

Contingency Plan Report
Second Quarter 2015

Ambient Monitoring

MWRA gathers data near the discharge outfall location in Massachusetts Bay on various thresholds in the Contingency Plan related to its Deer Island outfall NPDES discharge permit. **This report shows** ambient monitoring **results** relevant to Contingency Plan thresholds **that became available in the April-June 2015 time period**. There were no Contingency Plan threshold exceedances in the results available in this time period.

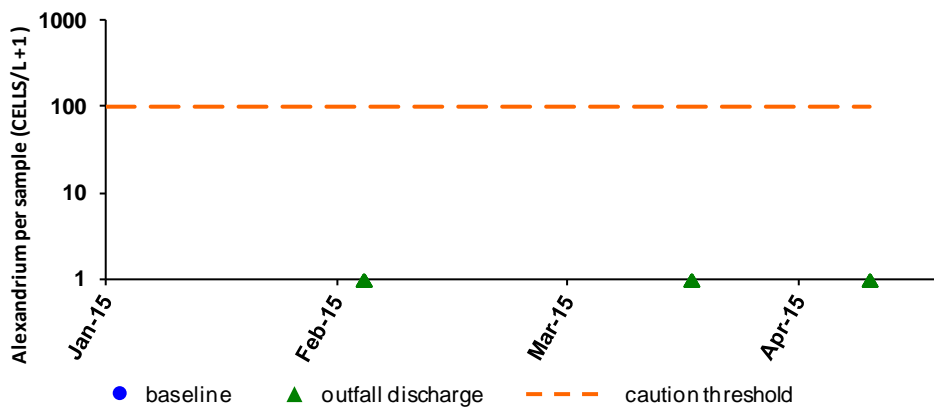
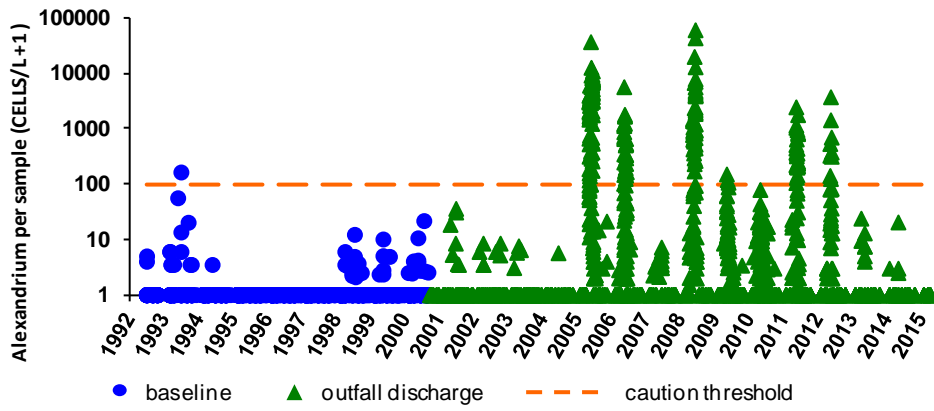
NUISANCE ALGAE – February-April 2015

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.

So far in 2015, *Alexandrium* has been almost entirely absent from Massachusetts Bay. Final data have been received for MWRA water column monitoring surveys in February, March, and April, and preliminary results have been reported for surveys in May and June. For May, a month in which *Alexandrium* has historically bloomed in Massachusetts Bay, *Alexandrium* was observed in 3 of the 20 samples at a very low abundance of 1 cell/L. These cells were present in samples from three stations spread between the mouth of Boston Harbor, the DITP outfall, and northern Mass Bay. The remaining samples had no *Alexandrium* present. In June, based on preliminary analysis, *Alexandrium* was observed in surface waters in 1 of the 20 samples at an abundance of 2 cells/L. The remaining samples had no *Alexandrium* present. We expect *Alexandrium* to remain very low for the remainder of the summer and do not anticipate threshold exceedances for the remainder of 2015. The figure below shows *Alexandrium* in the nearfield since 1992. The bottom figure shows the same data but includes only final results for the dates covered by this report and does not include preliminary data from May or June. Note logarithmic scale for graphs.



February-April results for Alexandrium per-sample abundance (cells/liter)

Caution threshold	100
Spring 2015	0*

* maximum of DNA-probe samples collected between February 2015 and April 2015.

