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STATE OF MICHIGAN  
DEPARTMENTS OF HEALTH AND HUMAN SERVICES AND  
ENVIRONMENT, GREAT LAKES, AND ENERGY

June 7, 2023

To: Local Health Department Health Officers and Environmental Health Directors

Subject: Harmful Algal Blooms and Cyanotoxin Testing

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) has responded to citizen reports of cyanobacterial blooms (also known as blue-green algae or harmful algal blooms) since 2016. In recent years, EGLE has responded to most credible cyanobacterial bloom reports received via phone or our [AlgaeBloom@michigan.gov](mailto:AlgaeBloom@michigan.gov) mailbox, often visiting the same lake multiple times to provide accurate updates to lake residents and local health departments. This response approach has yielded a great deal of information about cyanobacterial bloom timing, frequency, duration, and extent. This robust approach also has required extensive staff time and an increasing amount of funding to pay for laboratory analysis of water samples for cyanotoxins.

To reflect on lessons learned over the years, EGLE has established guidelines for cyanobacteria responses that ensure protection of human and animal health and the environment, while also recognizing the reality of staff and funding constraints. No set of guidelines can anticipate every scenario or unique circumstance that may occur during the year, so the following approach is not meant to be absolute in every case. However, we will follow these guidelines in most routine instances and believe they will provide for an effective cyanobacterial bloom response protocol:

- 1) EGLE will continue to collect information on bloom location and extent from state and local agencies and the general public. We will review photographs and other relevant information from all reports to try to determine whether cyanobacteria are the likely cause of the bloom.
- 2) If a report includes any of the following scenarios, EGLE will attempt to collect water samples for toxin analysis, potentially in coordination with local health departments:
  - a. A suspected animal or human illnesses is reported;
  - b. The bloom is in a water body not sampled previously by EGLE or a partner agency; or
  - c. The bloom is in a water body previously tested but cyanotoxins were not found.
- 3) If there is not an animal or human illness reported and there is a documented history of algal blooms producing toxins in a given water body in the past three years (2020-22), EGLE will not collect additional samples but will provide the historical information and recommend avoiding contact with the bloom due to the known presence of toxins in the recent past.

To foster HABs reporting and responses, EGLE will forward all HABs reports and/or cyanotoxin testing results to the Michigan Department of Health and Human Services (MDHHS). MDHHS will review data, notify local health departments of complaints and results, and work with local health departments to

address public health concerns. Either MDHHS or your department may take the lead on follow up, depending on your department's preference and capacity.

To support state and national HABS surveillance, MDHHS will coordinate with local health departments and other agencies to submit HAB reports into the Centers for Disease Control and Prevention's One Health Harmful Algal Bloom System (OHHABS). Here is what you need to know:

- OHHABS has three types of forms: environmental, human illness, and animal illness, which are available online at <https://www.cdc.gov/habs/ohhabs.html>.
- If your department prefers to do the initial completion of OHHABS forms, please send completed OHHABS forms via email to MDHHS Waterborne Disease Epidemiologist Dr. Susan Peters at [peterss6@michigan.gov](mailto:peterss6@michigan.gov) so that they can be entered into OHHABS. Alternatively, MDHHS will complete and submit these forms.
- MDHHS will share submitted final OHHABS reports back to local health departments.

The State of Michigan's HABS website is [michigan.gov/habs](http://michigan.gov/habs). Previous HAB reports, resources, and additional information on Michigan HAB activities can be accessed here.

To help the public know where HABS have been reported in Michigan, MDHHS and EGLE created the Michigan Harmful Algal Bloom Reports map, available online at [michigan.gov/habsmap](http://michigan.gov/habsmap). The map is updated weekly from June to November and shows verified bloom reports and results of any cyanotoxin tests. The map has different data layers that show reports and test results either from the most recent two weeks or the entire current season. 2022 data is also available to view on the mapper. In the future, data from older seasons will be added to the map.

We welcome any feedback or questions relating to these plans. Please contact:

- Mr. Gary Kohlhepp, EGLE Water Resources Division, at [kohlheppg@michigan.gov](mailto:kohlheppg@michigan.gov) or 517-230-7548
- Dr. Alex Rafalski, MDHHS Division of Environmental Health, at [rafalskia@michigan.gov](mailto:rafalskia@michigan.gov) or 517-881-1046 for information on HAB risk assessment and response
- Dr. Susan Peters, MDHHS Emerging and Zoonotic Infectious Disease Section, at [peterss6@michigan.gov](mailto:peterss6@michigan.gov) or 517-930-6957 for information on OHHABS reporting

Sincerely,



Michael Alexander, Manager  
Surface Water Assessment Section, EGLE  
517-449-7971



Mary Grace Stobierski, DVM, MPH, Manager  
Emerging and Zoonotic Infectious Diseases  
Section, MDHHS  
517-335-8165

CC: Marcus Wasilevich, MDHHS  
Andrea Keatley, MDHHS

Enclosures

**2022 MICHIGAN RECREATIONAL WATERBODY HARMFUL ALGAL BLOOMS**  
**SUMMARY OF PUBLIC HEALTH RESPONSES**  
**MICHIGAN DEPARTMENT OF HEALTH AND HUMAN SERVICES**

This report summarizes public health response activities for reported Michigan algal bloom events in 2022 to provide feedback to local health departments about these activities and to encourage future harmful algal bloom (HAB) reporting. This information is for local health department use only.

