



PENNSYLVANIA

13th in Beachwater Quality

6% of samples exceeded national standards in 2010

Polluted urban and suburban runoff is a major threat to water quality at the nation's coastal beaches. Runoff from storms and irrigation carries pollution from parking lots, yards, and streets directly to waterways. In some parts of the country, stormwater routinely causes overflows from sewage systems. Innovative solutions known as green infrastructure enable communities to naturally absorb or use runoff before it causes problems. The U.S. Environmental Protection Agency is modernizing its national rules for sources of runoff pollution and should develop strong, green infrastructure-based requirements.

Pennsylvania has 40 miles of Lake Erie coastline, eight miles of which are permitted public bathing beaches. The coastal beach monitoring program is administered by the Erie County Department of Health (DOH).

Swimming was prohibited at Beach 1 West and Beach 1 West Extension in 2010 because lifeguards could not be stationed there due to budget shortfalls.¹

Monitoring Results

In 2010, Pennsylvania reported 13 Lake Erie beaches in Erie County, of which 12 were reported as being monitored twice a week and 1 was reported as being monitored once a week. For this section of the report, NRDC looked at the percent of monitoring samples that exceeded the state's daily maximum bacterial standards (all reported samples were used to calculate the 2010 percent exceedance rates, including duplicate samples and samples taken outside the official beach season, if any). In 2010, 6%* of all reported beach monitoring samples exceeded the state's daily maximum bacterial standards. The beaches with the highest percent exceedance rates in 2010 were Beach 1 East (9%), Beach 11 (8%), Barracks Beach (7%), Beach 6 (6%), and Beach 9 (Pine Tree Beach) (5%), all in Erie County.

Sampling Practices: Beachwater quality monitoring activities are conducted from Memorial Day to Labor Day.

Practices are regulated by the state, with permit holders allowed to monitor more frequently than the state requires if they desire. Samples are collected in water that is approximately 30 inches deep, midway between the surface and the bottom. By regulation, at least three samples of water are taken from each beach at least once a week. Two samples are taken approximately 50 feet from each end of the beach, and the third sample is taken at the center. Presque Isle State Park has established a protocol requiring two sampling events each week.

When a sample is found to exceed bacterial standards, beaches are resampled for three consecutive days in order to lift advisories and/or restrictions as soon as possible.² States that monitor more frequently after an exceedance is found will tend to have higher percent exceedances and lower total advisory days than they would if their sampling frequency did not change after an exceedance was found.

Restrictions and Advisories

Total closing/advisory days for 14 events lasting six consecutive weeks or less decreased 59% to 14 days in 2010 from 34 days in 2009. For prior years, there were 45 days in 2008, 6 days in 2007, 53 days in 2006, and 39 days in 2005. In addition, there were no extended and 2 permanent events (730 days) in 2010. Extended events are those in effect more than six weeks but not more than 13 consecutive weeks; permanent events are in effect for more than 13 consecutive

KEY FINDINGS IN PENNSYLVANIA

Beachwater Contamination

(% of samples exceeding state standards in 2010)

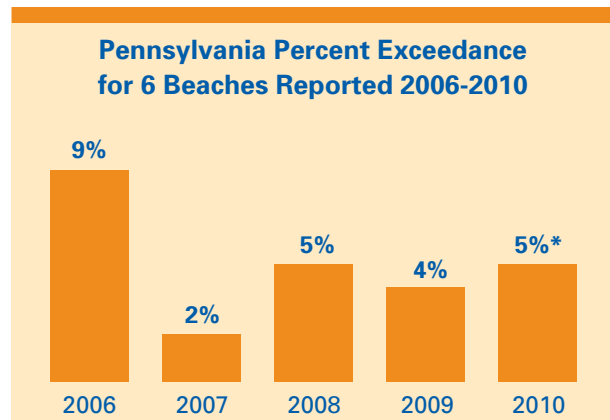
- Beach 1 East (9%) in Erie County
- Beach 11 (8%) in Erie County
- Barracks Beach (7%) in Erie County

Reported Sources of Beachwater Contamination Statewide (number of closing/advisory days)

- 14 (100%) stormwater

weeks. For 14 events lasting six consecutive weeks or less, 100% (14) of closing/advisory days in 2010 were due to monitoring that revealed elevated bacteria levels.

