Agricultural pollution, harmful algal blooms (HABs), and the cost of intervention

Summary

Nutrients such as nitrogen and phosphorus are essential for plant growth. However, when too many nutrients make it into our waterways, they can cause harmful algal blooms (HABs) like what we see every summer in Lake Erie. These nutrients come from a variety of places, the two main sources being wastewater treatment plants (WWTP) and agriculture. While WWTPs are regulated and controlled under the federal Clean Water Act and state law, agriculture is largely unregulated. Instead, states and the federal government have relied on farmer implementation of voluntary best practices. Despite years of significant government investment in this approach, overall water quality in Lake Erie has not improved and HABs continue to:

- pollute drinking water,
- threaten fish and wildlife,
- harm the economy, and
- prevent people from boating, swimming, and fishing in Lake Erie.

The massive HABs western Lake Erie experiences every summer can lead to dead zones where fish and wildlife cannot thrive because oxygen is depleted. HABs in Lake Erie also produce harmful cyanotoxins that threaten drinking water supplies, a common one being microcystin, which poses a serious threat to human and animal health. Microcystin is a potent liver toxin and a possible human carcinogen. Cyanotoxins can kill livestock and pets that drink affected waters. Last August was the ten-year anniversary of when toxins from an algal bloom in Lake Erie got into the city of Toledo's drinking water system. On August 2nd, 2014, more than half a million Toledo-area residents were ordered not to drink or even touch their water. The order lasted nearly three days.

Preventing agricultural pollution at the source

Agriculture is the primary source of unchecked nutrients fouling waters in the Western Lake Erie Basin. To improve water quality in the Lake and to protect it for the millions of residents that rely on the Lake for drinking water, we must reduce the amount of nutrients flowing into the Lake. In 2015, the U.S. and Canadian governments agreed to reduce the total phosphorus entering the Basin by 40% by 2025 to control HAB growth and improve water quality. However, that goal has not been met despite hundreds of millions of dollars spent in the watershed. The Alliance is helping shape solutions to these problems in two main ways:

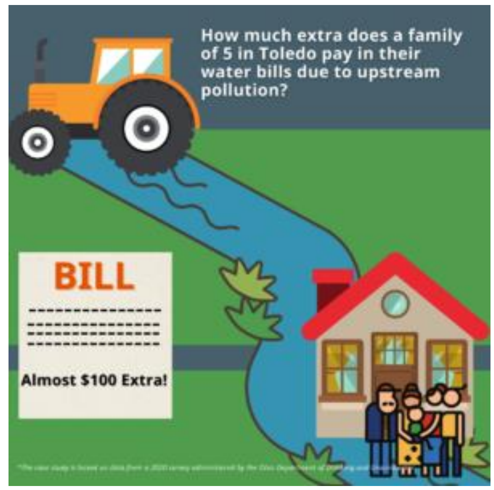
1. First, the Alliance actively works to improve the standards that govern nutrient application through advocacy and administrative rulemaking.
2. Second, the Alliance is focused on building out the knowledge necessary to make more informed decisions about implementation of conservation practices in the Lake Erie Basin.

Strategically implementing conservation practices where they are needed most, such as cover crops, is the main way to reduce the amount of nutrients that end up in our waterways. We recently launched a new water quality monitoring project in partnership with the Michigan Department of Agriculture to better understand how water and nutrients move through the watershed. This project will be used to improve conservation practice programs, maximizing the return on those investments.

Unfortunately, few rules are in place today to limit runoff from agricultural land, implementing the amount of conservation practices necessary to see improvement requires sustained investment, and accountability measures that meaningfully track the progress of that investment are lacking. The Alliance advocates for standards that reduce the amount of nutrient pollution allowed to flow into the Great Lakes, continued funding for targeted conservation practices, and meaningful ways to measure and track progress. Together, all these measures will reduce algal blooms, restore the lakes, and ensure safe, clean drinking water for our families.

The burden is shouldered by downstream communities

All too often, downstream communities are bearing the burden of upstream agricultural pollution. To ensure drinking water safety, public drinking water systems that draw water from Lake Erie have put into place additional monitoring and treatment for HABs, which can cost millions of dollars. This is a very real financial burden for drinking water systems, which gets passed on to ratepayers in the form of higher water bills. These additional costs – which are critical to ensure safe drinking water – add up. An analysis conducted by the Alliance found that the extra annual average per-capita cost for HAB-related monitoring and treatment for Ohioans who get their drinking water from Lake Erie is $10.48. For Toledo-area residents, the additional cost jumps to $18.76 per year -- almost $100 extra per year on a water bill for a family of five. This analysis is based on data from a 2020 survey administered by the Ohio Environmental Protection Agency's (OEPA) Department of Drinking and Groundwater (DDAGW). Downstream ratepayers, many of whom are already struggling to pay their water bills, shouldn't have to shoulder the financial burden of this pollution problem. Costs will only increase as the water quality in western Lake Erie continues to degrade.



Improved data, transparency, and accountability are needed

The case study identifies three lessons learned from the analysis. They are:

- **Downstream water users bear the burden of upstream polluters:** Downstream ratepayers are paying a real cost to manage a pollution problem they did not create. This is exacerbating existing water affordability issues. Ohio needs a statewide conversation about who is responsible for this financial burden. The state of Ohio must give downstream stakeholders a meaningful seat at the table in policy discussions on stopping agricultural runoff pollution.
- **Ongoing data is needed:** OEPA's DDAGW should require public water systems to collect and report cost information related to HABs on an annual basis. The data in this report is from 2020, which was a relatively small HAB year in western Lake Erie. Many costs incurred by water treatment facilities vary depending on HAB size and toxicity. Repeating the study will provide more accurate information to ratepayers, elected officials, and government agencies.
- **Transparent and accessible data is needed:** The data used in this case study was received only after learning DDAGW conducted the cost survey and the Alliance requested the results via a public records request. It is unacceptable that this is not easy to find and understand public information. Ratepayers should be able to easily access this information and have a right to know the impact that upstream agricultural pollution has on their water bills.