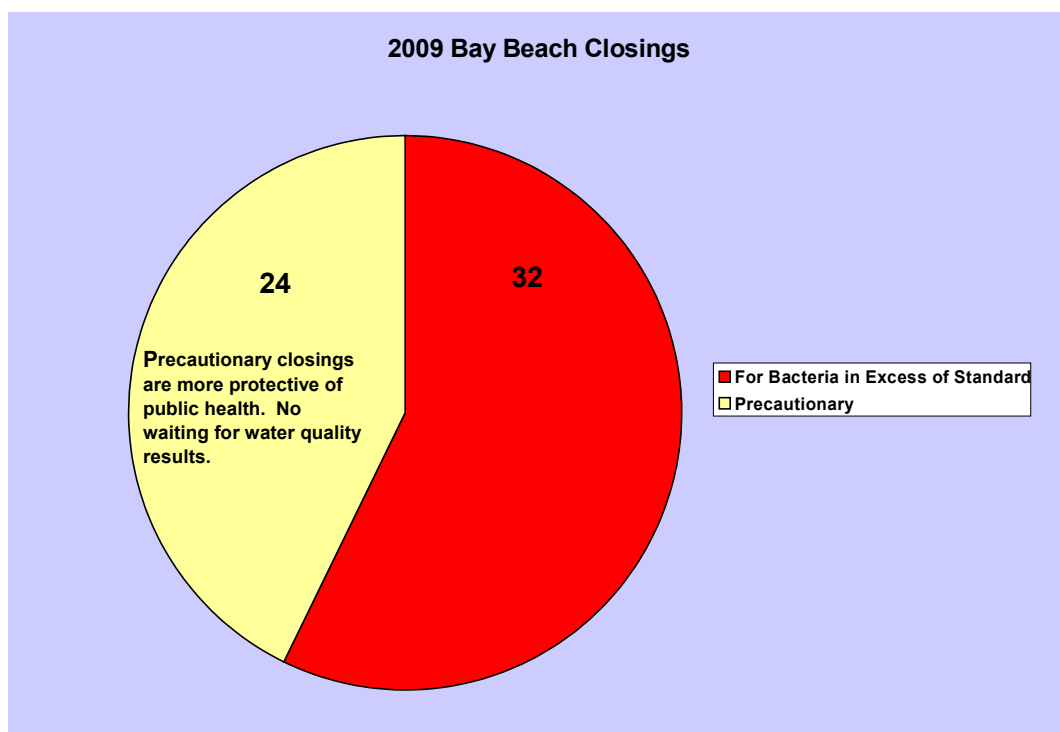


Figure 6. 2009 Bay beach closings and reasons for closings.

As shown in Figure 3 and Figure 5, closures at New Jersey's ocean and bay beaches due to exceedances of the water quality standard have been low relative to the early 1990's when they were typically in the 20-30 closure per year range. However, the overall number of closures is up at ocean beaches primarily due to precautionary closures since 2000, and the criminal medical waste dumping event in 2008. These precautionary closures represent an enhanced level of public health protection that has been implemented by county and local health officials with the support of DEP. Even with these additional precautionary closures, New Jersey beaches are open to bathing over 99.7% of the time (see Figure 7). The national average was 95% in 2008¹, the most recent year for which data is available. New Jersey also has more recreational beaches than any other state in the country¹.

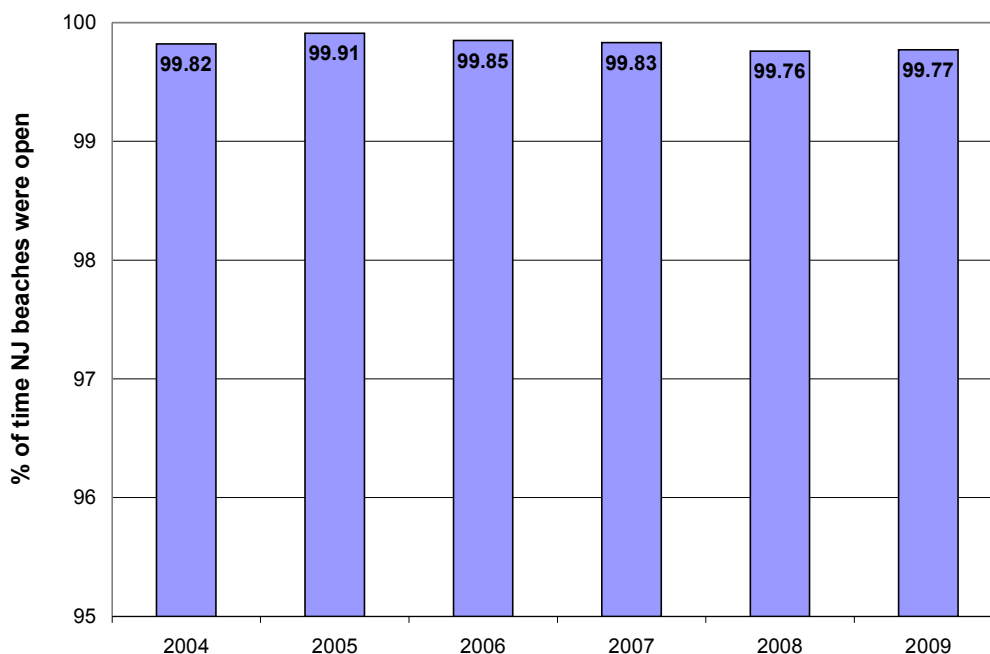


Figure 7. Percent of time NJ ocean and bay beaches are open for bathing by year

Enhancements to CCMP

DEP has joined with the USEPA and others in the private and public sectors to identify and address sources of pollution impacting the State's beaches. This approach will accelerate improvements in the quality of our beaches and coastal waters as a result of the increased

¹ USEPA, Water Headlines for June 2, 2008

coordination and pooling of resources.

