



Save the Harbor / Save the Bay 2013 Beaches Report Card

On Sunday, May 26, 2013 Save the Harbor / Save the Bay released its second annual **Beaches Report Card** on water quality and beach flagging accuracy on the Boston Harbor Region’s public beaches from Nahant to Nantasket that are managed by the Department of Conservation and Recreation (DCR).

The report card is based on an in-depth analysis of thousands of samples taken by the DCR and the Massachusetts Water Resources Authority (MWRA) in 2012. The samples were collected at 34 testing sites on public beaches in 9 communities including Nahant, Lynn, Revere, Winthrop, East Boston, South Boston, Dorchester, Quincy and Hull. The report card is based on methodology developed by the Save the Harbor/Save the Bay’s Beaches Science Advisory Committee (BSAC), Co-Chaired by Dr. Judy Pederson of MIT’s Sea Grant Program and Dr. Jim Shine of the Harvard School of Public Health.

Here are the results for 2012

Beach	Overall Beach Safety (2012)	Overall Beach Safety (2011)	Test Frequency	# of sampling locations
Revere Beach	100.00%	87.50%	weekly	4
Winthrop	100.00%	84.60%	weekly	1
Short	100.00%	83.30%	weekly	1
South Boston*	99.12%	98.17%	daily	4
Nantasket	98.33%	100.00%	weekly	4
Pleasure Bay**	93.86%	94.50%	daily	3
Wollaston***	93.20%	88.73%	daily	4
Nahant	89.29%	88.50%	weekly	4
Malibu	88.89%	91.70%	weekly	1
Constitution	88.60%	93.20%	daily	3
Savin Hill	88.24%	91.70%	weekly	1
King’s****	86.40%	73.20%	daily; weekly	3
Tenean	81.82%	79.50%	daily	1

*South Boston includes M Street Beach, City Point, and Carson Beach.

**Pleasure Bay increased sampling locations from 1 to 3 sites in 2012 for better understanding of water quality.

***Wollaston Beach includes the Milton St, Channing St, Sachem St, and Rice Road sampling locations.

****King’s Beach changed one of its sampling sites in 2012 to more accurately reflect water quality.

Testing frequency also increased from weekly to daily in 2012.

“2012 was a good year for most of the Boston Harbor region’s public beaches, with more than half earning either an A or an A plus,” said Bruce Berman, Director of Strategy, Communications and Programs at Save the Harbor/Save the Bay, which produced the report.

- Overall Beach Safety on these beaches increased from 88.82% in 2011 to 92.90% in 2012.
- South Boston’s beaches once again topped the list of beaches tested daily, at 98.17%, followed by Pleasure Bay at 93.86% and Wollaston Beach in Quincy at 93.20%.
- Beaches in Revere and Winthrop, which are tested weekly, scored 100% in 2012, followed closely by Nantasket Beach in Hull at 98.33%.
- King’s Beach in Lynn and Swampscott scored 86.40% in 2012, up from 73.20% in 2011, while Tenean Beach in Dorchester scored 81.82% in 2012, up from 79.50% in 2011.
- Constitution Beach in East Boston scored 88.60% in 2012, down from 93.20% in 2011. Malibu Beach and Savin Hill Beach in Dorchester scored 88.89% and 88.24% respectively, a slight decrease from 2011. Nahant Beach scored 89.29%, a slight increase from 2011.

2012 was a dry year, which explains most of the changes we saw from 2011. Bacterial pollution is often caused by storm water discharges that accompany summer showers, squalls and storms, so less rain means cleaner water.

Other factors affected the results as well. In 2012, there were changes in the testing procedures at King’s Beach on the Lynn/Swampscott line and at Pleasure Bay in South Boston, where daily tests and new testing sites have given us a better picture of the water quality situation on those beaches.

