

NOAA predicts mild harmful algal blooms for western Lake Erie this year

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(Phys.org) -- In its first-ever seasonal harmful algal bloom forecast for Lake Erie, NOAA researchers are predicting that western Lake Erie will have a mild bloom this summer, equivalent to conditions last seen in 2007.

Lake Erie has been plagued by a steady increase of [harmful algal blooms](#) (HABs) over the past decade. HABs can cause the death of fish, foul [coastlines](#), and harm both aquatic and human life. NOAA has issued weekly bulletins for HABs in Lake Erie since 2008, and will continue to do so.

The new forecast product responds to increasing stakeholder demand for this information, and shows how local needs can help drive NOAA's national research capacity to solve community problems.

The new seasonal forecast, made possible using models developed by scientists at NOAA's National Centers for Coastal Ocean Science (NCCOS), calls for a smaller bloom of the cyanobacteria HAB this summer, compared to recent severe blooms. Last year's bloom, one of the largest in decades, covered approximately 1,600 square miles at its maximum, an area the size of Long Island Sound. This year's mild bloom is expected to about one-tenth the size of last year's.

“This forecast is good news for Great Lakes, resource managers and decisions makers as NOAA and its partners take another step in advancing ecological forecasting capabilities for this important

economic and recreational region of our country,” said David Kennedy, NOAA’s assistant administrator for the National Ocean Service.

The projection uses a 10-year data set of nutrients flowing into Lake Erie, collected by the Heidelberg University of Ohio’s National Center for Water Quality Research, and analysis of satellite data from the European Space Agency’s Envisat. Ohio State University’s Sea Grant program and Stone Laboratory will help monitor the HAB if it appears later this summer. The results will provide information for regional managers and help the scientists refine the accuracy of the forecast’s models.

“This forecast presents a tremendous opportunity for state and regional managers to prepare and calibrate resources to ensure there is as little disruption of activities for [Lake Erie](#)’s citizens and recreational visitors,” said Jeff Reutter, Ph.D., director of Ohio State University’s Sea Grant program and Stone Laboratory. “The forecast of a mild season follows last year’s bloom, the most severe in decades, and will be welcomed for those planning activities for the 2012 summer season.”

When certain conditions are present, such as high nutrient or light levels, algae can reproduce rapidly. This dense population is called a bloom. Some are harmless, but when the organisms contain toxins, other noxious chemicals, or pathogens, it is known as a harmful algal bloom, or HAB. Since 2008, western [Lake Erie](#) has experienced unusually large blooms each summer, presenting challenges to public water managers.

“We can now capture both the short-term, looking days ahead, as well as the seasonal forecasts several months in advance, to assist resource managers in better response planning for such bloom events,” said NOAA’s Richard Stumpf, Ph.D., who leads the NOAA ecological forecasting applied research efforts within NCCOS.

The NOAA models and analysis were co-developed by Stumpf along with fellow NOAA oceanographer Tim Wynne. Funding was provided through NCCOS, NOAA's Center of Excellence for Great Lakes and Human Health, and NASA's Applied Science Program. The models will be published later this month in the journal PLoS ONE. Additional authors include Gary Fahnenstiel, Ph.D., NOAA's Great Lakes Environmental Research Laboratory and David Baker, Ph.D., Heidelberg University of Ohio.

Provided by NOAA Headquarters

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