**BACKGROUND**

From 2017-2022, the Michigan Department of Environment, Great Lakes, and Energy (EGLE) has received 563 reports of potential cyanobacterial blooms (also known as harmful algal blooms or HABs) or positive cyanotoxin test results in Michigan water bodies, including for Lake Erie and Saginaw Bay:

- Of those reports, 331 were determined to be blooms that met the case definition of a suspect or confirmed HAB (documented visual evidence of cyanobacteria or a positive laboratory test for cyanotoxin(s), cyanotoxin-producing cyanobacterial species, or cyanotoxin-producing genes).
- In that time, 229 unique water bodies have had a HAB (suspected or confirmed, using the case definition above). Some water bodies have HABs in multiple seasons, while others have only had a HAB in one season.
- From 2017-2022, 68 Michigan counties, plus the City of Detroit, have had waterbodies with suspect and confirmed HABs; some water bodies are located in multiple counties.
- Of water bodies tested during 2017-2022, 132 contained the cyanotoxin microcystin, 14 had anatoxin-a, 9 contained cylindrospermopsin, and 1 contained nodularin. Nineteen (19) water bodies have had multiple cyanotoxins detected during the same bloom. Note: not all water bodies are tested for cyanotoxins, and not all are tested for all cyanotoxins.

Depending on the exposure route, microcystin and nodularin can cause rash, hives, or skin blisters; stomach pain, nausea, vomiting, and diarrhea; severe headaches; fever; runny eyes and nose, cough, and sore throat; chest pain; asthma-like symptoms; or allergic reactions. Exposure to large amounts of microcystin can cause liver damage. Anatoxin-a exposure can result in neurologic symptoms, such as incoordination and seizures, and nausea, vomiting and diarrhea. Exposure to cylindrospermopsin can cause fever, headache, vomiting, and bloody diarrhea, with the potential for liver and kidney damage.

To address concerns of recreational exposure to HABs, EGLE and the Michigan Department of Health and Human Services (MDHHS) follow a response guide for HAB risk assessment and public health action. An interagency working group that includes MDHHS, EGLE, the Michigan Department of Agriculture and Rural Development (MDARD), Michigan Department of Natural Resources (MDNR), and local health departments continues work to improve the response guidance and implementation. Since 2019, the interagency workgroup has created updated communication resources including the [michigan.gov/habs](https://michigan.gov/habs) website, FAQs, and advisory signs.

**RESPONSE OVERVIEW**

EGLE conducts statewide cyanotoxin sampling in response to complaints of suspicious-looking algae and as part of its surface water monitoring program. MDHHS Bureau of Laboratories conducts testing for cyanotoxins and shares results with MDHHS program staff, EGLE, and MDARD. As new complaints and test results are received, MDHHS shares those results and, if necessary, a risk assessment with the local health department. As necessary and with input from MDHHS, local agencies create and implement a water body-specific notification plan for an algal bloom. Notifications may be issued through posting signs at the water body, issuing press releases, or other communication activities. Agencies involved in previous events include DNR, local governments, parks and recreation departments, water or drain commissions, campgrounds, and homeowners' and lake associations.

MDHHS, in partnership with EGLE, will again be publishing a Michigan Harmful Algal Bloom Reports Map during the 2023 season. The map, which will be updated weekly, shows verified HAB reports and the results of any

cyanotoxin tests. Starting in June, the map can be found online at [michigan.gov/habsmap](https://michigan.gov/habsmap) and also at [michigan.gov/habs](https://michigan.gov/habs). It is possible that local health departments may receive inquiries about the map. The public can contact [MDHHS-HABsmap@michigan.gov](mailto:MDHHS-HABsmap@michigan.gov) with questions about the map.

#### GENERAL MESSAGES FOR THE PUBLIC

- Green isn't always healthy. Look out for harmful algae— some algae can be harmful to humans and pets.
- It is always important to look at the water before people or pets go into the water or before letting pets drink from the water. A HAB may not be occurring right now, but HABs can move around a water body, disappear and reappear, and last from days to weeks.
- Blooms can look like sheens on the water, or water that contains small flecks, foams, or clumps. Visit the [HAB Picture Guide](#) for examples of HABs.
- People and their pets should avoid scums in the water, water that looks like spilled paint, or water that looks green or otherwise discolored..."See a bloom, give it room."
- Unless a bloom covers a large portion of the lake, people can limit their exposure by using an unaffected part of the lake. When in doubt, keep yourself and pets out.
- All suspected HABs should be reported to EGLE by e-mailing [AlgaeBloom@michigan.gov](mailto:AlgaeBloom@michigan.gov) or by calling 1-800-662-9278. Photographs of the reported bloom are extremely helpful.
- For more information on recommended precautions to avoid exposure to HABs, see [michigan.gov/habs](https://michigan.gov/habs).

