



# Great Lakes HABs Collaborative NEWSLETTER

LINKING SCIENCE AND MANAGEMENT TO REDUCE HARMFUL ALGAL BLOOMS

Winter 2020

## What's happening with the HABs Collaborative Steering Committee?

### Expansion of the Steering Committee:

Originally, the [HABs Collaborative Steering Committee](#) was comprised of 12 individuals from the HABs research and management communities around the Great Lakes Basin. In an effort to increase the number of agencies and research areas covered, the Steering Committee was expanded to 26 members in January 2020 as original members recommended new members.



Great Lakes HABs Collaborative Organizational Structure, 2020

### January 2020 Committee Meeting

In early January, Steering Committee members met at the Commission's office in Ann Arbor, Michigan, (with a number of remote participants joining as well) to discuss the scale, scope, and audience of the Collaborative's products; our current plans for products; and a vision for the future. Here are key takeaways:

- The **scale** of the Great Lakes HABs Collaborative's focus should be the entire Great Lakes Basin, including inland waters.

- Our **scope** includes harmful cyanobacteria and cladophora, as well as interdisciplinary work (environmental, social, and economic) focused on the cause and effect of blooms.
- **Audience** will shift depending on the product being developed, but in general we look to provide helpful information to the science and management community (with “management” including elected, appointed, and other government policymakers and implementers) at all levels of government. The nonprofit community and other entities working to increase engagement on the cause and effect of HABs are also a key audience.
- Members felt that we’re on the right track with the three **products** being developed now (see below for more information) but recognize that many questions remain regarding the impacts of HABs on human health. They agree that future work should help share information on the latest science across multiple exposure pathways with the Great Lakes Basin community.

## Products Being Developed

The following products are being developed by small teams of Steering Committee members with the intention of sharing drafts with our broad community of Listserv members in the coming months.

### “Who Does What” Fact Sheet

Ohio EPA’s Paul Gledhill, Michigan EGLE’s Michelle Selzer, Wisconsin DNR’s Gina LaLiberte, and Cherri Baysinger from the Interstate Technology Regulatory Council are working together on a fact sheet to clarify roles and responsibilities among the many government agencies working to address HABs in the Great Lakes Basin. The goal is to help the Great Lakes Basin community look beyond all our acronyms and understand connections among various management strategies and opportunities to share knowledge and get involved.

### Knowledge Gaps White Paper

This large team is working to prepare a white paper to advise the National HAB Committee as it updates the HARRNESS (Harmful Algal Research & Response National Environmental Science Strategy) covering 2005–2015. The work will also support federal agency reports on progress under HABHRCA, the new Annex 4 Adaptive Management Task Team, and other Great Lakes Water Quality Agreement obligations.

### New Website & Research Dashboard

As part of our effort to build a new website for the Collaborative, a small group of Steering Committee members (Dr. Silvia Newell, Wright State University; Dr. Tim Maguire, University of Windsor, and Cherri Baysinger, ITRC) and our colleague Becky Pearson, chief operating officer for the Great Lakes Observing System, are working with Commission staff to establish a vision for a HABs Research Dashboard. This catalog of different areas of HABs research will allow funders and others interested in understanding “who is doing what” in the HABs research community to connect with potential collaborators and develop projects to meet the needs of the Great Lakes Basin management community.

### Steering Committee Members Working on the White Paper:

Dr. Chris Winslow and Heather Raymond, the Ohio State University; Dr. Tim Maguire, University of Windsor; Dr. Mary Anne Evans, USGS; Dr. Tim Davis, Bowling Green State University; Dr. Greg Boyer, State University of New York; Ruth Briland, Ohio Environmental Protection Agency; and Kristy Meyer, Freshwater Future

## Upcoming Collaborative Webinars

### February 28, 2020 *Smart Watersheds for Smart Lake Management*

Please join us Friday February 28 at 1:30 p.m. EST for a webinar focusing on improved tributary monitoring technology leading to smart watersheds. To register for the webinar, go to: <http://bit.ly/SmartWatershed>

This webinar will feature presentations from: **Bryan Stubbs, Cleveland Water Alliance, Dr. Branko Kerkez, University of Michigan, and Myles Downhour and Angela Crain, USGS.**

