

Western Lake Erie HAB Early Season Projection

Bulletin 01 2025-05-08

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) and TBP loads measured by the Heidelberg University National Center for Water Quality Research.

With observations through May 6, we predict a potential bloom severity range of 2-4.5 (Mild to Moderate bloom conditions), similar to the 2023 (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 this week (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 change throughout the summer and move with the wind and currents. We will provide information on the presence and location of the bloom throughout the summer 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

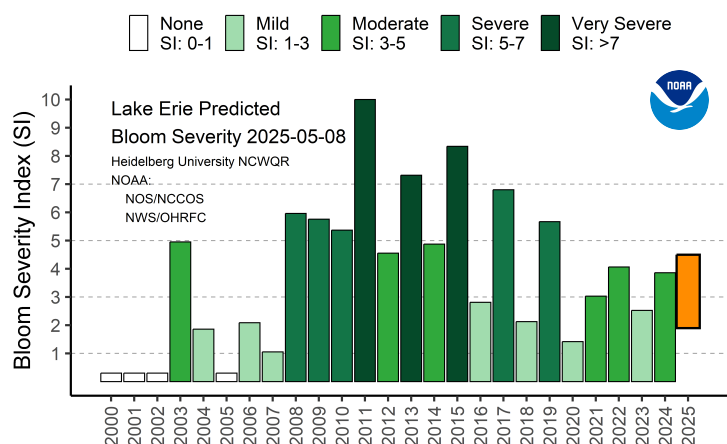


Fig. 1. Predicted bloom severity as compared to previous years. The wide orange bar is the likely range of severity based on the limits of the forecast uncertainty (2-4.5; Mild to Moderate bloom). There is uncertainty in the bloom severity due to the uncertainty of both the bloom severity models and the forecasted river flow and TBP loads through the end of July.

Total Bioavailable Phosphorus

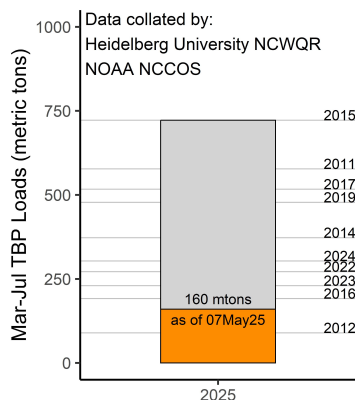


Fig. 3. Total bioavailable phosphorus (TBP) load accumulated from the Maumee River near Waterville, OH to date. The right axis denotes the TBP load from selected previous years.

Cumulative Total Bioavailable Phosphorus

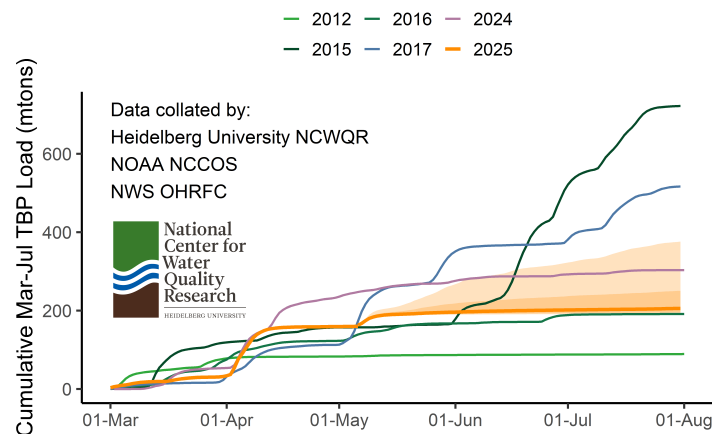


Fig. 2. Cumulative TBP loads for the Maumee River (Waterville, OH). Each line denotes cumulative load for different years. 2025 is in orange: the solid line is the measured load to May 6 plus predicted load for the remainder of the loading season; the orange shading shows the possible range.

Satellite Image - True Color



Fig. 4. True color image for 27 April 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 April.

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

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