



# Experimental Lake Erie Harmful Algal Bloom Bulletin

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

20 August, 2015, Bulletin 12

The *Microcystis* cyanobacteria bloom continues across a large part of the western basin along the Michigan and Ohio coasts. Recent southwesterly winds have pushed the bloom well into the central basin, with moderate to high concentrations extending eastward to far offshore of Cleveland. Scum has been rare the last few days, owing to the strong winds. Strong mixing has reduced the bloom on the Ontario coast to below detection, but cells are present. Microcystin toxins are still present in the bloom, but the concentration has decreased in general. Scum areas, when present, remain a risk.

Strong, 20 knot southwesterly winds are expected through tonight, creating strong mixing today and into Friday. Wind will diminish Friday into the weekend, favoring scum development, particularly on Saturday and early Sunday. Increasing winds late Sunday and Monday favor some mixing. Slight eastward movement is expected today, with little movement over the weekend. With the calm winds, low to moderate bloom concentrations may re-appear near the Ontario coast on the weekend. The persistent bloom in Sandusky Bay continues. No other blooms are evident in the central and eastern basins.

Please check Ohio EPA's site, <http://epa.ohio.gov/habalgae.aspx> for safety information, including updates on the State Parks. Keep your pets and yourself out of the water in areas where scum is forming.

-Tomlinson, Stumpf

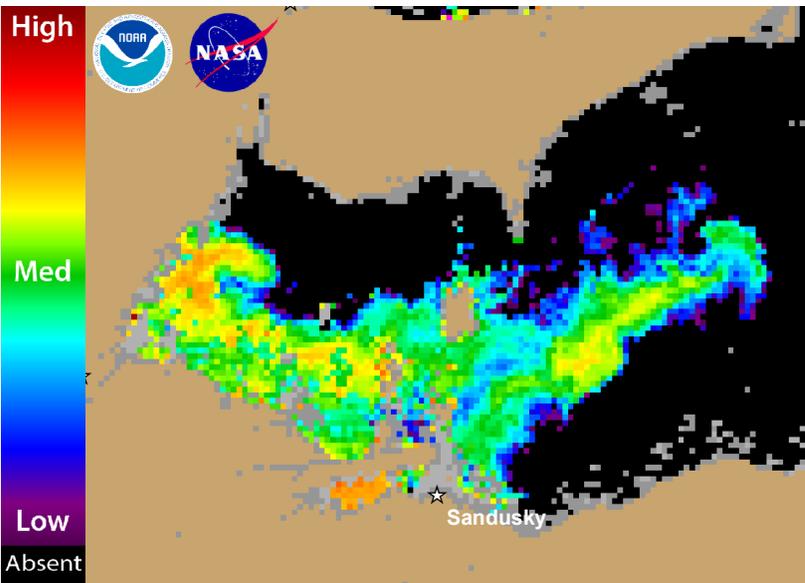


Figure 1. Cyanobacterial Index from NASA's MODIS- Terra data collected 19 August, 2015 at 11:00 EST. Grey indicates clouds or missing data. Black represents no cyanobacteria detected. Colored pixels indicate the presence of cyanobacteria. Cooler colors (blue and purple) indicate low concentrations and warmer colors (red, orange, and yellow) indicate high concentrations. The estimated threshold for cyanobacteria detection is 20,000 cells/mL.

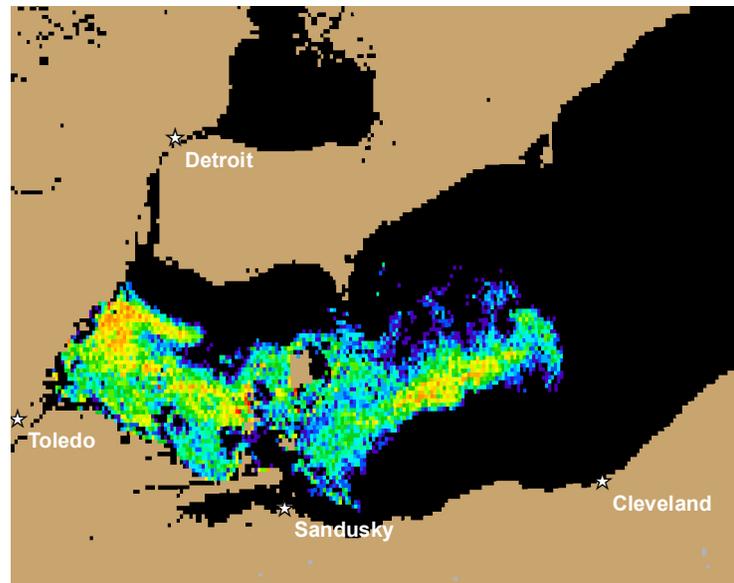


Figure 2. Nowcast position of bloom for 20 August, 2015 using GLCFS modeled currents to move the bloom from the 19 August, 2015 image.