### March 26, 2020 *Lakewide Action and Management Plan*

Save the date for a webinar highlighting Lakewide Management under the Great Lakes Water Quality Agreement and lake-by-lake reports on HAB-related issues and research. The webinar will take place Thursday March 26 at 2:00 p.m. EDT and feature presentations from each Lake Partnership Co-chair. To register for the webinar, go to: <http://bit.ly/LAMPwebinar>

## Member Spotlight



*Dr. Eveleth (center) and her students on South Bass Island.*

We know a lot of good work is happening around the Great Lakes Basin thanks to many of our Collaborative members. Help us share that work by suggesting content for the “Member Spotlight” section of this quarterly newsletter. Please share your ideas with Nicole Zacharda at [nzacharda@glc.org](mailto:nzacharda@glc.org).

### **Dr. Rachel Eveleth, Oberlin College**

In May 2019, Dr. Eveleth received a HABs Collaborative grant to study the cycling of nutrients in Lake Erie throughout the winter months. In the winter season, the lack of buoys and monitoring cruises leads to data gaps when it comes to understanding biogeochemical cycling of Lake Erie. However, what happens in the winter impacts nutrient, oxygen, and carbon cycles throughout the

spring and summer. Filling this data gap will help document winter conditions that may change in a warming climate and inform our understanding of summer HAB dynamics.

Recent work has shown that winter diatom blooms are happening in Lake Erie, however there is little known about how active diatoms are during the winter months. To investigate this, Dr. Eveleth and a team of students are measuring the net community production of the water column continuously using an Equilibrator Inlet Mass Spectrometer hooked up to a flow-through system of lake water. Further, they are collecting a suite of sonde data, pH and alkalinity to qualify CO<sub>2</sub> fluxes, and nutrient and chlorophyll samples. Measurements for this effort started on January 7 and will continue until March 27. This data will be interpreted in conjunction with lake ice cover and variability, though ice has been sparse this year.

Dr. Eveleth and her students look forward to sharing their data and findings with the community later this year.

### **Dr. Joseph Ortiz, Kent State University**

Dr. Joseph Ortiz of Kent State University and colleagues recently [published a manuscript](#) on using a specialized method (VPCA spectral decomposition method) to monitor the brown tide along the southeast coast of Florida. Dr. Ortiz and collaborators used satellite imagery over a 1.5-year period to observe the waxing and waning of the brown tide at 300-meter resolution using cloud-free, daily images. The method was able to differentiate the brown tide from cyanobacterial and sediment-related signals.

Methodology from this work allows remote sensing of algal blooms to move beyond chlorophyll-a monitoring to more targeted monitoring that separates the potentially toxic part of a bloom from non-harmful green algae and diatoms, or suspended sediment and pigment degradation products.

Dr. Ortiz is interested in the application of this method in other environments. Daily overpasses of the satellite used for this work mean that this method is well suited to study of larger water bodies such as the Finger Lakes and the Great Lakes but will also work on smaller lakes that are at more than 1 km in length and width.

If you are interested in learning more about this work or collaborating with Dr. Ortiz, please contact him at [jortiz@kent.edu](mailto:jortiz@kent.edu).



*Dr. Joseph Ortiz*



## Mobile HAB lab

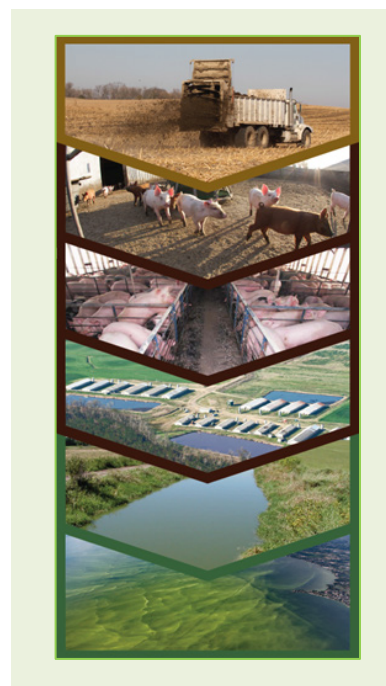


The Regional Science Consortium (RSC), is located in the research wing of the Tom Ridge Environmental Center on the shores of Lake Erie in Erie, Pennsylvania. The RSC laboratory has been monitoring cyanotoxins along the Lake Erie shoreline and Presque Isle Bay since 2014. The team collects weekly samples at 24 locations and analyzes for one to four different cyanotoxins. When cyanotoxin concentrations exceed the thresholds outlined in the team's HAB Monitoring Strategy (developed by the RSC's HAB Taskforce), beach and shoreline managers post signage warning of concerns for dogs and/or humans. Over time, the RSC team found that the public