As previously mentioned, DEP is working with local stakeholders to address the elevated bacteria levels in Wreck Pond. In early 2006, DEP completed a 300-foot extension of the Wreck Pond outfall into the ocean. In 2007, DEP's Water Monitoring and Standards Program began an intensive stormwater source trackdown study and has identified a number of potential sources of bacteria to the pond and surrounding beaches. DEP is working with the county and local governments to address these sources. Wet-weather sampling continues in an effort to pinpoint the sources. In 2009, this included sampling for enterococcus within some of the stormwater lines that are suspected of contributing to the beach impacts. This work helped to narrow down the areas for further inspection of infrastructure to identify sources of pollution impacting the beaches.

In 2007, 2008 and 2009, DEP joined with EPA, Monmouth and Ocean County Health Departments and the Ocean County Utilities Authority in a joint sampling program to study the correlation between three different methods for the analysis of enterococcus bacteria in marine waters. EPA Method 1600 is the traditional method used for the analysis of enterococcus bacteria in marine waters. Enterolert was used by Ocean County for the 2007 bathing season only and for this comparative study. Enterolert is a recently approved method for the detection of enterococci in water that requires half the time of the traditional method by eliminating the membrane filtration and transfer steps involved in the traditional method.

Additional samples were collected and analyzed by EPA using quantitative polymerase chain reaction (qPCR) - a method currently under development for the rapid detection of enterococcus bacteria in bathing water. Samples were collected at 20 ocean and bay stations in 2007, at two bay beaches in 2008 and at 10 ocean and bay stations in 2009. Final results for the 2008 study are available at::

http://www.epa.gov/region02/water/oceans/2008Report_QPCR_NJ_Final_Jan2010.pdf.

A similar study is planned for the 2010 summer bathing season. Results to date are encouraging with a positive correlation between the qPCR and the traditional enterococcus methods.

In 2009, seven bay beaches in Ocean County were sampled during wet weather conditions to determine whether increased rainfall contributed to increased levels of bacteria at bathing beaches. The data were inconclusive and the Ocean County Health Department will continue the study in 2010 in order to gather additional data.

On August 23, 2009 the Monmouth County Health Department (MCHD) and the Monmouth County Regional Health Commission (MCRHC) implemented advisory policies to notify the public when initial water quality results did not meet bathing standards at beaches under MCHD or MCRHC authority. Signs were posted at beach entrances and notification was also posted on the DEP website and 800 phone line. This policy will be extended to all Monmouth County beaches for the 2010 bathing season. The exact number of advisories issued could not be provided for this report.

Coastal Pollution Incidents of Note - 2009

The following pollution incidents received public, DEP, and local health agency attention in 2009, although the incidents did not always require beach closings:

On May 26, a dead whale washed up on the beach at Osborn Avenue in Bay Head. Local public works crews disposed of the carcass and cleared the beach of all of the remains. No beaches were closed.

On June 16, the DEP hotline received a complaint of medical waste washing up in Ocean City near Corson's Inlet State Park. The Cape May County Health Department and DEP responded to the complaints and assessed the beach. One syringe and one IV bag were found on the beach; no other debris was found and the beach was reopened.

On June 23, the Monmouth County Health Department notified DEP that small greaseballs were washing up on Raritan Bayshore beaches in Middletown Township. The greaseballs were collected and disposed of by the local public works crews. No beaches were closed due to the event.

On June 26, the Long Beach Island Health Department reported a large amount of trash and debris washing onto the beaches at the north end of Long Beach Island. Floatables collected included 25 syringes, wood debris, plastics and household trash. The trash came in during two high tides; one in the afternoon and one early the following morning. Public works crews cleaned and raked the beaches and local health officials assessed conditions. No beaches were closed. The trash wash up was most likely related to heavy rainstorms the previous week along with high tides and CSO discharges in the NY Harbor area.

On July 27, a 32-foot wooden pleasure boat capsized off the 91st Street beach in Long Beach Township on Long Beach Island. The boat broke up in the surf and approximately 90 gallons of diesel fuel spilled into the ocean. Debris from the wreck washed up all night along the shoreline. The Long Beach Island Health Department closed area beaches as a precaution while local public works crews cleaned boat wreck debris from the beaches. The beaches were closed until the next high tide to ensure the complete clean up of the debris.

On August 14, the DEP hotline was informed of debris washing up at Barnegat Light State Park. Some of the items found on the beach included a LabCorp Specimen box and small pieces of plastic. The debris was removed by the Long Beach Island Police Department and the beach was cleaned and assessed by the Long Beach Island Health Department. No beaches were closed.

On August 30, DEP's coastal flight observer noted a visible bright green plume coming out of the Deal Lake outfall into the ocean. The Monmouth County Health Department sampled the water in the lake and in the ocean and identified the algae as Microcystis sp., a common species of algae that blooms in fresh and low salinity water. This algae bloom is common in Deal Lake.

On August 30, a citizen reported that a bomb washed up at Island Beach State Park. A portion of the bathing beach was closed and the area was evacuated. The NAVY OED removed the torpedo and took it to their facility. The torpedo was approximately three feet long, very rusty and was not equipped with charges or explosives. The beach was reopened the next morning.

In early September and over the Labor Day weekend, the DEP hotline received numerous complaints of syringes and small plastic trash washing up in Ocean County. A total of 38 syringes washed up on the beaches of Long Beach Island, Toms River and Island Beach State Park. All syringes were immediately removed by county and local health officials. The Long Beach Island and Ocean County Health Departments conducted inspections at each affected beach. All syringes were the home-use type and were not traceable medical waste. These wash-ups can be attributed to a very high full moon tide, ongoing rough surf and recent offshore storms. Possible sources include CSO discharges or trash originating from landfills adjacent to the water.

