

Photo Contest Engages Public with Harmful Algal Blooms

Rebecca Long, Jennifer L. Graham, and Sarah Blount

In August of 2014, public awareness of algal blooms skyrocketed due to national headlines regarding Toledo, Ohio's public water supply crisis. Unsafe levels of the cyanotoxin microcystin in the water caused by a harmful algal bloom forced nearly half a million Ohio and Michigan residents to turn off the tap for three days and find other sources of drinking water. This incident left people across the nation eager to know more about algal blooms, how to predict them, and whether their own drinking-water supply was vulnerable. Knowledge of the causes of algal blooms is vital to helping reduce public health scares like the one in Toledo, and due to the difficulty in predicting algal blooms, knowing how to identify and report these dangerous blooms will tremendously help scientists and the general public better understand them.

Algal blooms flourish with abundant sunlight, warm temperatures, slow moving water, and nutrients – specifically nitrogen and phosphorus. Nutrient enrichment caused by human activity only feeds the problem, leading to more severe and frequent blooms. An algal bloom is considered harmful anytime water use, whether it be drinking-water supply, recreational activities, or aquatic life support, is impaired due to algae and their associated toxins and taste-and-odor compounds. Algal blooms can be green, blue, red, or brown. They can be scummy or look like paint on the surface of the water. In freshwater, cyanobacteria are most frequently the cause of harmful algal blooms (HABs). Most people have never seen a bloom, and a vital first step in building public awareness about algal blooms is helping the public recognize what an algal bloom looks like.

To help engage and educate the public about algal blooms and how to identify them, the U.S. Environmental Protection Agency (EPA) teamed up with the National Environmental Education Foundation (NEEF) and the North American Lake Management Society (NALMS) for the 2014 Algal Bloom Photo Contest. Entrants were encouraged to submit photos of algal blooms where they live, vacation, and recreate for an opportunity to win prizes and the chance for their photo to be used for the cover on this issue of *LakeLine*. Each photo entry required a caption describing where the photo was taken and why that place was important to the entrant. A photo library of algal blooms was created from the submitted photos to be used in future education and outreach material to help illustrate the prevalence and impacts of algal blooms around the country.

The contest was promoted on a variety of platforms including Twitter, Facebook, and Instagram, through which over 100 photos were entered using the hashtag #AlgalBloomPhoto14. These photos came from 27 states, Washington, D.C., Guam, and China, leading to a diverse portfolio of algal blooms and the environments they impact. Although only three winners could be chosen, all of the photos showed extraordinary examples of how algal blooms not only affect water quality, but also recreational use and wildlife.

The winning photo, photographed in Overbrook, KS, was taken at Overbrook City Lake, used by locals for recreational activities such as fishing. The photographer, Diana L., stated that “on the day that I was there, the lake was in the middle of a blue-green bloom as evident by the lines of what look like paint along

the shoreline.” When algal bloom events occur (Figure 1), not only is the lake less picturesque, but they also can cause fish kills, damaging the ecosystem as well as limiting the economical and recreational pursuits of the town.

Patricia M., whose photo of algal blooms in Downingtown, PA's Kardon Park took second place, stated that educating about algal blooms is “important because of all the creatures who call this water home,” including the wood duck, her ducklings, and the turtles that can be seen in her photo (Figure 2). Third-place photographer Lois A. stated similar reasons for her concern and submission (Figure 3) of an algal bloom photo in Lake Macbride State Park in Solon, IA, that the “nasty, stinky algal bloom threatens the wildlife and causes unpleasantness to all who come upon it.”

But recreation and wildlife aren't the only things affected by algal blooms, as the health of people and pets can also be at risk. The EPA's “The Choice is Yours, Clean Water or Green Water?” campaign uses photos submitted through this contest, including one of Lake Hodges, a reservoir located in southern California (Figure 4). Along with typical recreational uses, Lake Hodges is used to supply drinking water to the San Dieguito Water District and the Sante Fe Irrigation District. Algal blooms have caused fish kills, unpleasant odors, and have occasionally forced the Districts to stop drawing water from the reservoir while algae are blooming.

When algal blooms take over a water body, they can produce extremely dangerous toxins that can sicken or kill people and animals. They can cause an increase in water treatment costs and hurt industries that depend on clean water. Public knowledge of harmful algal



Figure 1. The winning photo in the 2014 HAB photo contest. Photo taken by Diana L. in Overbrook, KS.

blooms, their causes, and their effects is needed to help alleviate the problem. The 2014 Algal Bloom photo contest engaged over 100 participants to identify and think about algal blooms and how the blooms impact their communities. The many photos submitted will be used by federal, state, and non-government organization partners to continue to engage the public through outreach efforts. Thank you to all who participated and for your creative contributions to this effort!

