



# Experimental Lake Erie Harmful Algal Bloom Bulletin

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

16 July 2013; Bulletin 07

A cyanobacterial bloom has been confirmed in the central basin of Lake Erie. The most extensive concentrated area is in the center of the lake, although some coastal areas have had bloom patches. On Tuesday, July 16th, the Chatham-Kent Ontario's Public Health Unit closed area beaches due to a cyanobacterial bloom along the shores of Lake Erie and Lake St Clair. Imagery indicates that the bloom was concentrated on the Ontario shoreline at the beginning of the week (Figure 1) and has started to move southward into the central lake (Figure 4). In addition, Anabaena (a cyanobacteria) was identified by OSU/Stone Lab north of Lorain. Toxicity is unknown at this time.

The first indication of cyanobacteria in the western basin was reported by NOAA/GLERL, with microcystin levels of 14 ug/L in the western basin several miles due north of the Maumee River. This bloom is not yet large enough to appear in the satellite imagery.

The forecast indicates that the bloom in the central basin is expected to continue a S SE movement.

- Dupuy, Tomlinson, Stumpf

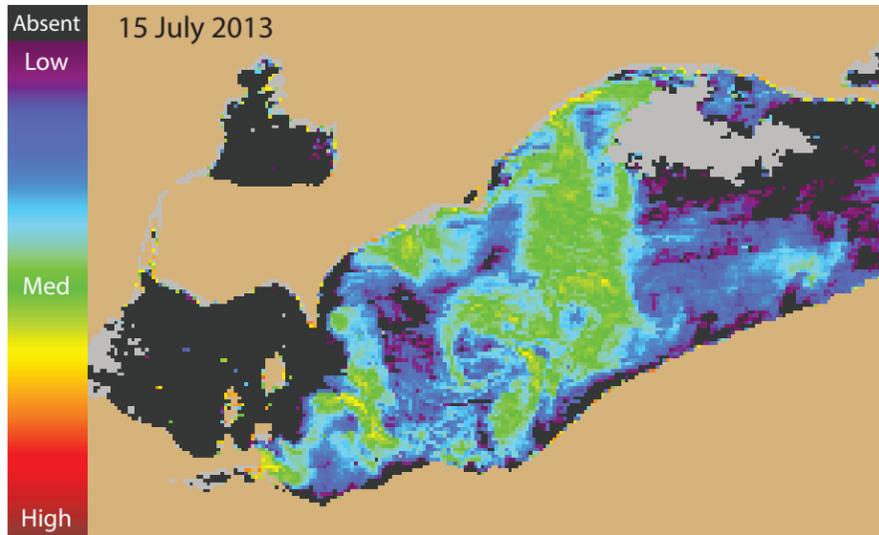


Figure 1. MODIS Cyanobacterial Index from 15 July 2013. Grey indicates clouds or missing data. Black represents no cyanobacteria detected. Colored pixels indicate the presence of cyanobacteria. Cooler colors (blue and purple) indicate low concentrations and warmer colors (red, orange, and yellow) indicate high concentrations. The estimated threshold for cyanobacteria detection is 35,000 cells/mL.

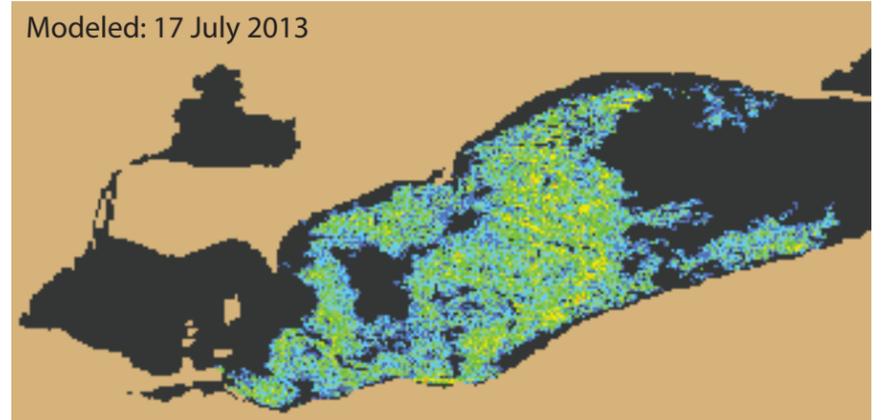


Figure 2. Nowcast position of bloom for 17 July 2013 using GLCFS modeled currents to move the bloom from the 15 July 2013 image.

