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**Boston Harbor and Massachusetts Bay**  
**Massachusetts Water Resources Authority**  
**Environmental Quality**  
**Department**

**WATER QUALITY REPORT**

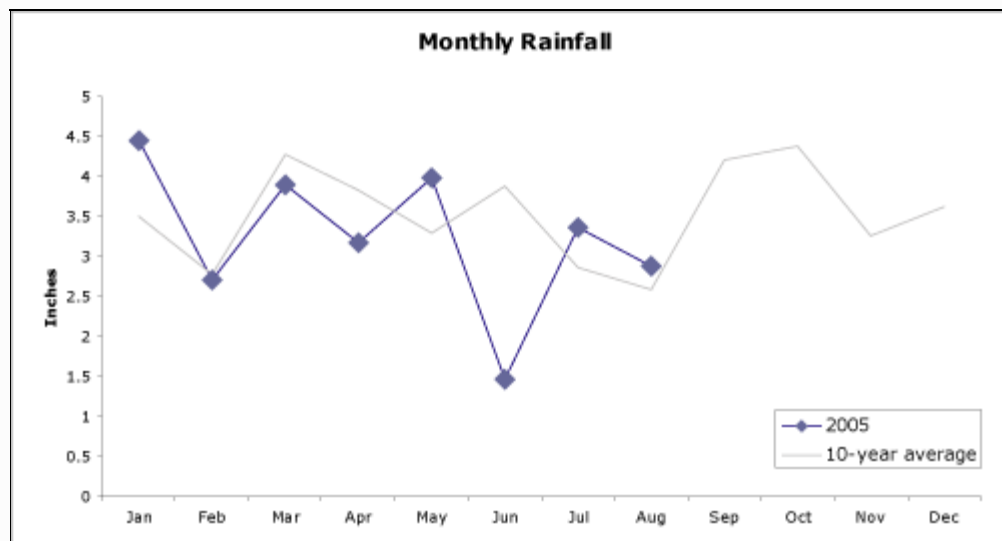
**Boston Harbor and Tributary Rivers - July 2005**

MWRA monitors water quality at more than 50 locations in Boston Harbor and its three largest tributary rivers: the Charles River, the Mystic River, and the Neponset River (See the **State of Boston Harbor report** for more on rivers). Monitoring is conducted year-round in each region on a rotating schedule, with the most intense sampling in spring and summer.

The graphs below are grouped by harbor (saltwater) locations, and river locations. In general, the tributary rivers have poorer water quality than the harbor, reflecting the impacts of urban storm runoff and combined sewer overflows (CSOs). These three rivers are dammed near their entry to the harbor, which reduces flushing and further concentrate nutrients and pollutants entering the rivers from upstream.

Moderate algal levels and water clarity are essential to a healthy Harbor ecosystem. High fecal coliform counts indicate potential public health threats. Indicators presented here are likely to be affected by environmental factors like temperature and rainfall as well as discharges of contaminated stormwater or CSOs.

THIS MONTH'S PRECIPITATION



***E. COLI***

*E. coli* is a bacteria found in human and animal waste; it is measured in recreational waters to indicate bacterial water quality and to assess public health risk. Counts greater than 126 colonies per 100 milliliters of water fail to meet the Massachusetts Department of Public Health swimming standard and indicate poor water quality. High levels of *E. coli* can occur following heavy rains that carry untreated waste into rivers and the harbor from storm runoff and combined sewer overflows.