If you would like to view more of the photos submitted to the 2014 Algal Bloom Photo contest, please visit the National Environmental Education Foundation's website at: <http://neefusa.org/algalbloomcontest>.

Selected References

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Figure 2. The second-place photo in the 2014 HAB photo contest. Photo taken by Patricia M. in Downingtown, PA.



Figure 3. The third-place photo in the 2014 HAB photo contest. Photo taken by Lois A. in Solon, IA.

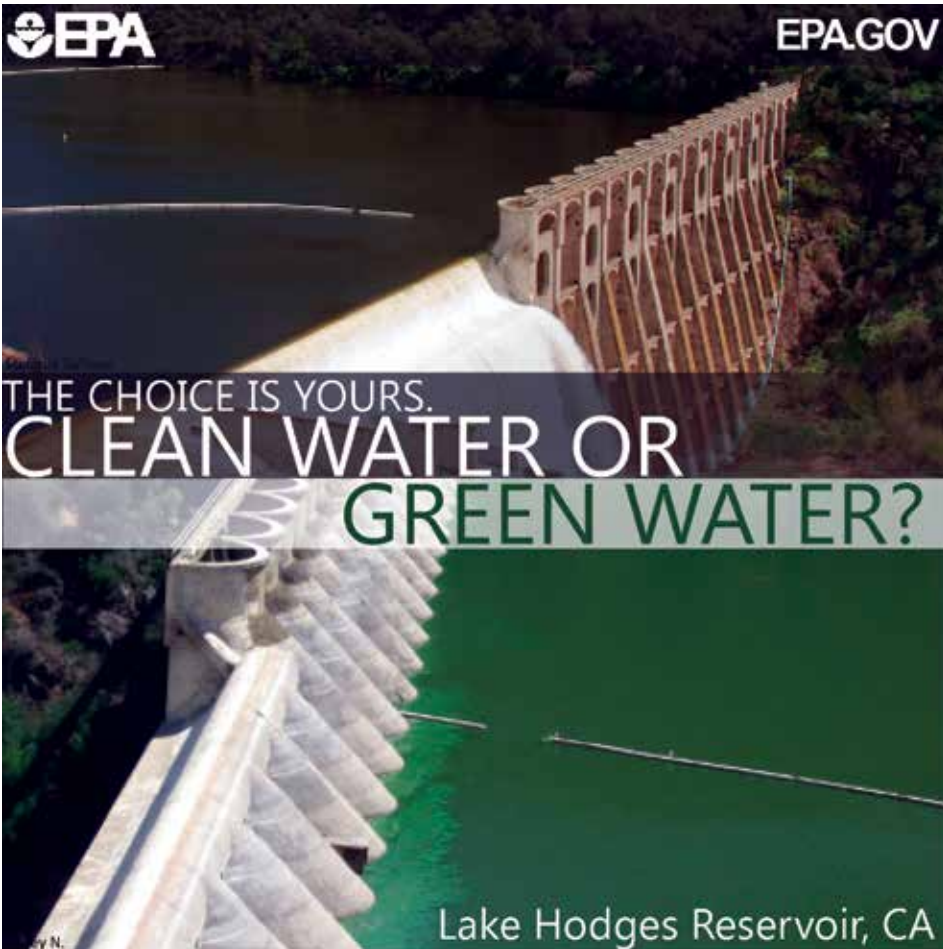


Figure 4. The EPA's "The Choice is Yours. Clean Water or Green Water?" campaign uses photos from the 2014 HAB photo contest, including the image of Lake Hodges Reservoir, CA, depicted here.

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Rebecca Long is an Oak Ridge Institute for Science and Education (ORISE) research participant in the Policy, Communications, and Resource Management Staff branch in EPA's Office of Wetlands, Oceans, and Watersheds. Rebecca is an environmental geologist from Virginia and currently works on communications and outreach issues.



Jennifer Graham is a research hydrologist with the U.S. Geological Survey in Lawrence, Kansas. She has studied harmful algal blooms in the United States for the past 16 years. Jennifer serves as a co-chair of the NALMS Inland HAB Program and served as the Region 7 Director for NALMS from 2011-2014.



Sarah Blount is a research associate for the Weather and Environment Program at the National Environmental Education Foundation, where she researches and writes about links between climate, weather and the natural world.

