

# Beach Closings

## Background

Water quality monitoring at New Jersey's beaches has been performed through the Cooperative Coastal Monitoring Program (CCMP) since 1974. The program is administered by the New Jersey Department of Environmental Protection (NJDEP) with the participation of the New Jersey Department of Health and local environmental health agencies. This beach monitoring program assesses nearshore coastal water quality, investigates sources of water pollution and enables NJDEP and local health agencies to respond to immediate public health concerns arising from contamination in coastal recreational areas. Partial funding for the CCMP comes from the United States Environmental Protection Agency Beaches Environmental Assessment and Coastal Health (BEACH) Act grants.<sup>1</sup> All water quality analysis is conducted by NJDEP-certified laboratories, and results are available within 24 hours of sampling.

As one component of New Jersey's CCMP, bathing beaches are tested on Mondays from mid-May through mid-September for fecal indicator bacteria. Fecal waste from humans and animals may contain microorganisms that can cause illness if contaminated water is accidentally ingested during bathing or water sport activities. Fecal contamination is determined by testing water for the presence of enterococci, a fecal indicator bacteria, that is present in untreated fecal wastes. The presence of fecal indicator bacteria does not by itself indicate that disease-causing organisms are present; it does indicate that fecal waste has contaminated the water to some degree, and that disease-causing organisms could be present. From the inception of the CCMP in 1974 through 2003, samples were analyzed for fecal coliform bacteria. Beginning in 2004, the BEACH Act required samples to be analyzed for enterococcus bacteria. The EPA has found that enterococcus is a reliable indicator of untreated fecal contamination in both marine and fresh waters and has a greater correlation with swimming-associated gastrointestinal illness than other bacterial indicator organisms.

The CCMP monitored water quality at 185 ocean stations and 32 bay stations in 2014. Representative monitoring stations are located along recreational swimming beaches. Ocean sampling stations are selected in areas that are close to potential pollution sources such as stormwater outfalls and coastal lake discharges. In areas where there is no pollution source, a monitoring station is selected that is representative of water quality at several adjacent beaches. All recreational guarded bay beaches are monitored due to their non-contiguous locations. The locations of monitoring stations are reviewed annually, but remain relatively constant.

Ocean and bay recreational beaches are closed when, during routine sampling, two consecutive samples at a primary or bracket station (a station on either side of a primary beach station) exceed the primary contact standard of 104 enterococci bacteria per 100 milliliters of sample.



Photo credits: NJ Coast at Seaside Heights (photo by Steve Jacobus, NJDEP)

The beach will remain closed until a subsequent sample is obtained which indicates the concentration is within the standard. Samples at bracket stations will also be collected to determine the extent of the bacterial contamination. When beach closings are necessary, the County or Local Health agency will post a "No Swimming" sign at the beach. The beach will remain closed until the ban on swimming is lifted. Sampling is always performed in conjunction with a sanitary survey, which includes identifying possible pollution sources and observing water and shoreline conditions. Beach conditions, advisories and beach closings, and the reasons for beach closings are posted on the DEP web page ([www.njbeaches.org](http://www.njbeaches.org)) each day. The sampling information is used as part of the recreational use assessment in DEP's [Integrated Water Quality Monitoring and Assessment Report](#).<sup>2</sup>

## Status and Trends

The number of ocean beach actions for the last 15 years is shown in Figure 1 for the period 2000 – 2014. Note that in recent years, many of beach closings are due to precautionary rainfall policies; however beaches may be closed as a precaution for any reason at any time to protect public health. Precautionary closings may have resulted when beaches with known stormwater pollution problems were automatically closed after heavy rainfalls. These heavy rainfalls have the potential to increase bacterial contamination in these waters because of discharge from stormwater outfall pipes. The precautionary closings can occur whenever there is any public health concern and will occur without water testing.

### Beach Closings

Page 1 - Updated 3/2016

Environmental Trends Report, NJDEP, Division of Science, Research, and Environmental Health  
<http://www.nj.gov/dep/dsr/trends/>

