



# ENVIRONMENTAL QUALITY UPDATE:

## MONITORING BACTERIA

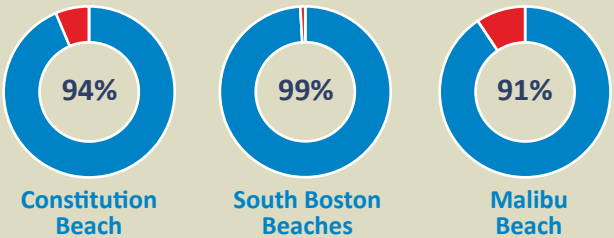
In Boston Harbor and Massachusetts Bay

### Protecting Massachusetts Bay

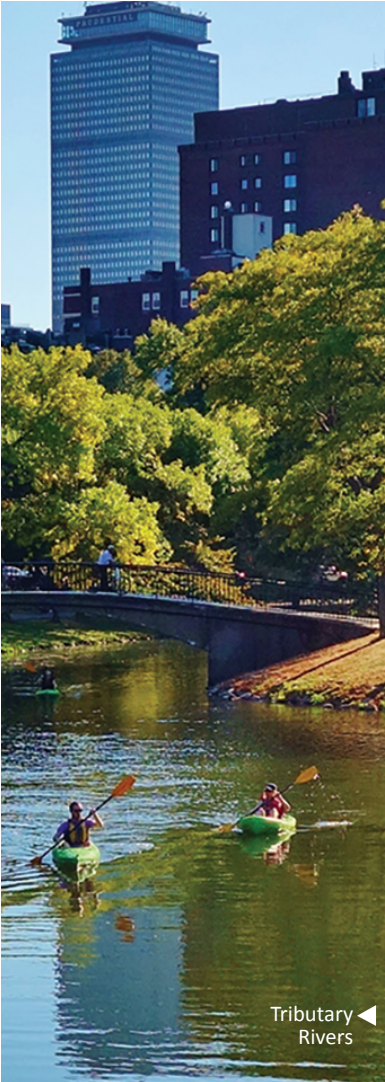
MWRA has permanently moved the effluent discharge from Boston Harbor to Massachusetts Bay through a 9.5-mile undersea outfall tunnel. Bacteria remain at safe levels for recreation and shellfishing at monitoring stations near the outfall and closer to the coast.

MWRA's efforts to eliminate wet-weather discharges of sewage and stormwater have resulted in the cleanest urban beaches in the country.

### Percent of samples meeting the saltwater swimming standard for *Enterococcus* at Harbor Beaches 2012-2016:



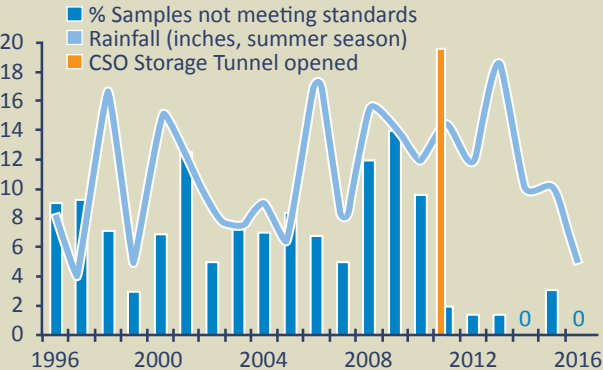
South Boston beaches have met swimming standards 99% of the time in the last 5 years. Today, any high bacteria counts are mainly from stormwater runoff, which often contains animal waste and other sources of bacteria.



### Swimmable Beaches After MWRA Improvements

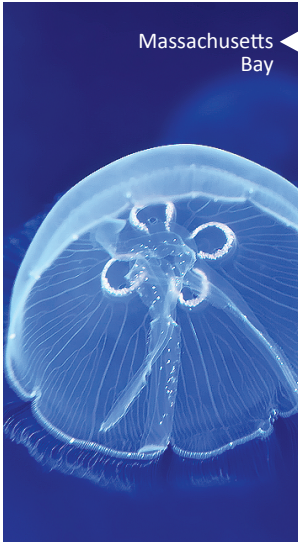
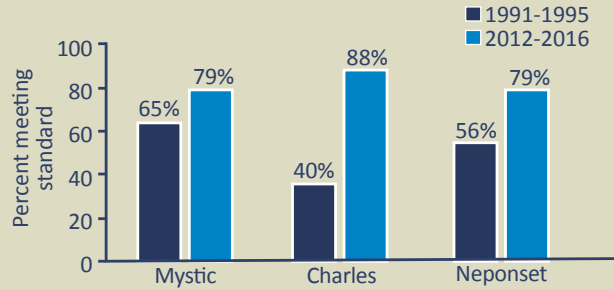
Overall bacterial water quality is better today in Boston Harbor's beaches, due in part to MWRA activities including the Boston Harbor Project, Combined Sewer Overflow (CSO) Long-Term Control Plan, and CSO Storage Tunnel in South Boston.

