HEALTH ADVISORIES

The U.S. Environmental Protection Agency (U.S. EPA) published national drinking water Health Advisories for the cyanotoxins microcystins and cylindrospermopsin (see Table 1). The Health Advisories provide the cyanotoxins levels in drinking water less than or equal to which adverse human health impacts are unlikely to occur over a 10-day period of time. Health Advisories are developed to help states and water systems assess local situations and during emergency situations and spills. They are not a federally enforceable, regulatory limit.

Given the health concerns that can occur from cyanotoxins in drinking water, many water systems are taking actions to manage and reduce the risks from cyanotoxin contamination in drinking water. These actions can include steps for cyanotoxin monitoring, adjusting treatment to address contamination before levels are of concern and notifying the public through a Drinking Water Advisory when tap water toxin levels are a possible public health concern.

10-DAY HEALTH ADVISORIES	LEVEL
Microcystins	
Children pre-school age and younger (under 6 years old)	**0.3 µg/L**
School-age children (6 years and older)	**1.6 µg/L**
Cylindrospermopsin	
Children pre-school age and younger (under 6 years old)	**0.7 µg/L**
School-age children (6 years and older)	**3.0 µg/L**

Table 1. U.S. EPA's National 10-Day Health Advisories

EPA United States Environmental Protection Agency

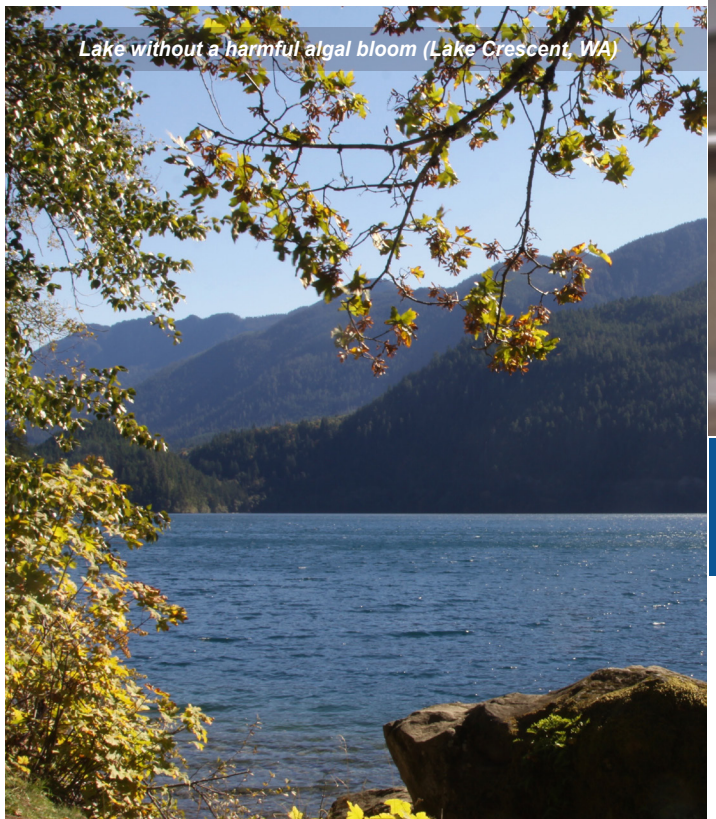
Co-Branding (optional)

MORE INFORMATION

For more information about how HABs are managed in your tap water contact your public water system.

For more general information see: www.epa.gov/cyanohabs.

EPA: 810-F-16-007



Lake without a harmful algal bloom (Lake Crescent, WA)

CYANOTOXINS

DRINKING WATER ADVISORIES

EPA United States Environmental Protection Agency

Co-Branding (optional)

SUMMARY

Freshwater harmful algal blooms (HABs) are a growing concern in the United States and worldwide. Some HABs can produce toxins that are harmful to humans and animals (see Figure 1). These toxins can pose challenges to drinking water supplies. Given this risk, many drinking water systems are taking actions to manage cyanotoxins in drinking water and notify the public if tap water toxin levels become a concern, including issuing Drinking Water Advisories.

BACKGROUND

Cyanobacteria, formerly referred to as blue-green algae, are found naturally in lakes, rivers, ponds and other surface waters. When certain conditions exist, such as in warm water containing an abundance of nutrients, they can rapidly form harmful algal blooms (HABs). Some HABs are capable of producing toxins, called cyanotoxins, which can pose health risks to humans and animals. Conventional water treatment (consisting of coagulation, sedimentation, filtration and chlorination) can generally remove cyanobacterial cells and low levels of toxins. However, water systems may face challenges providing drinking water during a severe bloom event when there are high cyanobacteria and cyanotoxin levels in drinking water sources. If cyanotoxins occur in tap water over a 10-day time period at levels above the national drinking water Health Advisories, people are at risk of various adverse health effects including upset stomach, vomiting and diarrhea as well as liver and kidney damage.