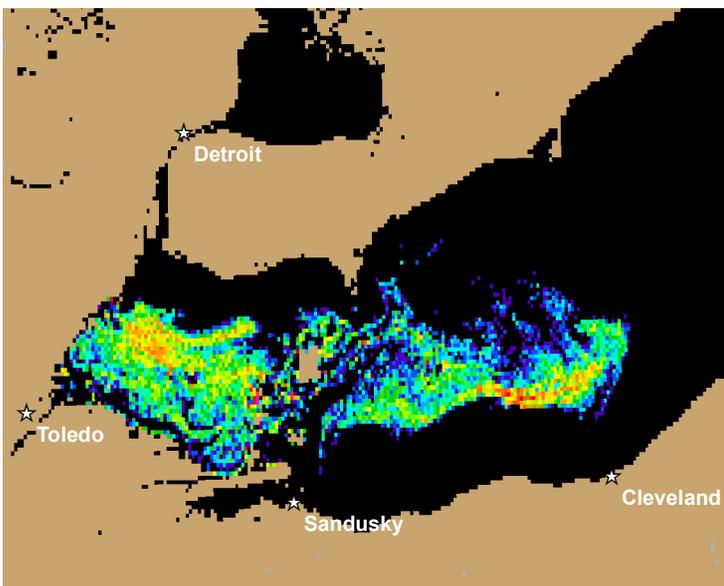
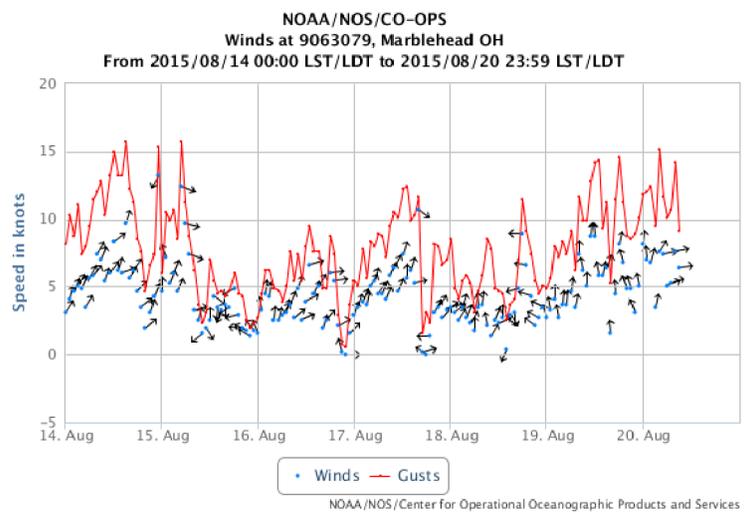
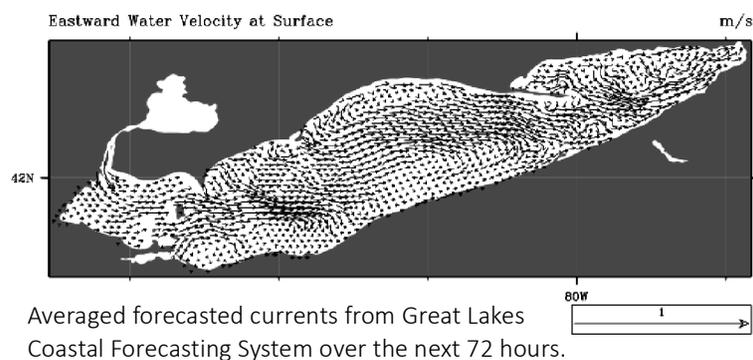


Figure 3. Forecast position of bloom for 23 August, 2015 using GLCFS modeled currents to move the bloom from the 19 August, 2015 image.



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).



Supported by the NASA Applied Sciences Health and Air Quality Program. Wind forecasts derived from NOAA/National Weather Service in Cleveland.



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

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