#### MDHHS CONTACTS

For information, response consultation, or any questions during the 2023 HAB season, please contact:

- Alex Rafalski, PhD, Toxicologist, Division of Environmental Health at [rafalskia@michigan.gov](mailto:rafalskia@michigan.gov) or 517-881-1046
- Susan Peters, DVM, MPH, Waterborne Disease Epidemiologist, Emerging Zoonotic and Infectious Diseases Section at [peterss6@michigan.gov](mailto:peterss6@michigan.gov) or 517-930-6957

**TABLE 1: SUMMARY OF 2022 HARMFUL ALGAL BLOOM EVENTS**

Number of water bodies with complaints and/or investigations	129
Number of these water bodies with confirmed/suspected cyanobacterial blooms (HABs)	80
Suspected HABs <sup>1</sup>	36
Confirmed HABs <sup>2</sup>	44
Affected counties	38
Reason for sampling (can be multiple reasons):	
Complaint	55
Targeted surveillance/monitoring	26
Public health actions taken	42
Confirmed reports of related illnesses:	
Human	0
Canine (dog)	0
Water body testing results:	
Water bodies positive for cyanotoxins	39
Positive for microcystin	38
Positive for anatoxin-a	4
Positive for cylindrospermopsin	3
Positive for nodularin	0
Water bodies positive for ≥2 different cyanotoxins	6
Toxins exceeded recommended recreational levels (available for microcystin, cylindrospermopsin)	26

<sup>1</sup>Suspected: Images or site visit findings/measurements are consistent with cyanobacterial bloom and cyanotoxins not measured/detected.

<sup>2</sup>Confirmed: Laboratory detection of cyanotoxins/toxin-producing genes/cyanobacterial species known to produce toxins.

TABLE 2: HARMFUL ALGAL BLOOM EVENTS 2017-2022	2017	2018	2019	2020	2021	2022
Water bodies with complaints/investigations*	54	32	76	128	144	129
Water bodies with suspected/confirmed HABs	44	24	43	61	79	80
HABs for which advisory issued	6	2	0	4	6	13
HABs with public health actions	10	11	18	24	31	42
HABs with human illnesses reported	1	0	1	4	1	0
Total human illnesses	2	0	1	4	5	0
HABs with pet/livestock illnesses or deaths	3	1	2	1	2	0
Total pet/livestock illnesses or deaths	3	1	7	1	2	0

\*Individual water bodies may be investigated during multiple years.

