

2014 Harmful Algal Bloom State Survey

Summary of Results and Recommendations



SUMMARY

Toxic algae outbreaks are becoming more common, affecting a growing number of freshwater ponds and lakes, and leading to impacts on human health, livestock and pets, fish and other aquatic wildlife, drinking water costs, and recreation. Most algae are not harmful to humans, and green algae are essential parts of a healthy aquatic ecosystem. But toxic algae, including blue-green algae, are different. Despite the name, blue-green algae are actually made up of types of bacteria known as cyanobacteria that can produce toxins, including a group known as microcystins. The algal cells are usually too small to be seen, but sometimes can form visible colonies, called harmful algal blooms (HABs).

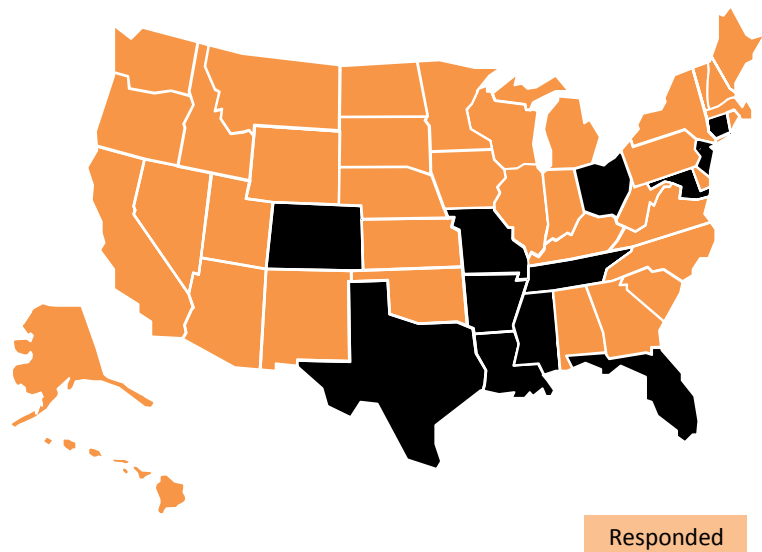
In summer 2013, Resource Media and the National Wildlife Federation partnered to track health warnings and advisories about freshwater HABs across the US. We created the first [national online map](#) showing incidents of toxic algae outbreaks, and later issued a [report](#) detailing the scope of the problem, including a troubling blind-spot: although freshwater HABs have been documented in all mainland states, no federal agency currently tracks lake closures or health warnings nationally. And because state level monitoring is by no means universal, we suspected – but could not confirm – that countless toxic algae outbreaks go undetected or unreported every year.

Whereas last year’s report provided a focus on HAB prevention policy (as well as tracking incidents) this year we focused on states’ HAB monitoring, public awareness and action. To that end, Resource Media and the National Wildlife Federation conducted a 50-state survey (as well as the District of Columbia) to shed light on states’ approach to freshwater HAB monitoring, dissemination of public information, as well as any steps being

taken to address this issue. As of April 23, 38 states and the District of Columbia had completed this survey, to total 39 responses.

The survey responses confirmed that HABs are a widespread problem: **every state that returned a survey acknowledged HABs as an issue, with the majority calling the issue “serious.”** Yet the broad diversity in how – and whether – states

HAB Survey Responses



monitor HABs, and their methods for informing the public about potentially harmful toxic algae outbreaks, also confirms that there is tremendous room for improvement in how the US manages this risk to public health and local economies.

The following 12 states did not respond to the survey: Arkansas, Colorado, Connecticut, Florida, Louisiana, Maryland, Mississippi, Missouri, New Jersey, Ohio, Tennessee, Texas.

The following data and observations apply to the 39 complete responses and should be read bearing in mind that this is self-reported data provided by well-qualified individuals representing their states. We expect this publication may prompt the volunteering of further information from the states, perhaps from other individuals who have additional contributions to make. As such, we hope this publication helps serve the purpose of creating a fuller picture of, and creating a dialogue around, how states monitor and respond to freshwater HABs.

