



Experimental Lake Erie Harmful Algal Bloom Bulletin

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

27 July 2015, Bulletin 04

The *Microcystis* cyanobacteria bloom continues in the western basin. The bloom extends from west of West Sister Island, veering southward to the coast, then curving to the northeast through the islands toward the central basin and up to the Canadian coast east of Pelee Point. Some development occurred closer to Michigan on Friday, however slightly eastward transport occurred in the western basin over the weekend. Microcystin has been detected; toxin levels are high in scums, where the bloom is concentrated. Winds 10-15 knots Sunday (July 27) partially mixed the bloom into the water column, reducing surface concentrations. Calm weather over the next few days will favor scum formation, especially during daytime. Relatively little transport is expected through early Wed. However, west to NW winds, associated with the passage of a cold front late Wednesday and early Thursday, will favor more eastward movement and mixing. Please keep pets out of scums.

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

- Stumpf, Dupuy

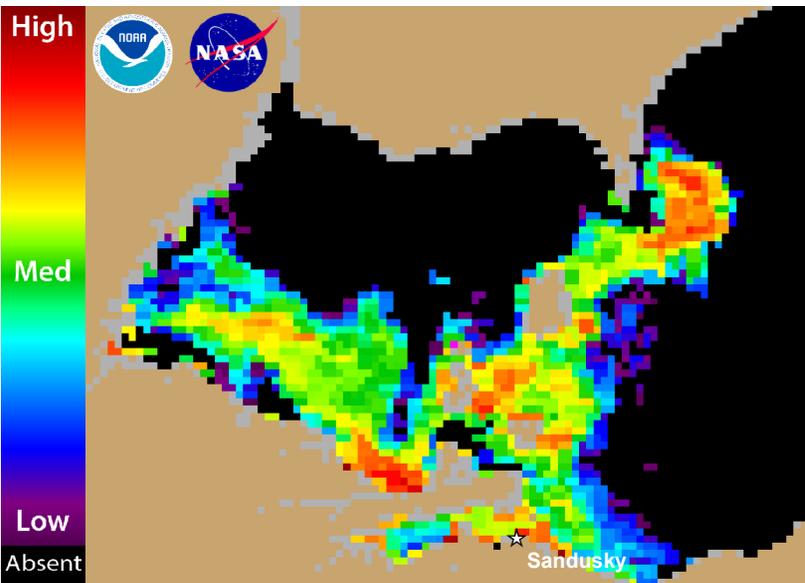


Figure 1. Cyanobacterial Index from NASA's MODIS-Terra data collected 24 July 2015 at 12:00 pm EDT. Grey indicates clouds or missing data. Black represents no cyanobacteria detected. Colored pixels indicate the presence of cyanobacteria. Cooler colors (blue and purple) indicate low concentrations and warmer colors (red, orange, and yellow) indicate high concentrations. The estimated threshold for cyanobacteria detection is 20,000 cells/mL.

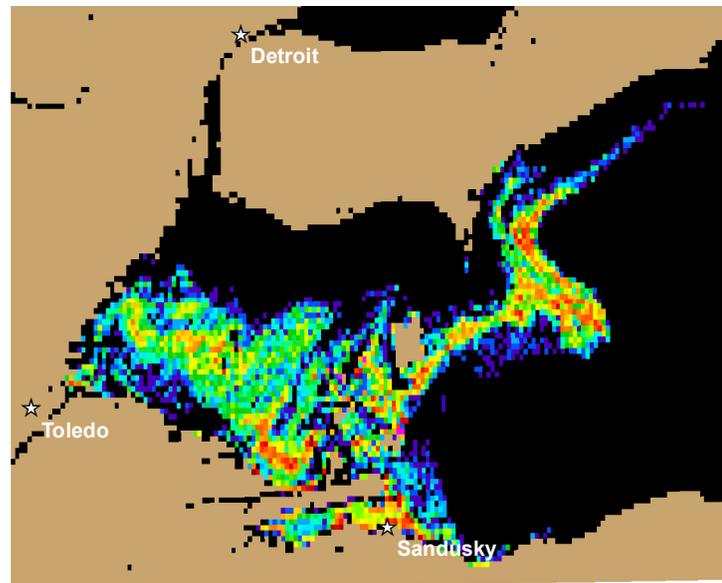


Figure 2. Nowcast position of bloom for 27 July 2015 using GLCFS modeled currents to move the bloom from the 24 July 2015 image.

