

Western Lake Erie HAB Early Season Projection

Bulletin 02 2025-05-15

Summary: The Western Lake Erie HAB Early Season Projection provides an estimate of potential *Microcystis* harmful algal bloom (HAB) severity. The projected severity depends on input of total bioavailable phosphorus (TBP) from the Maumee River during the loading season (March 1-July 31), and uses a combination of measurements and forecasts of Maumee River discharge from the U.S. Geological Society and the National Weather Service - Ohio River Forecast Center (through July) combined with TBP loads measured by the Heidelberg University National Center for Water Quality Research.

With observations through May 13, we predict a potential bloom severity range of 2.5-4.5 (Mild to Moderate bloom conditions), similar to the 2016 (Mild) or 2022 and 2024 (Moderate) blooms. Through the spring, conditions have been relatively dry except for a large precipitation and associated river discharge event in early April and another moderate precipitation event in early May. Near normal precipitation and river discharge are currently predicted for the remainder of the loading season (May-July).

The range in forecasted severity reflects the uncertainty in forecasting precipitation, particularly through June and July. We will issue a comprehensive seasonal forecast on June 26. Any bloom that does develop will move throughout the summer due to wind and currents. We will provide information on the presence and location of the bloom via monitoring and forecasts that are [posted daily on the web](#), and emailed to subscribers weekly, in collaboration with NOAA's Great Lakes Environmental Research Laboratory (GLERL).

Predicted Bloom Severity

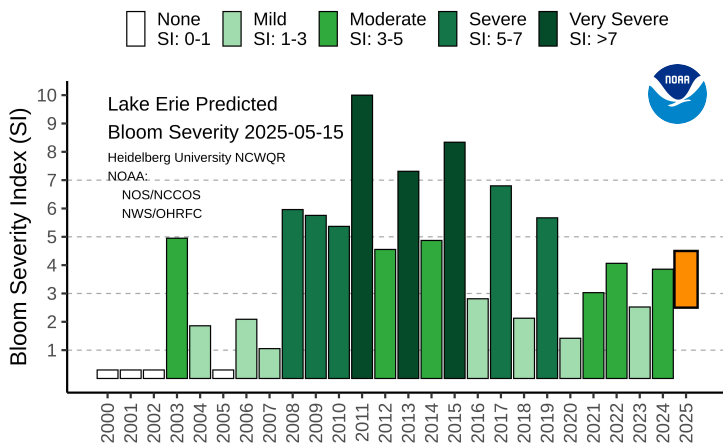


Fig. 1. Predicted bloom severity as compared to previous years. The wide orange bar is the likely range of severity based on current forecast uncertainty (2.5-4.5; Mild to Moderate bloom). The uncertainty in the bloom severity forecast is due to uncertainty in both the bloom severity models and the forecast river flow and TBP loads through the end of July.

Cumulative Total Bioavailable Phosphorus

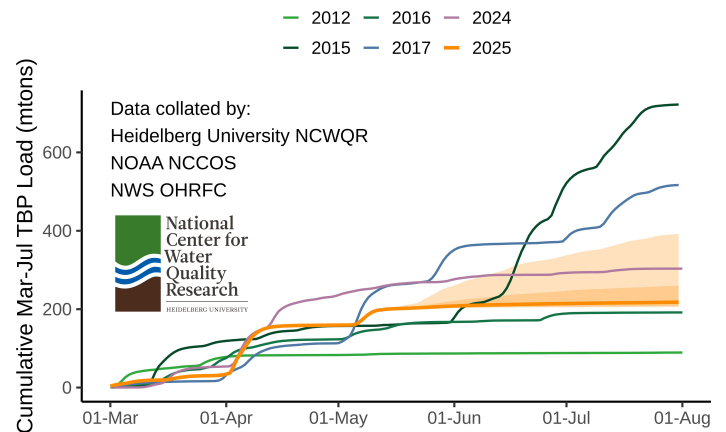


Fig. 2. Cumulative TBP loads for the Maumee River (Waterville, OH). Each line denotes cumulative load for different years. 2025 is in orange: the solid line is the measured load to May 13 and predicted load for the rest of the loading season (thru July); the orange shading shows the possible load range for the remainder of the season.

Total Bioavailable Phosphorus

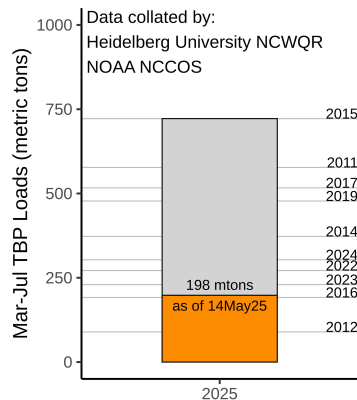


Fig. 3. Total bioavailable phosphorus (TBP) load accumulated from the Maumee River near Waterville, OH to date. The right axis denotes the TBP load from selected previous years.

Satellite Image - True Color

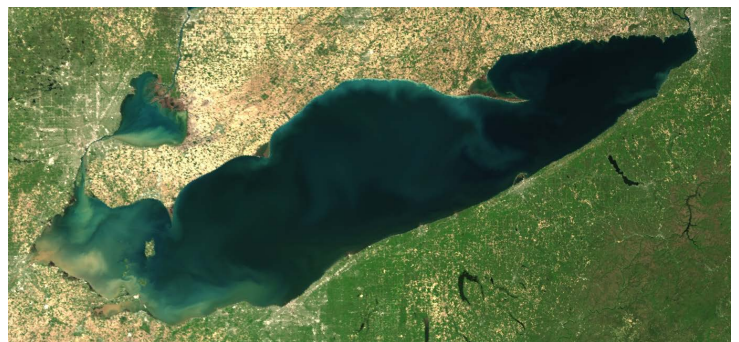


Fig. 4. True color image for 11 May 2025 derived from the Copernicus Sentinel-3a/b satellite. The western basin has substantial suspended sediment (brown color) from the Maumee River due to the high flow event in early May.

For more information visit: coastalscience.noaa.gov/science-areas/habs/hab-forecasts/lake-erie/ or ncwqr.org/

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