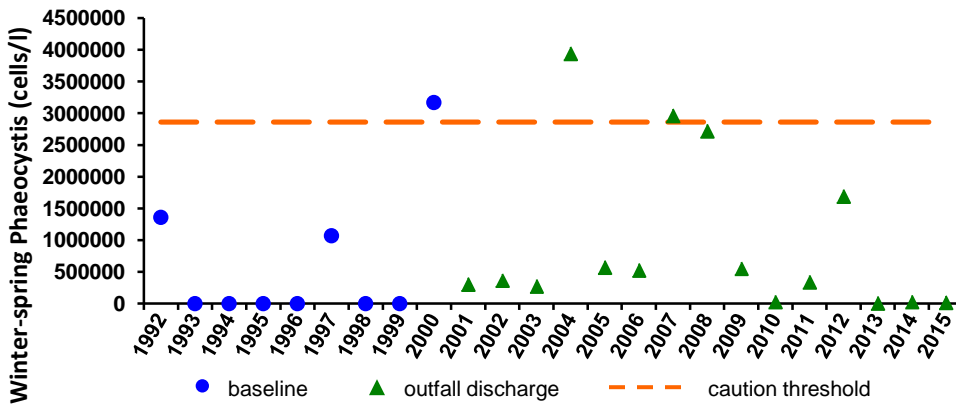
PHAEOCYSTIS and PSEUDONITZSCHIA

The nuisance algae *Phaeocystis* and *Pseudonitzschia* did not exceed the [nuisance algae thresholds](#) during winter/spring 2015 (February through April), which included three surveys.

As in the previous two years, there was no large spring bloom of *Phaeocystis pouchetii* in Massachusetts Bay. Average nearfield abundance was well below the threshold. Low abundances of *Pseudonitzschia* were observed in the nearfield in winter/spring 2015, as in most other pre- and post-diversion years.

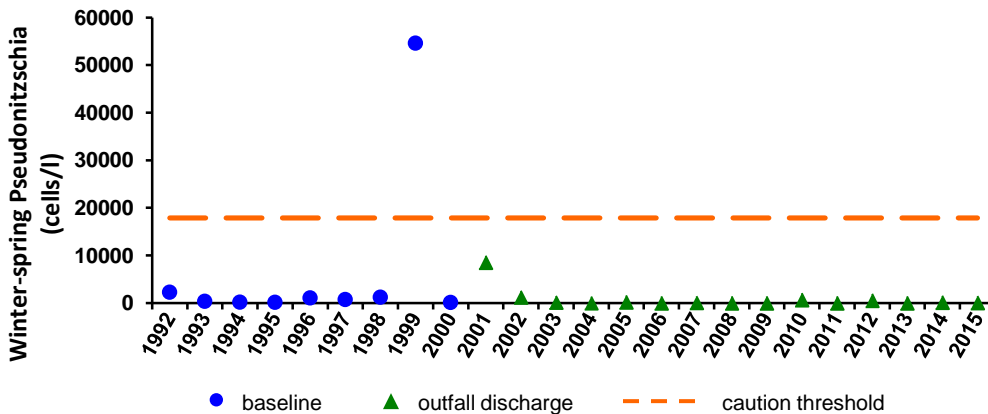
In the figures below, we compare *Phaeocystis* and *Pseudonitzschia* data to the nuisance algae thresholds for winter/spring. The graphs include data since the start of the monitoring program in 1992; however, the seasonal average values for 1992-2010 are calculated using a subset of all results reflecting 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/archive2013.htm>.

PHAEOCYSTIS - Winter/spring



Winter/spring <i>Phaeocystis</i> mean abundance (cells/liter)	
Caution threshold	2,860,000
Winter/spring 2015	13,800

PSEUDONITZSCHIA - Winter/spring



Winter/spring <i>Pseudonitzschia</i> mean abundance (cells/liter)	
Caution threshold	17,900
Winter/spring 2015	51

CHLOROPHYLL February- April 2015

There were no [chlorophyll threshold](#) exceedances in this period. The nearfield mean areal average chlorophyll in winter/spring 2015 (February-April) was 122 mg/m², below the caution level threshold for winter/spring of 199 mg/m². The spring 2015 value is at the median of all post-diversion years, neither higher nor lower than usual.

The figure compares chlorophyll data for winter/spring 2015 (February-April), which included three 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/archive2013.htm>.

Winter/spring