Relative Status of New Jersey Beach Water Quality

According to the latest data from an assessment report of the nation's beaches², New Jersey's beach water quality is among the best on the East Coast of the U.S. As shown in Figure 8, New Jersey had the lowest percentage of beach closings/advisories of the East Coast states in 2008. This good water quality is also reflected in the number of days the beaches were open to the public in NJ. With 241 monitored marine beaches in NJ and 16 weeks to the bathing season, NJ has a total of 78,400 beach-days available each summer. In 2009, there were a total of 180 beach closings, representing 0.23% of the available beach days. In other words, when the public in NJ went to the beach in 2009, they found the beach was open for bathing 99.77 percent of the time. As Figure 9 shows, NJ has among the highest percentage of beaches open on the East Coast in 2008.

² USEPA 2008 Beach Notification Summary [updated 2009 October 16]. United States Environmental Protection Agency, Water Science <http://www.epa.gov/waterscience/beaches/seasons/2008/>

% of Beach-Days affected by a Closure/Advisory – East Coast States in 2008³

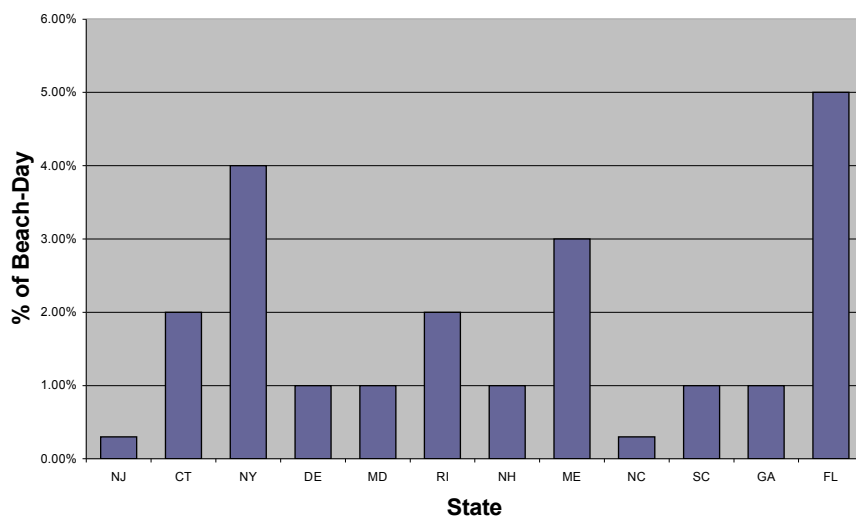


Figure 8. East Coast bathing beaches affected by a closure or advisory in 2008

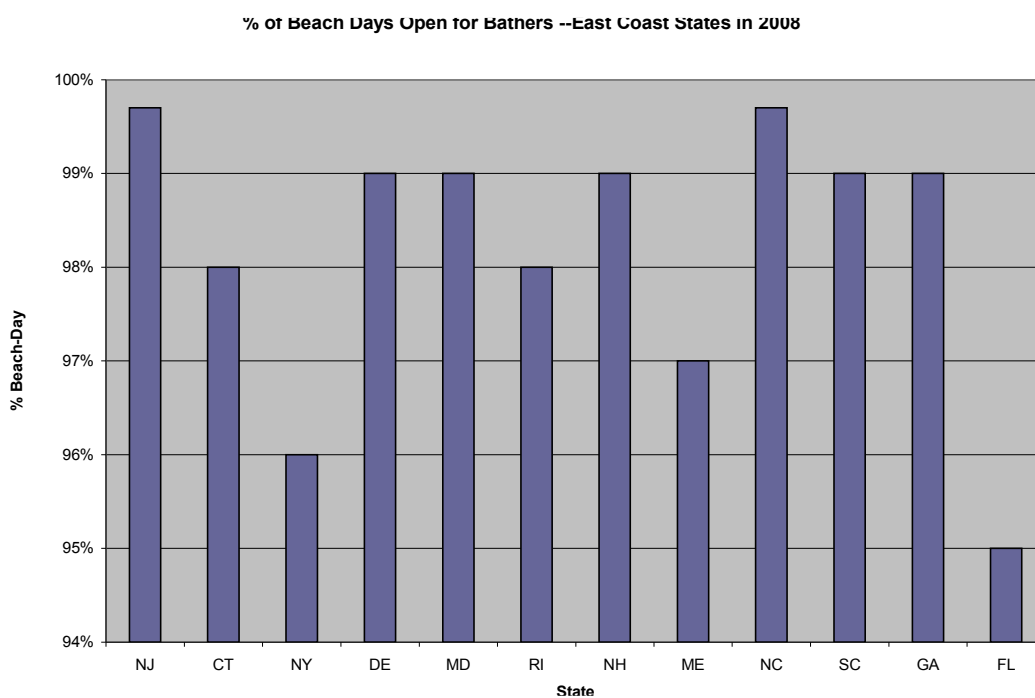


Figure 9. Percent of beach days available to bathers based on USEPA data. Beach days are defined as the # of beaches open multiplied by the # of days in the beach season.

³ USEPA, Water Headlines for June 2, 2008. The most recent date for which data is available.

Beach Monitoring Revisions/Enhancements for 2010

In 2010, the following enhancements to the CCMP will be implemented:

- NJDEP purchased the analytical equipment to perform enterococcus testing utilizing the rapid qPCR method. This capability will allow NJDEP to expand its collaborative work with EPA Regions 2 to evaluate this new technique as a potential means to obtain more timely measures of bathing beach water quality.
- When towns issue Bathing Advisories these will be listed along with other beach closure information on the Department's web page (www.njbeaches.org).
- NJDEP has contracted with Rutgers University to redesign web access to the daily algal conditions/chlorophyll remote sensing information collected as part of the CCMP aircraft surveillance of NJ waters. This will provide a more user-friendly access to this information.
- Monmouth County Health Dept will post winter sampling results on njbeaches.org web page.

