



Experimental Lake Erie Harmful Algal Bloom Bulletin

National Centers for Coastal Ocean Science and Great Lakes Environmental Research Laboratory

17 October 2013; Bulletin 22

We regret the interruption of the bulletin for the last few weeks due to the US government shutdown.

The cyanobacteria bloom in western Lake Erie has persisted owing to a relatively calm fall. Scum layers were sporadic near the Islands in early October, and scum layers were found south and east of Pelee Island, even on Oct 12 (magenta/pink in image).

The most intense area of the bloom was in that region. Stronger winds during the last few days mixed the bloom into the water column, reducing concentrations. While the bloom has weakened in the west, pockets of high concentrations are still found in the western basin. GLERL has found toxin levels have dropped substantially in the western basin.

Lake Erie has had a relatively calm fall (until the last couple of days) only one event had winds of >15-20 knots (on Oct 7). The lake has been relatively warm for October, the water temperature is still warm enough to support cyanobacteria growth (>15 C or >59 F). Tonight (Thursday) and Friday winds of up to 20 knots are expected, and cool air has entered the region. The combination of strong wind and dropping temperature should continue to reduce the bloom intensity.

Eastward to northeastward transport is likely today and tomorrow, favoring reduction of the bloom near shore. No impact is expected on the Ohio shoreline. While elevated concentrations were present earlier this week along the coast west of Point Pelee, Ontario; the concentrations have diminished and should remain so.

- Stumpf, Dupuy

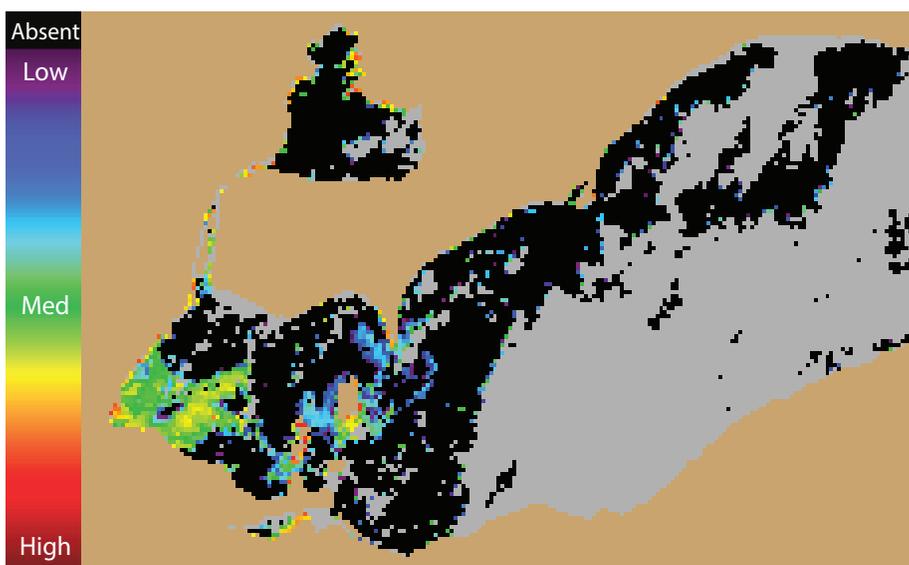


Figure 1. MODIS Cyanobacterial Index from 16 October 2013. Grey indicates clouds or missing data. Black represents no cyanobacteria detected. Colored pixels indicate the presence of cyanobacteria. Cooler colors (blue and purple) indicate low concentrations and warmer colors (red, orange, and yellow) indicate high concentrations. The estimated threshold for cyanobacteria detection is 35,000 cells/mL.

