

Contingency Plan Report Third Quarter 2013

Ambient Monitoring

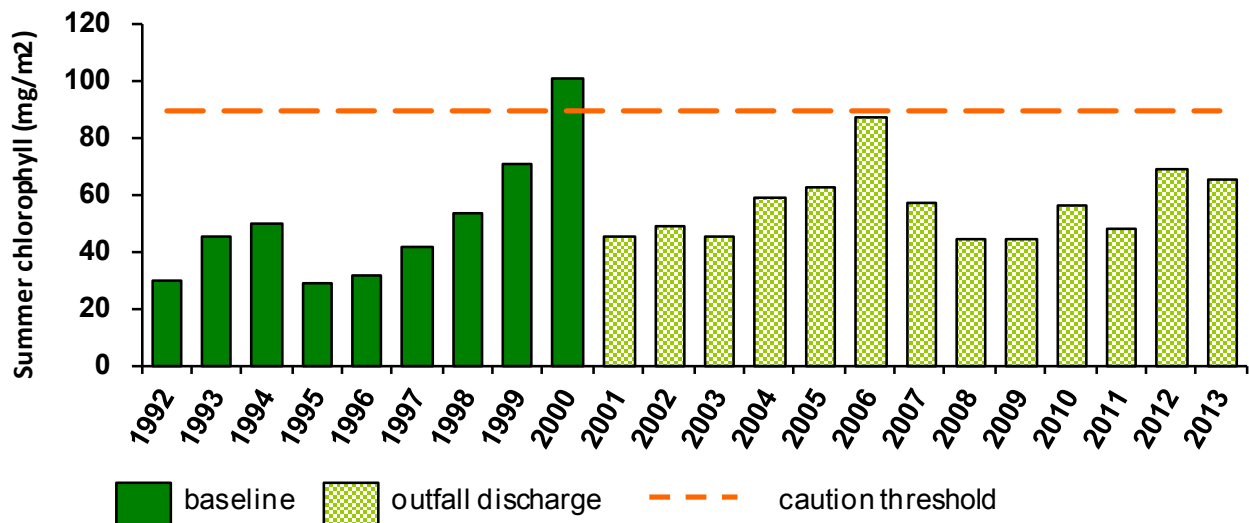
MWRA gathers data from the outfall location in Massachusetts Bay on various thresholds in its Deer Island outfall discharge permit. This Contingency Plan quarterly report shows relevant ambient monitoring results that became available in the July-September 2013 time period. Those results did not exceed any Contingency Plan thresholds.

CHLOROPHYLL May-August 2013

There were no [chlorophyll threshold](#) exceedances in this period. The nearfield mean areal average chlorophyll in summer 2013 (May-August) was 65 mg/m², below the caution level threshold for summer of 89 mg/m². The summer 2013 value is similar to several previous baseline and post-diversion years.

The summer 2013 result includes the average nearfield chlorophyll from four surveys, to the corresponding threshold. The graph includes data since the start of the monitoring program in 1992; however, the seasonal average values for 1992-2010 are calculated using a subset of all results reflecting the modified design that began in 2011, *i.e.* three winter/spring surveys. This enables us to better compare the threshold results across years. The previous reports are at <http://www.mwra.state.ma.us/harbor/html/archive.htm#cpqamb>.

