

Commonwealth of Pennsylvania



DEPARTMENT OF
ENVIRONMENTAL PROTECTION

DEPARTMENT OF
HEALTH

PENNSYLVANIA FISH
AND BOAT COMMISSION

October 31, 2019

Mr. Andrew R. Wheeler
Administrator
Environmental Protection Agency
Office of Water
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

Attn: Docket No. EPA-HQ-OW-2019-0463; FRL 9999-83-OW

Re: Notice of Intent to Develop a Policy on the Determination of a Harmful Algal Bloom (HAB) and Hypoxia as an Event of National Significance in Freshwater Systems (September 16, 2019)

Dear Administrator Wheeler:

The Pennsylvania Department of Environmental Protection (DEP), the Pennsylvania Fish and Boat Commission (PFBC), and the Pennsylvania Department of Health (DOH) thank the U.S. Environmental Protection Agency (EPA) for the opportunity to provide comment to assist with the Development of Policy on the Determination of a Harmful Algal Bloom (HAB) and Hypoxia as an Event of National Significance in Freshwater Systems. Since 2018, DEP has been conducting a pilot monitoring program for HABs and cyanotoxins and provides the following information from this two-year project.

Though hypoxia may be induced by the presence of HABs under certain circumstances, DEP has not been regularly monitoring for dissolved oxygen in connection with HABs and therefore cannot offer much information regarding the connection between HABs and hypoxia. However, during monitoring activities in the summer of 2019, DEP did observe dissolved oxygen levels of 272% saturation at 10:04 AM in a HAB near the surface of Blue Marsh Lake; DEP posits that cyanobacteria caused this supersaturated dissolved oxygen condition and likely also produced near-anoxic conditions at night as cellular respiration increase and photosynthetic activity decreased. That said, DEP has only observed such connections between HABs and dissolved oxygen concentrations in a few instances. The Eastern Lake Erie basin and along the Ohio River (downstream of Pennsylvania waters) are areas in which there are more extensive data and established procedures for monitoring HABs; however, data are still lacking in these areas.

2019 was the second year that DEP operated a concerted HAB/cyanotoxin monitoring pilot program. In 2018 and 2019, DEP found a number of incidents of HABs and elevated cyanotoxin/cyanobacteria

levels in the small quantity of samples DEP collected in Pennsylvania. This sampling clearly demonstrated that HABs and cyanotoxin issues and concerns do exist in Pennsylvania. Many of the HABs observed in Pennsylvania were associated with cyanotoxin and cyanobacteria levels well above current recommended EPA and World Health Organization recreational criteria, and presumably created conditions unsafe for water contact recreation. Where samples were drawn near drinking water intakes, it is also possible that incidents of elevated cyanotoxins and cyanobacteria constituted situations of concern for public drinking water supplies.

DEP utilizes federal Great Lakes Restoration Initiative (GLRI) funds provided through EPA to allow partner nonprofit Regional Science Consortium at Presque Isle to monitor beaches and public access areas for HABs along Lake Erie. While it is unlikely that Pennsylvania would experience the widespread, systemic HAB conditions such as those experienced in the Western Basin of Lake Erie in 2018, DEP partners with the Erie County Department of Health and the Pennsylvania Department of Conservation and Natural Resources (DCNR) to implement the Lake Erie HAB Monitoring and Response Strategy, which serves to coordinate efforts across agencies during a HAB event.

Because of the small quantity of data that DEP has acquired on HABs/cyanotoxins over the past two years, it is not possible for DEP to make recommendations as to the best metrics that should be applied to properly assess toxicity, potential to spread, economic impact, relative size, geographic scope, the ability to affect several municipalities, and other issues pertaining to the severity of HABs in Pennsylvania.

However, DEP has gained appreciable insights into how to conduct an effective HABs/cyanotoxin monitoring program over the past two years, including: appropriate test types to apply based on observed surface water conditions; effective sampling methods and sampling periods; effective communication with other state agencies; and relevant laboratory policies and procedures.

DEP's developing HAB/cyanotoxin monitoring program has also documented many instances of elevated levels of saxitoxin and anatoxin-a, in addition to many instances of elevated levels of microcystins/nodularin and cylindrospermopsin. As such, DEP recommends that EPA should establish monitoring guidelines or protocols and recreational criteria for saxitoxin and anatoxin-a. In addition, the Lake Erie HAB Monitoring and Response Strategy and response strategies used along the Ohio River moderated between Ohio, West Virginia, and Kentucky by the Ohio River Valley Water Sanitation Commission (ORSANCO) can serve as models for interagency coordination during a HAB event.

To directly answer some other questions posed in this request for comments regarding access to the necessary critical resources, DEP, PFBC, and DOH request that EPA consider the existing resource limitations facing many states – such as limitations in technical expertise, supplies and equipment, and human, financial, and infrastructure resources – in determining national significance of HAB and hypoxia events. Expanding monitoring and response programs to a scale necessary to comprehensively assess and respond to HABs and hypoxia events in surface waters across Pennsylvania would require significant additional resources that are currently unavailable to DEP, PFBC, DOH, and other partner state agencies.

DEP, PFBC, and DOH also recommend that EPA consider impacts or threats to drinking water sources or supplies caused by HABs, although neither DEP, PFBC, nor DOH currently has the level of

information or experience necessary to provide more detailed comments on how factors such as duration, magnitude, frequency, extent, and toxicity of HABs should be used to determine events of national significance as pertains to impacts or threats to drinking water sources or supplies. Likewise, DEP, PFBC, and DOH recommend that EPA consider impacts or threats to recreational uses of surface waters in determining HAB events of national significance, although neither DEP, PFBC, nor DOH can currently provide detailed comments on exactly how impacts or threats to recreational uses should be assessed by EPA in determining an event of national significance.

DOH's ability to protect against human health threats from HABs is directly correlated to DEP's monitoring efforts to identify ongoing HABs, as permitted bathing beaches are not currently required to monitor and sample for HABs. Through policy, DOH has adopted the EPA Recommended Human Health Recreational Ambient Water Quality Criteria and Swimming Advisories for Microcystins and Cylindrospermopsin (May 2019) guidelines for permitted beaches under the DOH Public Bathing Place Program. Without sufficient resources for routine monitoring surveillance of an active bloom and notification from DEP of elevated toxin levels, specific recommendations cannot be made by DOH. The extent and significance of the problem from a public health perspective is not known as health conditions resulting from cyanobacteria toxin exposure are not currently reported to DOH.

Without the resources necessary to design and implement more thorough and comprehensive investigations of HABs in Pennsylvania's surface waters – outside of the resources available through the GLRI program, without clear guidance from EPA on HAB monitoring and response, and as DEP, PFBC, and DOH have just recently begun more concerted and deliberate collaboration with other state agencies in Pennsylvania – including the Pennsylvania Department of Agriculture – it is difficult for DEP, PFBC, and DOH to offer detailed comments on many aspects identified in EPA's request for comments on development of this policy, such as the extent, duration, or reoccurrence of HABs.

Should you have any questions or need additional information, please contact Aneca Atkinson, DEP, Deputy Secretary for Water Programs, by e-mail at aneatkinso@pa.gov or by telephone at 717.783.2950.

Sincerely,



Patrick McDonnell,
DEP Secretary



Timothy D. Schaeffer,
PFBC Executive Director



Dr. Rachel Levine,
DOH Secretary