

## Harmful Algal Blooms Frequently Asked Questions

*The information provided here is for general awareness and educational purposes. For specific concerns or medical advice, consult with local health authorities or medical professionals.*

*There is no guarantee that natural water is ever bacteria free, so use best judgment and always avoid drinking water from any river, lake or stream. If you are fishing, check the area's fishing regulations and fish consumption advisories to ensure that it is safe to consume fish from a natural water source.*

*For more information and additional resources, visit [azdeq.gov/azhab](http://azdeq.gov/azhab).*

### What are Harmful Algal Blooms (HABs)?

Harmful Algal Blooms, commonly known as HABs, are excessive growths of certain types of algae in water bodies, such as lakes, rivers, and oceans. These blooms can produce cyanotoxins that result in harmful effects on the environment, human health, and marine life. Not all of these algae are harmful.

### What do HABs look like?

HABs can be blue, green, blue-green and sometimes brown or black. They may look like pea soup or spilled green paint, as well as surface scum, mats or films on the water. They also could appear as green dots or globs floating below the surface and discolor or leave streaks in the water.

### What should I do if I suspect a HAB?

If you suspect a HAB is occurring, ADEQ recommends:

- Notifying the local land owner or manager of the waterbody

- Contacting the local public health department
- Filing a report through the ADEQ Arizona Water Watch mobile app
- Emailing ADEQ | For contact information, visit [azdeq.gov/azhab](http://azdeq.gov/azhab).

ADEQ also recommends always practicing healthy recreational water habits. Enjoying the outdoors is an important part of an active, healthy lifestyle. ADEQ recommends following these simple, healthy habits in waters with visible algae:

- **STAY AWAY** from algae and scum in the water – **AND** – keep children and pets away from algae in the water or on the shore
- **DO NOT DRINK** or use this water for cooking
- **AVOID EATING FISH** from the water until the bloom is dissipated as toxins can build up in fish tissue
- **WHEN IN DOUBT, STAY OUT**

### Why do HABs occur?

Algae and bacteria are natural parts of all water bodies. HABs occur when certain types of algae, known blue-green algae (cyanobacteria), grow rapidly and create large populations in the water. This excessive growth can be caused by an overabundance of nutrients, such as nitrogen and phosphorus. These nutrients may be from natural sources, such as decaying organic matter, or from human activities, such as agricultural runoff or untreated sewage discharge. Environmental conditions such as increased temperature, nutrients, sunlight and shallow or stagnant water increase the chance of HABs.

### How can HABs affect human health?

When people come into contact with water contaminated by HABs, they may experience health problems such as skin rashes, respiratory irritation, nausea, vomiting, diarrhea, and allergic reactions. Ingesting water or seafood contaminated with toxins from HABs can lead to more severe health issues over time, including liver damage or neurological problems. Children are at a higher risk of experiencing symptoms, which could be a result of having a lower body weight than adults, as well as lacking knowledge of the risks of ingesting natural and potentially contaminated water.

### How can HABs affect animal health?

HABs can create hypoxic (oxygen-depleted) conditions in the water, harming fish and other aquatic organisms. Domestic animals and wildlife can also get sick if they drink the water, potentially leading to death. HABs can be especially harmful to pets, such as dogs.

### Do all algal blooms make people and animals sick?

Only some cyanobacteria produce cyanotoxins and do not necessarily release toxins all the time. Scientists are still studying how and at what levels cyanotoxins affect people's health. It is not yet known how many different cyanotoxins exist and there is not a test for all the different types, nor is there a way to know when an algae is going to produce the toxin, to what extent and for how long.



## How is illness caused by cyanobacteria diagnosed?

Currently there are no medical tests that can identify cyanotoxins in people or easily prove that an illness is related to cyanotoxin exposure. Blood samples may be helpful in evaluating patients for physical responses to toxin exposure, but they do not directly check for cyanotoxins. Usually when people are concerned about illness from cyanotoxin exposure, their doctor will collect information about the symptoms, timing and nature of exposure (e.g. if a person was swimming in the water or drank the water). The physician will look for other possible causes of the illness and will determine the most probable cause based on many factors.

