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WATER QUALITY REPORT

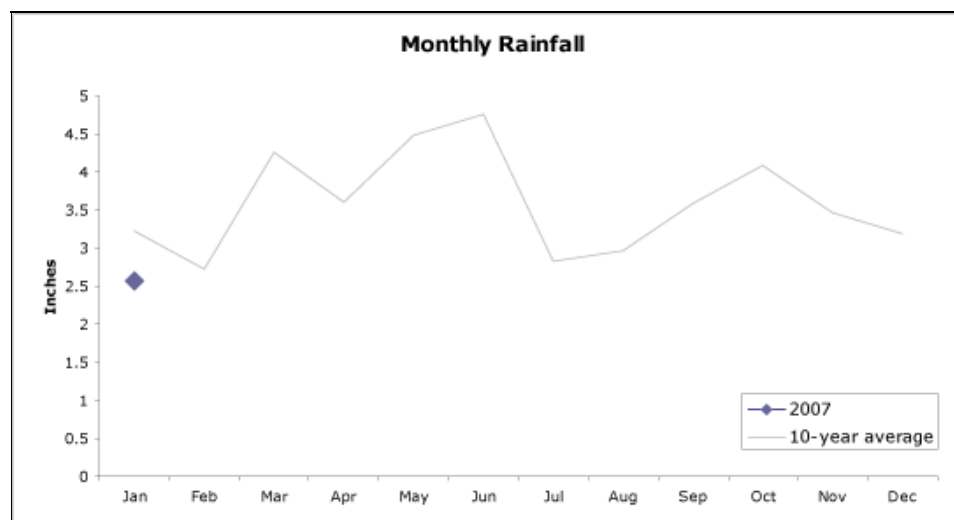
Boston Harbor and Tributary Rivers January 2007

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.

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 levels of algae and water clarity are essential to a healthy Harbor ecosystem. High fecal coliform counts signal potential public health threats. Water quality indicators 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



Among other water quality indicators, MWRA measures *E. coli*, *Enterococcus*, algae, and clarity. Select each indicator below to view recent data from the harbor and rivers.

E. COLI: A bacteria found in both human and animal waste.

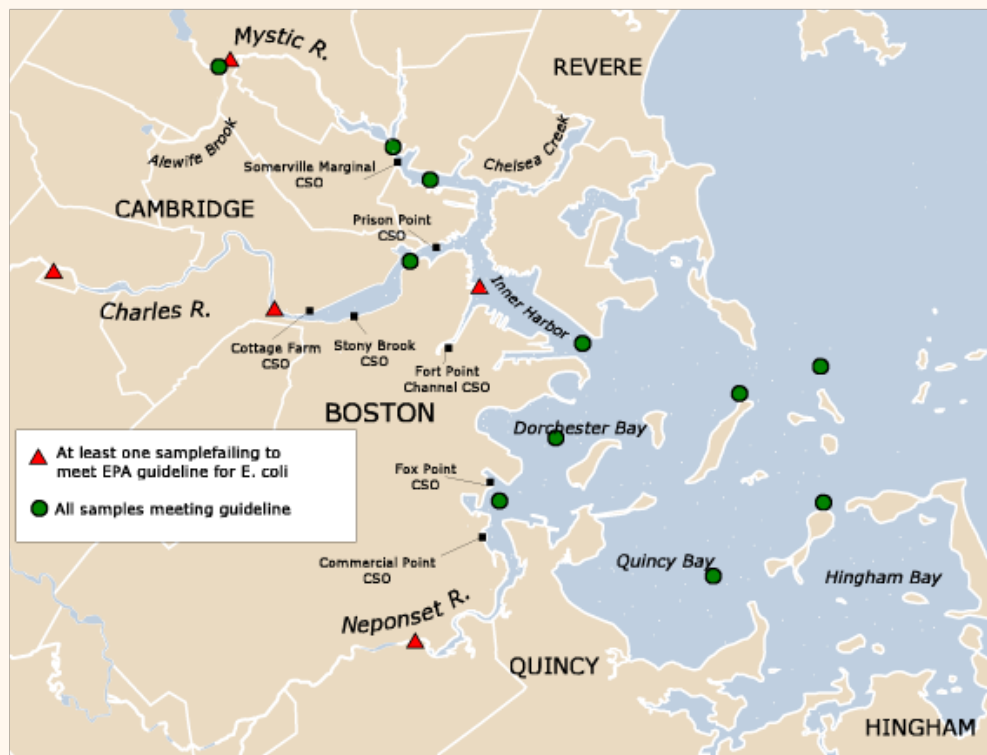
ENTEROCOCCUS: A bacteria that is a strong indicator of human sewage.

