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Contingency Plan Report
Third Quarter 2008

Ambient Monitoring

MWRA gathers data from the outfall location in Massachusetts Bay on various thresholds in its Deer Island outfall discharge permit. This report shows relevant ambient monitoring results that became available in the July-September 2008 time period. There are updated data relevant to the exceedance of a Contingency Plan threshold, for the nuisance alga *Alexandrium*, for which partial results were reported last quarter.

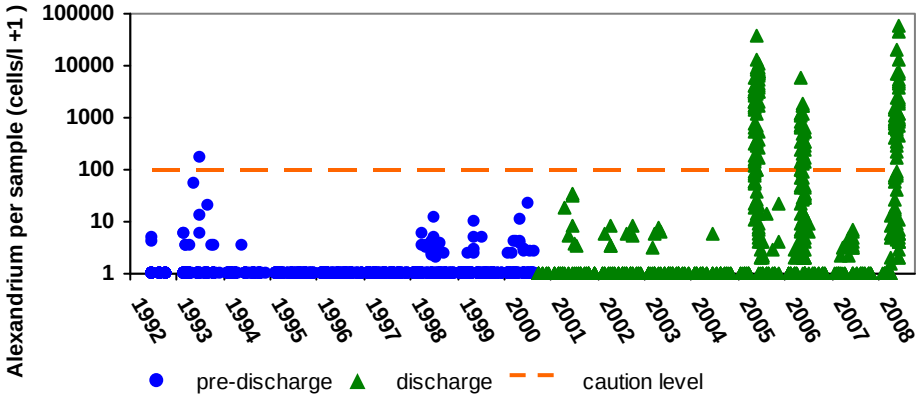
NUISANCE ALGAE – February-June 2008

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.

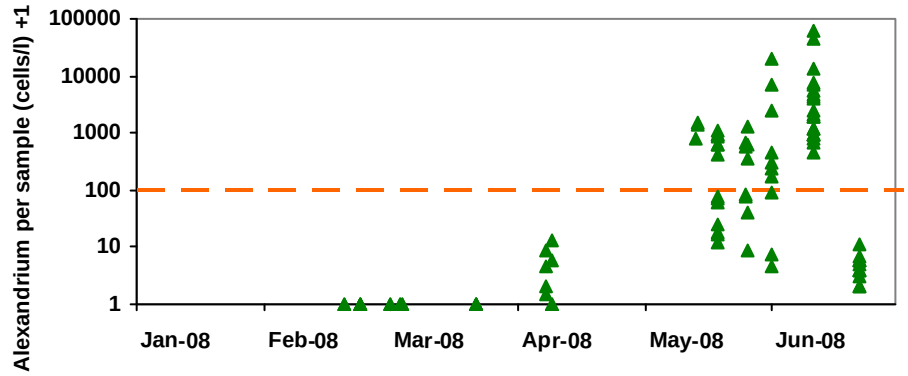
In 2008 there was an *Alexandrium* bloom along the coast of Maine, New Hampshire, and Massachusetts. Early data, using rapid molecular DNA probe methodologies from a special survey on May 16 and a routine survey on May 21, showed that the single sample abundance of *Alexandrium* in the outfall nearfield exceeded the Caution Level threshold of 100 cells/L, triggering notification under the Contingency Plan (see http://www.mwra.state.ma.us/harbor/pdf/20080516amx.pdf). By late June 2008, the bloom had subsided in Massachusetts Bay. The peak abundance of algae in 2008 in western Massachusetts Bay was similar to the the 2005 bloom, but the bloom was less widespread and lasted a shorter time in Massachusetts waters compared to 2005. However, unlike 2005, there were high levels of *Alexandrium* in Boston Harbor which led to closing of shellfish beds there.

The figure below includes nearfield data available through September 2008, including data from routine surveys through May 2008, from special rapid DNA probe samples taken from three of the routine surveys and from four special surveys in May and June 2008, and from special targeted surveys during the bloom. Data from routine analyses for *Alexandrium* in June 2008 have not yet been received and will be included in next quarter's report. (Note logarithmic scale for graph.)