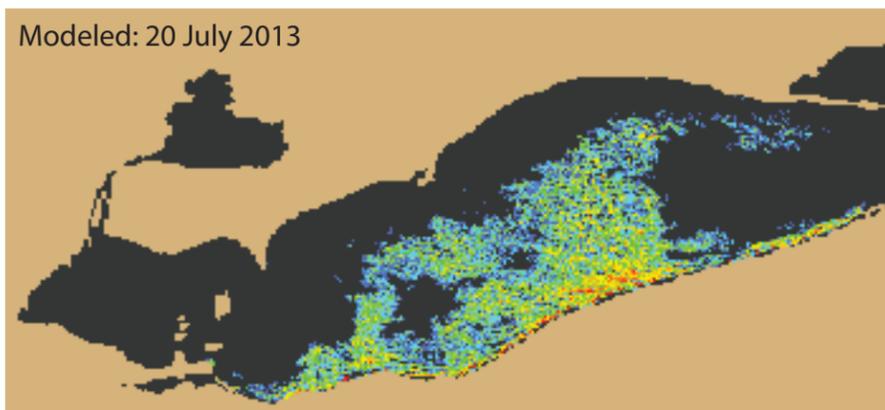


Figure 3. Forecast position of bloom for 20 July 2013 using GLCFS modeled currents to move the bloom from the 15 July 2013 image.