Related Programs:

Clean Shores

Non-recreational shorelines that have been left unattended serve as reservoirs of floatable debris that can be refloated during extreme high tides and can wash up on recreational beaches, become floating hazards to navigation, or impact marine life. DEP uses state correctional facility inmates to remove floatable debris from the shorelines of the Hudson, Raritan, and Delaware estuaries and barrier island bays. The Clean Shores Program conducts shoreline cleanups year-round. In 2009, the Clean Shores Program removed 3.75 million pounds of debris from 151 miles of shoreline (see Figure 10).

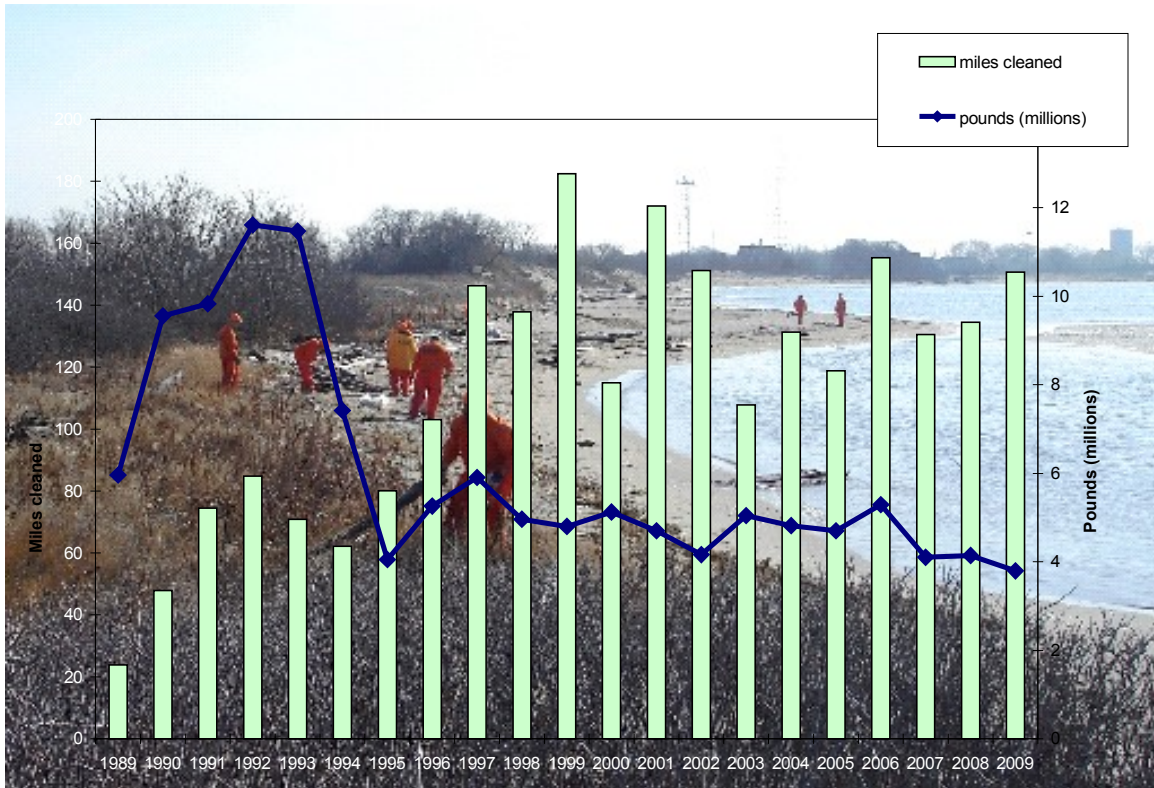


Figure 10: Total amount of debris removed by Clean Shores Program since start of program.

Adopt A Beach

This program fosters citizen stewardship of coastal beaches and teaches the public about the hazards of marine debris to marine life by providing information and field experience. Twice a year, volunteers in groups or as individuals clean their selected beaches and count and categorize the debris. The cleanup activities prevent marine debris from returning to the coastal waters and assist the DEP in tracking pollution sources. In 2009 more than 1,000 volunteers removed 58,718 items of trash and debris from the state's beaches. DEP forwards the marine debris information to EPA to be included in the Floatables Action Plan Annual Summary and the Ocean Conservancy to be included in its national and international marine debris databases.

