

Contingency Plan Quarterly Report on Ambient Monitoring Results First Quarter 2020

MWRA gathers data near the outfall discharge location in Massachusetts Bay. These data are used to calculate results on various thresholds in the Contingency Plan that is attached to its Deer Island Treatment Plant (DITP) NPDES discharge permit. Previous Contingency Plan reports are available at <http://www.mwra.state.ma.us/harbor/html/archive.htm#cpq>.

No Contingency Plan related data were finalized in the first quarter of 2020. Threshold testing on Ambient Monitoring results from 2019 was completed by December 31, 2019 and previously reported.

Two water column surveys were scheduled for this quarter, the first on February 10 and the second on March 17. The February survey was postponed by one day due to inclement weather. The March survey was delayed due to weather and the coronavirus outbreak.

General observations from the February survey: The water column was very well mixed top-to-bottom throughout the survey area. Dissolved oxygen was close to saturation within the range normally observed in cold, winter conditions during this time of the year, with water temperature measurements ranging between 3.7 and 5.8 Celsius. Chlorophyll data from ship measurements and satellite images show low chlorophyll concentrations throughout western Massachusetts Bay. (Fig. 1).

Only preliminary results for phytoplankton from the February survey are available at this time. Preliminary analyses of Contingency Plan nuisance algae indicate no levels of concern for exceeding any thresholds. *Alexandrium catenella*, the algae responsible for paralytic shellfish poisoning, was absent from most water samples collected during February survey. Only two samples with concentration of 1 cell per liter were observed, which are well below the caution level threshold of 100 cells per liter. This is to be expected, as blooms of this organism, when they occur, are only in late spring and early summer in Massachusetts Bay. For *Pseudo-nitzschia* spp., another nuisance algae that is responsible for amnesiac shellfish poisoning, abundance equivalent to hundreds of cells per liter was observed in the single rapid-analysis sample, which is also well below levels of concern compared to the caution level threshold of 18,000 cells per liter for the winter/spring season.

No whales were spotted by the field team during the February survey. Reduced visibility due to the presence of fog throughout the survey trip may have impacted sightings.

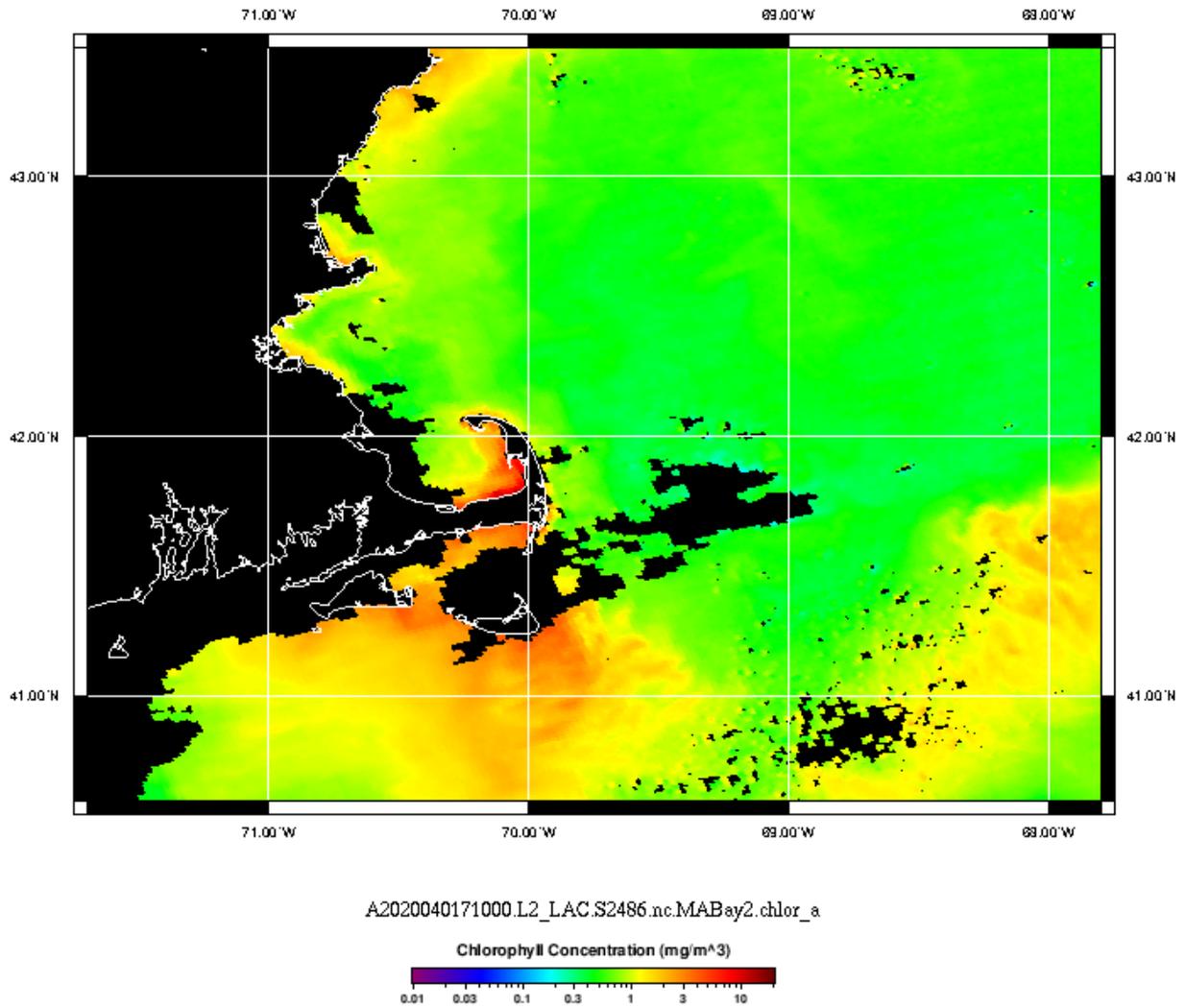


Figure 1. NASA satellite image from MODIS data showing chlorophyll concentrations in Western Massachusetts Bay in the range of 0.3 to 2 mg/m³ on February 9