Experimental Lake Erie Harmful Algal Bloom Bulletin

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

13 August, 2015, Bulletin 10

The *Microcystis* cyanobacteria bloom continues across a large part of the western basin south of West Sister Island from Michigan to the islands. It extends through the islands to the NE reaching the Ontario coast east of Point Pelee. The bloom is forming scum, particularly in the high concentration areas and during light to moderate winds. Concentrations are greatest in the western basin, decreasing somewhat through the islands to moderate levels on the Ontario coast. Microcystin is present in this bloom, and the toxin levels are extremely high in scums. A Recreational Public Health Advisory has been posted for Maumee Bay State Park by Ohio EPA.

Winds will be relatively strong today, gradually decreasing onto the weekend (to 5-10 knots), with each day seeing an increasing likelihood of extensive scum in areas of moderate to high concentrations. With southwest winds over the next few days, scum development is most likely to first occur in the southwest portion of the lake, even with winds of 10-15 knots. Mixing is expected today and into Friday. Some of the bloom may spread east offshore of the Ohio coast east of Sandusky Bay over the next few days.

The persistent bloom in Sandusky Bay continues. No other blooms are evident in the central basin and eastern basins.

Please check Ohio EPA's site on harmful algal blooms for safety information. http://epa.ohio.gov/habalgae.aspx
Keep your pets and yourself out of the water in areas where scum is forming.
- Stumpf, Tomlinson

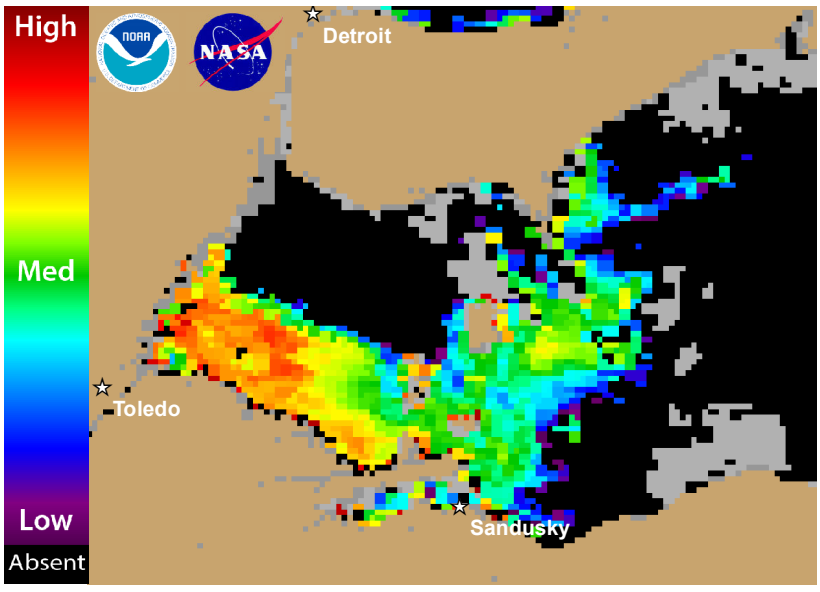


Figure 1. Cyanobacterial Index from NASA's MODIS-Aqua/Terra data collected 11 August, 2015. Grey indicates clouds or missing data. Black represents no cyanobacteria detected. Colored pixels indicate the presence of cyanobacteria. Cooler colors (blue and purple) indicate low concentrations and warmer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

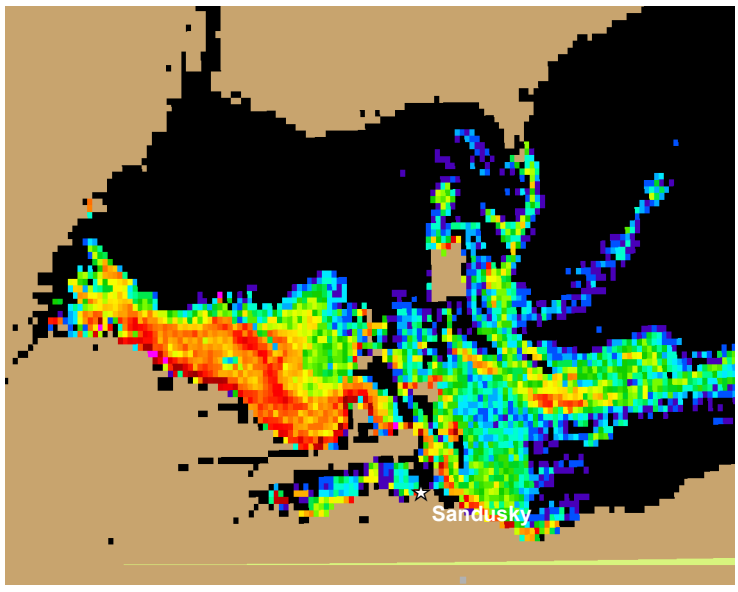


Figure 2. Nowcast position of bloom for 13 August, 2015 using GLCFS modeled currents to move the bloom from the 11 August, 2015 image.