Summer



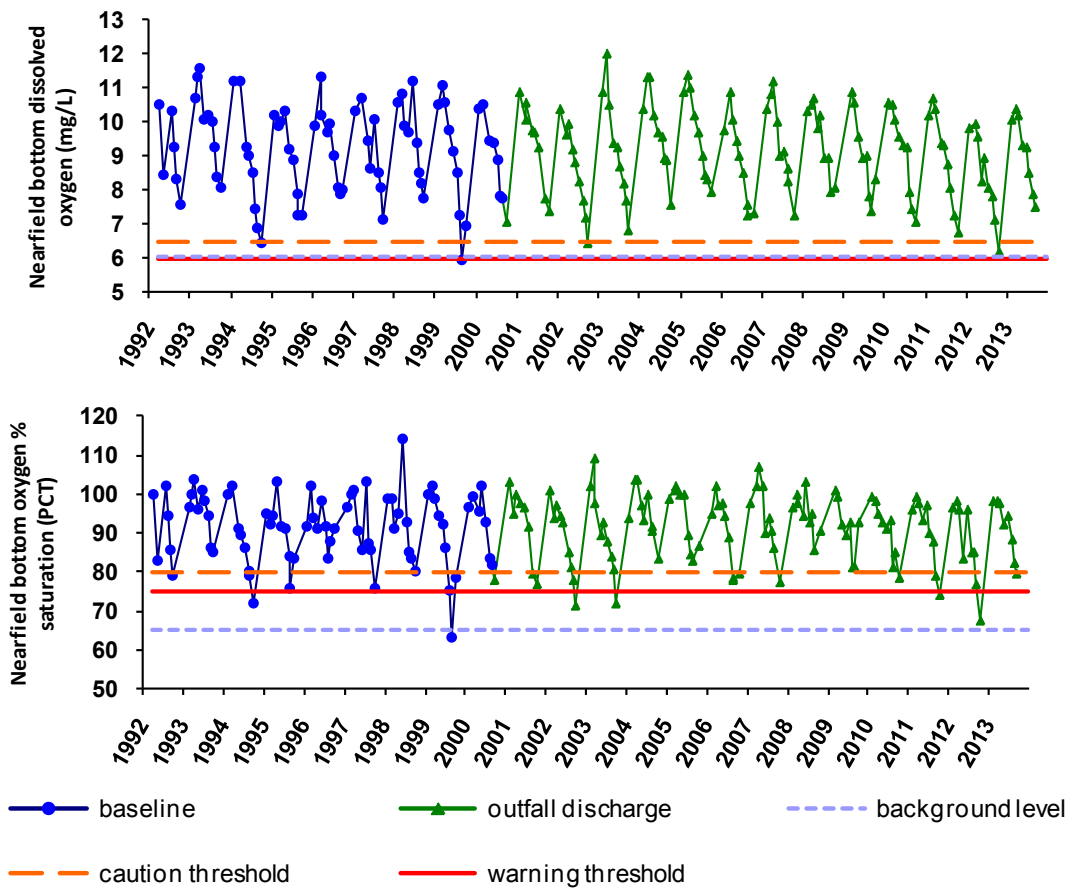
DISSOLVED OXYGEN – June - September 2013

Measurements of dissolved oxygen (DO) concentration and percent saturation in summer 2013 did not fall below background levels and thus did not exceed thresholds.

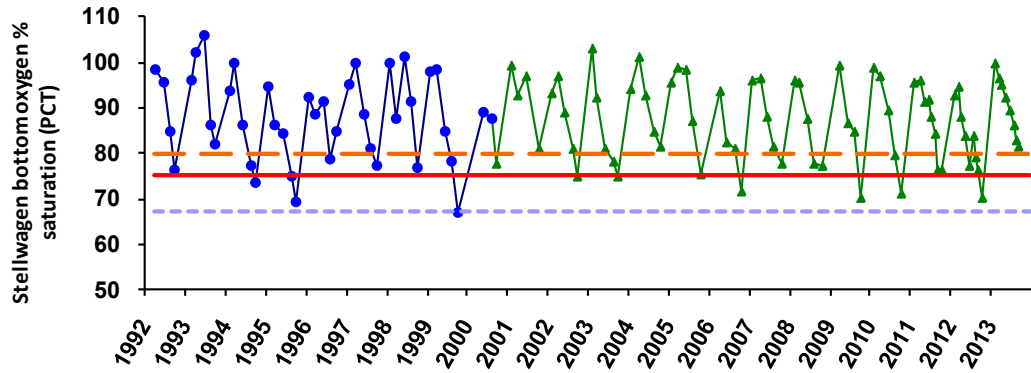
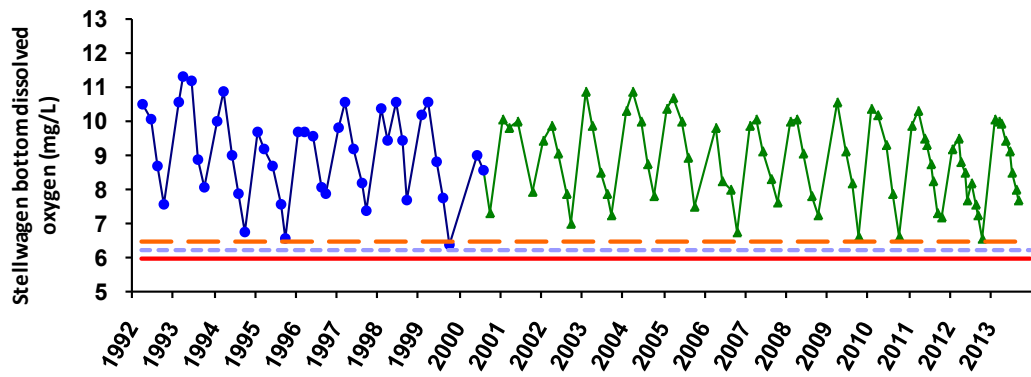
The current reporting period for [dissolved oxygen thresholds](#) is June-September 2013. During this period there were four surveys. Oxygen levels were similar to those seen in most baseline years. The graphs below show the natural annual fluctuation of DO and percent saturation, which is typically lowest in early autumn. The 1992-2010 data shown are a subset of all data reflecting the modified design that began in 2011, *i.e.* nine surveys per year, and one station rather than four in Stellwagen Basin. This enables us to better compare the threshold results across years. The previous reports are at <http://www.mwra.state.ma.us/harbor/html/archive.htm#cpqamb>.