Standards and Procedures: Swimming advisories and restrictions, rather than beach closings, are issued at Lake Erie beaches. In Pennsylvania, if a single-sample *E. coli* count is between 235 and 1,000 cfu/100 ml, a swimming advisory is issued. While swimming is permitted, the public is informed that the *E. coli* level exceeds standards, and people are advised about what precautions to take should they choose to enter the water. If a single-sample count is 1,000 cfu/100 ml or greater, a swimming restriction is posted and swimming is prohibited. Pennsylvania also uses the 5-sample, 30-day geometric mean standard for *E. coli* of 126 cfu/100 ml to post restrictions.³ There is no protocol for delaying or forgoing an advisory or restriction when bacterial standards are exceeded.



Pennsylvania issues preemptive rain advisories at its Lake Erie beaches when rainfall exceeds 0.5 inch in a 24-hour period.² Beaches are also preemptively posted with restrictions when there is a known sewage spill and when high waves and strong winds out of the west are present.²

The Erie County DOH started developing a predictive beachwater quality model in 2004 based on weather, known sewage discharges, storm events, and water currents. A stream gauge has been installed on a major tributary to Lake Erie that influences the water quality of the beaches to inform the development of predictive water quality models for beaches at Presque Isle State Park. In 2008, a buoy that retrieves water quality data in real time was deployed off of Presque Isle. Plans are to deploy a second buoy in 2011, and data from these buoys will be utilized in predictive model development.³

* Why don't the 2010 percent exceedance values in this summary match? Only samples from a common set of beaches monitored each year from 2006–2010 are included in the bar chart. Because some beaches were not monitored in each of those years, the percent exceedance for this subset of beaches (5%) did not have the same value as the percent exceedance for all of the beaches monitored in 2010 (6%).

Pennsylvania 2010 Monitoring Results and Closing or Advisory Days					
Beach	Tier	Assigned Monitoring Frequency	Total Samples	% of Samples Exceeding State Standards	Closing or Advisory Days
Erie County					
Barracks Beach	1	2/wk	96	7%	2
Beach 1 East	1	2/wk	99	9%	2
Beach 1 West	Not Open	2/wk	3	0%	0 (365)*
Beach 1 West Extension	Not Open	2/wk	3	0%	0 (365)*
Beach 10 (Bundy Beach)	1	2/wk	93	4%	1
Beach 11	1	2/wk	102	8%	2
Beach 2	1	2/wk	0	NA	0
Beach 6	1	2/wk	99	6%	2
Beach 7 (Water Works Beach)	1	2/wk	99	4%	2
Beach 8 (Pettinato Beach)	1	2/wk	93	4%	1
Beach 9 (Pine Tree Beach)	1	2/wk	93	5%	1

Beach	Tier	Assigned Monitoring Frequency	Total Samples	% of Samples Exceeding State Standards	Closing or Advisory Days
Erie County					
Freeport Beach	1	1/wk	14	0%	0
Mill Road Beaches	1	2/wk	93	2%	1

*Reported closing or advisory days are for events lasting six consecutive weeks or less. Number of days in parentheses are for events lasting more than six consecutive weeks.

NOTES

1 Doug Range, Erie County Department of Health, personal communication, May 2011.

2 Erie County Department of Health. Beach Sampling Information. Accessed at <http://www.ecdh.org/environmental/BeachSampleInfo.htm>. February 2011.

3 Doug Range, Erie County Department of Health, personal communication, April 2011.

Testing the Waters 2011 reflects data as of June 27, 2011.