

One Health Harmful Algal Bloom System (OHHABS)

What are harmful algal blooms?

Harmful algal blooms (HABs) occur when algae and cyanobacteria grow out of control in bodies of water. This overgrowth can produce toxins harmful to people and animals, or kill animals or plants in the water by severely depleting oxygen when they decompose. HABs most often occur in warm, nutrient-rich bodies of freshwater, marine water, or brackish water (salt and fresh water mixed together). Normally, algae are important organisms in oceans, rivers, and lakes because they are the building blocks of the food chain and ecosystem. When they grow out of control, however, they can harm people, animals, and the environment.

Why are HABs a public health issue?

HABs can affect the environment, drinking water, recreational water, and food. Exposure to HAB toxins through water, food, or air may cause a range of mild to severe symptoms in both humans and animals. Exposures can result in symptoms that affect the skin, stomach and intestines, lungs, and nervous system. Animals, such as dogs, cattle, birds, and fish, are more likely to be affected because they are more likely to drink from or swim in affected waters. People can be affected from exposure during work or recreational activities, or from contaminated drinking water or food.

HAB events can cause serious illness in humans and animals, and damage the environment. For example:

- In 2007, 15 people were affected with respiratory illness from exposures to HAB toxins from a HAB near the Florida coast.
- From 2007 to 2011, HAB-associated foodborne exposures caused 273 cases of human illness. These illnesses included stomach, intestinal, and neurologic symptoms from eating finfish or shellfish.
- From 2009 to 2010, 11 HAB-associated outbreaks from recreational exposures in freshwater settings in three states were reported to the CDC. The 61 people sickened in the outbreaks experienced skin irritation, stomach, intestinal, respiratory, or neurologic signs and symptoms. These 11 outbreaks represented 46% of the 24 outbreaks associated with untreated recreational water reported for 2009-2010.
- In 2014, nearly 500,000 residents of Toledo, Ohio could not use public water to drink, cook, or bathe for almost three days because it was contaminated with a toxin from a HAB in Lake Erie.
- In fall of 2015, a cyanobacterial bloom of *Microcystis* covered 636 of the Ohio River's 981 miles. *Microcystis* can produce microcystin, a toxin that can cause diarrhea, vomiting, and liver damage, and can kill animals that drink contaminated water.

To learn more about HABs and their health effects, visit www.cdc.gov/habs.

Why do we need HAB surveillance?

Evidence suggests that HABs are increasing in frequency and severity due to climate change, farming practices, storm and wastewater runoff, and other environmental issues. The identification of HABs is critical to determine their patterns of occurrence, to protect water and food supplies, and to alert the public when there is a problem.

HAB-associated outbreaks can be reported in the National Outbreak Reporting System (NORS). However, NORS only captures aggregate information about two or more human cases of illness. **Surveillance for individual cases of human and animal illness will provide additional information on the annual number of cases, where illnesses are occurring, and symptoms from exposure.**

What is the One Health Harmful Algal Bloom System?

This voluntary reporting system, called OHHABS, is accessible to state and territorial public health departments and their designated environmental health or animal health partners. It collects data on individual human and animal cases of illnesses from HAB-associated exposures, and environmental data about HABs. **The goal of OHHABS is to collect information to support the understanding and prevention of HABs and HAB-associated illnesses.**

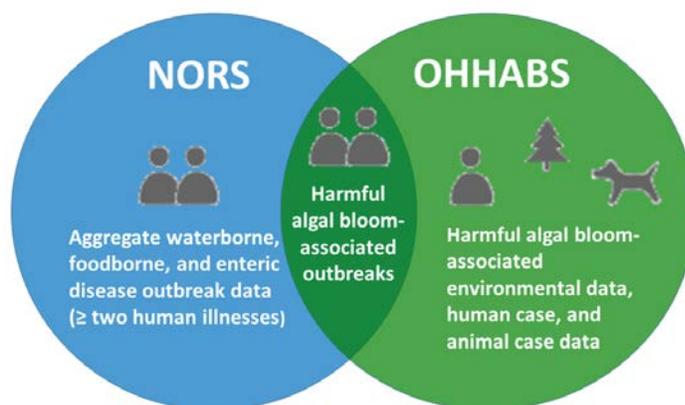
OHHABS is an example of One Health surveillance. The One Health concept recognizes that the health of humans is connected to the health of animals and the environment. The human health, animal health, and environmental health communities can more effectively address many linked health challenges by working together.



What is the difference between OHHABS and NORS?

OHHABS is linked to NORS and shares web-based reporting features. OHHABS is an event-based reporting system for HAB events and HAB-associated human and animal cases of illness. NORS is an event-based reporting system for foodborne, waterborne, and enteric disease outbreaks that may collect HAB-associated aggregate outbreak data. A HAB-associated outbreak can be reported in both OHHABS and NORS; however, data are collected differently in each system.

For more information about OHHABS, please visit www.cdc.gov/habs/ohhabs.



What can be reported in OHHABS?

What can be reported?	Description
Harmful Algal Bloom Events	<ul style="list-style-type: none"> Location and description of a HAB in any water body (e.g., inland lake, coastal water body, brackish water body) For foodborne HAB-associated illnesses with no observed HAB event, the seafood catch or harvest location may be reported.
Human Cases of Illness	<ul style="list-style-type: none"> Individual cases of illness <u>Note:</u> If multiple people became ill following exposure to a HAB, state and territorial public health partners should submit both OHHABS and NORS reports. NORS is used to report at the level of an outbreak (\geq two persons linked epidemiologically by time, place, or exposure). Data are reported to NORS in aggregate.
Animal Cases of Illness	<ul style="list-style-type: none"> Individual cases of illness Domestic pets (for example, dogs, cats, parrots, guinea pigs) Livestock (for example, cattle, sheep, goats, chickens, pigs, horses) Wildlife non-domesticated animals (for example, birds, sea lions, fish, deer) <u>Note:</u> Animal cases of illness can be reported individually (single dog, single sea lion) or at the group level for multiple animal cases (a fish kill, a herd of cattle, a flock of birds). Users can indicate whether they are reporting a single case or a group of illnesses.

How Can I Start Reporting in OHHABS?

OHHABS is intended for use by public health departments and their designated environmental health and animal health partners.

If you are a public health professional, environmental health professional, or animal health professional interested in reporting to OHHABS, please contact your state's NORS Reporting Site Administrator to gain access to OHHABS. For assistance on identifying or contacting your state's NORS administrator, please contact NORSAdmin@cdc.gov.

If you are a member of the public and would like to report a HAB-associated illness or outbreak, please contact your local or state health department. Contact information can be found at www.cdc.gov/mmwr/international/relres.html.