

Draft Blue-Green Algae Section of 303(d) Report – 7/3/2012

Harmful Algal Blooms

The Wisconsin Department of Natural Resources, along with other state and local partners, is working hard to protect human health, domestic animals, and wildlife from harmful algal blooms. In order to achieve this goal, the Department is committed to monitor and sample suspected harmful algal blooms, inform the general public about the causes and potential risks of harmful algal blooms, and find opportunities to improve and expand the harmful algal bloom protection program in the future.

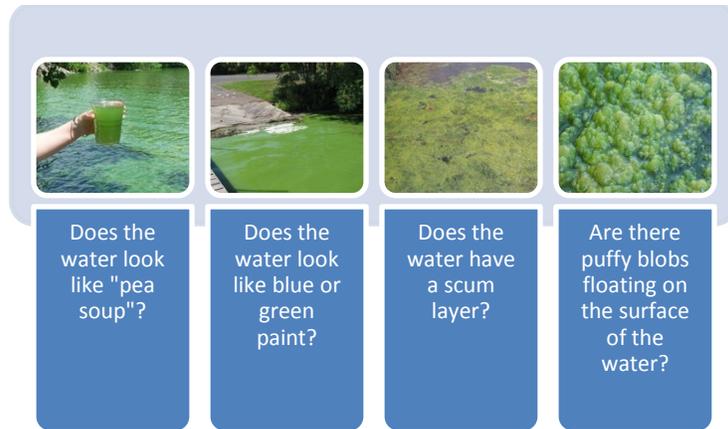
The DNR's current activities which address harmful algal blooms in Wisconsin include a partnership with the Department of Health Services (DHS) in conducting algal bloom and toxin sampling and disseminating results as part of the DHS's Algal Bloom Surveillance System (HABISS), funded by a grant to the DHS from the Centers for Disease Control. The aim of the HABISS project is to track cases of human and animal illnesses possibly related to algal bloom exposure. The HABISS project has also funded additional DNR sampling efforts in areas with chronic algal bloom problems, including Lakes Tainter and Menomin in Dunn County and the Petenwell and Castle Rock Flowages in Juneau County and Adams County.

Other DNR efforts to inform Wisconsin residents about harmful algal blooms include outreach to individual citizens and lake associations, press releases in the summer to alert citizens to peak algal blooms, press releases in late summer and fall to alert hunters to the risks of algal blooms to waterfowl-retrieving dogs, and information posted on the DNR's website. The website includes a page on blue-green algae which addresses citizens' concerns about the health and aesthetic impacts of algal blooms, information on personal protective measures and control of blooms, and links to the DHS website and algae-related illness reporting portal. The information which is presented to the public on the DNR Blue-green Algae web page is incorporated below.

Algae of Concern

Only a small percentage of algal species can cause harm to humans and the environment through toxin production or excessive growth. Typically in Wisconsin, these algae are "blue-green algae", also sometimes referred to as Cyanobacteria. Many different species of blue-green algae occur in Wisconsin's waters, some of which may produce toxins. Although these algal species may be very different, in great numbers they all produce similar visual warnings:

Learning the Signs



Controlling Blooms

Unfortunately, there is no method to control or mitigate a bloom once it has started. Therefore, the best way to protect human health is to prevent these blooms from occurring in the first place. Algae, like all plants, require nutrients such as phosphorus and nitrogen to grow. If too much phosphorus and/or nitrogen is added to our lakes and rivers, it can spur more algae to bloom and can increase the frequency of harmful algal bloom occurrences.

The Department has taken measures to reduce the amount of nutrients, mainly phosphorus, entering surface waters. In December 2010, Wisconsin promulgated water quality standards for phosphorus following the publications of chs. NR 102 and NR 217, Wis. Adm. Code. These standards are used to reduce the amount of phosphorus discharged from point sources, maintain and protect healthy water, and improve waters that are already experiencing the adverse effects from excess phosphorus. Additionally, Wisconsin has tightened the nonpoint source performance standards to try to reduce the amount of nutrients entering surface water from nonpoint sources. These changes took effect January 2011 following the publication of ch. NR 151, Wis. Adm. Code.

