

Contingency Plan Report

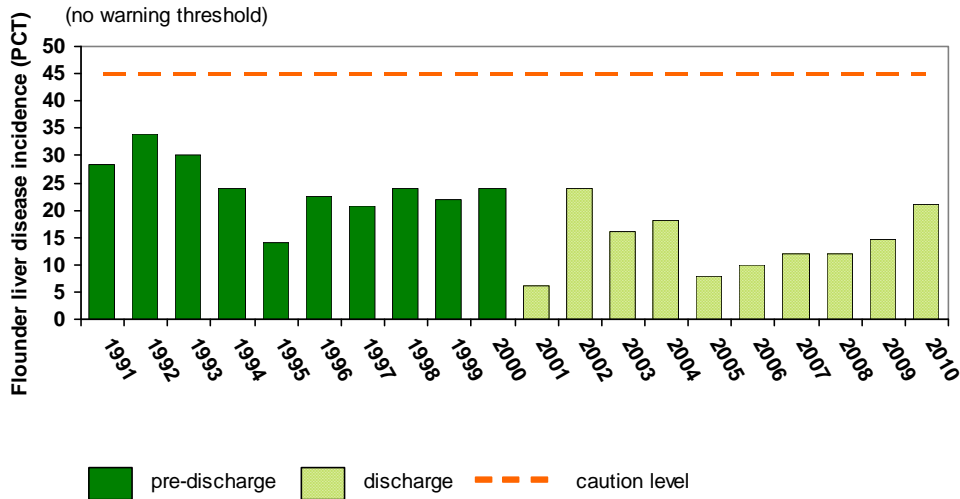
Third Quarter 2010

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 2010 time period. Those results did not exceed any contingency plan thresholds.

FLOUNDER LIVER DISEASE - 2010

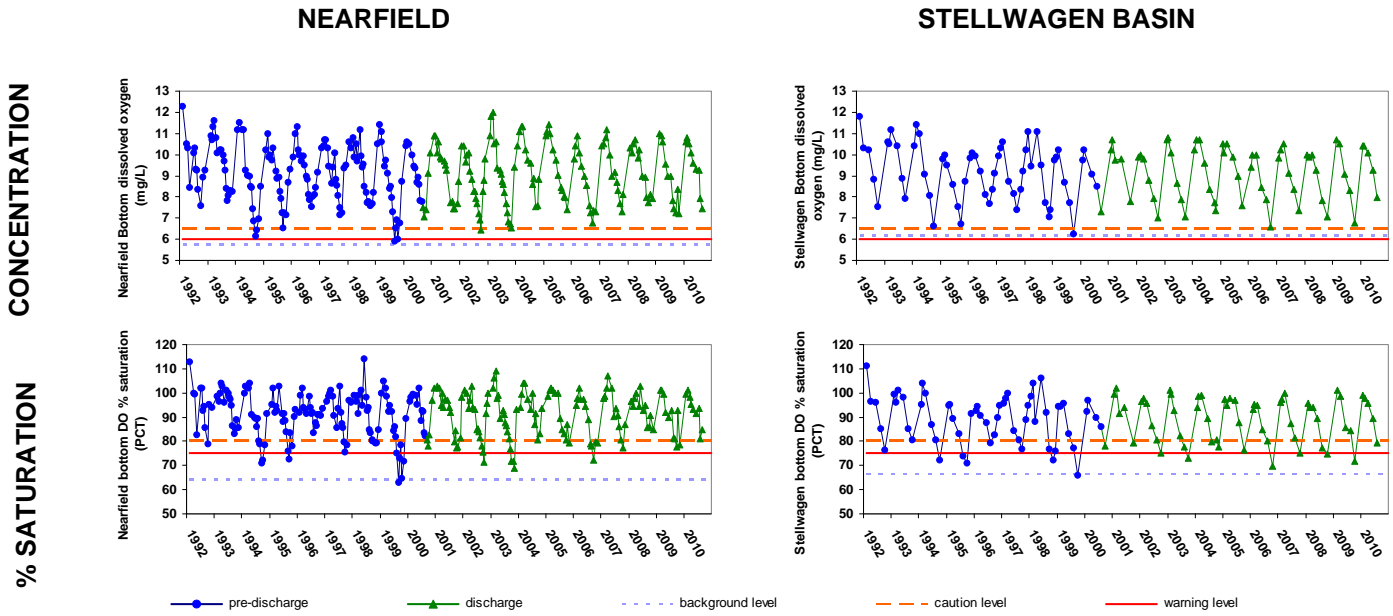
The prevalence of liver disease at the outfall site in 2009 was 21%, within the range of the baseline years, and did not exceed the threshold. Flounder are sampled annually in April.



