

## Blue-Green Algae Toxicity Warning

As of 10/5/2016 reports of Algae in Livermore-San Ramon and other Tri-Valley Rivers, Lakes and ponds



**Prevention is key.** Don't allow your pets to drink from stagnant ponds, lakes or other bodies of water that have bluish-green scum on the surface or around the edges. Blue-green algae cells can also stick to a pet's fur and be ingested when the animal cleans itself, so think twice before allowing your pet to jump into a body of water.

East Bay Times – Story – 9/17/2016

Katie Stone didn't know about the threat of toxic blue-green algae in Castro Valley's Lake Chabot until after her beloved 5-year-old chocolate lab Josie lapped up some of the reservoir water on a visit there last year.

Josie sickened and died within a few hours.

It was a stark early example of California's growing problems with cyanobacteria, a naturally occurring substance that has blossomed like a slimy weed to infect more than 40 state lakes and waterways stretching from Berkeley, San Jose, Discovery Bay, the Russian River and Redding to Los Angeles. It is the highest count ever and double the 22 reported last year, according to officials.

Blue-green algae around a backyard dock in a private-access area in Discovery Bay Doug Duran/Bay Area News Group

Many people and water agencies have been caught off guard by the growing extent of the algae, which can cause gastrointestinal upsets, skin rashes and allergic reactions in people, and sickness or death among dogs, livestock, sea otters and other wildlife.

California's five-year drought created ideal conditions for brewing toxic levels of the naturally occurring bacteria, which multiplies rapidly in hot temperatures, low water flows and stagnant water choked with fertilizers and nutrients.

Despite more rainfall this year, the mischievous microbes are causing more trouble than ever because nutrients that built up during the drought were washed off hills. The algae is triggering health warnings and advisories, the closing of swim areas, layoffs of lifeguards and a reduction in park visitors and revenues.

Stone, a Castro Valley resident, said neither she nor the lake operator were prepared on a winter day in 2015 for the toxic algae when she took Josie to Lake Chabot east of Oakland, where neither dogs nor people are supposed to make body contact with the

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water. Dogs being dogs, however, Josie apparently romped away for a brief slurp. She died that night from kidney failure.

#### A BLOOMING DISASTER

More than 40 California lakes and waterways have suffered blooms of toxic blue-green algae that appeared to spread during five years of drought and has not relented despite a wetter winter.



“It was traumatic. We were very upset the regional park district didn’t have prominent warning signs,” she said. “They are doing a much better job now.”

East Bay Regional Park District officials say they have become more rigorous about warning signs.

“The algae caught everyone by surprise, and it was difficult to get clear guidance and protocols on what to do about it,” said Carolyn Jones, a park district spokeswoman. “We went more than 80 years before we had a closure for this toxic substance in the drought.”

It’s hard to track algae outbreaks over time because reporting of algae blooms has been spotty and inconsistent among the many different lake operators and owners.

However, there are many signs the algae is getting worse in California as well as spreading to other states such as Ohio and Florida, and global warming only portends more blooms, says Beverley Anderson-Abbs, an environmental scientist with the state Water Resources Control Board.

**Among the waterways closed at times are Del Valle Reservoir near Livermore, Pyramid Lake near Los Angeles and Lake Elsinore in Riverside County.**

San Jose closed its Cunningham Lake to boating and fishing for the first time earlier this month because of the toxic algae, disappointing kayakers, paddle boaters and a local outrigger canoe club, said Alex Pearson, a manager in the city parks and recreation department. Almaden Lake also was closed earlier this month, but it has had other algae-related closures off and on since 2010.

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Contra Costa County health officials posed warning signs this year in some waters in Discovery Bay, a boater-oriented community. “The effect on recreation has been huge — not being able to boat or swim in areas at the high time of the season,” said Contra Costa County Supervisor Mary Piepho, a Discovery Bay resident.

She said the build-up underscores the need for the state to allocate greater fresh water flows through the Sacramento-San Joaquin River to flush out pollutants.

Runoff from algae-contaminated inland lakes also flows out of streams and rivers to harm sea otters that eat shellfish in Monterey Bay, a team of 15 state and university researchers concluded in a 2010 paper. They linked 21 deaths of southern sea otters, an endangered species, to toxic effects of the blue-green algae between 1997 and 2008, the scientists wrote in the journal *PloS One*.