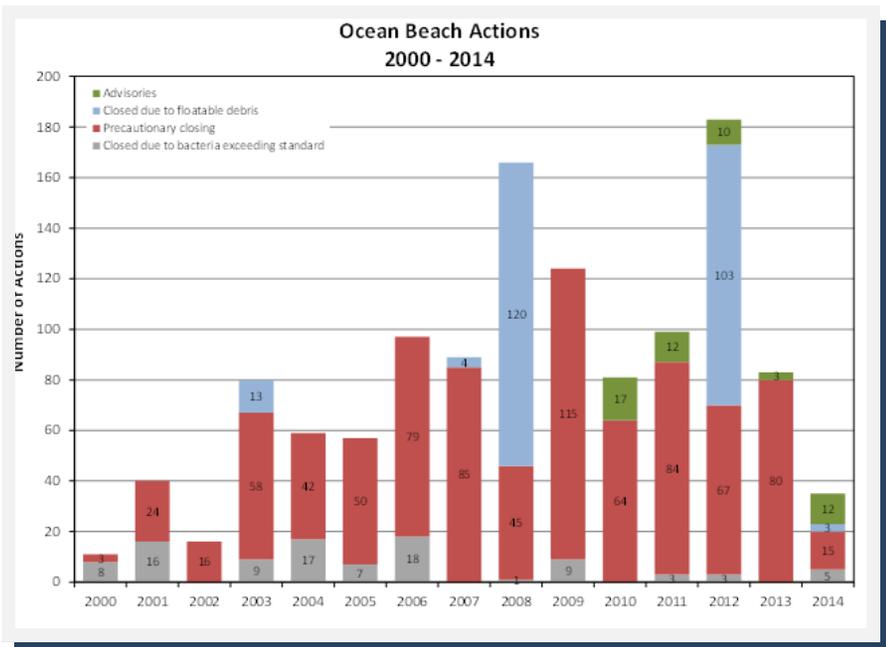


Figure 1. Ocean beach actions taken between 2000 and 2014.

A policy for regular precautionary rainfall closings was put in place at two beaches in Spring Lake in 2002 and, in 2005 and 2007, expanded to two additional ocean beaches in Sea Girt. The bathing areas of the beaches were automatically closed for 24 hours after the end of all rainfalls greater than 0.1 inch or an increased flow in storm drains, and for 48 hours after rainfalls greater than 2.8 inches within a 24-hour period. In addition, lifeguards (or staff as designated by the town) would prohibit swimming near any parts of these beaches where the stormwater plume is observed to be mixing within the swimming area. These four beaches were found to have been impacted from discharge from a coastal lake known as Wreck Pond. The quality of the water in Wreck Pond had been negatively influenced by stormwater runoff and the filling in of the lake from sedimentation. In 2011, DEP developed the Wreck Pond Restoration Action Plan with local stakeholder input to address water quality in the Wreck Pond Watershed and the Sea Girt and Spring Lake beaches. The action plan included: cleaning and assessment of Sea Girt and Spring Lake’s sanitary and storm sewer systems; a continuous 48-hour storm study; educational events and public outreach (e.g., nonpoint pollution seminars,

build-a-rain-barrel and rain garden workshops, watershed-wide cleanups); and the reinstatement of wet weather monitoring at the Wreck Pond beaches to gather additional data and reevaluate the precautionary rainfall closure policy.<sup>3</sup> In an effort to address sources of contamination to the pond, the Department proceeded to fund a partial dredging of Wreck Pond and partially funded a 300-foot extension of the storm water discharge pipe. In addition, microbial source tracking was performed,<sup>4</sup> aging infrastructure was investigated and areas of concern were repaired. During Superstorm Sandy in October 2012, the large sand dune on the south side of the Wreck Pond outfall structure breached creating an inlet to the pond. The inlet naturally closed several weeks later; however, during heavy rain events, the level of the pond rises and water also discharges through the storm-created inlet. Extensive water quality monitoring of the waters around Wreck Pond have been performed over several years and it has been determined that the precautionary closing policy was no longer necessary. The precautionary closing policy for those four area beaches was lifted in 2014 and those beaches are currently monitored on a weekly basis from mid-May through mid-September.

Swimming advisories warn the public of potentially unhealthy water conditions. Advisories may be issued at the discretion of local health or enforcement agencies as warnings due to an exceedance of the water quality standard or extraordinary rain events. In 2010, one county began issuing swimming advisories following the first exceedance of the bacteria standard and in 2012; two of the four coastal counties participating in the CCMP were issuing swimming advisories. By 2014, all counties participating in the CCMP issued swimming advisories following the first exceedance of the bacteria standard.

Detailed recent beach closing information, including the specific beaches closed and reasons for the closings, can be found in the [CCMP Annual Report](#).<sup>5</sup> Data from the 1980’s show much higher yearly rates of beach closings. In 1988, for example, ocean beaches were closed over 800 times. Many of these closings were due to bacteria exceeding the standard. Improvements and upgrades to sewage treatment plants discharging into the ocean have largely corrected this problem. Some of the closings were also due to floatables. Floatables are floating debris such as plastic, paper or bottles, that wash up on the shore. Tighter controls on waste handling, including procedures mandated by the New Jersey’s 1989 Comprehensive Regulated Medical Waste Management Act, have largely reduced these problems.

**Beach Closings**

Page 2 - Updated 3/2016

The majority of ocean and bay beach closing years listed on the previous page were related to the impacts of stormwater. Floatable debris is also responsible for occasional but significant beach closings in New Jersey. In 1990, there were 10 separate beach closings due to floatable debris washing up along the coast. In the following 12 years, no closings occurred due to floatables. However, in 2003, 13 separate closings were due to reported wash-ups of trash and debris (following heavy rainfall in the NY/NJ harbor area and suspected combined sewer overflow discharges). In 2007, there were four closings due to floatable debris and, in 2008, a criminal medical waste dumping event caused the closing of 120 ocean beaches. In 2009 and 2010, no beaches were closed due to floatable debris washups but, in 2012, a total of 103 ocean beaches were closed on one weekend due to a washup of floatable debris and trash, including syringes, following a heavy rain event and in 2014 a small floatables event closed 3 beaches.