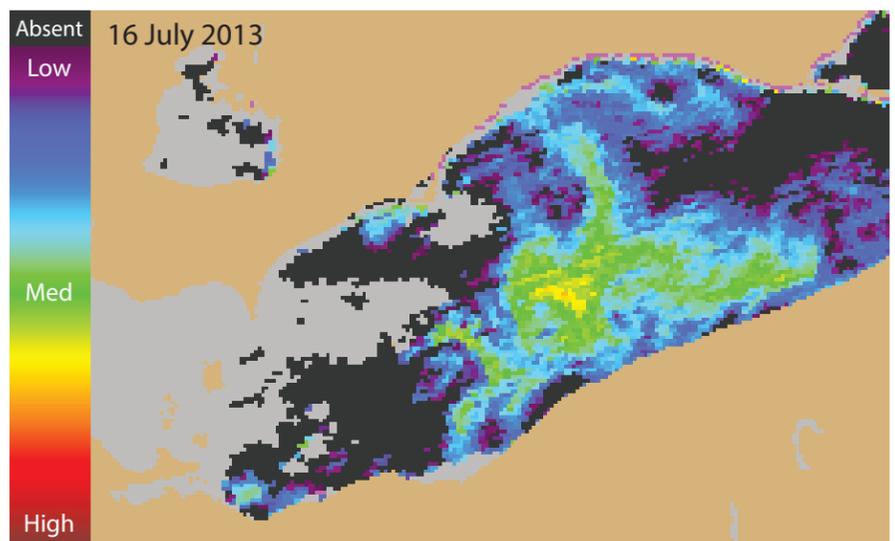
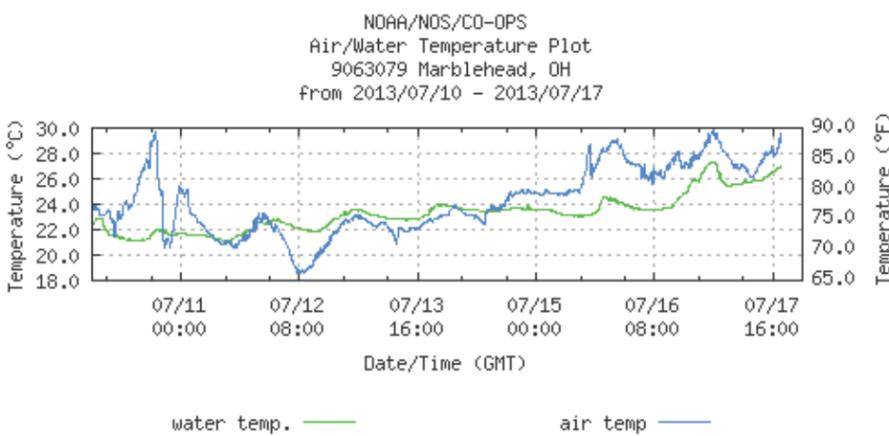
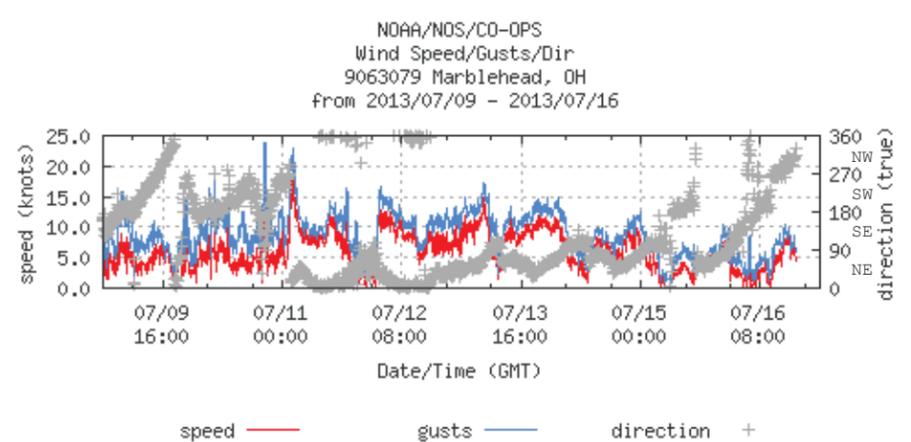


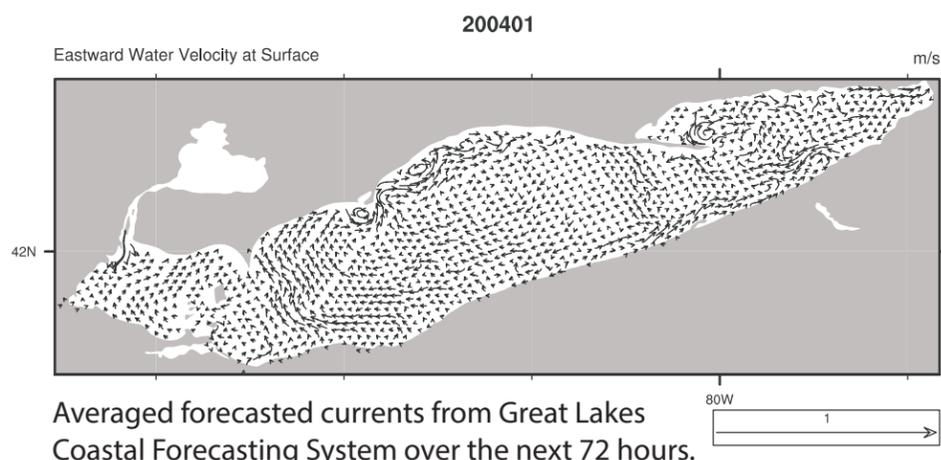
Figure 4. MODIS Cyanobacterial Index from 16 July 2013. This confirms the models prediction of the bloom's southern movement.



Air and 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).



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