TOPLINE FINDINGS

Assessing the Seriousness of HABs

- 71% of responding states reported that HABs are either a “somewhat serious” or a “very serious” problem
- No responding states reported that HABs are “not an issue”
- More than half (20) of responding states reported that “HABs occur every year in many lakes and/or other fresh water bodies in my state”
- 49% (19) of states reported actively monitoring some public access lakes/water bodies that have experienced HABs in the past
- One state (Nebraska) actively monitors all public access lakes/water bodies for HABs
- 56% (22) of responding states reported relying, at least in part, on local municipalities and members of the public to report HABs
 - 31% (12) of responding states reported relying **solely** on local municipalities and members of the public to report HABs

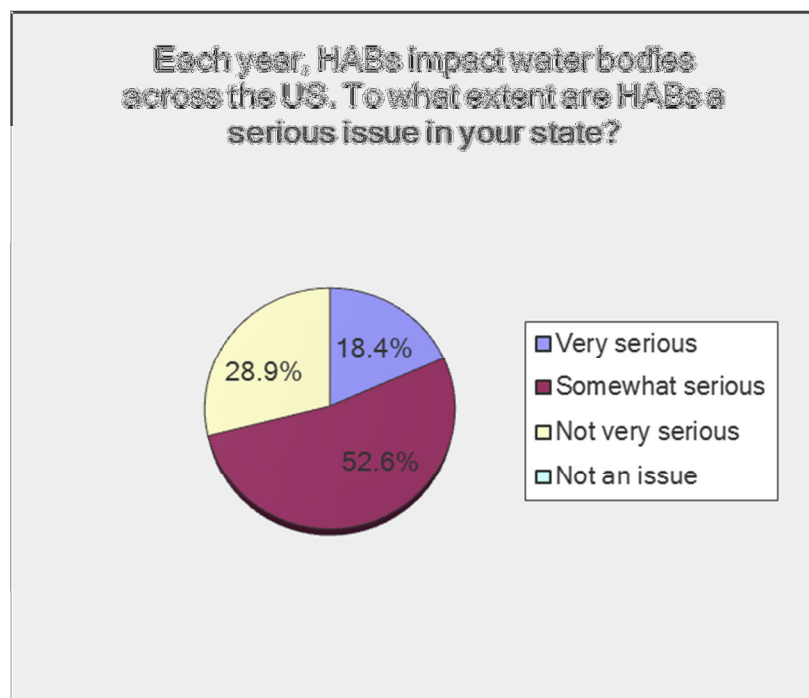


Figure 1: 71 percent of respondents report that HABs are either a serious or somewhat serious problem in their state.

- 38% (15) of responding states reported not tracking any of the impacts of HABs
- Of states that do track HAB impacts, the most commonly reported impact to be tracked/studied was animal mortalities (54%)
- Two states (Oklahoma and Virginia) reported tracking or studying Emergency Room admissions
- Three states (Hawaii, Kansas and Oklahoma) reported tracking or studying tourism statistics in relation to HABs
- 77% (30) of responding states reported that they do not have a HAB hotline for the public to report HABs.
 - This includes 11 of the 12 states that reported relying **solely** on local municipalities and members of the public to report HABs

Public Information

- 73% (27) of responding states reported that they “provide information to those who request it”
 - 4 states (Alabama, Alaska, New Mexico and Utah) reported that they “provide information to those who request it”, but do not disseminate information to the public in any other way
- The following methods of communication with the public received between 46% and 49% positive responses:
 - My state alerts the local media about HABs and/or health advisories with a press release or press advisory
 - My state provides information about the location and/or severity on a publicly available website
 - My state posts signs at HAB impacted beaches/lakes/communities to educate local residents and visitors
 - My state provides general education to the public about what to do if they suspect a HAB
- Two states (Kansas and New York) reported using Facebook and/or Twitter to announce information about HABs, health advisories or beach closures
- More than half (20) of the responding states reported tracking historic data on HABs and all but two of those states reported providing public access to that data

Action

- 12 states reported running a HAB program (i.e. with dedicated staff, a budget, a planning process).
 - 3 of those states (New York, Virginia and Washington) reported that their HAB programs have dedicated funding
- 47% (18) of responding states reported “actively addressing known causes of HABs”
- 4 states (Alaska, Maine, Nevada and New Mexico) reported taking no action on HABs, past, present or future

WHY NO RESPONSE DOES NOT MEAN “NO HAB PROBLEM”

It is important to recognize that the absence of a survey response from twelve states does not mean that a) these states are not experiencing HABs or that b) these states are not addressing their HAB problems. Independent research shows, for example, that Maryland and Ohio – two states that did not submit responses to the survey – are experiencing HABs and are taking steps to address the problem.