FIGURE 1: TRENDS IN HARMFUL ALGAL BLOOM EVENTS 2017-2022

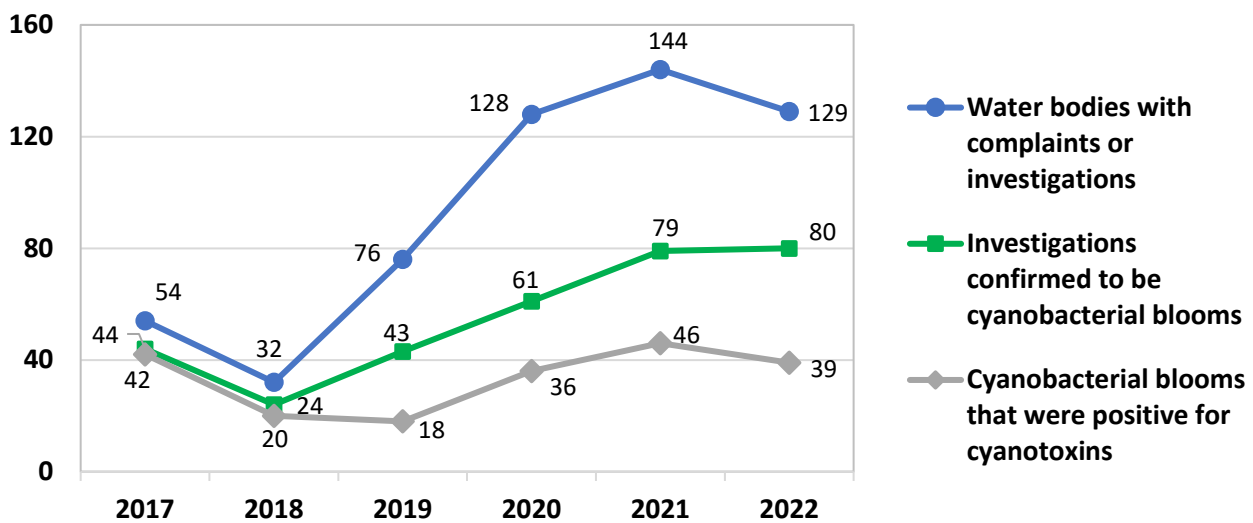
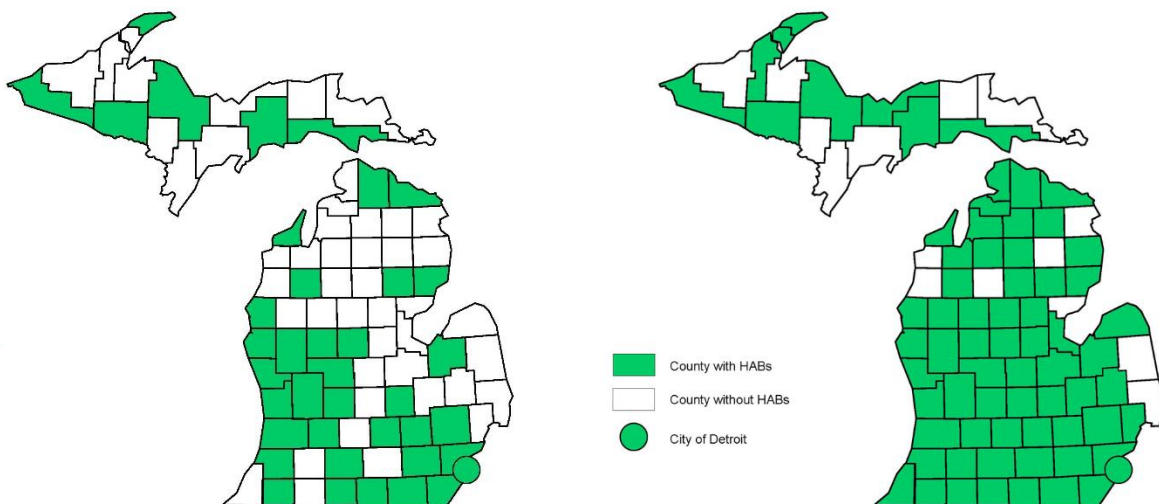


FIGURE 2: MICHIGAN COUNTIES WITH SUSPECTED AND CONFIRMED HARMFUL ALGAL BLOOM REPORTS IN 2017-2022

Counties with Blooms in 2022 (n=38)

Counties with Blooms in 2017-2022 (n=68)



**Michigan HARMFUL ALGAL BLOOMS CONTACT LIST**

Updated 5/30/2023

EGLE HABs WEBSITE: [www.michigan.gov/habs](http://www.michigan.gov/habs)

MDHHS HABs REPORTS MAP: [www.michigan.gov/habsmap](http://www.michigan.gov/habsmap)

Topic	Person	Contact Info
Report a bloom	Email (preferred & w/ pictures) OR EGLE Environmental Assistance Center	<a href="mailto:AlgaeBloom@michigan.gov">AlgaeBloom@michigan.gov</a> 1-800-662-9278
Lake-specific monitoring & results	MDHHS HAB Reports Map  John Matousek, EGLE	<a href="http://www.michigan.gov/habsmap">www.michigan.gov/habsmap</a> <a href="mailto:matousekj@michigan.gov">matousekj@michigan.gov</a> 517-755-6125 (cell)
HABs monitoring in MI	Gary Kohlhepp, EGLE	<a href="mailto:KohlheppG@michigan.gov">KohlheppG@michigan.gov</a> 517-230-7548 (cell)
Health-related questions or information	Local Health Department  Alex Rafalski, MDHHS  Susan Peters, MDHHS	<a href="#">County/District Health Department contact</a> <a href="mailto:RafalskiA@michigan.gov">RafalskiA@michigan.gov</a> 517-881-1046 (cell) <a href="mailto:PetersS6@michigan.gov">PetersS6@michigan.gov</a> 517-930-6957 (cell)
OHHABS reporting	Susan Peters, MDHHS	<a href="mailto:PetersS6@michigan.gov">PetersS6@michigan.gov</a> 517-930-6957 (cell)
Report domestic animal illness due to HABs	Animal Industry Division, MDARD	1-800-292-3939 or fill out the <a href="#">Animal Reportable Disease Form</a>
Report wildlife illness due to HABs	Department of Natural Resources	517-336-5030 or <a href="http://www2.dnr.state.mi.us/ORS/Survey/4">www2.dnr.state.mi.us/ORS/Survey/4</a>
General animal health-related questions	Animal Industry Division, MDARD  Michele Schalow, MDARD (companion animal, exotic animal, and equine HABs concerns)	1-800-292-3939 <a href="mailto:SchalowM@michigan.gov">SchalowM@michigan.gov</a> 517-243-1592 (cell)
Lake treatment questions	EGLE Aquatic Nuisance Control	<a href="mailto:egle-wrd-anc@michigan.gov">egle-wrd-anc@michigan.gov</a> 517-284-5593
Drinking water concerns	Alex Rafalski, MDHHS	<a href="mailto:RafalskiA@michigan.gov">RafalskiA@michigan.gov</a> 517-881-1046 (cell)
Nonpoint Source Pollution Control	Nonpoint Source Program District Staff, EGLE	<a href="#">List and map of NPS staff</a>
Inland lake natural shoreline protection and restoration	Julia Kirkwood, Michigan Natural Shoreline Partnership	<a href="mailto:KirkwoodJ@michigan.gov">KirkwoodJ@michigan.gov</a>