ALGAE: Microscopic plants, or phytoplankton, the overgrowth of which can degrade water quality.

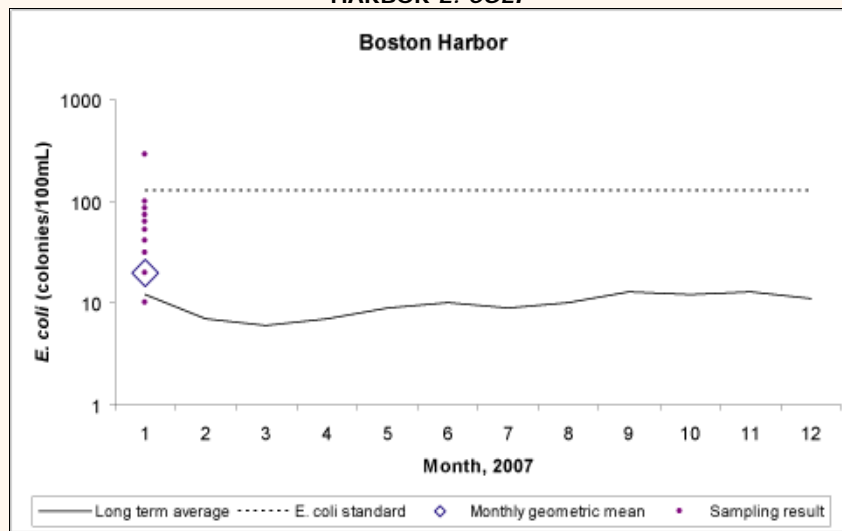
CLARITY: Water clarity is primarily affected by concentrations of algae and suspended solids.

E. COLI

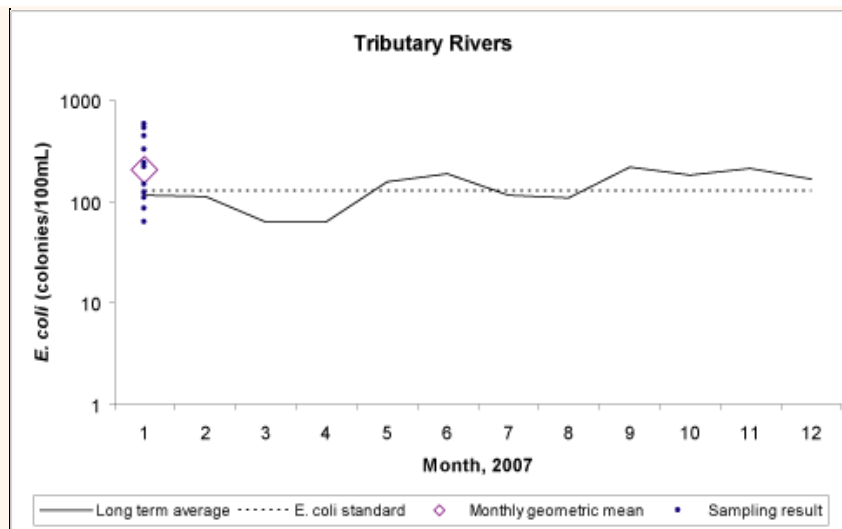
E. coli is a bacteria found in human and animal waste; it is measured in recreational waters to indicate bacterial water quality and to assess public health risk. Counts greater than 126 colonies per 100 milliliters of water fail to meet the Massachusetts Department of Public Health swimming standard 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.