Although these regulatory changes were a great step in reversing the growing number of algal blooms in the State, more can be done. The Department is also working to inform citizens about their role in being part of the solution. Recommended riparian measures include:

- Maintaining native vegetation along shorelines as buffer areas
- Minimizing activities that result in erosion
- Reducing the amount of fertilizer used on lawns
- Using only phosphorus-free fertilizer when possible
- Fixing leaking septic systems
- Using only phosphorus-free detergents in dishwashing machines

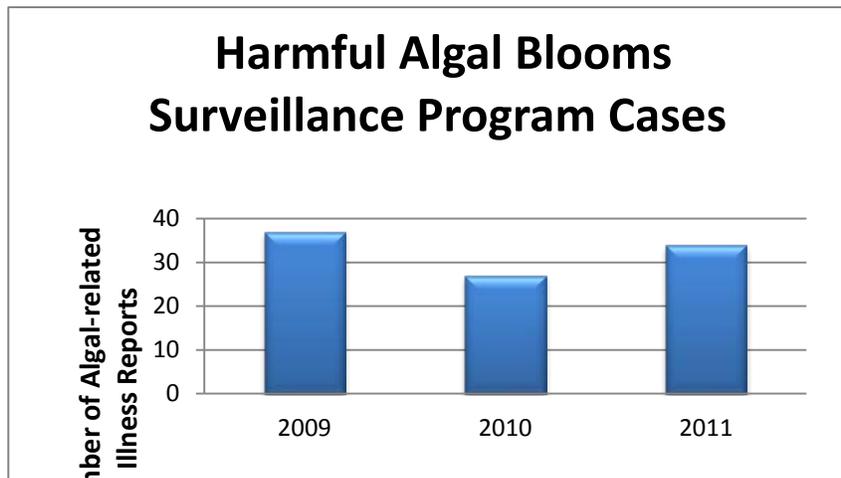
| More information about phosphorus reduction strategies can be found at http://dnr.wi.gov/news/mediakits/mk_phosphorus.asp.

Defending Human Health

In Wisconsin, personal discretion and judgment are always the first lines of defense to protect human health from harmful algal blooms. If citizens are concerned that a harmful algal bloom may be occurring, the Department strongly recommends that they should NOT allow children,

adults, or family pets to swim, boat, or recreate on these waters. The Department, partnering with the DHS, has set up a citizen-based [Harmful Algal Blooms Surveillance](#) system so that citizens can report illnesses related to harmful algal blooms. These reports are priorities and the Department tries to confirm as many blooms as possible, given staffing and resource constraints.

If human or animal illness occurs from a harmful algal bloom exposure, medical attention is strongly advised. Key symptoms of concern include stomach cramps, diarrhea, vomiting, headache, fever, muscle weakness, or difficulty breathing, while pets display symptoms such as seizures, vomiting, or diarrhea. If these symptoms arise, citizens are asked to contact their local doctor or veterinarian, or contact the Poison Information Hotline (800-222-1222) right away. The DNR and Department of Health are working to quantify HAB incidence reported to their local care provider.

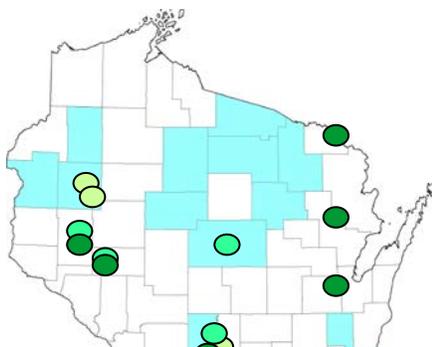


DNR's Commitment

DNR is engaged in monitoring of suspected bloom sites in order to determine 1) if a bloom is actually occurring at the site or not, and 2) if the algae involved in the bloom exceeds the World Health Organization standard of 100,000 cells/ml. If these criteria are met, the DNR and DHS work with local health authorities to inform the public on the potential health risks associated with the bloom, and sends out advisories to avoid the waterbody until the bloom has subsided. [Warning signs](#) have been developed and may be used at the local authorities' discretion. The Department is working to develop clearer protocols about when these signs should be used.

Due to shortages in funding and staff time, not all reports can be investigated by the Department. Additionally, there may be a time lag between when the bloom is reported and when Department staff can collect the sample. The Department is trying to develop strategic plans to address these shortfalls in our current harmful algal bloom response program.

Harmful Algal Bloom (HAB) Incidences in 2011



-  HAB samples > 100,000 cells/ml
-  HAB samples < 100,000 cells/ml
-  HAB report but no sample taken
-  BGA bloom report or inquiry

Looking forward

The Department hopes to improve and expand Wisconsin's harmful algal bloom awareness and protection program in the future. Specifically, DNR is looking at the following expansion opportunities:



Improving Outreach and Education

- Provide readily available information for citizens to arm themselves with critical knowledge about harmful algal blooms



Expanding Volunteer Monitoring

- Provide training to citizens interested in collecting samples and being part of the solution. For more information visit <http://dnr.wi.gov/lakes/clmn/>.



Refining Our Scientific Understanding

- Improve our scientific understanding of harmful algal blooms so that we can begin predicting when and where blooms might occur, rather than simply reacting to them.



Increase DNR Monitoring Program

- Effectively use our resources to respond to reported HAB occurrences as soon as possible.

DNR will continue to inform our partners of programmatic changes and opportunities to participate moving forward. Additionally, the DNR is working with other state programs to learn from these programs in the hopes of strengthening our own.