



## “Lakespert” – Hear Me Out: Stop Blaming Cyanobacteria

Madeline Reilly /  
Steve Lundt, CLM

Let me introduce you to our guest “Lakespert” for this summer issue of LakeLine. Madeline lives in Vermont and is NALMS’ 2025 Education, Communications, and Outreach (ECO) Intern. She’ll be working on education and outreach projects and is interested in full-time work in this field. Take it away, Madeline . . .

~ Steve Lundt

Thanks, Steve! Over the last two years I worked as an environmental educator in the Lake Champlain Basin, which spans 8,234 square miles across parts of Vermont, New York, and Québec. During that time, I had countless conversations with the public about cyanobacteria blooms (or HABs: harmful algal blooms). For locals and tourists alike, Lake Champlain’s beaches are a quintessential part of summertime in our region. Yet with warming summers and more frequent severe storms, beach closures due to HABs are becoming part of our summer routine. Smaller ponds and lakes throughout the watershed are now regularly affected by blooms, too.

In response, our region has a robust network for monitoring cyanobacteria and streamlining data into real-time maps and resources (read more in *Lakeline*’s Summer 2019 issue!). While public communications around HABs appropriately focus on mitigation and safety, many people still don’t know much about cyanobacteria and why blooms form. As an educator, I’m always seeking ways to deepen public understanding of environmental issues in ways that empower people to take action. How we talk about HABs greatly impacts this understanding. As blooms affect more lakes, opportunities arise to educate people not only on how to stay safe, but how they can help prevent blooms.

When talking with people, I observed a sense of contempt toward cyanobacteria, as well as alarm over cyanotoxins. When summer plans are foiled by pea soup water and “BEACH CLOSED” signs, it’s understandable why people assume the fault lies in front of them rather than in our lawns, our farms, stormwater and wastewater infrastructure, or severe storms. And when cyanobacteria are perceived as toxic nuisances,

it overshadows the reality that they are native and essential members of our ecosystems. To fill in these gaps, I’ve thought of two ways to enrich existing messaging: (1) highlighting the ecological role of cyanobacteria; and (2) emphasizing how human behavior and landscape change are driving blooms.

#1: Let’s start with a refresher on cyanobacteria – they’re quite fascinating! Similar to algae in function but taxonom-



Figure 1. *Microcystis aeruginosa* (bottom) and *Aphanizomenon flos-aquae* (top right) from a bloom in Barr Lake near Denver, CO (microscopic images). They’re among species known to produce cyanotoxins, but let’s zoom out to understand why HABs aren’t really their fault. Photo: Abbie Culbertson.

ically distinct, cyanobacteria are single-celled organisms that produce oxygen through photosynthesis (Figure 1). They're the ancestors of chloroplasts in photosynthetic plants, meaning they predate the oxygen-rich atmosphere that supports life today. Cyanobacteria belong in our waters and serve as essential building blocks of our ecosystems. Without them, life as we know it likely wouldn't exist.

#2: By changing the narrative around cyanobacteria being the primary source of "harm" in HABs, we can encourage behavioral changes that address the root causes. Yes, HABs can be toxic because certain species produce cyanotoxins. However, a fuller explanation considers that cyanobacteria are always present, and human activities create the conditions for potentially toxic blooms. For disappointed beachgoers, a HAB may be their first up-close-and-personal experience with nonpoint-source pollution; while the problem manifests on the water, the "blame" is spread out over topography and time. Here's our teaching opportunity: use what we know about cyanobacteria to explain why our actions are to blame. An informed public helps us shift from simply managing the problem to being proactive.

In fact, despite their frustration, most people I spoke with wanted to help. We know it's not a cure-all for landowners to plant vegetative buffers or reduce their use of fertilizer, but we also know that every action has an impact that can be scaled up. And we certainly have more agency than our resident cyanobacteria. While they can only respond to changing conditions, our choices on land determine those conditions.

How do we put this into practice? Organizations that monitor HABs can hold community awareness events to share the fuller story. Use newsletters and digital communications to share bite-sized information. Connect with libraries and schools. Alongside safety tips, beach signage can include the roles of cyanobacteria and our actions. Does your municipality share information in multiple languages? Recruit interpreters to translate signage and written materials, and artists to create visuals. The simplest way: talk to your lake-loving friends and neighbors! Share what you know and ask them to do the same. Now is the time to spread the word and expand our thinking

to reach more people. Thanks for hearing me out.

**Madeline Reilly** is the 2025 NALMS Education, Communications, and Outreach (ECO) Intern. She holds a B.S. in Environmental Studies from the University of Vermont and has worked with all ages as an environmental educator focusing on the Lake Champlain watershed. As the ECO Intern, she is developing a webinar targeting the needs of early career members and supporting NALMS communications. Feel free to reach out to her at [mreilly@nalms.org](mailto:mreilly@nalms.org)!



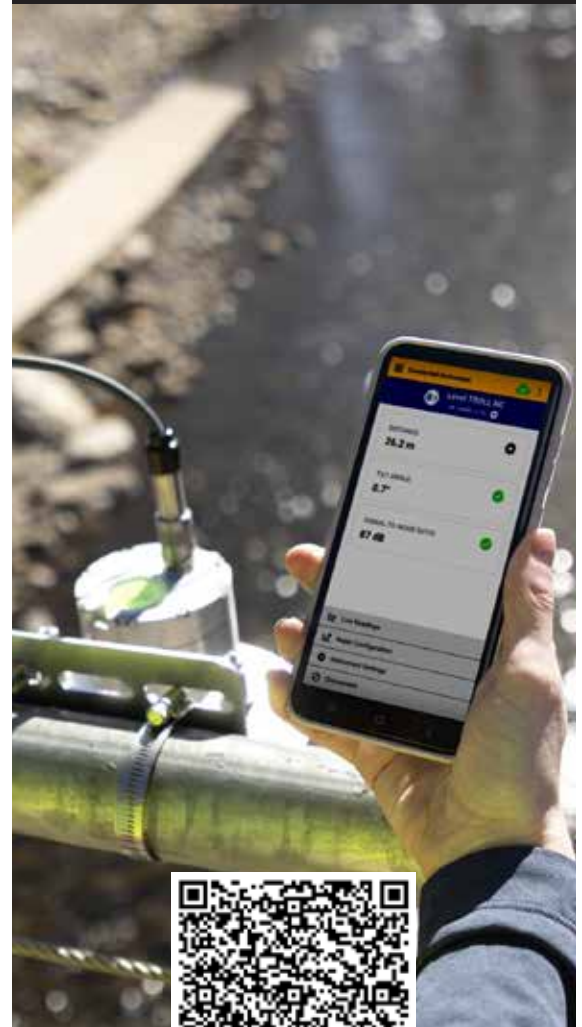
**Steve Lundt**, Certified Lake Manager, has monitored and worked to improve water quality at Barr Lake (Denver, Colorado) for over 20 years. Steve is active with the Colorado Lake & Reservoir Management Association and is a past Region 8 director for NALMS and an active member since 1998. ✨



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