HARBOR E. COLI

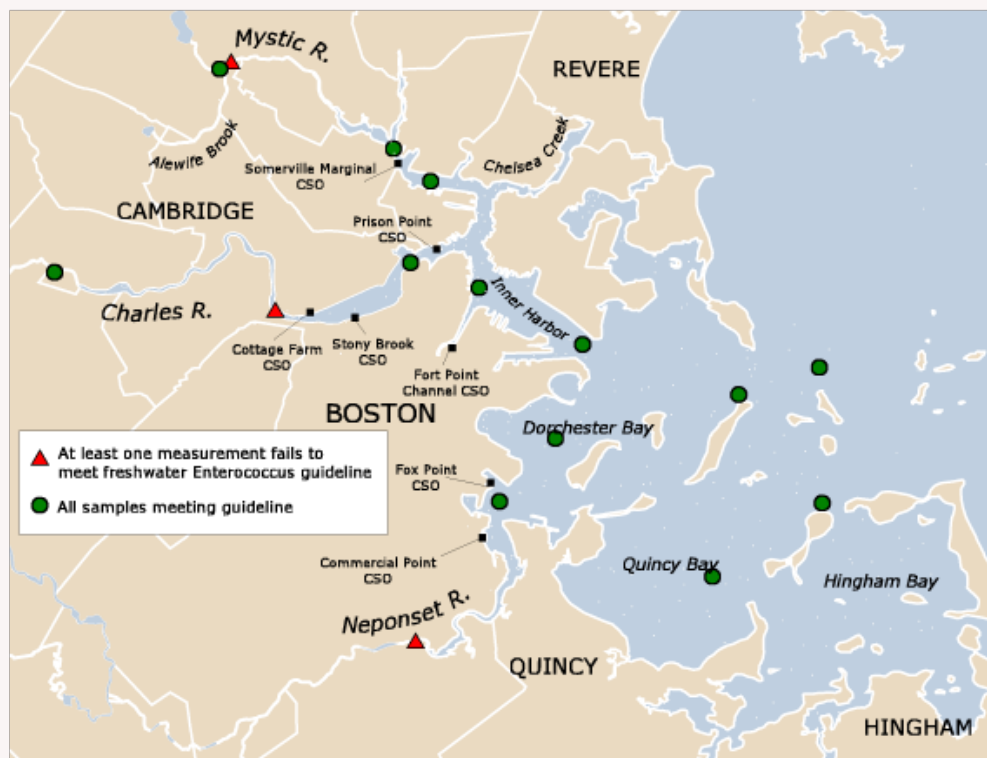


RIVER E. COLI

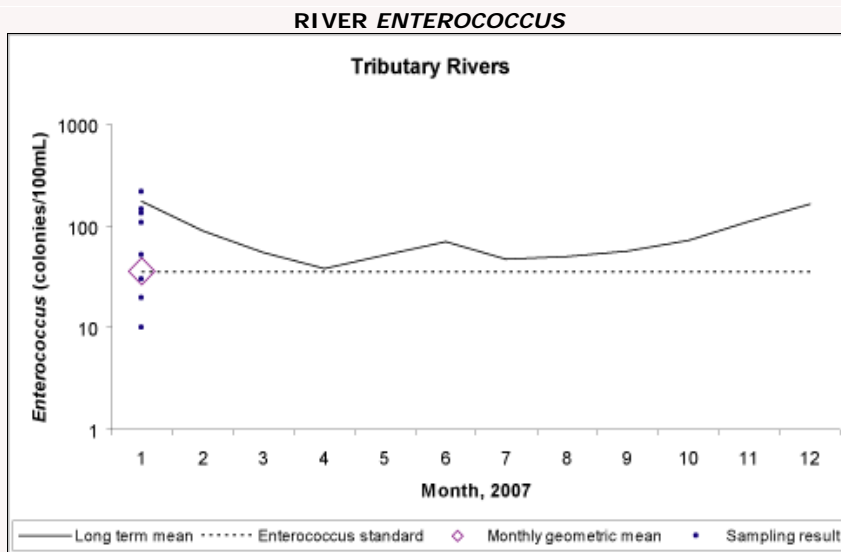
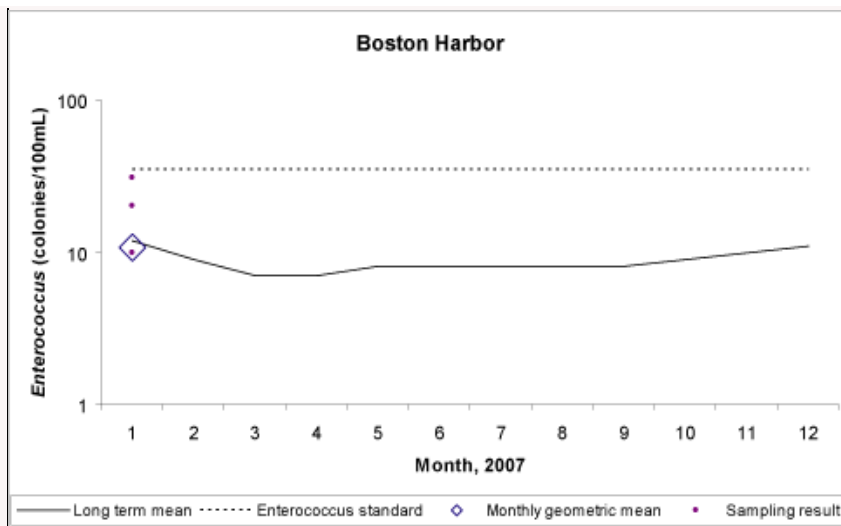