January-June results for *Alexandrium* per-sample abundance (cells/liter)	
Caution threshold	100
Winter-early summer 2008	60,431

* maximum of samples collected between January 1, 2008 and June 30, 2008.



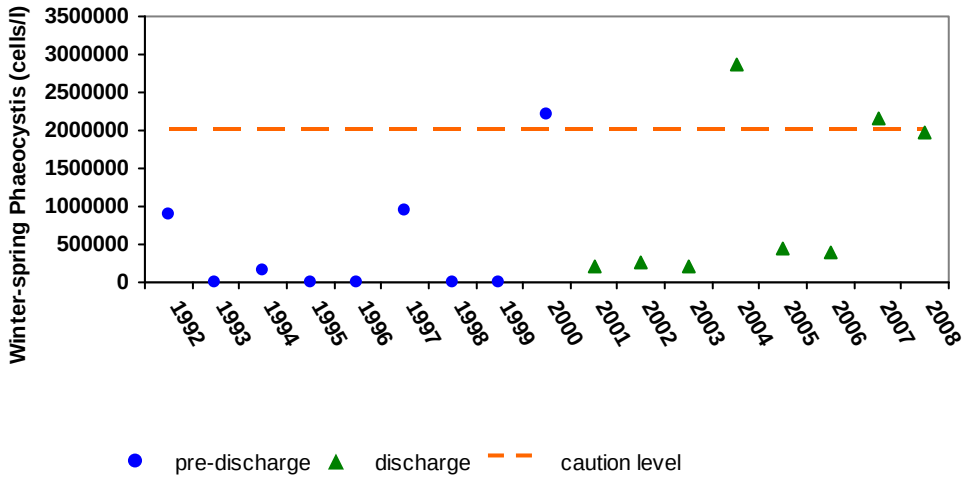
PHAEOCYSTIS and PSEUDONITZSCHIA

There was a large spring bloom of *Phaeocystis pouchetii* in the Gulf of Maine, with average nearfield abundance slightly lower than the threshold . *Pseudonitzschia* was not observed in the nearfield in winter/spring 2008.

In the figures below, we compare *Phaeocystis* and *Pseudonitzschia data* to the nuisance algae thresholds for winter/spring 2008 (January through April), which included four surveys.

PHAEOCYSTIS

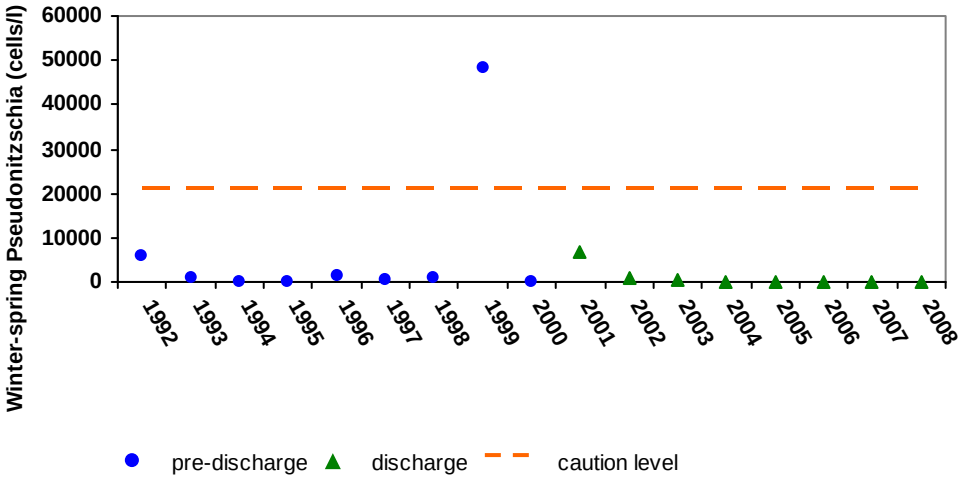
Winter/spring



Winter/spring *Phaeocystis* mean abundance (cells/liter)	
Caution threshold	2,020,000
Winter/spring 2008	1,980,000