Our 2013 tracking of freshwater HABs found that three HABs were reported in Maryland that summer; in [Lake Needwood](#), Montgomery County, [Lake Bernard Frank](#), Montgomery County, and [Northwest Creek](#), Queen Anne’s County. In fact, according to [Eco-Check.org](#), a project run by the University of Maryland’s Center for Environmental Science, “Blooms of the harmful algae *Microcystis aeruginosa* (a cyanobacterium) have occurred in the Potomac River for most summers since the 1960s.” In addition to conducting outreach to local media and partnering in academic research, Maryland is making efforts to highlight the impacts of HABs (which include [dog deaths](#), [disrupted recreation](#), and [human illness](#)). The state’s [Eyes on the Bay](#) website offers a search engine which can be used to search for particular HAB incidents and impacts. However, the economic impact of HABs is still largely unexplored. Maryland, along with the federal government and other Chesapeake Bay states, is engaged in a significant effort to address the causes of HABs, and other causes of water impairment, by putting in place a “pollution diet” that limits pollutants into the Chesapeake Bay and waters that feed into it. And while there are clearly some inland efforts taking place, including the state’s awarding of a [\\$40,000 contract](#) to plan the restoration of Northwest Creek, the state’s efforts to address the causes of HABs are primarily focused on the Chesapeake Bay.

Ohio is another state that didn’t respond to the survey, but that we know is making serious efforts to tackle its HAB problems. Our 2013 tracking of freshwater HABs showed that Ohio had ten incidents of freshwater HABs, information that was shared on the state’s user-friendly [website and online map](#). Grand Lake St. Marys and Lake Erie are two of the more high-profile locations of the recurring HABs, and the impact of their occurrence has been highlighted by local media and other interested parties. These impacts include [fish kills](#), [a dog death and human illness](#), and [reduced tourism](#). Visitors to Lake Erie alone contribute more than \$10.7 billion to Ohio’s economy. In addition, the [Grand Lake St. Marys Lake Improvement Association](#) estimates that toxic algae and public health advisories caused local business revenue to decline 35–40 percent annually due to slow tourism seasons. Ohio has spent more than [\\$8 million](#) fighting toxic algae in Grand Lake St. Marys, which included two chemical treatments to starve the algae by removing phosphorus from the water. Ohio is also proactively addressing the causes of HABs through the state legislature. The governor is soon expected to [sign into law](#) a bill that “requires farmers who apply fertilizer to 50 or more acres to be certified by the Ohio Department of Agriculture, and makes various amendments related to protecting water quality and keeping farm nutrients in fields.” – a step in the right direction to curb one of the most prevalent causes of HABs: farm runoff.

This information about two particular states is by no means exhaustive, but these cases are examples of the kind of issues being dealt with, and work being done, in states that did not respond to this survey.

RECOMMENDATIONS

Our findings suggest that the range of severity of the HAB problem, and the response across states, is enormous. However, because no state reported that HABs were not an issue at all, it is reasonable to suggest that states should be (and in some cases, are) taking action to manage the risk that toxic algae poses to the public. And given the nationwide scope of the problem, a nationwide response, handled at the federal level, may also be warranted. Resource Media and the National Wildlife Federation recommend the following:

Assessing the Seriousness of HABs

HAB Hotline – A majority of states (56%) rely, at least in part, on local municipalities and the public to call in suspected HABs and for many states (31%) this is the only method of information gathering conducted. However, only nine states reported operating a HAB hotline that members of the public could call to report a suspected HAB. Providing the public with a HAB hotline is an effective, relatively low-cost measure that would optimize this method of information gathering.

Public education campaign – Considering the onus placed on the public in many states to report suspected HABs, we recommend that states assess the level of public awareness about their role in the HAB monitoring process, and consider conducting a public awareness campaign in the run up to HAB season. The U.S. Environmental Protection Agency will be conducting a seasonal HAB awareness campaign in 2014 that could support such state efforts, and all but three states noted in their responses that they would like to learn more about this program.

Tracking impacts – Creating a more complete picture of the full impact of HABs requires an investment of time and money. Because so few states currently have funding dedicated to monitoring and addressing HABs – only New York, Virginia and Washington reported having dedicated funding for HAB programs – we believe there are many states where tracking HAB impacts will help make the case for state funding. A short-term study of the impact of HABs on the state’s tourism industry (an area just three states reported tracking and/or studying – Hawaii, Kansas and Oklahoma) might be an effective, limited-cost way of demonstrating the impact of HABs in compelling, economic terms.