ENTEROCOCCUS

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.

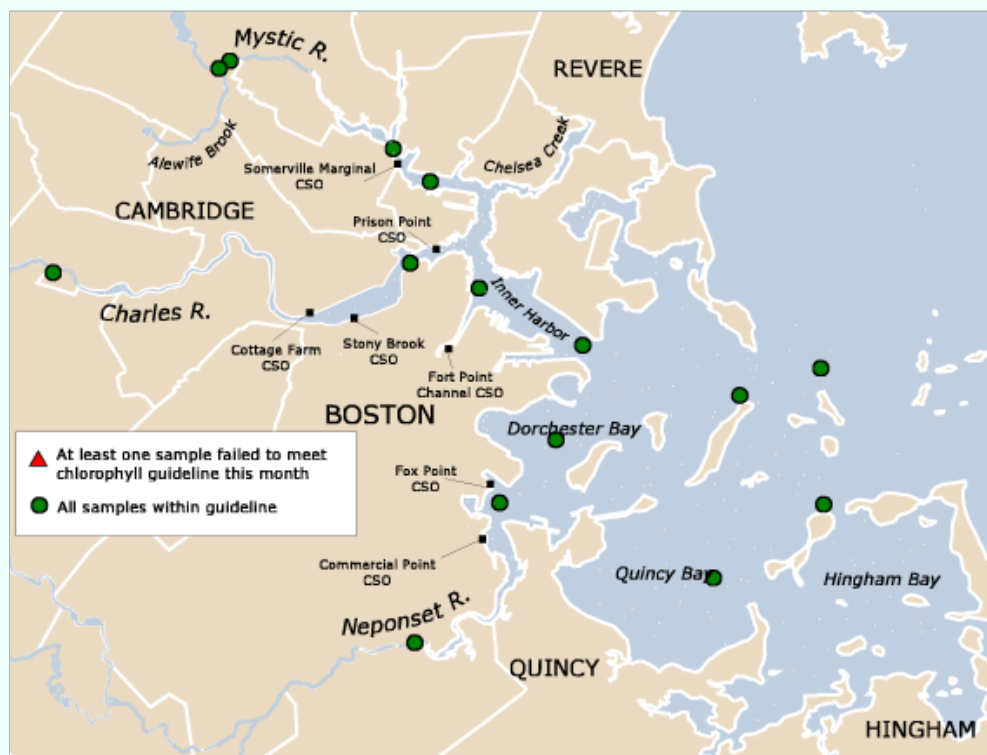


HARBOR ENTEROCOCCUS

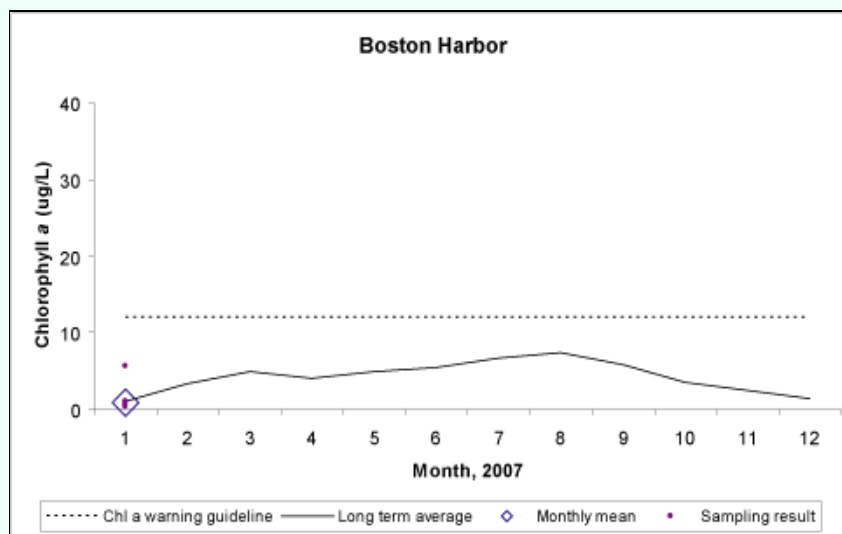


ALGAE

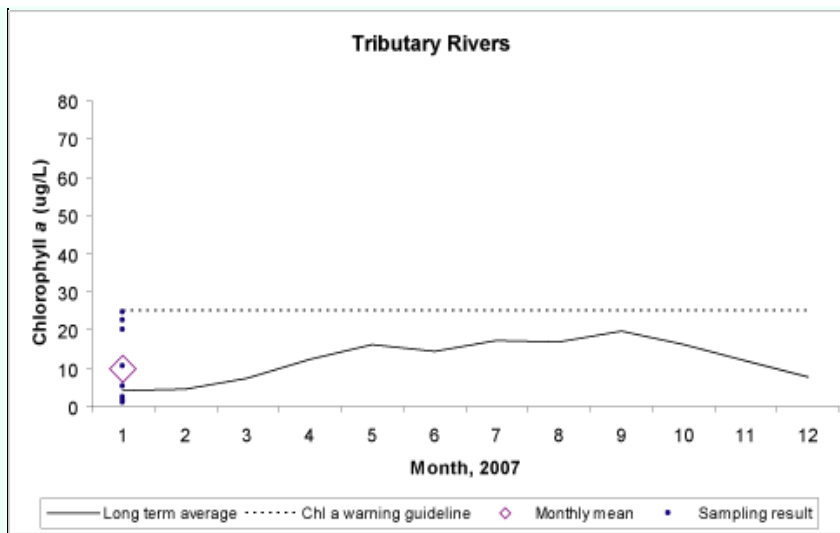
In the harbor and rivers, photosynthesis is carried out by algae (or phytoplankton), microscopic plants suspended in the water column. To determine the amount of algae in the water, we measure chlorophyll. High chlorophyll concentrations indicate an overabundance of nutrients in the water, which can result in elevated algae levels, or algal blooms. Algal 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 an overgrowth of algae.