## Can cyanotoxins be deadly?

Exposure to cyanotoxins in humans is rarely fatal. There are many more cases of dogs and livestock dying from cyanobacteria exposure, likely because dogs and livestock are more likely to directly ingest or eat the algae.

## How many types of cyanotoxins are there?

There are numerous types of cyanotoxins, and not all have been identified. Cyanotoxin research in this emerging field of science, and researchers continue to identify new types. Some cyanobacteria are able to produce many different categories of toxins at certain times but may be less likely to produce other categories of toxins.

## How are people exposed to cyanotoxins?

Illness caused by cyanotoxins may occur through drinking contaminated water, eating algae, ingesting contaminated fish or shellfish, or coming into physical contact with the toxin through your skin while swimming or recreating. Simply being present in the general area of a HABs does not mean that exposure has occurred; however when you recreate in any natural waters it is wise to be aware of the potential exposure to any contaminants that might be present.

## Can I still swim or participate in recreational activities during a HAB?

It's important to be cautious during a HAB; avoid swimming or participating in other recreational activities in waters with visible algal blooms or if you notice any unusual odor, color, or foam on the water surface. Pay attention to local advisories and warnings issued by health authorities or environmental agencies to ensure your safety. Do not ingest water that contains a potential HAB. It is difficult to treat water containing algal toxins, so boiling or filtering water for drinking is not advised.

## What should I do if I come into contact with lake water in areas of algal blooms?

You should promptly use a towel to dry off and shower in clean water as soon as possible. If shower facilities are not readily available, rinsing off with any available clean water may be helpful as an interim measure. Make sure to also rinse your pets so they do not lick algae off their fur.

## Are some people or animals more likely to get sick than others?

Most of the reported illnesses and deaths in the U.S. relating to cyanobacteria exposures have occurred in pets and livestock. While there are still many unknowns about cyanotoxins effects on human health, children are considered to be at greater risk of harmful effects than adults. People with underlying diseases (such as liver disease) may be at higher risk than average due to weaker hepatic functioning; however this applies to many other types of toxin load on the body. Some sensitive individuals with asthma and related conditions could experience worsening of their symptoms due to odors released from decaying algal mats.

## What should I do if I think I am sick because of cyanobacteria?

Seek advice from a medical professional. Tell them about when and how you were exposed and all the symptoms and any underlying conditions that could

be impacted. Encourage the doctor to call the local county public health department to report the illness if there is a strong suspicion that it is related to cyanobacteria exposure.

## Can I still go fishing in water that has a HAB? Can I eat the fish?

Research indicates that toxins from harmful algae can accumulate in fish tissue over time if regularly exposed. When a potential HAB is present in the area it is good to be cautious and not consume the fish at least until the bloom has dissipated.

In general, ADEQ recommends that you check the local fishing advisories for a specific water, especially if you plan to consume the fish. For more information on Arizona fish consumption advisories (unrelated to HABs), see [azdeq.gov/fca](http://azdeq.gov/fca).

## How can we prevent HABs?

While we cannot eliminate harmful algae or bacteria from our natural environment, individuals can help reduce occurrence of HABs by using fertilizers responsibly and properly managing waste (septic systems, stormwater, camping waste, pet waste, etc.). Communities and industries can implement practices that reduce nutrient runoff, improve wastewater treatment, control storm-water run-off and anything else necessary to protect water quality as a whole.

## Can we clean up or stop HABs in progress?

For ponds and small lakes, there are treatment options and many lake or pond owners actively manage to prevent HABs. However, there are currently no effective treatments for large lakes. The best course of action is to implement programs to prevent HABs by reducing the nutrients entering the water and preventing stagnation in the lake.