### Carson Beach bacteria levels have dropped since 2011:



### Cleaner Rivers After Improvements

### Percent of samples meeting freshwater swimming standard for *Enterococcus* bacteria in tributary rivers:



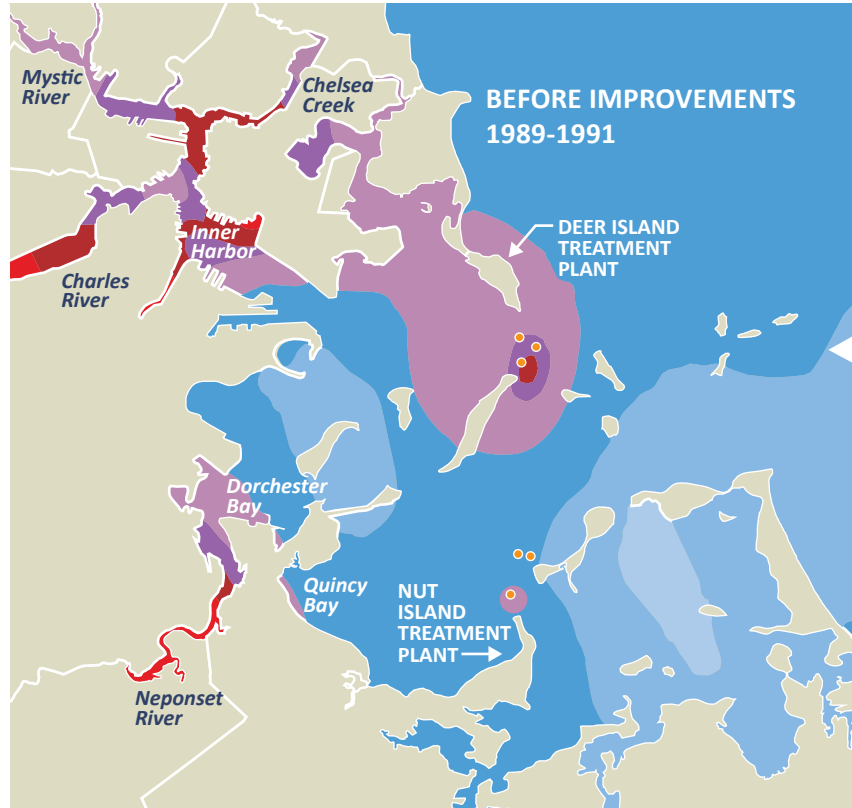
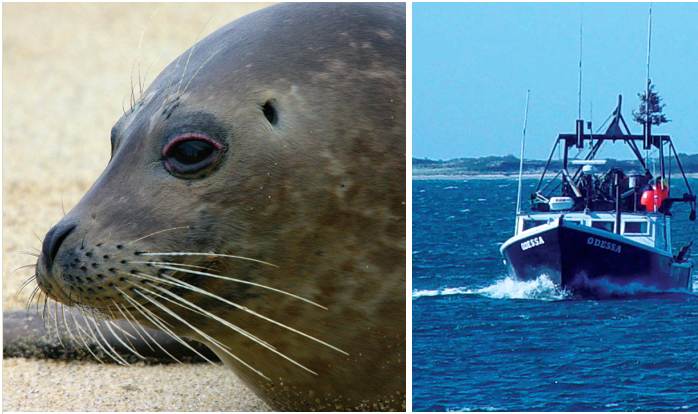
For more information on MWRA activities, go to [www.MWRA.com](http://www.MWRA.com).

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Tributary Rivers





## BOSTON HARBOR BACTERIA: THE LIGHTER THE BLUE, THE BETTER

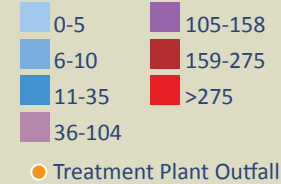
MWRA measures *Enterococcus*, a bacteria associated with human and animal waste, at more than 60 sampling locations. The data are used to estimate values for areas not sampled.

### **Enterococcus Bacteria In Wet Weather Before Improvements**

Sewage effluent and solids were discharged daily into Boston Harbor through outfalls near Deer Island and Nut Island treatment plants.

#### LEGEND

Geometric mean number of bacteria, colonies per 100 ml sample. Lighter blue shading indicates lower bacteria counts.



MWRA was established by an act of the Legislature in 1984 to provide wholesale water and sewer services to the metropolitan Boston area; today, that is 2.5 million people in 61 communities.

### **Boston Harbor Water Quality Was Poor Before MWRA Improvements**

Before 1991, water quality in Boston Harbor frequently violated water quality standards for bacteria. Pollution from untreated combined sewer overflows and poorly treated sewage resulted in widespread beach closures, especially in wet weather. These problems led to the creation of MWRA and the court-ordered Boston Harbor Project.

### **The Boston Harbor Cleanup Improved Treatment**

MWRA's sewage treatment system has been transformed under the federally mandated 20-year, \$5 billion Boston Harbor Project. This work included rebuilding the Deer Island Treatment Plant; constructing a 9.5-mile outfall tunnel to discharge treated wastewater away from the Harbor into Massachusetts Bay; transforming sewage solids from a pollutant to a marketable fertilizer; and controlling combined sewer overflows.



### **Enterococcus Bacteria In Wet Weather After MWRA Upgraded Treatment and Equipment**

The Nut Island Treatment Plant has been replaced by a headworks, which screens sewage before sending it to Deer Island. Once treated, Deer Island effluent is discharged to Massachusetts Bay.