Nearfield oxygen levels in September 2013 were similar to those seen in several baseline years.

NEARFIELD



STELLWAGEN BASIN



- baseline
- ▲ outfall discharge
- background level
- caution threshold
- warning threshold

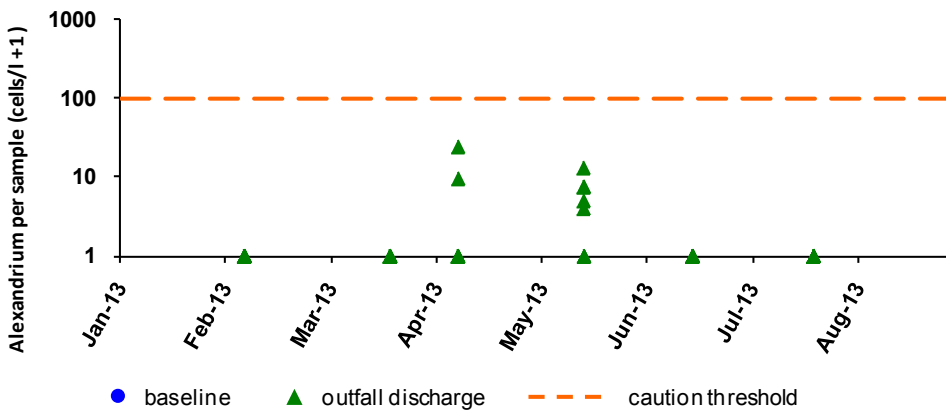
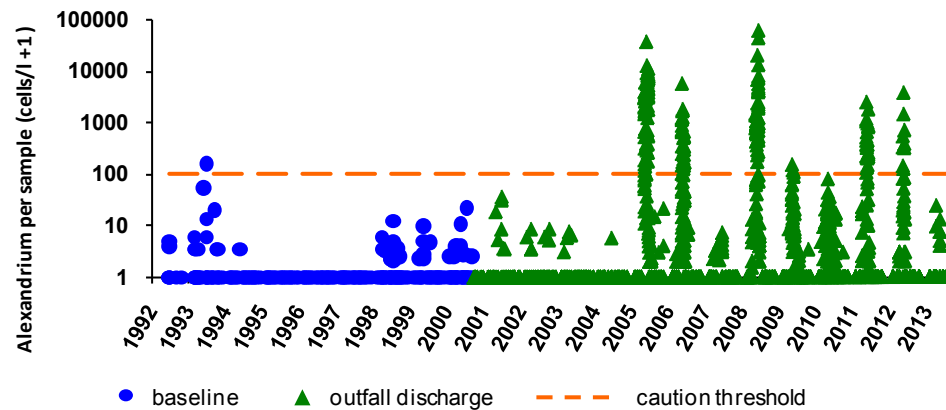
NUISANCE ALGAE – July 2013

There were no exceedances of [nuisance algae thresholds](#) in the period covered by this report.

ALEXANDRIUM

The [nuisance algae](#) *Alexandrium* (“red tide”) can cause paralytic shellfish poisoning (PSP) in Massachusetts Bay. MWRA measures *Alexandrium* abundance in its monitoring program, and also checks state fisheries agency observations of shellfish PSP toxicity to keep track of the course of Gulf of Maine *Alexandrium* blooms.

As reported previously, in 2013 there was an *Alexandrium* bloom along the coast of Maine and New Hampshire, but unlike several recent years, the bloom had little effect in Massachusetts Bay. By June 2013, the bloom had subsided. The figure below shows *Alexandrium* in the nearfield throughout the monitoring period. The bottom figure shows the same data but just from February through July 2013; during this period there were six routine surveys. (Note logarithmic scale for graphs.)



July results for <i>Alexandrium</i> per-sample abundance (cells/liter)	
Caution threshold	100
July 2013	0*

* maximum of DNA probe samples collected in nearfield in July, 2013.