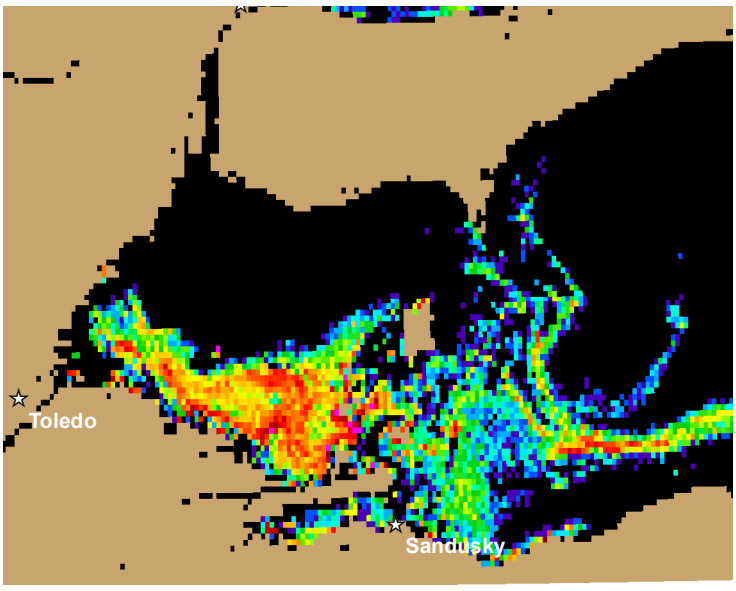
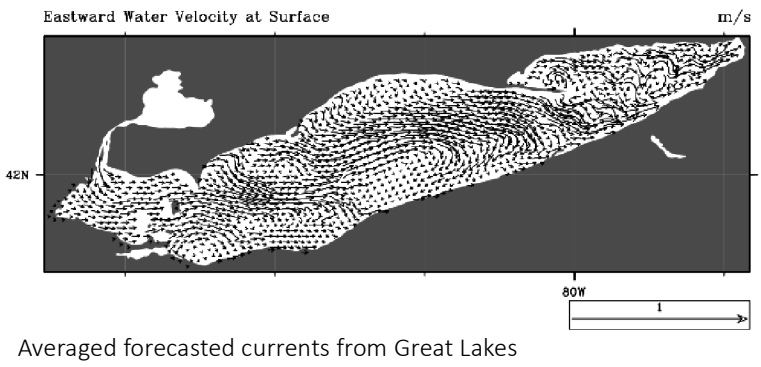
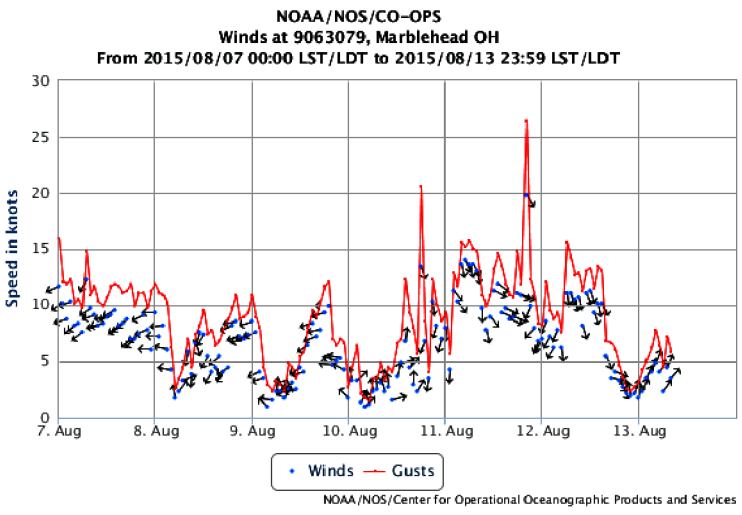


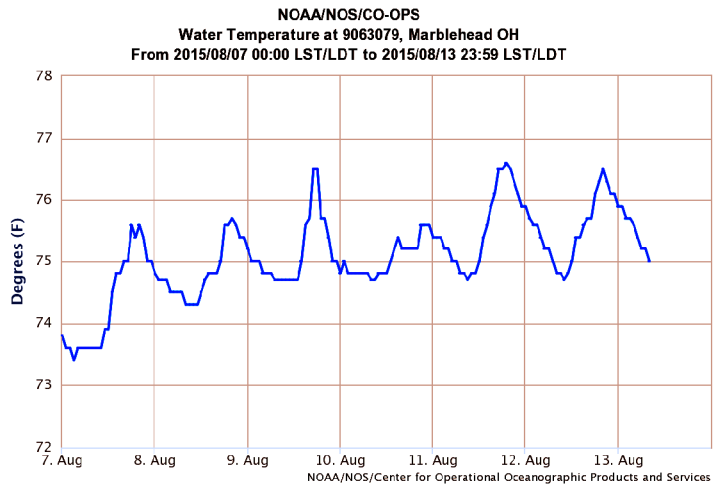
Figure 3. Forecast position of bloom for 15 August, 2015 using GLCFS modeled currents to move the bloom from the 07 August, 2015 image.



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



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).



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

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

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http://www.glerl.noaa.gov/res/waterQuality/?targetTab=habs