



Executive Summary

Save the Harbor / Save the Bay Beaches Science Advisory Committee

Exchange Conference Center on Boston's Fish Pier, May 30, 2012

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This is a summary of the data on water quality and flagging accuracy on the metropolitan region's public beaches from Nahant to Nantasket, prepared by Save the Harbor / Save the Bay for the Beaches Science Advisory Committee Meeting on May 30, 2012 at the Exchange Conference Center on Boston's Fish Pier.

Beach Water Quality:

To assess and compare the water quality conditions on each beach, we looked at the percentage of samples exceeding the state swimming standard of 104 cfu/100ml. We call this metric "Beach Safety".

The total number of samples will vary across the beaches, as some beaches are sampled weekly (about 12 samples a season) and some are sampled daily (about 73 samples a season per sampling location). Also, beaches vary in the number of sampling locations; some have only one location, some have as many as four. If a beach has 4 locations and is sampled daily, there would be 292 samples taken.

Overall Beach Safety

Nantasket Beach - Hull	100%
South Boston @ M Street	98.60%
South Boston @ City Point	98.60%
South Boston @ Carson (Bathhouse and I Street)	97.30%
South Boston @ Pleasure Bay	94.50%
Wollaston @ Rice Road	93.20%
Constitution Beach - East Boston	93.20%
Malibu Beach - Dorchester	91.70%
Savin Hill - Dorchester	91.70%
Nahant	88.50%
Wollaston @ Milton Road	87.70%
Wollaston @ Channing Street	87.70%
Revere Beach	87.50%
Wollaston@ Sachem Street	86.30%
Winthrop	84.60%
Short Beach - Revere	83.30%
Tenean Beach - Dorchester	79.50%
King's Beach - Lynn	73.20%

Beach Flagging:

Assessing the accuracy of the beach flags is relatively simple on beaches that are tested daily. It is much more difficult on beaches that are sampled weekly, because you can't determine the accuracy of the flags without daily test results.

To determine the accuracy of the flags, we compared beaches that were sampled daily for two different metrics which we call "Sensitivity" and "Specificity."

Sensitivity tells us what percentage of the time the beach is correctly labeled with a red flag. We have expressed this number as a percentage which can be expressed as "When this is not safe for swimming, it is correctly labeled with a red flag x% of the time." The closer the metric is to 100% the better.

Sensitivity from "Best to Worst"

<u>Beach</u>	<u>Sensitivity</u>
Wollaston (Entire Beach)	75.00%
Tenean Beach - Dorchester	73.30%
Wollaston@ Sachem Street	70.00%
Wollaston @ Channing Street	55.50%
Wollaston @ Rice Road	40.00%
Constitution Beach - East Boston	40.00%
Wollaston @ Milton Road	33.30%
South Boston @ M Street	0%
South Boston @ City Point	0%
South Boston @ Carson (Bathhouse and I Street)	0%
South Boston @ Pleasure Bay	0%

Specificity tells us what fraction of the time the beach is correctly labeled with a blue flag, We have expressed this number as a percentage and the metric can be expressed as "when the beach is safe for swimming, it is correctly labeled with a blue flag x% of the time." The closer the metric is to 100%, the better.

Specificity from "Best to Worst"

<u>Beach</u>	<u>Specificity</u>
South Boston @ M Street	98.60%
South Boston @ City Point	98.60%
South Boston @ Carson (Bathhouse and I Street)	97.20%
South Boston @ Pleasure Bay	94.20%
Wollaston (Entire Beach)**	91.30%
Constitution Beach - East Boston	89.70%
Wollaston @ Channing Street	87.50%
Wollaston @ Rice Road	86.70%

Wollaston @ Milton Road
Wollaston@ Sachem Street
Tenean Beach - Dorchester

85.90%
84.10%
81.00%