In 2012, officials in Lynn and Swampscott identified and corrected illegal connections and broken pipes. They have agreed to meet this summer to discuss ways in which they can work together to address the persistent pollution problems at King’s Beach on the Lynn-Swampscott line.

There have also been efforts to address the outstanding water quality challenges at Tenean Beach in Dorchester, where Boston Water and Sewer has identified and corrected illegal connections that may improve water quality this season.

Beach Flagging and Posting Accuracy

We use flags to inform the public about water quality on the Boston Harbor region’s public beaches. A blue flag indicates when the water is safe for swimming, while a red flag indicates that it is not. Unfortunately, it still takes 24 hours to get reliable test results. As a result, the flags often reflect yesterday’s water quality, and not the current conditions on the beach.

Save the Harbor uses three metrics to measure beach flagging and posting accuracy, which we can only calculate for beaches that are tested daily.

Overall Predictive Efficiency: tells us what fraction of the time the flags are correct. This metric can be expressed as “The flags correctly indicate that the beach is safe or unsafe for swimming x% of the time.”

Beach	Overall Predictive Efficiency 2012	Overall Predictive Efficiency 2011
South Boston	99.12%	96.33%
Constitution	96.05%	86.00%
Wollaston	95.11%	82.50%
Pleasure Bay	88.16%	89.00%
Tenean	87.01%	80.00%
King's*	69.74%	n/a

*King's was tested weekly in 2011 so Overall Predictive Efficiency is not available for that year

Specificity: tells us what fraction of the time the beach is correctly labeled with a blue flag. This metric can be expressed as “When the beach is safe for swimming, it is correctly labeled with a blue flag x% of the time.”

Specificity (Blue Flag Accuracy)

Beach	Specificity
King's Beach	100%
Pleasure Bay	100%
South Boston	100%
Constitution	95.77%
Tenean	86.11%
Wollaston	83.72%

Sensitivity: tells us what percentage of the time the beach is correctly labeled with a red flag. This metric can be expressed as “When the beach is not safe for swimming, it is correctly labeled with a red flag x% of the time.”

Sensitivity (Red Flag Accuracy)

Beach	Sensitivity
Constitution	100.00%
Tenean	100.00%
Wollaston	100.00%
King's Beach	30.30%
South Boston	25.00%
Pleasure Bay	10.00%

Overall flagging accuracy improved somewhat in 2012, as a direct result of DCR's continuing efforts to develop more accurate models for beach management on a beach-by-beach basis.

While specificity (blue flag accuracy) is fairly high on many beaches, sensitivity (red flag accuracy) continues to be problematic, with less than 50% of the red flags posted correctly on some beaches in 2012.

Beach testing, posting procedures and flagging accuracy continue to be a challenge on these beaches, as they are elsewhere across the Commonwealth and the country. This issue needs to be addressed if we are to protect both the public's health and their right to enjoy the benefits of our region's public investment in clean water and better beaches.

In 2013, Save the Harbor will continue to work with the Metropolitan Beaches Commission (MBC) and the DCR, MWRA, EPA, DEP, the Massachusetts Department of Public Health (DPH) and the Beaches Science Advisory Committee to develop more accurate models to better predict when to post or flag a beach.

"At Save the Harbor/Save the Bay our goal is clean water and not simply better models or faster and more accurate test results. We are working towards the day when there is no need for flags at all," said Berman.

Save the Harbor / Save the Bay would like to thank Dr. Jim Shine and Dr. Judy Pederson, Co-Chairs of our Beaches Science Advisory Committee, Dr. Andrea Rex and Kelly Coughlin of the MWRA, DCR's Gary Briere, and SH/SB's Staff Assistant for water quality Jacqueline Sussman for their help with this report.

For more information on Save the Harbor / Save the Bay's **Beaches Report Card**, contact Bruce Berman on his cell at 617-293-6243 or email bruce@bostonharbor.com

You can find the data and learn more about the methodology on which the report card is based at www.savetheharbor.org/beachesreportcard