did not have a clear understanding of HABs and potential impacts, especially to dogs. To enhance education and outreach efforts, the RSC received a grant for the Pennsylvania Department of Environmental Protection's Environmental Education program to create the "Mobile HAB Lab". This mobile outreach and education exhibit not only travels along the Lake Erie shoreline, but also to locations throughout western Pennsylvania to educate the public on HABs. To see a full video tour of the RSC Mobile HAB Lab visit [www.regsciconsort.com/mobile-hab-lab/](http://www.regsciconsort.com/mobile-hab-lab/).

## International Joint Commission: Report on Manure Management

In its new report, the International Joint Commission's Great Lakes Water Quality Board (WQB) examines the increasing trend of large, concentrated livestock feeding facilities as a source of Great Lakes pollution. Where there are more animals there is more animal waste (manure). While manure has nutrients that help crops grow, applying excessive amounts of manure to fields and at the wrong times can cause nutrients from manure to pollute waters and cause or worsen algal blooms. The report, *Oversight of Animal Feeding Operations for Manure Management in the Great Lakes Basin*, outlines actions to better manage the manure from large-scale livestock operations to protect the Great Lakes. According to the report, manure management rules are different for each Great Lakes state and province, and oversight lacks rigor. The WQB recommends that the Great Lakes states and provinces coordinate to consistently regulate storing and applying manure to land.



## Great Plains and Midwest HABs Conference, Contributed by Steering Committee member Gina LaLiberte of the Wisconsin DNR

Federal, tribal, state, university, and NGO partners met at the University of Kansas - Edwards Campus February 2-5, 2020 for the U.S. EPA Great Plains and Midwest Harmful Algal Blooms (HABs) Workshop. The goal of the workshop was to share information and build relationships between participants' water quality programs by identifying shared goals, needs, and barriers as related to HAB prevention and source water protection in agriculture dominated landscapes.

Workshop sessions included presentations on state and federal nutrient reduction efforts, science, and funding, state case studies on HAB mitigation and management, and partnerships for HAB research, monitoring, and response. New Steering Committee Member Ruth Briland of the Ohio EPA presented on Source Water Management and Mitigation Strategies in Ohio. Wisconsin's Gina LaLiberte spoke on The Lake Superior Collaborative's Algal Bloom Subgroup: Partnering for Nearshore Cyanobacterial Bloom, Monitoring, Research, and Public Health Outreach. Additional Great Lakes state presenters appeared for Minnesota, Michigan, and Indiana.

A smaller group convened at U.S. EPA Region 7 Headquarters in Lenexa, Kansas, to synthesize the information from the first two days of the workshop and identify priority needs for nutrient reduction, funding opportunities, and collaboration for HAB management and research. The group also identified immediate and long-term next steps that state and federal partners will take to meet HAB research and management needs.

## Are you going to ASLO?

The HABs Collaborative will be submitting an abstract to share our approach for the HABs Research Dashboard at the June 2020 ASLO-SFS conference in Madison, Wisconsin. If you are a Listserv member presenting on HABs in the Great Lakes at ASLO, let us know and we'll do a feature in our Spring 2020 newsletter. Visit the event webpage at: [www.aslo.org/madison-2020](http://www.aslo.org/madison-2020) and note that abstracts are to be submitted for consideration by March 9!

## Get involved and stay in touch!

### Twitter

The Collaborative is active on Twitter! Follow us to get up-to-date information about our work and other HABs-related content. [@GLHABsCollab](https://twitter.com/GLHABsCollab)

### Join our Listserv!

To join our Listserv and receive announcements about the Collaborative, please email [Ken Gibbons](mailto:kgibbons@glc.org) at [kgibbons@glc.org](mailto:kgibbons@glc.org)