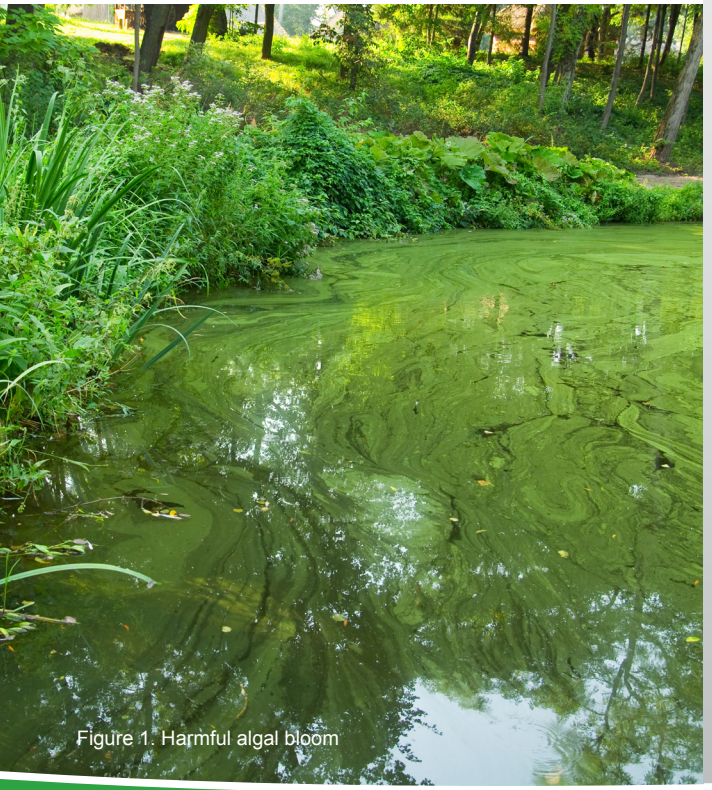
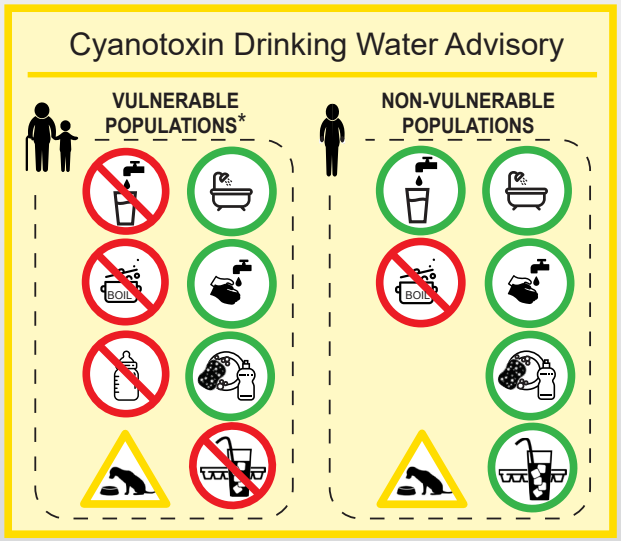


Figure 1. Harmful algal bloom

Drinking Water Health Advisories



*vulnerable populations = infants, children under the age of six, pregnant women, nursing mothers, those with pre-existing liver conditions, those receiving dialysis treatment, the elderly and sensitive populations.

DRINKING WATER ADVISORIES

If a drinking water advisory is issued for cyanotoxins, instructions for appropriate actions to be taken by consumers will be described in the advisory notification. There is a possibility that there will be different instructions for different population groups, depending on the levels of cyanotoxin found in the drinking water.

Using the U.S. Environmental Protection Agency's national drinking water Health Advisory levels (see Table 1) for microcystins and cylindrospermopsin as a guide, ranges of cyanotoxin levels in drinking water can be shown with the following advisory levels: **green**, **yellow** and **red** (see Figure 2). **Green** corresponds to drinking water toxin levels where adverse health impacts are unlikely to occur for everyone. **Yellow** indicates drinking water toxin levels where the risk of adverse health impacts is higher for infants, young children under the age of six and other vulnerable populations (including: pregnant women, nursing mothers, those with pre-existing liver conditions, those receiving dialysis treatment, the elderly and other sensitive populations). **Red** indicates drinking water toxin levels above which the risk of adverse health impacts is higher for everyone drinking the water. Drinking water systems can elect to issue Drinking Water Advisories using these categories as guides.

< Figure 2. Possible Drinking Water Health Advisories