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## **Report: Phosphorus Needs to Be Managed Differently to Protect Lake Erie**

Lake Erie is challenged by increasing levels of dissolved phosphorus and harmful algal blooms. However, if significant actions are taken, the lake again can recover as dramatically as it did in the 1980s, according to the final report of the Ohio Lake Erie Phosphorus Task Force.

The report, released today by Ohio EPA, identifies areas for additional research and analysis related to how nutrients move from land into our stream systems. The report also recommends increasing the use of state of the art agricultural practices and using more care in the application of fertilizers and manure to fields.

Total phosphorus, including dissolved and particulate phosphorus, historically has been a problem in Lake Erie. Initial actions to reduce phosphorus loadings to Lake Erie in the 1970s focused on reducing the largely dissolved phosphorus discharging from wastewater treatment plants. In addition, farmers across the region adopted management practices that effectively reduced sediment erosion from fields and the particulate phosphorus attached to it. As a result, the goal of reducing total phosphorus load by 11,000 metric tons was reached and the status of the lake dramatically improved in the 1980s.

While most monitoring efforts focus on total phosphorus levels, researchers at Heidelberg University also were tracking dissolved phosphorus. They began to note a trend of increasing dissolved phosphorus loads to the lake from northern Ohio rivers beginning about 1995. Coupled with the concerning increase in blooms of toxin-producing blue-green algae, also known as cyanobacteria, Ohio EPA Director Chris Korleski convened the Ohio Lake Erie Phosphorus Task Force in 2007 to gather existing research, data and other information on the sources of phosphorus and their potential contribution to the algal blooms.

The task force is an Ohio EPA-led assembly of experts from federal, state and local government agencies, farm interest groups and universities. The group's full report was issued today by Ohio EPA.

"I commend the task force for its work, which is a road map forward in future phosphorus management," Korleski said. "This group is a great example of what I like to call 'Green Academy,' a collaboration between governmental entities, agricultural interests and Ohio's colleges and universities. It is partnerships like these that help to move Ohio forward."

The report details the findings and makes suggestions for moving forward. Among them are:

- Phosphorus loading is primarily affecting the western basin, particularly from the Maumee and Sandusky river watersheds in northwestern Ohio. Phosphorus levels also are increasing from northeastern watersheds, such as the Cuyahoga and Grand rivers, but to a much smaller extent than the northwestern rivers.

- There are multiple sources of phosphorus loading; however, the most significant is runoff from agricultural nutrient applications such as commercial fertilizers and livestock manure. The task force's primary concern was dissolved reactive phosphorus (DRP), a form of phosphorus in solution that does not attach to sediment. DRP, also called soluble phosphorus, is more readily available for uptake by both crops and algae than particulate phosphorus attached to soil and sediment. Both manure and commercial fertilizer have relatively high concentrations of soluble, or dissolved reactive phosphorus, which is why it was the task force's primary concern.
- The task force concludes that management practices that focus on the timing, amount and method of application of nutrients (fertilizers) will have the greatest beneficial potential for reducing the algal blooms in the western basin. The task force concludes that tools and measures need to be refined to account for crop fertility needs and environmental risk.
- Scientific analyses are needed on the movement of sediment and nutrients through stream systems and as they move through lake estuaries, bays, near-shore zones and open lake waters during and after storm runoff.
- Examine the role of climate change that has resulted in stronger storms that produce more storm water runoff and the effect of invasive species such as zebra and quagga mussels in the lake.
- Additional scientific analysis is needed so results can be applied to the most effective melding of modern soil conservation methods with advanced nutrient management measures and agricultural water management measures.

The task force's report thoroughly discusses these and other findings. The full report and other task force documents are available online at [www.epa.ohio.gov/dsw/lakeerie/ptaskforce/index.aspx](http://www.epa.ohio.gov/dsw/lakeerie/ptaskforce/index.aspx).

A better understanding of how nutrients are moving from the land into the watershed and ultimately into the lake is critical for planning and implementing current and future management strategies.

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**The Ohio Lake Erie Phosphorus Task Force is comprised of:** Ohio Farm Bureau Federation, Heidelberg University's National Center for Water Quality Research, The Ohio State University Environment and Natural Resources, OSU College of Biological Sciences, OSU Sea Grant, OSU Extension, U.S. EPA Great Lakes National Program Office, University of Toledo, U.S. Geological Survey, Natural Resource Conservation Service, Ohio Department of Agriculture, U.S. Department of Agriculture's Agriculture Research Service, Conservation Action Project and Henry County SWCD, Northeast Ohio Regional Sewer District, Ohio Department of Natural Resources Division of Soil and Water, ODNR Division of Wildlife, Case Western Reserve University, Ohio Lake Erie Office, Ohio Academy of Science/Ohio Fractured Flow Work Group and Ohio EPA Division of Surface Water.