## EGLE Tentative 2023 Cyanotoxin Sampling Plan for Michigan Waterbodies

This list of Michigan lakes will tentatively be sampled for cyanotoxins in summer 2023 (alphabetical listing by county). This list is not exhaustive, as EGLE may also sample for cyanotoxins on any lake when reports of suspicious-looking cyanobacteria/algae or algae-associated illness are received.

Lake/Location	County	Latitude	Longitude	Project	Frequency	Month Range
Kalamazoo Lake	Allegan	42.65103	-86.20564	EGLE Lake Monitoring	Once	August
Fletcher Pond	Alpena	44.98280	-83.87484	EGLE Lake Monitoring	Once	August
Deer Lake	Baraga	46.583813	-88.2123	EGLE Lake Monitoring	Once	August
Brissette Beach Township Park	Bay	43.70778	-83.9343	EGLE Saginaw Bay Shoreline	Monthly	May- Sept
Bay City State Recreation Area	Bay	43.67286	-83.90766	EGLE Saginaw Bay Shoreline	Monthly	May- Sept
Wenona Beach	Bay	43.6548	-83.8727	EGLE Saginaw Bay Shoreline	Monthly	May- Sept
Nayanquing Point State Wildlife Area	Bay	43.772525	-83.934727	EGLE Saginaw Bay Shoreline	Monthly	May- Sept
Quanicassee State Wildlife Area	Bay	43.634837	-83.779885	EGLE Saginaw Bay Shoreline	Monthly	May- Sept
Pinconning Park	Bay	43.85312	-83.92334	EGLE Saginaw Bay Shoreline	Monthly	May- Sept
Randall Lake Chain	Branch	41.9757	-85.04195	EGLE Lake Monitoring	Once	August
Driskles Lake	Cass	41.9069	-85.7997	EGLE Lake Monitoring	Once	August
Black Lake	Cheboygan; Presque Isle	45.45317484	-84.27513011	EGLE Lake Monitoring	Once	August
Geiger Rd. Boat Ramp	Huron	43.799355	-83.426127	EGLE Saginaw Bay Shoreline	Monthly	May- Sept
B.C. McLeish Memorial Park, Bay Port	Huron	43.85298	-83.37535	EGLE Saginaw Bay Shoreline	Monthly	May- Sept
Caseville County Park	Huron	43.94965	-83.27538	EGLE Saginaw Bay Shoreline	Monthly	May- Sept
Bass Lake	Iron	46.04445	-88.77139	EGLE Lake Monitoring	Once	August
Brule Lake	Iron	46.056419	-88.838263	EGLE Lake Monitoring	Once	August
Camp Lake	Kent	43.18	-85.67	EGLE Lake Monitoring	Once	August
Cranberry Lake	Kent; Ottawa	43.10562	-85.79134	EGLE Lake Monitoring	Once	August
Herpolsheimers Pond	Lapeer	42.96759	-83.101084	EGLE Lake Monitoring	Once	August
South Manistique	Mackinac	46.174246	-85.766301	EGLE Lake Monitoring	Once	August
Fox Lake	Muskegon	43.37973	-86.2425	EGLE Lake Monitoring	Once	August
White Lake	Muskegon	43.4114	-86.35706	EGLE Lake Monitoring	Once	August
Muskegon Lake	Muskegon	43.234598	-86.288461	EGLE Lake Monitoring	Once	August
Brooks Lake	Newaygo	43.39642	-85.750488	EGLE Lake Monitoring	Once	August
Neva Lake	Oakland	42.64	-83.518	EGLE Lake Monitoring	Once	August
Brendel Lake	Oakland	42.639	-83.509	EGLE Lake Monitoring	Once	August
Hardwood Lake	Ogemaw	44.24639	-83.99223	EGLE Lake Monitoring	Once	August
Peach Lake	Ogemaw	44.295	-84.1653	EGLE Lake Monitoring	Once	August
Bond Falls Reservoir	Ontonagon	46.393795	-89.103384	EGLE Lake Monitoring	Once	August
Sunset Bay Marina Beach	Tuscola	43.67044	-83.58143	EGLE Saginaw Bay Shoreline	Monthly	May- Sept
Van Auken Lake	Van Buren	42.253347	-86.184812	EGLE Lake Monitoring	Once	August





