

Lake Erie Harmful Algal Bloom Early Season Projection

5 June 2018, Projection 05



The severity of the western Lake Erie cyanobacterial harmful algal bloom (HAB) depends on the input of bioavailable phosphorus, particularly from the Maume River during the loading season (March - July). This bulletin gives an estimate of potential bloom severity based on a combination of measurements through June 4 and river forecasts through July.

March had average precipitation and river loads, April and May were somewhat wetter than average. The current outlook for June and July is for average river discharge. The phosphorus load to date is sufficient for some bloom to occur. However, while we still have uncertainty in the projected bloom severity, we expect the bloom to be less severe than last year.



These projections will be updated each week through the end of June with new data and weather models. The final seasonal forecast will be made July 12 with a comprehensive set of models and data. This seasonal projection is for the peak bloom severity, which is typically not observed until late August or early September in the western lake. Most of the lake will be unaffected. Even in the Western Basin, bloom location will depend on wind, and NOAA will provide updates on the bloom location twice weekly during the summer. This projection uses river forecasts from the National Weather Service Ohio River Forecast Center, and measurements from Heidelberg University.

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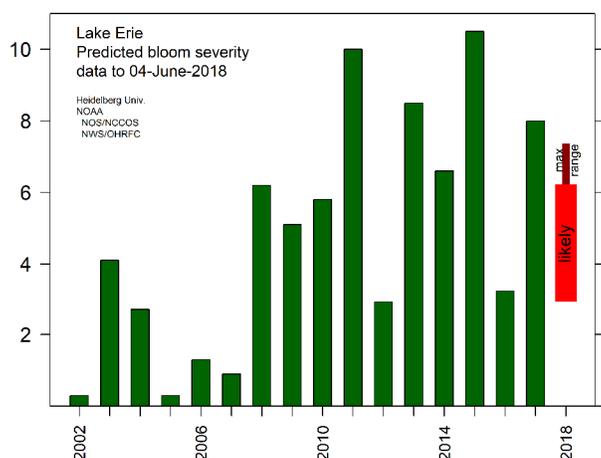


Figure 1. Projected bloom compared to previous years. The wide bar is the likely range of severity based on uncertainty in the weather forecasts. The narrow bar is the maximum range of severity based on the models. Because the projection uses modeled discharge for eight weeks, there still remains uncertainty in potential bloom severity.

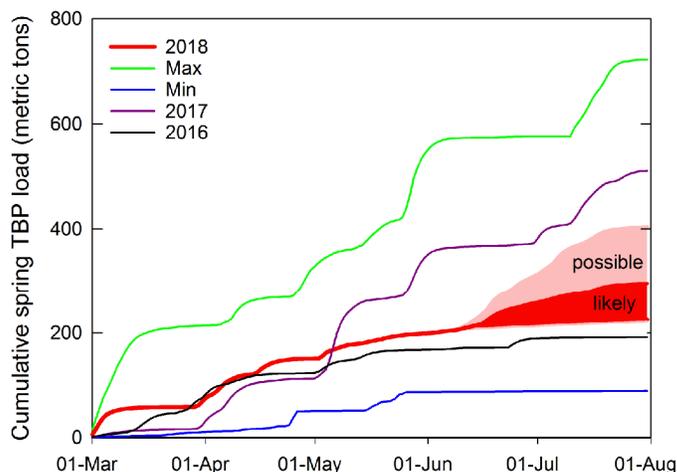


Figure 2. Cumulative total bioavailable phosphorus (TBP) loads for the Maume River (based on Waterville). Each line denotes a different year. 2018 is in red, the solid line is the measured load to June 3rd, the red area shows the likely range for the remainder of the loading season, and the light red shows the possible range.

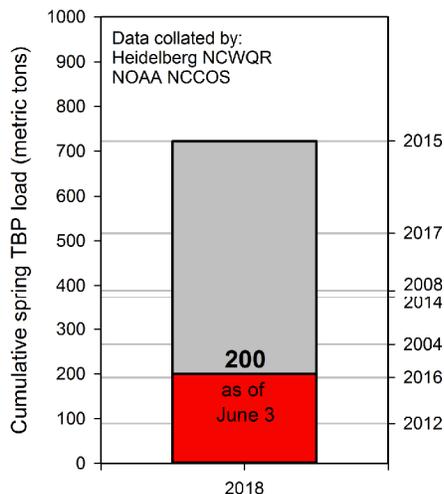


Figure 3. Total bioavailable phosphorus (TBP) load accumulated from the Maume River near Waterville to date. The right axis denotes the TBP load from selected previous years. Current loads have passed 2016. Data at: <http://data.glos.us/maumeel/>



Figure 4. True color image on 04 June 2018 made with data processed from the Aqua satellite (provided by NASA). Water color variations in the lake result from sediments (either from rivers or stirred up by winds) and from the normal—and harmless—spring algal bloom. The cyanobacteria *Planktothrix* has appeared in Sandusky Bay, as it does each year at this time. No cyanobacteria are present in Lake Erie proper.