

Summary of Algal Bloom Press Conference
7/13/17
Stone Laboratory

What Contributes to Algal Blooms and How Do We Know?

Laura Johnson (Heidelberg)

Monitoring occurs at 18 stations on Lake Erie, and five new stations are being added. These stations are located in tributaries and provide year-round monitoring of nutrients entering the water.

The amount of nutrients (such as phosphorus) ultimately entering Lake Erie depends on how much water is in the river and the concentration of nutrients.

We had six major storm events from March to today, meaning rainfall was high. Nutrients primarily run off the land during storm events when there is a lot of rain. The later in the year these storms appear, the less nutrients run off the land as most of the runoff occurs during early storms when ground is frozen.

Monitoring is showing increased phosphorus in the water since the mid-1990s. Phosphorus is above average and above the targets established to fix the problem. There is less phosphorus reported than it was in 2011 and 2015 when we had the largest recorded blooms.

A question was asked on whether they were able to monitor changes in the rate of nutrients entering the water due to adoption of best practices on the land (ie farmers and livestock operations changing their practices). It doesn't appear that any change is showing up. One reason may be that there aren't a lot of the larger operations adopting change yet. They talked about how this is a slow process and that programs are just beginning.

Algal Bloom Forecast, Comparison to Previous Years and Predictability of Forecast

Rick Stumpf (NOAA)

NOAA has created a scale of 1 (smallest bloom) to 10 (largest bloom). 2011 was the highest bloom recorded and was a 10, serving as the high-end baseline. The 2015 bloom was higher than that, and came in at a 10.5. Last year was 3.2 and was smaller than the forecast. There was less rain in 2016.

In explaining why last year's forecast was off, he said there are two ways phosphorus enters the water.

- From rivers as runoff (external loading)
- From sediment in the lake that already contains phosphorus (internal loading)

NOAA predicted a higher rate of internal loading from sediment since the 2015 bloom was large. They assumed some of the phosphorus from 2015 would have settled to the bottom of the lake. This was not the case. Stumpf said it shows that sediment is not a large cause of the problem, and that if we stop phosphorus from entering the lake, the blooms will end.

In 2017, we experienced a wet May and wet July, so the forecast is a 7.5. He said there are plenty of places on the lake that will not see blooms. He also said that even during a similar year of blooms as

forecasted (like 2013), the worst of the blooms did not reach the islands and did not appear everywhere on the lake. Nor did it impact the entire western basin.

Estimated time for blooms to first appear is late July or early August.

If there are more SW winds, Ohio shoreline will likely not be impacted.

Future Work

Stumpf said they are employing a new satellite, so better resolution and information will be available.

NOAA is working on toxicity forecasting. Right now, there is no way of identifying predictions of toxicity level.

New research is being done to identify whether the DNA/organic origin of blooms is coming from plant-based sources (fertilizer) or animal-based sources (manure). This will help prioritize policies and actions needed.

What Needs to Happen?

To fix the problem, we need a 40% reduction in phosphorus to put the lake back where it was 20 years ago. Total phosphorus hasn't changed in a decade. Most of the changes needed are related to agricultural practices – putting fertilizer/manures on fields in the right amount at the right time, appropriate use of cover crops, appropriate disposal of manure, water drainage management and the use of tiles on farms.

A “domestic action plan” detailing what actions are needed is coming out in February 2018.

Are fish safe to eat?

Researcher Stuart Ludsin said if people follow the already fish consumption guidelines already set by Ohio EPA, they are safe.

- One walleye meal a week
- Two yellow perch meals a week

He said no toxins found in walleye meat; small levels in yellow perch meat.

M. Huntley, Ohio Travel Association