One measure of the effects of pollution is the prevalence of liver disease in winter flounder. The flounder liver disease threshold value (dashed line) is based on data from Boston Harbor during the baseline monitoring period (1991-2000). In the harbor, flounder liver disease rates were historically quite high but dropped considerably during the late 1980s. Since Massachusetts Bay monitoring began, prevalence of an early-stage liver disease near the new outfall has been much lower than the threshold. If the prevalence of liver disease at the outfall site were to approach that seen in Boston Harbor in the 1990's, a caution level threshold would be exceeded.

DISSOLVED OXYGEN – June - August 2010

Measurements of dissolved oxygen (DO) concentration and percent saturation in June through August 2010 did not fall below background levels and thus did not exceed thresholds.

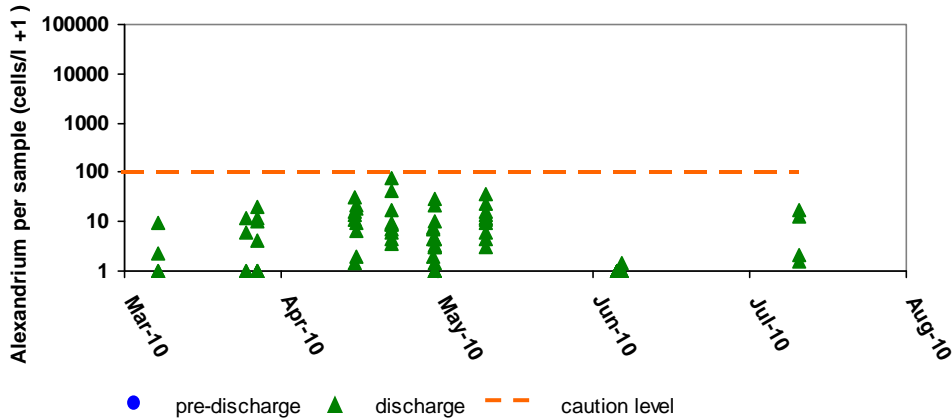


The current reporting period for [dissolved oxygen thresholds](#) is June through August 2010. During this period there were four nearfield surveys and two farfield surveys. Oxygen levels were similar to those seen in most baseline years. The graphs above include data since the start of the monitoring program in 1992, and reflect the natural fluctuation of DO and percent saturation, which is typically lowest in early autumn.

NUISANCE ALGAE - *Alexandrium* – June-July 2010 (partial results)

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 2010 there was an *Alexandrium* bloom along the coast of Maine, New Hampshire, and Massachusetts. However, unlike many recent years, the single sample abundance of *Alexandrium* in the outfall nearfield did not exceed the Caution Level threshold of 100 cells/L. By early July 2010, the bloom had subsided in Massachusetts Bay. Rapid analysis results are available through July 2010, but additional results for late summer will be reported next quarter. The figure below includes results for each sample available through September 2010, from rapid DNA probe data from routine surveys and three special surveys in spring 2010. (Note logarithmic scale for graph.)



June-July partial results for <i>Alexandrium</i> per-sample abundance (cells/liter)	
Caution threshold	100
Early summer 2010 (partial)	16*

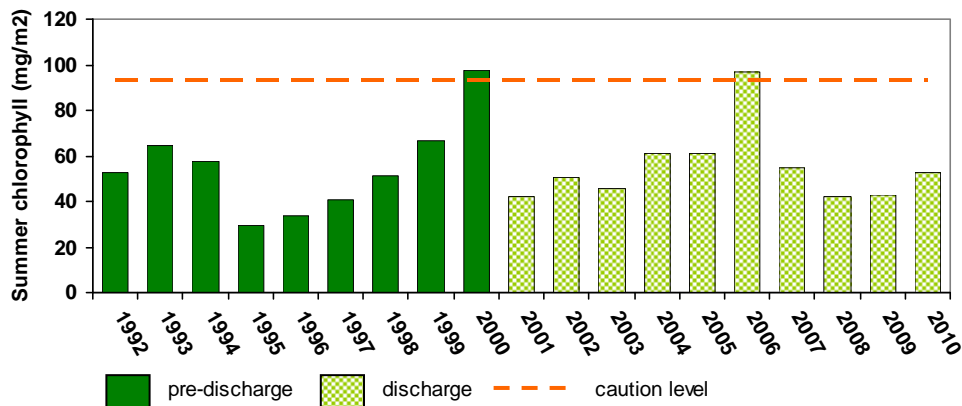
*maximum of DNA probe samples collected between June 1, 2010 and July 30, 2010.

CHLOROPHYLL – May-August 2010

There were no [chlorophyll threshold](#) exceedances in this period. The nearfield mean areal average chlorophyll in summer 2010 (May-August) was 53 mg/m², well below the caution level threshold for summer of 93 mg/m² and in the range typical of the pre-discharge period.

The figure compares chlorophyll data for summer 2010 (May-August), which included five surveys¹, to the corresponding threshold. The graph includes data since the start of the monitoring program in 1992.

Summer



¹ Note that the survey that usually takes place in very early September, took place at the end of August this year and thus is included in the summer time period.