Adopt A Beach

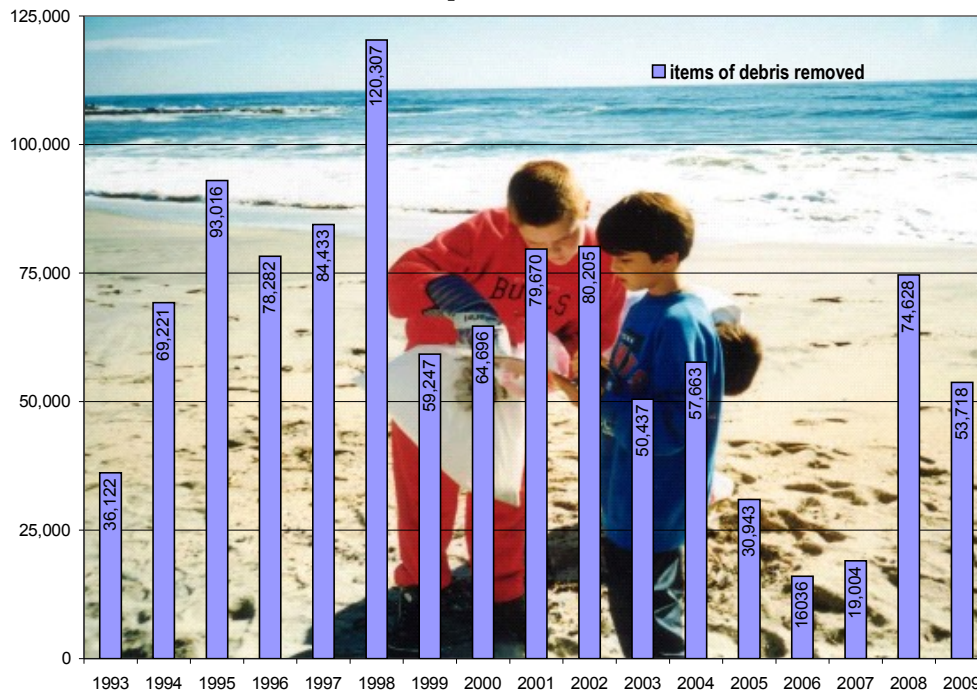


Figure 11. Total amount of trash and debris removed by Adopt A Beach volunteers since start of program.⁴

Additional Information

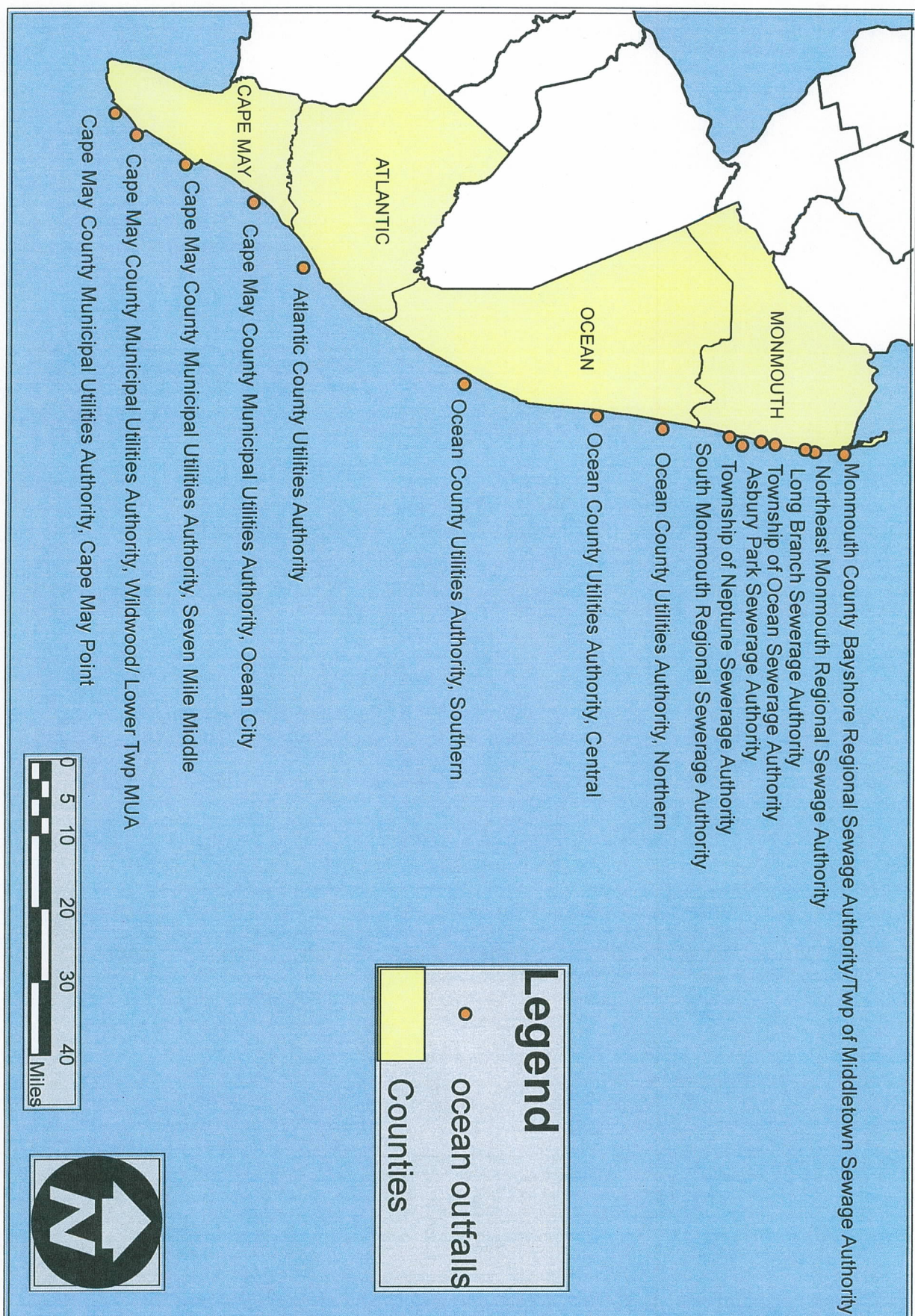
For additional information about the CCMP, or New Jersey's beach monitoring in general, contact Virginia Loftin at 609-984-5599 or Virginia.Loftin@dep.state.nj.us or visit the Program's website at www.njbeaches.org.