HARBOR ALGAE

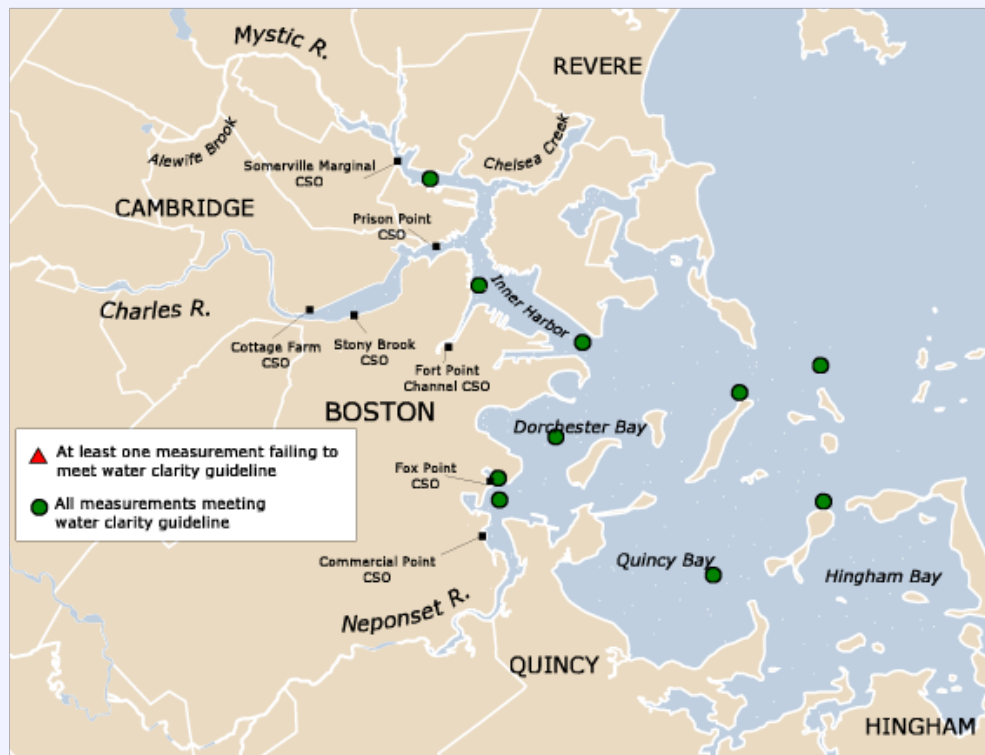


RIVER ALGAE

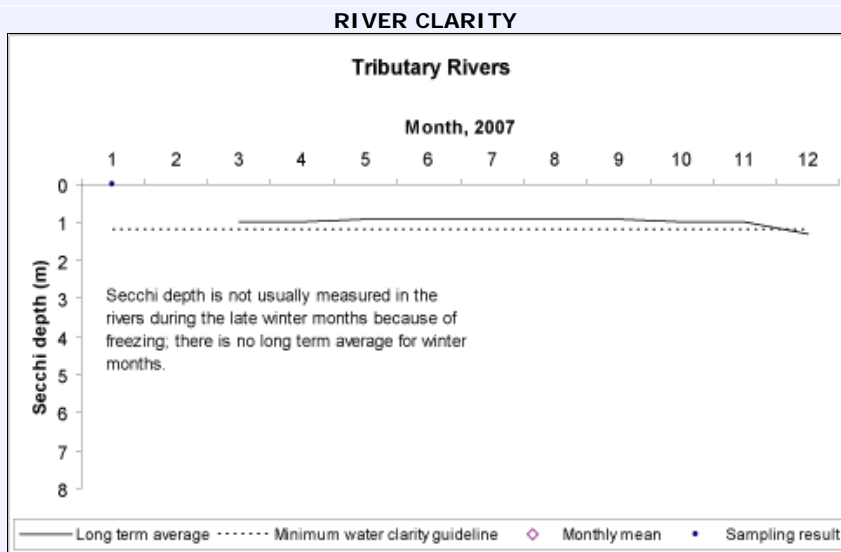
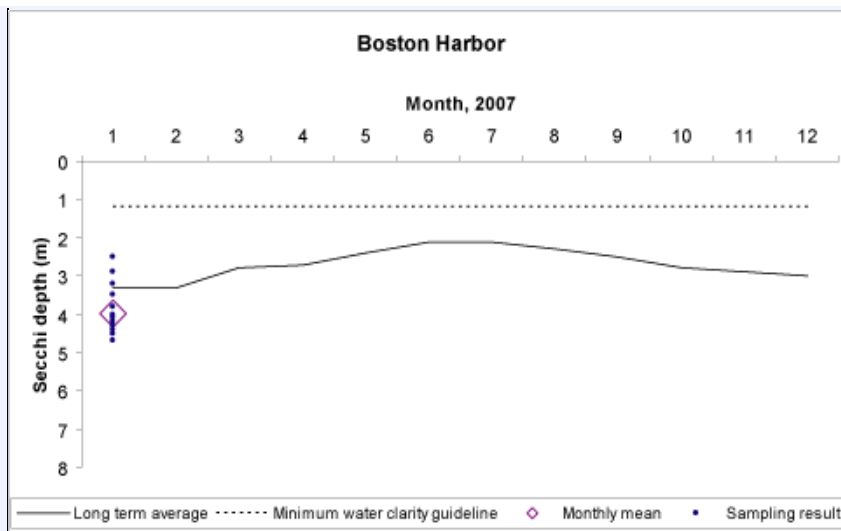


WATER CLARITY

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



HARBOR CLARITY



[See older Harbor and River reports](#)

[Download Harbor data \(Excel\)](#)

[Download River data \(Excel\)](#)

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](#).

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