Closures at New Jersey's ocean beaches due to exceedances of the water quality standards have been on the decline since the 1990's. The precautionary closures and the swimming advisory policy now in effect at all four coastal counties represent an enhanced level of public health protection that has been implemented by county and local health officials with the support of DEP. In 2014, New Jersey beaches were open to bathing over 99.9% of the time, as seen in Figure 2. By comparison, in 2012,

the most recent year of reporting, the national average of beaches being open was reported to be 95%.<sup>6</sup>

## Outlook & Implications

Stormwater rules now in place in New Jersey are expected to reduce the impacts of stormwater on coastal regions as well as elsewhere in the state. Two sets of stormwater rules were adopted in February 2004. The first set of rules is intended to address and reduce pollutants associated with existing stormwater runoff. The second set of regulations sets forth the required components of regional and municipal stormwater management plans, and establishes the stormwater management design and performance standards for new development.<sup>7</sup>

## More Information

If you are interested in learning more about the Cooperative Coastal Monitoring Program or about the water quality at the beach you enjoy, please visit the New Jersey Department of Environmental Protection's beach information web page at [www.njbeaches.org](http://www.njbeaches.org). More information on Wreck Pond and the Action Plan can be found at: [www.nj.gov/dep/wreckpond/](http://www.nj.gov/dep/wreckpond/).

## References

- <sup>1</sup>Beaches Environmental Assessment and Coastal Health (BEACH) Act, October 10, 2000 (which amended the Clean Water Act).
- <sup>2</sup>NJDEP, 2012. 2010 New Jersey Integrated Water Quality Monitoring and Assessment Report. Water Monitoring & Standards. The report is available at <http://www.state.nj.us/dep/wms/bwgsa/generalinfo.htm>.
- <sup>3</sup>NJDEP, 2015, Wreck Pond, Accessed online 8/11/2015 at: <http://www.nj.gov/dep/wreckpond/>
- <sup>4</sup>Tiedemann, John, Wreck Pond Watershed Microbial Source Tracking Study, Monmouth University, September 2007. Accessed online on 8/11/2015 at: [http://www.nj.gov/dep/wreckpond/docs/monmouth\\_university\\_wreck\\_pond\\_watershed\\_report.pdf](http://www.nj.gov/dep/wreckpond/docs/monmouth_university_wreck_pond_watershed_report.pdf)
- <sup>5</sup>NJDEP. 2014. Cooperative Coastal Monitoring Program - Summary Report for 2013. Water Monitoring & Standards. The report is available at <http://www.state.nj.us/dep/bmw/bathingbeach/reports/2013ccmpapp.pdf>.
- <sup>6</sup>USEPA, National Summary, 2012 Swimming Season Update
- <sup>7</sup>See <http://www.nj.gov/dep/stormwater/>

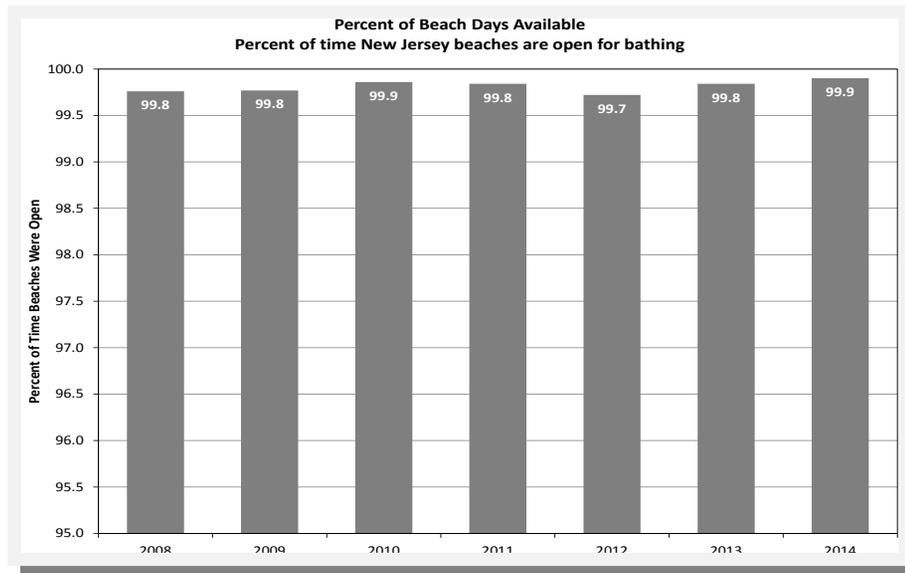


Figure 2. Percent of time New Jersey beaches are open for bathing by year.