⁴ NJDEP, Adopt A Beach Program

Appendix 1**Wastewater Treatment Facilities Discharging to the Nearshore Coastal Waters**

1	Monmouth County Bayshore Regional Sewage Authority
2	Township of Middletown Sewage Authority
3	Northeast Monmouth Regional Sewerage Authority
4	Long Branch Sewerage Authority
5	Township of Ocean Sewerage Authority
6	Asbury Park Sewerage Authority
7	Township of Neptune Sewerage Authority
8	South Monmouth Regional Sewerage Authority
9	Ocean County Utilities Authority, Northern
10	Ocean County Utilities Authority, Central
11	Ocean County Utilities Authority, Southern
12	Atlantic County Utilities Authority
13	Cape May County Municipal Utilities Authority, Ocean City
14	Cape May County Municipal Utilities Authority, Seven Mile Middle
15	Cape May County Municipal Utilities Authority, Wildwood
16	Cape May County Municipal Utilities Authority, Cape May Point
17	Lower Township Municipal Utilities Authority

Appendix 1 **Wastewater Treatment Facilities** **Discharging to the Nearshore Coastal Waters**



Appendix 2

NJDEP Cooperative Coastal Monitoring Program
2009 Ocean Beach Closings

DATE	COUNTY	MUNICIPALITY	BEACH	REASON
5/25/2009	Monmouth	Spring Lake	York Ave.	precautionary due to rain
5/25/2009	Monmouth	Spring Lake	Brown Ave.	precautionary due to rain
5/25/2009	Monmouth	Sea Girt	The Terrace	precautionary due to rain
5/25/2009	Monmouth	Sea Girt	Beacon Blvd.	precautionary due to rain
6/6/2009	Monmouth	Spring Lake	York Ave.	precautionary due to rain
6/6/2009	Monmouth	Spring Lake	Brown Ave.	precautionary due to rain
6/6/2009	Monmouth	Sea Girt	The Terrace	precautionary due to rain
6/6/2009	Monmouth	Sea Girt	Beacon Blvd.	precautionary due to rain
6/13/2009	Monmouth	Spring Lake	York Ave.	precautionary due to rain
6/13/2009	Monmouth	Spring Lake	Brown Ave.	precautionary due to rain
6/13/2009	Monmouth	Sea Girt	The Terrace	precautionary due to rain
6/13/2009	Monmouth	Sea Girt	Beacon Blvd.	precautionary due to rain
6/20/2009	Monmouth	Spring Lake	York Ave.	precautionary due to rain
6/20/2009	Monmouth	Spring Lake	Brown Ave.	precautionary due to rain
6/20/2009	Monmouth	Sea Girt	The Terrace	precautionary due to rain
6/20/2009	Monmouth	Sea Girt	Beacon Blvd.	precautionary due to rain
6/21/2009	Monmouth	Spring Lake	York Ave.	precautionary due to rain
6/21/2009	Monmouth	Spring Lake	Brown Ave.	precautionary due to rain
6/21/2009	Monmouth	Sea Girt	The Terrace	precautionary due to rain
6/21/2009	Monmouth	Sea Girt	Beacon Blvd.	precautionary due to rain
6/22/2009	Monmouth	Spring Lake	York Ave.	precautionary due to rain
6/22/2009	Monmouth	Spring Lake	Brown Ave.	precautionary due to rain
6/22/2009	Monmouth	Sea Girt	The Terrace	precautionary due to rain
6/22/2009	Monmouth	Sea Girt	Beacon Blvd.	precautionary due to rain
6/24/2009	Monmouth	Spring Lake	York Ave.	precautionary due to rain
6/24/2009	Monmouth	Spring Lake	Brown Ave.	precautionary due to rain
6/24/2009	Monmouth	Sea Girt	The Terrace	precautionary due to rain
6/24/2009	Monmouth	Sea Girt	Beacon Blvd.	precautionary due to rain
6/27/2009	Monmouth	Spring Lake	York Ave.	precautionary due to rain
6/27/2009	Monmouth	Spring Lake	Brown Ave.	precautionary due to rain
6/27/2009	Monmouth	Sea Girt	The Terrace	precautionary due to rain
6/27/2009	Monmouth	Sea Girt	Beacon Blvd.	precautionary due to rain
7/1/2009	Monmouth	Spring Lake	York Ave.	precautionary due to rain
7/1/2009	Monmouth	Spring Lake	Brown Ave.	precautionary due to rain
7/1/2009	Monmouth	Sea Girt	The Terrace	precautionary due to rain
7/1/2009	Monmouth	Sea Girt	Beacon Blvd.	precautionary due to rain
7/8/2009	Monmouth	Spring Lake	York Ave.	precautionary due to rain
7/8/2009	Monmouth	Spring Lake	Brown Ave.	precautionary due to rain
7/8/2009	Monmouth	Sea Girt	The Terrace	precautionary due to rain
7/8/2009	Monmouth	Sea Girt	Beacon Blvd.	precautionary due to rain
7/8/2009	Monmouth	Manasquan	Main Ave.	Bacteria
7/12/2009	Monmouth	Spring Lake	York Ave.	precautionary due to rain
7/12/2009	Monmouth	Spring Lake	Brown Ave.	precautionary due to rain
7/12/2009	Monmouth	Sea Girt	The Terrace	precautionary due to rain
7/12/2009	Monmouth	Sea Girt	Beacon Blvd.	precautionary due to rain
7/21/2009	Monmouth	Spring Lake	York Ave.	precautionary due to rain
7/21/2009	Monmouth	Spring Lake	Brown Ave.	precautionary due to rain
7/21/2009	Monmouth	Sea Girt	The Terrace	precautionary due to rain
7/21/2009	Monmouth	Sea Girt	Beacon Blvd.	precautionary due to rain
7/23/2009	Monmouth	Spring Lake	York Ave.	precautionary due to rain
7/23/2009	Monmouth	Spring Lake	Brown Ave.	precautionary due to rain
7/23/2009	Monmouth	Sea Girt	The Terrace	precautionary due to rain
7/23/2009	Monmouth	Sea Girt	Beacon Blvd.	precautionary due to rain
7/24/2009	Monmouth	Spring Lake	York Ave.	precautionary due to rain
7/24/2009	Monmouth	Spring Lake	Brown Ave.	precautionary due to rain
7/24/2009	Monmouth	Sea Girt	The Terrace	precautionary due to rain
7/24/2009	Monmouth	Sea Girt	Beacon Blvd.	precautionary due to rain
7/26/2009	Monmouth	Spring Lake	York Ave.	precautionary due to rain
7/26/2009	Monmouth	Spring Lake	Brown Ave.	precautionary due to rain
7/26/2009	Monmouth	Sea Girt	The Terrace	precautionary due to rain
7/26/2009	Monmouth	Sea Girt	Beacon Blvd.	precautionary due to rain
7/27/2009	Ocean	Long Beach Township	92nd Street	boat sank - precautionary due to boat debris (not water quality related)
7/28/2009	Ocean	Long Beach Township	92nd Street	boat sank - precautionary due to boat debris (not water quality related)
7/29/2009	Ocean	Long Beach Township	92nd Street	boat sank - precautionary due to boat debris (not water quality related)
7/30/2009	Monmouth	Spring Lake	York Ave.	precautionary due to rain
7/30/2009	Monmouth	Spring Lake	Brown Ave.	precautionary due to rain
7/30/2009	Monmouth	Sea Girt	The Terrace	precautionary due to rain