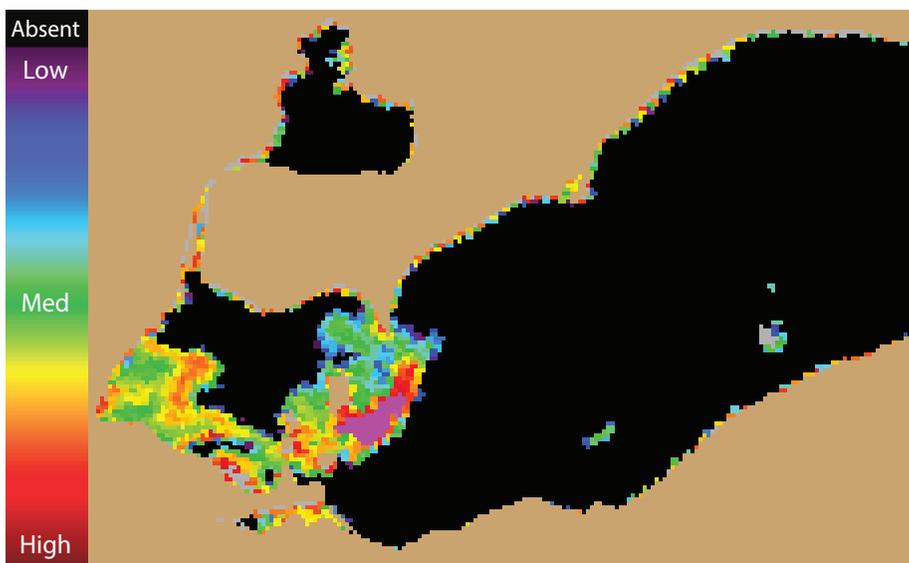
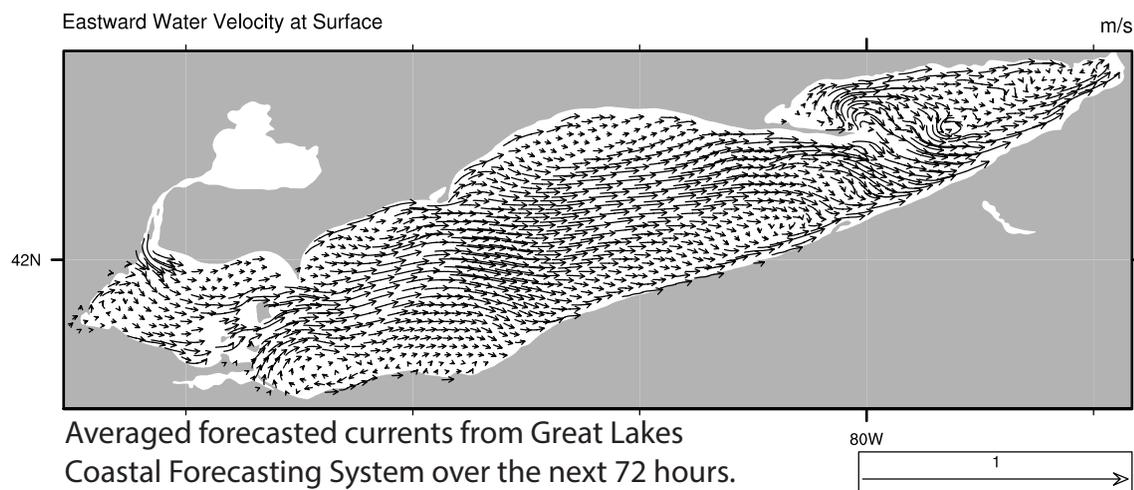
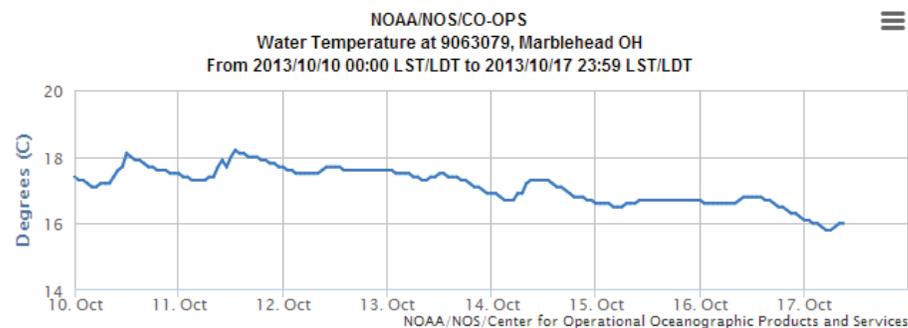


Figure 2. MODIS Cyanobacterial Index from 12 October 2013.

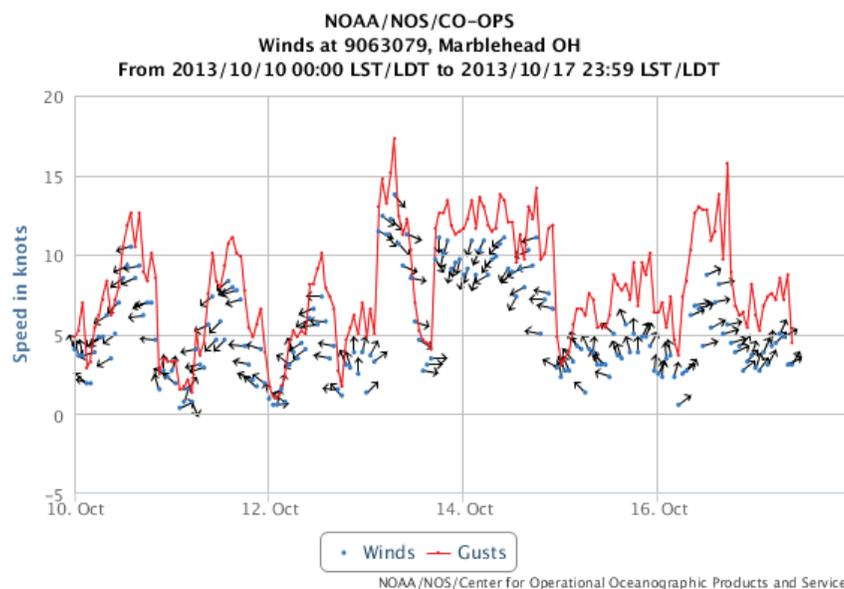
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Averaged forecasted currents from Great Lakes Coastal Forecasting System over the next 72 hours.



Water Temperature from Marblehead, OH. From: NOAA/Center for Operational Oceanographic Products and Services (CO-OPS).



Wind Speed, Gusts and Direction from Marblehead, OH. From: NOAA/Center for Operational Oceanographic Products and Services (CO-OPS). Note: 1 knot = 0.51444 m/s. Blooms mix through the water column at wind speeds greater than 7.7 m/sec (~ 15 knots).