State officials stepped up their efforts to alert the public to the risks and water officials of how to manage them. On Aug. 24, they issued a caution to the public to heed local warning signs to avoid contact with contaminated water bodies and to keep pets away. The big message: When in doubt, stay out.

Likewise, state officials urged lake operators to be vigilant in monitoring for the toxic algae, and to use state guidelines on when to put up caution signs and closure signs.

The state last month opened a web site portal — <http://bit.ly/2cJcnPt> — for public agencies and the public to get information about cyanobacteria blooms.

Some lake managers are testing herbicides to reduce algae blooms, but the results have been mixed and inconclusive, officials say.

“There is no silver bullet,” Anderson-Abbs said. “Generally, the best thing to do is to stay out of the water until the bloom is over.”

After losing one dog to algae poisoning, Stone said she keeps her other dog on a leash at all times in parks, and they steer clear of freshwater lakes.

“I don’t trust lake water anymore where the water is still and you don’t know what is building up,” said Stone, an epidemiologist. “We take her to the ocean.”

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# PET POISON HOTLINE INFORMATION

**Level of toxicity:** Generally moderate to severe

**Common signs to watch for:**

- Vomiting
- Diarrhea
- Blood in stool or black, tarry stool
- Pale mucous membranes
- Jaundice
- Seizures
- Disorientation
- Coma
- Shock
- Excessive secretions (e.g., salivation, lacrimation, etc.)
- Neurologic signs (including muscle tremors, muscle rigidity, paralysis, etc.)
- Blue discoloration of the skin and mucous membranes
- Difficulty breathing
- Death

Cyanobacteria (also known as blue-green algae) are microscopic bacteria found in freshwater lakes, streams, ponds and brackish water ecosystems. They can produce toxins (such as microcystins and anatoxins) that affect people, livestock and pets that swim in and drink from the algae-contaminated water. Blue-green algae grow and colonize to form “blooms” that give the water a blue-green appearance or a “pea soup” like color. It also looks like blue or green paint on the surface of the water. Because the algae float, they may be blown by the wind into thick, concentrated mats near the shore, thus making them easily accessible to livestock, pets and people. Algal concentrations vary throughout the year, but are most abundant during periods of hot weather in mid- to late-summer months and are most likely to be found in nutrient-rich water. While most blue-green algae blooms do not produce toxins, it is not possible to determine the presence of toxins without testing. Thus, all blooms should be considered potentially toxic. Very small exposures, such a few mouthfuls of algae-contaminated water, may result in fatal poisoning.

Dogs that enjoy swimming and playing in lakes and ponds may be exposed to blue-green algae. Hunting dogs are especially predisposed due to increased exposure outdoors. Clinical signs of poisoning are dependent on the toxin involved. *Microcystins* can result in liver damage or failure. Signs of liver injury include vomiting, diarrhea, blood in stool or black, tarry stool, weakness, pale mucous membranes, jaundice, seizures, disorientation, coma, and shock. Death generally follows within days as a result of liver failure. Blood work changes include elevated liver enzymes, a low blood sugar, a low protein, and even abnormal clotting. Aggressive, immediate treatment is necessary to help treat this quick-acting, potentially fatal poison!

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*Anatoxins* result in neurotoxicity evidenced by excessive secretions (e.g., salivation, lacrimation, etc.), neurologic signs (including muscle tremors, muscle rigidity, paralysis, etc.), blue discoloration of the skin and mucous membranes, and difficulty breathing. Death follows within minutes to hours of exposure as a result of respiratory paralysis. Livestock that graze around affected ponds or lakes and are able to drink from them are often found dead near the water source. Treatment includes anti-seizure medication, oxygen, and aggressive care by your veterinarian.

Unfortunately, there is no antidote for the toxins produced by blue-green algae. Immediate veterinary care is imperative. If you suspect your dog was exposed to blue-green algae, contact Pet Poison Helpline immediately for guidance.

**Poison type:** Plants

**Alternate names:** Cyanobacteria, algal, Microcystis, Anabena, Aphanizomenon, cyanotoxin, anatoxin