Appendix 2

NJDEP Cooperative Coastal Monitoring Program
2009 Ocean Beach Closings

7/30/2009	Monmouth	Sea Girt	Beacon Blvd.	precautionary due to rain
8/1/2009	Monmouth	Spring Lake	York Ave.	precautionary due to rain
8/1/2009	Monmouth	Spring Lake	Brown Ave.	precautionary due to rain
8/1/2009	Monmouth	Sea Girt	The Terrace	precautionary due to rain
8/1/2009	Monmouth	Sea Girt	Beacon Blvd.	precautionary due to rain
8/2/2009	Monmouth	Spring Lake	York Ave.	precautionary due to rain
8/2/2009	Monmouth	Spring Lake	Brown Ave.	precautionary due to rain
8/2/2009	Monmouth	Sea Girt	The Terrace	precautionary due to rain
8/2/2009	Monmouth	Sea Girt	Beacon Blvd.	precautionary due to rain
8/6/2009	Monmouth	Spring Lake	York Ave.	precautionary due to rain
8/6/2009	Monmouth	Spring Lake	Brown Ave.	precautionary due to rain
8/6/2009	Monmouth	Sea Girt	The Terrace	precautionary due to rain
8/6/2009	Monmouth	Sea Girt	Beacon Blvd.	precautionary due to rain
8/9/2009	Monmouth	Spring Lake	York Ave.	precautionary due to rain
8/9/2009	Monmouth	Spring Lake	Brown Ave.	precautionary due to rain
8/9/2009	Monmouth	Sea Girt	The Terrace	precautionary due to rain
8/9/2009	Monmouth	Sea Girt	Beacon Blvd.	precautionary due to rain
8/12/2009	Monmouth	Spring Lake	York Ave.	precautionary due to rain
8/12/2009	Monmouth	Spring Lake	Brown Ave.	precautionary due to rain
8/12/2009	Monmouth	Sea Girt	The Terrace	precautionary due to rain
8/12/2009	Monmouth	Sea Girt	Beacon Blvd.	precautionary due to rain
8/13/2009	Monmouth	Spring Lake	York Ave.	precautionary due to rain
8/13/2009	Monmouth	Spring Lake	Brown Ave.	precautionary due to rain
8/13/2009	Monmouth	Sea Girt	The Terrace	precautionary due to rain
8/13/2009	Monmouth	Sea Girt	Beacon Blvd.	precautionary due to rain
8/18/2009	Cape May	Cape May	Ocean Street	sewage spill, precautionary
8/18/2009	Cape May	Cape May	Guerney St.	sewage spill, precautionary
8/18/2009	Cape May	Cape May	Decatur St.	sewage spill, precautionary
8/19/2009	Cape May	Cape May	Ocean Street	sewage spill - high bacteria
8/19/2009	Cape May	Cape May	Guerney St.	sewage spill - high bacteria
8/19/2009	Cape May	Cape May	Decatur St.	sewage spill - high bacteria
8/22/2009	Monmouth	Spring Lake	York Ave.	precautionary due to rain
8/22/2009	Monmouth	Spring Lake	Brown Ave.	precautionary due to rain
8/22/2009	Monmouth	Sea Girt	The Terrace	precautionary due to rain
8/22/2009	Monmouth	Sea Girt	Beacon Blvd.	precautionary due to rain
8/24/2009	Monmouth	Spring Lake	York Ave.	precautionary due to rain
8/24/2009	Monmouth	Spring Lake	Brown Ave.	precautionary due to rain
8/24/2009	Monmouth	Sea Girt	The Terrace	precautionary due to rain
8/24/2009	Monmouth	Sea Girt	Beacon Blvd.	precautionary due to rain
8/26/2009	Monmouth	Long Branch	Imperial Beach	Bacteria
8/26/2009	Monmouth	Bradley Beach	Evergreen	Bacteria
8/26/2009	Monmouth	Sea Girt	Beacon Blvd.	Bacteria
8/26/2009	Monmouth	Asbury	7th Ave	Bacteria
8/26/2009	Monmouth	Deal	Deal Casino	Bacteria
8/28/2009	Monmouth	Spring Lake	York Ave.	precautionary due to rain
8/28/2009	Monmouth	Spring Lake	Brown Ave.	precautionary due to rain
8/28/2009	Monmouth	Sea Girt	The Terrace	precautionary due to rain
8/28/2009	Monmouth	Sea Girt	Beacon Blvd.	precautionary due to rain
8/29/2009	Monmouth	Spring Lake	York Ave.	precautionary due to rain
8/29/2009	Monmouth	Spring Lake	Brown Ave.	precautionary due to rain
8/29/2009	Monmouth	Sea Girt	The Terrace	precautionary due to rain
8/29/2009	Monmouth	Sea Girt	Beacon Blvd.	precautionary due to rain
8/30/2009	Monmouth	Spring Lake	York Ave.	precautionary due to rain
8/30/2009	Monmouth	Spring Lake	Brown Ave.	precautionary due to rain
8/30/2009	Monmouth	Sea Girt	The Terrace	precautionary due to rain
8/30/2009	Monmouth	Sea Girt	Beacon Blvd.	precautionary due to rain
8/30/2009	Ocean	Island Beach State Park	Bathing Beach	precautionary - bomb washup