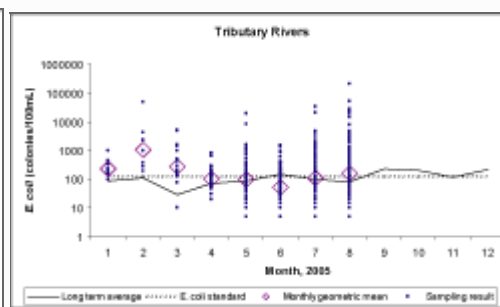
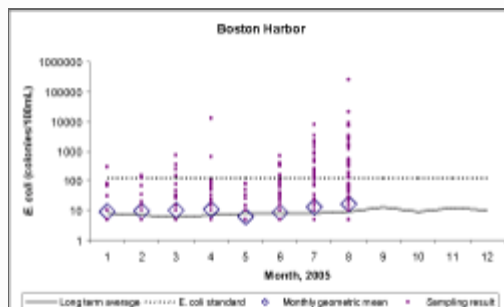


*E. coli* counts greater than 126 colonies per 100 mL fail to meet the state standard.

(Click on images for a closeup view)

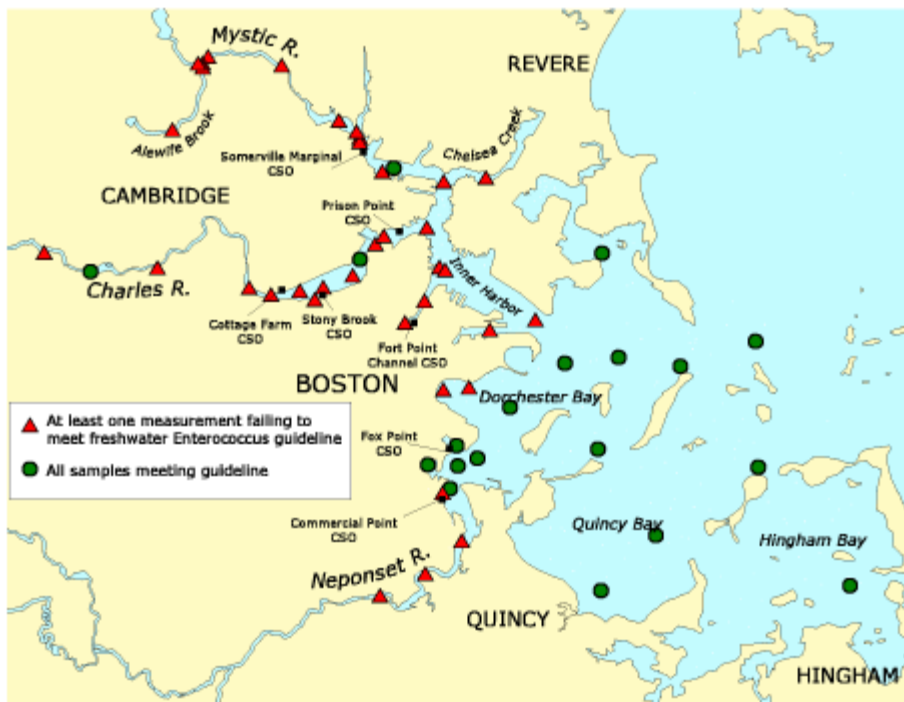
**HARBOR *E. COLI***

**RIVER *E. COLI***



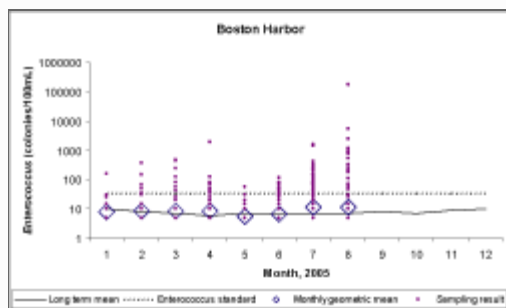
**ENTEROCOCCUS**

Enterococcus is a type of bacteria present in the intestines of warm-blooded animals and is considered to be an excellent indicator of human sewage. During the swimming season, a geometric mean count above 35 colonies per 100 mL (an average of counts from samples collected over several days or weeks) results in prolonged closure of a swimming area.