# One Health Harmful Algal Bloom System (OHHABS)



Public reporting burden of this collection of information is estimated to average 20 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to CDC/ATSDR Information Collection Review Office, 1600 Clifton Road NE, MS D-74, Atlanta, Georgia 30333; ATTN: PRA (0920-1105). DO NOT MAIL FORMS TO THIS ADDRESS

Form Approved  
OMB No. 0920-1105  
Expires 03/31/2019

CDC REPORT ID	CDC FORM ID	STATE REPORT ID	DATE CREATED
_____	_____	_____	_____

## GENERAL INFORMATION

**Dates** (MM/DD/YYYY)

Date bloom was first observed \_\_\_\_\_

Date of bloom notification to Local, Territorial, Tribal, or State Health Authorities \_\_\_\_\_

If no bloom date is available, select and explain in Remarks.  
\_\_\_\_\_

1-Foodborne intoxication, 2-Other evidence of harmful algal toxicity

**Date Remarks**

## Geographic Description (For foodborne intoxication, report where food was caught/harvested)

**Location**

State/Jurisdiction \_\_\_\_\_ Count(ies) \_\_\_\_\_

Did an algal bloom impact water quality in any other states/jurisdictions?  
Yes      No      Unknown      Not applicable

If Yes, what other state(s) were affected? \_\_\_\_\_

Official name of water body \_\_\_\_\_ Common name of water body \_\_\_\_\_

Specific location name \_\_\_\_\_ Nearest city/town \_\_\_\_\_

**Location Coordinates**

Coordinate format:    Degrees Minutes Seconds (DD MM SS)    Decimal Degrees (DDD.DDDD)

Latitude \_\_\_\_\_ Longitude \_\_\_\_\_

Hydrologic unit code (e.g., 04-Great Lakes) \_\_\_\_\_ <http://water.usgs.gov/GIS/huc.html>

## Water Body Characteristics

Water type (e.g., Lake, Ocean) \_\_\_\_\_ Water salinity \_\_\_\_\_

What is the water body, or if applicable, the area of the water body where the bloom was located, used for? (check all that apply)

<input type="checkbox"/> Agriculture	<input type="checkbox"/> Aquaculture	<input type="checkbox"/> Industrial/Occupational
<input type="checkbox"/> Public drinking water system	<input type="checkbox"/> Raw/Non-potable water use (e.g., lawn care)	<input type="checkbox"/> Recreation
<input type="checkbox"/> Other (describe in Remarks)	<input type="checkbox"/> None	<input type="checkbox"/> Unknown

**Geographic Description Remarks**





**BLOOM DESCRIPTION**

**Health Advisories/Warnings**

Advisory or warning type	Response (i.e., Yes/No/Unknown/Not Applicable)	Issuing agency (e.g., State Park, Health Department)	Criteria/Reason(s) for issue (e.g., Bloom observed, Toxin detected)	Start date (MM/DD/YYYY)	End date (MM/DD/YYYY)
Health advisory					
No contact warning					
Water body closure (recreational activity)					
Water body closure (fish/shellfish)					
Other					

**Observational Data**

Date documented (MM/DD/YYYY)	Documented by (e.g., General public, Park ranger)	Scum or algal matter observed? (i.e., Yes/No/Unknown)	Water color (e.g., Blue-green, Brown)	Water clarity (e.g., Clear, Muddy)	Water odors (i.e., Yes/No/Unknown) (if Yes, describe in Remarks)	Water flow (e.g., Stagnant, Moving, Unknown)	Tidal conditions (e.g., High tide, Low tide)

**LABORATORY TESTING**

**Algae, Algal Toxins, or Components Testing**

Which of the following was tested for algae, algal toxins, or components? (check all that apply)

- Air
- Algae
- Finished drinking water
- Food
- Raw/Ambient water
- No testing
- Other
- Unknown

If testing was conducted,

1) Why was it tested? (check all that apply)

- Fish illness/kill\*
- Animal health event response\*
- Citizen complaint
- Human health event response\*
- Monitoring
- Odor
- Other
- Unknown

**\*Please include a form for the corresponding human or animal case(s)**

2) If water was tested, was it tested for any of the following? (check all that apply)

- Algae
- Algal toxins
- Chlorophyll
- Copper sulfate
- Enterococci
- Fecal coliforms
- Other
- Unknown



**Laboratory Results** (Please report information that characterizes algal testing results in environmental or food samples—more extensive results may be attached to this report)