**NJDEP Cooperative Coastal Monitoring Program
2009 Bay Beach Closings**

DATE	COUNTY	MUNICIPALITY	BEACH	REASON
6/20/2009	Ocean	Ocean Gate	Anglesea Ave	high bacteria
6/20/2009	Ocean	Ocean Gate	Wildwood Ave.	high bacteria
6/20/2009	Ocean	Pt. Pleasant Boro	Maxson Ave.	precautionary due to rain
6/21/2009	Ocean	Beachwood Borough	Beachwood Beach	high bacteria
6/22/2009	Ocean	Beachwood Borough	Beachwood Beach	high bacteria
6/23/2009	Ocean	Beachwood Borough	Beachwood Beach	high bacteria
6/24/2009	Ocean	Beachwood Borough	Beachwood Beach	high bacteria
6/25/2009	Ocean	Beachwood Borough	Beachwood Beach	high bacteria
6/26/2009	Ocean	Beachwood Borough	Beachwood Beach	high bacteria
6/26/2009	Ocean	Pine Beach Borough	Avon Road	high bacteria
6/29/2009	Ocean	Beachwood Borough	Beachwood Beach	high bacteria
7/1/2009	Monmouth	Belmar	L Street	precautionary due to rain
7/8/2009	Monmouth	Belmar	L Street	precautionary due to rain
7/12/2009	Monmouth	Belmar	L Street	precautionary due to rain
7/12/2009	Monmouth	Neptune	Shark River Beach and	precautionary due to rain
7/21/2009	Monmouth	Belmar	L Street	precautionary due to rain
7/23/2009	Ocean	Pine Beach Borough	Avon Road	high bacteria
7/23/2009	Monmouth	Belmar	L Street	precautionary due to rain
7/24/2009	Ocean	Pine Beach Borough	Avon Road	high bacteria
7/25/2009	Ocean	Pine Beach Borough	Avon Road	high bacteria
7/26/2009	Ocean	Pine Beach Borough	Avon Road	high bacteria
7/26/2009	Ocean	Beachwood Borough	Beachwood Beach	high bacteria
7/26/2009	Monmouth	Belmar	L Street	precautionary due to rain
7/27/2009	Monmouth	Leonardo	Thompson Ave	heavy seaweed on beach
7/27/2009	Ocean	Pine Beach Borough	Avon Road	high bacteria
7/27/2009	Ocean	Beachwood Borough	Beachwood Beach	high bacteria
7/27/2009	Monmouth	Belmar	L Street	precautionary due to rain
7/28/2009	Monmouth	Leonardo	Thompson Ave	heavy seaweed on beach
7/30/2009	Monmouth	Belmar	L Street	precautionary due to rain
8/1/2009	Monmouth	Belmar	L Street	precautionary due to rain
8/1/2009	Monmouth	Neptune	Shark River Beach and	precautionary due to rain
8/2/2009	Monmouth	Belmar	L Street	precautionary due to rain
8/2/2009	Monmouth	Neptune	Shark River Beach and	precautionary due to rain
8/3/2009	Ocean	Beachwood Borough	Beachwood Beach	high bacteria
8/3/2009	Ocean	Pt. Pleasant Boro	Maxson Ave.	high bacteria
8/3/2009	Ocean	Ocean Gate	Anglesea Ave	high bacteria
8/3/2009	Ocean	Ocean Gate	Wildwood Ave.	high bacteria
8/4/2009	Ocean	Beachwood Borough	Beachwood Beach	high bacteria
8/4/2009	Ocean	Pt. Pleasant Boro	Maxson Ave.	high bacteria
8/5/2009	Monmouth	Belmar	L Street	high bacteria
8/6/2009	Monmouth	Belmar	L Street	high bacteria
8/7/2009	Monmouth	Belmar	L Street	high bacteria
8/8/2009	Monmouth	Belmar	L Street	high bacteria
8/9/2009	Monmouth	Belmar	L Street	high bacteria
8/10/2009	Monmouth	Belmar	L Street	high bacteria
8/12/2009	Ocean	Ocean Gate	Anglesea Ave	fuel spill - precautionary
8/12/2009	Ocean	Ocean Gate	Wildwood Ave.	fuel spill - precautionary
8/12/2009	Monmouth	Belmar	L Street	precautionary due to rain
8/13/2009	Monmouth	Belmar	L Street	precautionary due to rain
8/21/2009	Ocean	Pt. Pleasant Boro	Maxson Ave.	high bacteria
8/21/2009	Ocean	Pt. Pleasant Boro	River Ave.	high bacteria

Appendix 2

NJDEP Cooperative Coastal Monitoring Program
2009 Bay Beach Closings

8/24/2009	Monmouth	Belmar	L Street	precautionary due to rain
8/28/2009	Monmouth	Belmar	L Street	precautionary due to rain
8/29/2009	Monmouth	Belmar	L Street	precautionary due to rain
8/30/2009	Monmouth	Belmar	L Street	precautionary due to rain
9/1/2009	Ocean	Pt. Pleasant Boro	River Ave.	high bacteria