Increased systematic water monitoring – 51% of the states responding indicated they are actively monitoring, either some or all, public water bodies. Given that monitoring is essential to both identifying and confirming a HAB occurrence, it is important that all states develop adequate monitoring programs. Some states are already employing a variety of techniques for funding such programs. See the Action section below for more details and recommendations.

Public Information

Social media – Overall, most states are disseminating to the public whatever information they have on HABs, using a mixture of communication methods including local media, state-run websites and at HAB sites. One low-cost method, however, that is not being used (with the exceptions of New York and

Kansas) is social media websites. Since 49% of states are already alerting their local media about HAB advisories and warnings, it would not take much more of a time investment to also distribute that same information on Facebook, Twitter and other social media sites.

Federal clearinghouse for state-gathered information on HABs – Because many states are already doing a good job of publicly disseminating what information they have gathered on HABs, providing a federal clearinghouse for all this information would add significant value to the state-level work already being done. Given that this work is being done in different ways and in non-corresponding departments across the states, a centrally managed, public facing website would provide a great resource for individuals looking for more information. It could also foster greater coordination between neighboring states.

Action

State funding – A significant number of states are addressing the causes of HABs, many in conjunction with academic institutions. This academic coordination appears to be, in part, in lieu of directly providing state resources to address the issue. This fiscal prudence is understandable, but such partnerships would ideally have the potential to develop into fully funded state programs. States might consider adopting a relatively low-impact measure already underway in Washington State, which levies a \$1 tax on boats and that money directly funds its HAB program.

Federal funding – State funding aside, it is clear that federal funding can make an enormous difference to the viability of states' HAB programs. Unfortunately, Oregon recently lost its HAB funding, which had been provided by the Centers for Disease Control and Prevention, and has had to significantly downscale its HAB program as a result. Another state responding to the survey also questioned CDC's role in dealing with HAB issues, so it's clear that CDC's leadership and funding on this issue matters and should be seriously considered. States may rely on other existing federal programs where appropriate (such as the pilot HAB program in Lake Erie led by the National Oceanic and Atmospheric Administration Great Lakes Environmental Research Laboratory). Or they could investigate potential new funding through other federal avenues such as the [Harmful Algal Bloom and Hypoxia Research and Control Act](#), which is currently up for re-authorization (having passed the Senate in February 2014). Among other components, the legislation calls for programs that identify research, development and demonstration needs and prioritizes monitoring, prevention, control, mitigation and response to both marine and freshwater HABs and hypoxia.

A NOTE ON METHODOLOGY

The survey was voluntary and for the sake of clarity we aimed to obtain just one survey response per state. All information provided was taken at face value. Consequently, there are sure to be nuances and internal state discrepancies that were not recorded in the results. However, to capture the highest quality of data possible through this method, significant efforts were made to identify the most appropriate, well-qualified state employee in each state to receive and respond to the survey.

After conducting online research to identify a contact in each state, phone calls were placed to each individual to confirm their position as primary state contact for freshwater HABs. For the most part, people confirmed what the online research had suggested, but in some instances a new state contact was provided. The survey was then distributed via an online survey tool, Survey Monkey, which provides confirmation of email receipt or bounce-backs, as well as the ability to sort and analyze results. Fifty-one state contacts (including a contact for the District of Columbia) were sent an initial email on February 26, inviting them to take the survey and all the emails were confirmed as delivered. Two additional follow-up emails were sent subsequently to encourage outstanding states to submit responses.

Considering the online research, direct outreach and distribution method, we are confident that the final list of contacts was robust, and that a good faith effort was made to gather information from all 50 states and the District of Columbia.

As of April 23, 40 responses had been submitted; however two of these were from the same state (Pennsylvania). These two extremely similar responses were amalgamated, leaving 39 complete responses.

RESOURCE MEDIA CONTACTS

<p>Cat Lazaroff Managing Program Director (202) 375-1329 cat@resource-media.org</p>	<p>Aileo Weinmann Senior Program Director (202) 538-5038 aileo@resource-media.org</p>
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NATIONAL WILDLIFE FEDERATION CONTACTS

<p>Michael Murray Staff Scientist (734) 887-7110 murray@nwf.org</p>	<p>John Kostyack Vice President, Wildlife Conservation (202) 707-6879 kostyack@nwf.org</p>
<p>Lacey McCormick Communications Manager Gulf Coast Restoration, Clean Water Act (512) 610-7765 mccormick@nwf.org</p>	<p>Jordan Lubetkin Sr. Regional Communications Manager Great Lakes Restoration, Invasive Species (734) 887-7109 lubetkin@nwf.org</p>