

**September 10, 2018**

**Caleb Osborne (Associate Director of the Office of Water Quality)**

**Arkansas Department of Environmental Quality (ADEQ)**

**5301 Northshore Drive, North Little Rock, 72118**

“The federal Clean Water Act requires Arkansas to submit a report to the United States Environmental Protection Agency (EPA) on the quality of water in the state every two years. The Arkansas Department of Environmental Quality (ADEQ) released the proposed 2018 303(d) List, which is part of the report, today and seeks public comment on the proposed list through Monday, September 10, 2018.” That is what I am trying to do.

Arkansas is home to significant, high-quality water resources. I ask that the ADEQ work with all of us to protect one of our most valuable resources, our water. If in doubt of a categorizing a marginal water “segment”, give that segment the benefit of review before placing it on a diluted list (Example: Two segments of Big Creek and two segments of Buffalo River are listed as Category 4b). In other words, if a water segment appears to have potential issues (Example: Recent issues with algae from unknown sources have been reported, Harmful algal blooms and toxin poisoning in dogs has been issued by the State of Arkansas Health Department see Appendix A.) Potential human health issue? Warning for pet owners and I would guess humans? Source of the problem? Preventable now or do we wait until a water body system collapses and requires a costly cleanup or requiring more “segments” condemned for safety issues?

Please don't “water down” a designation from say a 5 to a 4b, if in doubt. Remediation cost more than prevention and protection. I am hopeful the old nickname for Arkansas, “The Natural State” is not a forgotten one, or a historical one that only a few of the old timers like me, remember.

I suggest when “segments” become questionable (Example: Big Creek that is a tributary of Americas First National River, the Buffalo River) that any degradation be taken seriously and considered of the highest priority that might just be an early warning like a “canary in the cold mine” and deserves to be examined in more detail not less, not a 4b but a 5 for insurance and protection until the question is resolved.

Total maximum daily loads (TMDL) is one useful method for determining in advance of causes and can lead to early preventions that might protect say, The Buffalo River.

ADEQ, I read your mission statement on your website. Please do what you have signed on to do in that demanding statement. Words are just words, if not acted on.

John Murdoch

Wesley, Arkansas 72773

*Arkansas Department of Environmental Quality*

## **Water Division**

### **Mission Statement**

**“To protect and enhance the water quality of the State of Arkansas in a manner consistent with the economic wellbeing of all Arkansans.**

**The division's mission is to protect, enhance and restore all waters of the state for the health, safety and welfare of present and future generations. We accomplish this mission by monitoring the aquatic environment, permitting, enforcing environmental laws, using and refining scientifically sound methods and regulations, planning, coordinating, educating, providing technical assistance and encouraging pollution prevention practices.”**

## **APPENDIX A**



## Arkansas Department of Health

4815 West Markham Street • Little Rock, Arkansas 72205-3867 • Telephone (501) 661-2000

3 August 2018

Dear Veterinarian:

### **Subject: Harmful algal blooms and toxin poisoning in dogs**

Harmful algal blooms (HAB) from blue-green algae (cyanobacteria) may be intermittently present in parts of the Buffalo River National Park, specifically the lower river region. These algae can produce toxins, such as microcystins and anatoxins, that affect people, pets, and livestock that swim in and drink from algae-contaminated water. Buffalo River National Park manages multiple high-use recreational swim/float areas where people frequently recreate with their dogs. Though we have received only a few reports of human illnesses possibly associated with HABs, we want to inform you of the current situation and provide additional resources should a potential case present at your clinic.

Though this notice is specific to HAB activity within the lower Buffalo River region, it is important to note that HABs are an issue for many lakes, ponds, and possibly rivers nationwide, and their incidence is on the rise. Please consider water exposure and travel history as elements of a patient's medical history.

### **Clinical Signs and Diagnosis**

Signs of cyanobacterial toxin poisoning depend on the type of toxin (hepatotoxin, neurotoxin, or dermatotoxin), toxin concentration, amount consumed, size of the animal, and exposure route. The majority of exposures result in no or self-limiting clinical signs, but ingestion of large amounts of toxin can result in serious illness and presentation for emergency care. Common signs of hepatotoxin poisoning (e.g. microcystins) include vomiting, diarrhea, anorexia, jaundice, abdominal tenderness, and dark urine. Death can occur within days after exposure due to liver failure. Neurotoxins (e.g. anatoxin-a) cause excessive drooling, disorientation, seizures, and respiratory failure. Death follows within minutes to hours after exposure from respiratory paralysis. Additionally, cyanobacteria may produce dermatotoxins, which result in rash, hives, or an allergic reaction in the exposed animal.

Diagnosis is based primarily on history of recent exposure to cyanobacteria, clinical signs of poisoning, and necropsy findings. Diagnostic methods include analysis of stomach and fecal content and liver histopathology.

### **Treatment**

Untreated, cyanobacterial toxin poisonings may be fatal in animals. Prompt veterinary care is critical for patients showing hepatic or neurologic symptoms and should include supportive care. There are no antidotes to these toxins, but experimentally, oral cholestyramine has shown promise for treatment in dogs. Inducing vomiting within the first two hours of ingestion may minimize absorption of ingested toxins. Activated charcoal slurry may be of benefit to bind toxins in the gut if cholestyramine is not available. Pet Poison Hotlines may be consulted for additional treatment advice.

**To report an illness:** contact Arkansas Department of Health at [adh.zoonotic@arkansas.gov](mailto:adh.zoonotic@arkansas.gov) or 501-280-4136.

**To report suspect nuisance or harmful algal blooms:** contact Arkansas Department of Environmental Quality at [https://www.adeq.state.ar.us/complaints/forms/nuisance\\_algae\\_complaint.aspx](https://www.adeq.state.ar.us/complaints/forms/nuisance_algae_complaint.aspx) or [https://www.adeq.state.ar.us/complaints/forms/harmful\\_algae\\_complaint.aspx](https://www.adeq.state.ar.us/complaints/forms/harmful_algae_complaint.aspx) or 501-682-0923.

**For additional information:**

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[http://www.merckvetmanual.com/mvm/toxicology/algal\\_poisoning/overview\\_of\\_algal\\_poisoning.html?qt=cyanobacteria&alt=sh](http://www.merckvetmanual.com/mvm/toxicology/algal_poisoning/overview_of_algal_poisoning.html?qt=cyanobacteria&alt=sh)

<http://www.mdpi.com/2072-6651/5/6/1051/htm>

<http://www.health.state.mn.us/divs/idepc/diseases/hab/vet/index.html>

[http://www.dec.ny.gov/docs/water\\_pdf/habspets.pdf](http://www.dec.ny.gov/docs/water_pdf/habspets.pdf)

<https://www.nps.gov/buff/learn/news/buffalo-river-water-quality.htm>