Laboratory Result Number	1	2	3	4	5
<b>Classification</b> (e.g., Cyanobacteria, Toxin)					
<b>Genus or toxin</b> (e.g., <i>Microcystis</i> )					
<b>Species</b> (e.g., <i>aeruginosa</i> )					
<b>Sub-species</b> (e.g., f. <i>scripta</i> )					
<b>Detected in?</b> (e.g., Water, Food)					
<b>Sample description</b> (e.g., lake water sample)					
<b>Concentration</b> (e.g., 20)					
<b>Unit</b> (e.g., ppm)					
<b>Test type</b> (e.g., ELISA)					
<b>Sample collection date</b> (MM/DD/YYYY)					
<b>Sample collection time</b> (##:##)	AM PM	AM PM	AM PM	AM PM	AM PM

**Laboratory Testing Remarks**



**LINKS TO OTHER SYSTEMS**

**Links To Other Data Systems Containing Information About This Report** (Use the table below to link this report to other data systems that contain related information)

If a National Outbreak Reporting System (NORS) report was created to summarize a human outbreak associated with this OHHABS report, please enter the **NORS State ID** in the **System Report ID Number** field.

<b>System type</b> (e.g., Federal)	<b>System name</b> (e.g., NORS)	<b>System report ID number</b> (e.g., NORS State ID)	<b>Brief description of linked information</b> (e.g., Ciguatera outbreak)

**SUPPLEMENTAL INFORMATION**

**General Remarks** (Please include or attach any information that was not captured in this form)

General Remarks

**AUTHOR AND AGENCY INFORMATION**

**Form Author:** \_\_\_\_\_ **Agency Contact Name:** \_\_\_\_\_

**Report Author:** \_\_\_\_\_ **Agency Contact Title:** \_\_\_\_\_

**Reporting Site Name:** \_\_\_\_\_ **Agency Contact Phone:** \_\_\_\_\_

**Agency Name:** \_\_\_\_\_ **Agency Contact Fax:** \_\_\_\_\_

**Agency Contact Email:** \_\_\_\_\_



# One Health Harmful Algal Bloom System (OHHABS)



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Form Approved  
OMB No. 0920-1105  
Expires 03/31/2019

CDC REPORT ID	CDC FORM ID	STATE REPORT ID	HUMAN CASE ID	DATE CREATED
_____	_____	_____	_____	_____

**\*\*Note: Create or update a report by appending an environmental form to this human form.**

## GENERAL INFORMATION

### Human Description

Sex: \_\_\_\_\_ Age (years): \_\_\_\_\_ State of residence: \_\_\_\_\_

### Dates (MM/DD/YYYY)

Did the person have exposure to algae and/or algal toxins on a single date or multiple dates? *(check one)*

Single date                      Multiple dates                      Unknown

Date of first exposure: \_\_\_\_\_ Time: \_\_\_\_\_ AM      PM

Date of last exposure: \_\_\_\_\_ Time: \_\_\_\_\_ AM      PM

Date of illness onset: \_\_\_\_\_ Time: \_\_\_\_\_ AM      PM

Date of illness recovery: \_\_\_\_\_ Time: \_\_\_\_\_ AM      PM

Date of death: \_\_\_\_\_ Time: \_\_\_\_\_ AM      PM

Date of interview: \_\_\_\_\_ Time: \_\_\_\_\_ AM      PM

Date of notification to Local, Territorial, Tribal or State Health Authorities \_\_\_\_\_

### Date Remarks

## HUMAN EXPOSURE INFORMATION

### Location

State(s) where exposure occurred? \_\_\_\_\_

Count(ies) where exposure occurred? \_\_\_\_\_

Setting(s) of the exposure? \_\_\_\_\_

Specific location name \_\_\_\_\_

**Activities**

<b>Exposure source</b> (e.g., Water, Air, Food)	<b>Exposure activity</b> (e.g., Recreational activities, Personal use)	<b>Exposure activity description</b> (e.g., Swimming, Eating shellfish)	<b>Water type</b> (if applicable) (e.g., Lake, Ocean, Community Water System)	<b>Food type</b> (if applicable) (e.g., Bass, Grouper, Oysters)	<b>Duration of activity</b> (e.g., 30)	<b>Duration unit</b> (e.g., Minutes)

\*Personal use: water used for activities such as drinking, cooking, bathing, etc.; Non-personal use: water used for activities such as car washing, lawn care, etc.