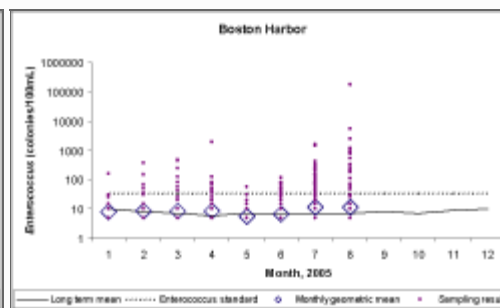


(Click on images for a closeup view)

### HARBOR *ENTEROCOCCUS*



### RIVER *ENTEROCOCCUS*



### ALGAE

The abundance of algae is indirectly measured by chlorophyll. Chlorophyll is the green pigment in plants that is essential for photosynthesis (photosynthesis is the process plants use to create energy from light). In the harbor and rivers, photosynthesis is carried out by algae (or phytoplankton), microscopic plants suspended in the water column.

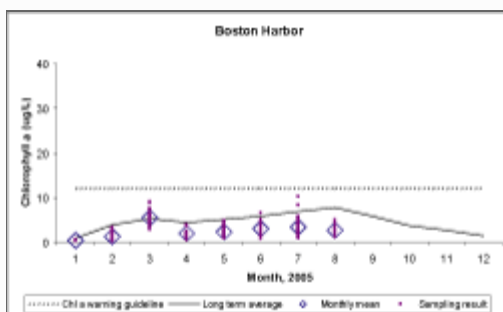
An overabundance of nutrients in the water can result in elevated algae levels, or algal blooms, which are indicated by high chlorophyll concentrations. Algae blooms can deplete bottom-water dissolved oxygen, reduce water clarity, and impair recreational uses.



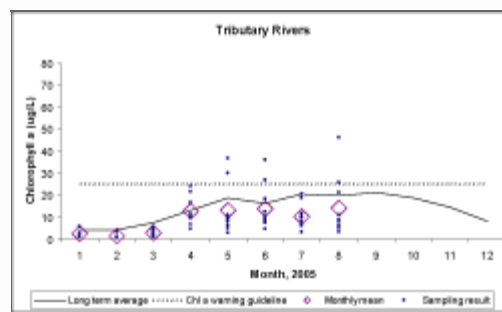
Chlorophyll concentrations greater than 12 micrograms per liter in the Harbor and 25 micrograms per liter in the rivers indicate overgrowth of algae.

(Click on images for a closeup view)

### HARBOR ALGAE



### RIVER ALGAE



### WATER CLARITY

Water clarity in the harbor and the rivers is primarily affected by concentrations of algae and suspended solids. Secchi disks are a simple way to approximate the transparency of water. White or black-and-white disks are lowered into the water and the maximum depth at which they are visible is recorded. Large secchi disk depths indicate good water clarity, small secchi disk depths indicate poor water clarity.

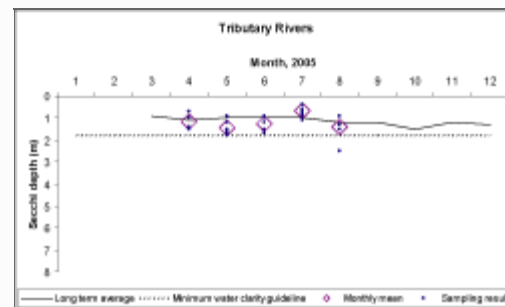
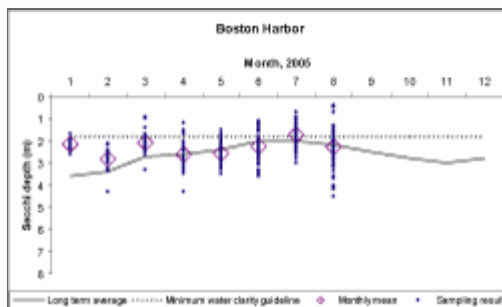


Secchi disk depths less than 1.8 meters indicate poor water clarity.

(Click on images for a closeup view)

HARBOR CLARITY

RIVER CLARITY



Please address data requests or questions about the harbor and the bay to the MWRA Environmental Quality Department at 617-788-4601, or [e-mail us](#).

See a report from a different month:

July 2005

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