PSEUDONITZSCHIA

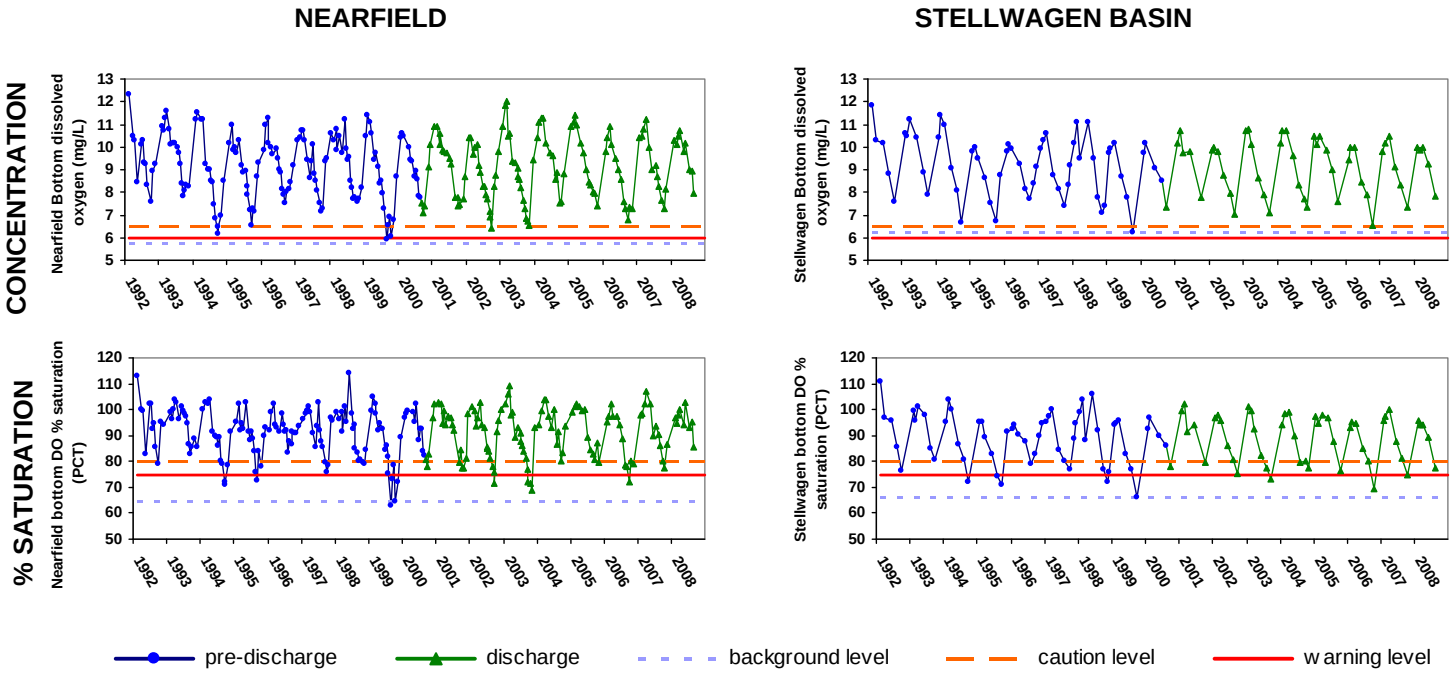
Winter/spring



Winter/spring *Pseudonitzschia* mean abundance (cells/liter)	
Caution threshold	21,000
Winter/spring 2008	0

DISSOLVED OXYGEN – June- early September 2008

Measurements of dissolved oxygen (DO) concentration and percent saturation in June through early September 2008 did not fall below background levels and thus did not exceed thresholds.



The current reporting period for dissolved oxygen thresholds is June-early September 2008. During this period there were four nearfield surveys and two farfield surveys. Oxygen levels were similar to those seen in most baseline years. The graphs above include data since the start of the monitoring program in 1992, and reflect the natural fluctuation of DO and percent saturation, which is typically lowest in early autumn.