**Exposure Routes and Remarks**

What were the route(s) of exposure? (check all that apply)

Ingestion          Inhalation          Skin contact          Other (describe in Remarks)          Unknown

Exposure Remarks (e.g., additional description of multiple exposures)

**SIGNS/SYMPTOMS OF ILLNESS AND HEALTH OUTCOMES**
**Signs/Symptoms of Illness**

<b>Sign/Symptom</b> (e.g., Lethargy, Respiratory irritation)	<b>Time to onset</b> (e.g., 30)	<b>Onset unit</b> (e.g., Minutes)	<b>Duration of sign/symptom</b> (e.g., 4)	<b>Duration unit</b> (e.g., Hours)	<b>Recurrence following multiple exposures?</b> (i.e., Yes/No/Unknown/Not Applicable)

**Was the person still experiencing signs/symptoms at the time of interview?**

Yes *(describe in Remarks)*      No      Unknown

**Were signs/symptoms consistent with the route(s) of exposure? (e.g., location of rash consistent with exposed body parts)**

Yes      No *(describe in Remarks)*      Unknown

**If a food item was implicated, were the signs/symptoms consistent with foodborne fish/shellfish poisoning?**

Yes *(describe in Remarks)*      No      Unknown      Not applicable

**Poisoning description (e.g., Ciguatera Fish Poisoning)** \_\_\_\_\_

**Signs/Symptoms Remarks**

**Medical Care and Health Outcomes**

**Did the person receive first aid care from a non-medical provider? (e.g., park staff)**

Yes      No      Unknown

**Did the person visit a healthcare provider? (i.e., non-emergency)**

Yes      No      Unknown

**Did the person go to an emergency department?**

Yes      No      Unknown

**Was a Poison Control Center contacted?**

Yes      No      Unknown

**Did the person die?**

Yes      No      Unknown

**Do you have additional information about medical care or health outcomes for this person?**

*(Do not include personally identifiable information)*

Yes      No

**Medical Care and Health Outcomes Remarks**

**Health History and Differential Diagnosis**

<b>Does the person have a history of:</b>	<b>Response</b> (i.e., Yes/No/ Unknown)	<b>If response is Yes, please describe</b>
Chronic respiratory disease, such as asthma or COPD?		
Using tobacco products?		
Chronic skin disease, such as psoriasis or eczema?		
Allergies to food, medication, or other substances?		
Chronic gastrointestinal disease, such as Crohn's disease?		
Chronic kidney disease or failure (e.g., caused by hypertension, diabetes, extended use of NSAIDs)?		
Liver disease, such as hepatitis or cirrhosis?		
Chronic neurologic disease (e.g., caused by diabetes)?		
Was the person immunocompromised due to medication or illness (e.g., transplant recipient, diabetic)?		
Did the person drink any alcohol within 24 hours prior to symptoms?		
Was the person pregnant?		
Was the person taking medications that increased skin sensitivity to the sun (e.g., acne treatment, antibiotics)?		
Did the person frequently take over the counter (OTC) pain medication (e.g., more than 5 times a week)?		
Did the person have an open wound, sores, or broken skin at the time of the exposure?		
Had the person recently been exposed to any communicable diseases that cause similar signs or symptoms?		
Had the person recently been exposed to any environmental irritants that cause similar signs or symptoms (e.g., poison ivy/oak)?		
Were other causes of the illness investigated?		
Were environmental samples (e.g., mushrooms) tested to rule out other possible causes?		



## CLINICAL TESTING

### Clinical Testing

Were clinical specimens tested?

Yes (*describe in Test Results*)

No

Unknown

What type(s) of clinical testing were done to diagnose the illness or rule out other causes? (*check all that apply*)

Bloodwork

Culture

Fecal analysis

Histopathology

Skin biopsy

Stomach content analysis

Toxicology

Urinalysis

X-ray

None

Other (*describe in Remarks*)

Unknown

### Clinical Test Results

Clinical Specimen Number	1	2	3	4	5
<b>Classification</b> (e.g., Cyanobacteria)					
<b>Genus or toxin</b> (e.g., <i>Microcystis</i> )					
<b>Species</b> (e.g., <i>aeruginosa</i> )					
<b>Subspecies/ Serotype / Genotype</b> (e.g., f. <i>scripta</i> )					
<b>Detected in clinical specimen?</b> (i.e., Yes/No/Unknown)					
<b>Detected in which types of specimens?</b> (e.g., Blood)					
<b>Concentration</b> (e.g., 20)					
<b>Unit</b> (e.g., ppm)					
<b>Test type</b> (e.g., ELISA)					

**Clinical Testing Remarks** (Please include any other clinical testing information—do not include personally identifiable information)

### Clinical Testing Remarks

**SUPPLEMENTAL INFORMATION**

**General Remarks** (Please include or attach any other relevant information not captured in the form—do not include personally identifiable information)

General Remarks

**AUTHOR AND AGENCY INFORMATION**

**Form Author:** \_\_\_\_\_ **Agency Contact Name:** \_\_\_\_\_

**Report Author:** \_\_\_\_\_ **Agency Contact Title:** \_\_\_\_\_

**Reporting Site Name:** \_\_\_\_\_ **Agency Contact Phone:** \_\_\_\_\_

**Agency Name:** \_\_\_\_\_ **Agency Contact Fax:** \_\_\_\_\_

**Agency Contact Email:** \_\_\_\_\_