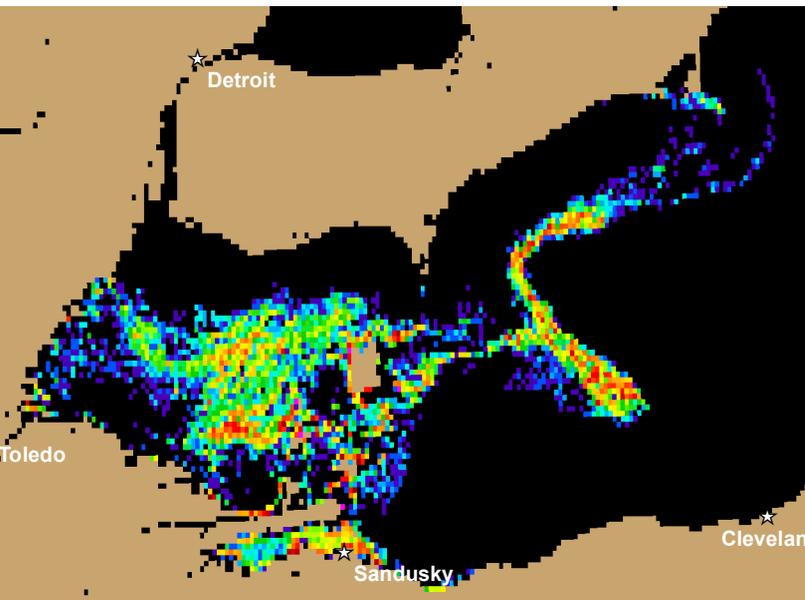
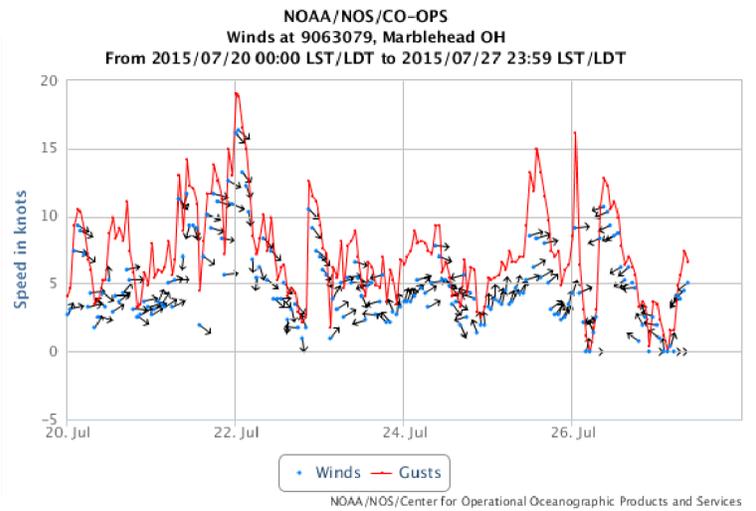
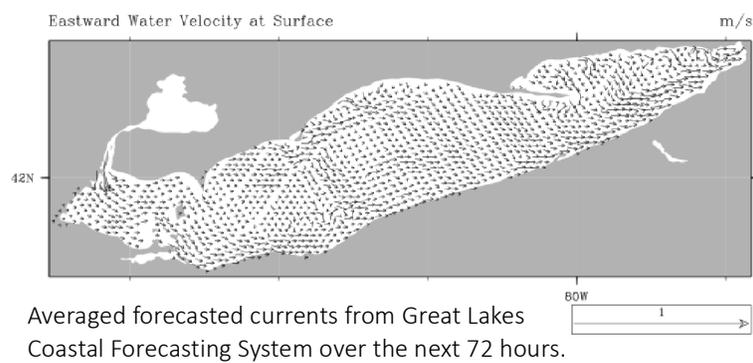


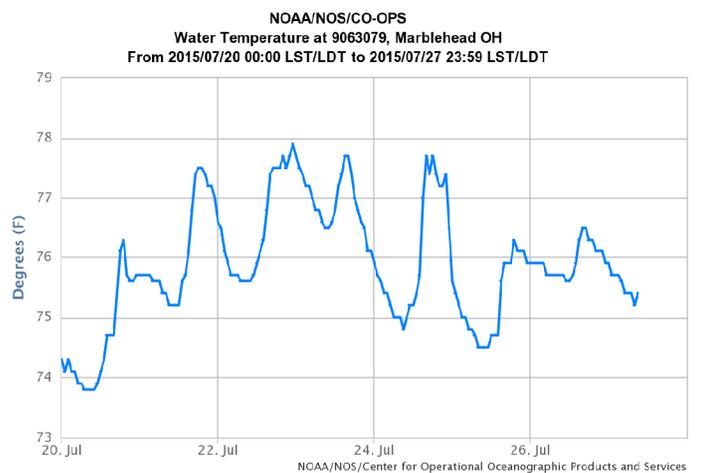
Figure 3. Forecast position of bloom for 30 July 2015 using GLCFS modeled currents to move the bloom from the 24 July 2015 image.



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).