Great Lakes HABs Collaborative
NEWSLETTER
LINKING SCIENCE AND MANAGEMENT TO REDUCE HARMFUL ALGAL BLOOMS Spring 2020

What's happening with the HABs Collaborative Steering Committee?

May 2020 Committee Meeting

The Steering Committee met in May to discuss the status of existing products being developed (HABs Knowledge Gaps Fact Sheet and a "Who Does What with Great Lakes HABs" Factsheet), proposed human health "mini-reviews," and Steering Committee governance.

Per the **Charter finalized in May 2018**, our co-chairs, Silvia Newell of Wright State University and Michelle Selzer of Michigan's Department of Environment, Great Lakes, and Energy, served their two-year term and invited colleagues to take on this role on behalf of the Collaborative.

Katie Stammler of Essex Region Conservation Authority and Tim Maguire of the Cooperative Institute for Great Lakes Research volunteered to stand as co-chairs of the Collaborative's work. A current list of Steering Committee members can be found **here**.

Silvia Newell and Michelle Selzer will stay on the Steering Committee for the next two years. A special thanks goes to both for their leadership during their term as co-chairs. Through their efforts, a Charter was instituted, the Collaboratory was shifted to a Collaborative, and the Steering Committee was expanded. Their guidance was instrumental in continuing the Collaborative's work creating a community of practice across the water management and research sectors working to address HABs in the Great Lakes.

Meet the new co-chairs

Dr. Katie Stammler

Katie Stammler has been with the Essex Region Conservation Authority as the Water Quality Scientist and Source Water Protection Project Manager since 2014. In 2019, Dr. Stammler became an adjunct Assistant Professor at the Great Lakes Institute for Environmental Research at the University of Windsor and serves on several graduate

Dr. Katie Stammler

student committees. Dr. Stammler has participated on many local, Provincial and international initiatives related to the reduction of HABs and leads several research and outreach programs at ERCA to achieve these goals. Dr. Stammler has experience conducting water quality research across Ontario and received her BSc from the University of Windsor, MSc from the University of Guelph, and Ph.D. from the University of Western Ontario. Dr. Stammler is very excited to co-chair the HABs collaborative with Tim Maguire and looks forward to reinforcing the international relationships needed to restore Lake Erie.

Dr. Timothy Maguire

Timothy Maguire is a postdoctoral research fellow for the Cooperative Institute for Great Lakes Research (CIGLR) at the University of Michigan, working with Dr. Casey Godwin from the university's School for Environment and Sustainability and Dr. Craig Stow of NOAA's Great Lakes Environmental Research Laboratory. Dr. Maguire's research involves the use of a variety of complex statistical approaches, GIS, and artificial intelligence/machine learning techniques to develop numerical water quality models in the Great Lakes. Prior to working with CIGLR and NOAA GLERL, Dr. Maguire was a postdoctoral researcher at the University of Windsor Great Lakes Institute of Environmental Research with Dr. Scott Mundle. Additionally, his research topics include quantifying agricultural impacts on riverine water quality, urban ecology, and the impact of urbanization on biogeochemical cycles. Dr. Maguire received his Ph.D. in biology from Boston University, M.L.A. in extension studies and environmental management from Harvard University, and B.S. in marine safety and environmental protection from Massachusetts Maritime Academy.

Dr. Timothy Maguire

Annex 4 update on COVID-19 and Lake Erie nutrient monitoring efforts for 2020

The 2012 update to the Great Lakes Water Quality Agreement created Annex 4 on Nutrients as a means of collaboratively evaluating and address nutrient impacts on the Great Lakes. Twice yearly, leaders of the region's environmental and natural resource agencies convene to discuss progress under the GLWQA and various annexes, including Annex 4.

The June 2020 Great Lakes Executive Committee meeting was convened for remote participants and included an update on the impact of COVID-19 on governments' nutrient monitoring. Below are highlights from the briefing supplied by the Annex 4 subcommittee:

- **Spring boat trips by EPA and ECCC for monitoring water quality on Lake Erie did not take place, and summer surveys are on hold.** NOAA's seasonal sampling of HABs in Lake Erie has been delayed but is expected to resume - perhaps at a reduced scale - in time to begin tracking the formation of the bloom by mid-summer.
- **ECCC's nearshore monitoring of Cladophora in Lake Erie and Lake Ontario is on hold and it is unclear when it will resume.**
- **ECCC's atmospheric precipitation samplers have been shut down until further notice**. No atmospheric deposition data are being collected for the 2020 load calculations.
- **The suspension of field sampling operations will also lead to data gaps in the 2020 load calculations for some of the major tributaries and connecting channels. Automated water quality samplers and pump stations are still running in most cases, but data quality may suffer due to inability to check on and calibrate them.** As a result, there will be significant gaps in nutrient load data from Canadian tributaries. In Ohio, Heidelberg has continued daily monitoring of the Maumee River at a reduced frequency, but many other tributaries will be missing data for the spring loading period. While some impacts such as missed samples, delays in lab processing, and/or equipment malfunctions were inevitable, the USGS does not anticipate significant periods of missing flow and/or nutrient load data as a result of COVID-19 impacts.

The Great Lakes HABs Collaborative encourages colleagues to share how COVID-19 has affected your work this year, along with any emerging solutions, so that we may continue to build our community of practice and support one another during this unprecedented time. Start a conversation on Twitter: **@GLHabsCollab.**

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. A draft will be shared with listserv members for feedback later this summer.

Knowledge Gaps Fact Sheet

During the last Steering Committee meeting, it was determined that instead of creating a white paper, this large team will work to prepare a fact sheet to advise legislative leaders in both nations and the United States' National HAB Committee as it updates the **HARRNESS (Harmful Algal Research & Response National Environmental Science Strategy)** covering 2005-2015. This piece will be an easily digestible piece to inform those involved in the development of policies to restore and protect the Great Lakes from HABs.

Human Health "mini-reviews"

The Collaborative is seeking to award four honorariums to researchers working on the effect of HABs on human and animal health. The honorariums will be for the researchers to work with the Collaborative's Steering Committee on a public facing fact sheet on the current state of science related to:

- **Effects of long-term exposure/cumulative exposure;**
- **Exposure to toxins through aerosolization;**
- **Plant uptake of toxin and fish accumulation; and**
- **Effects of toxin on animals/livestock.**

Steering Committee Members Working on the Fact Sheet

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

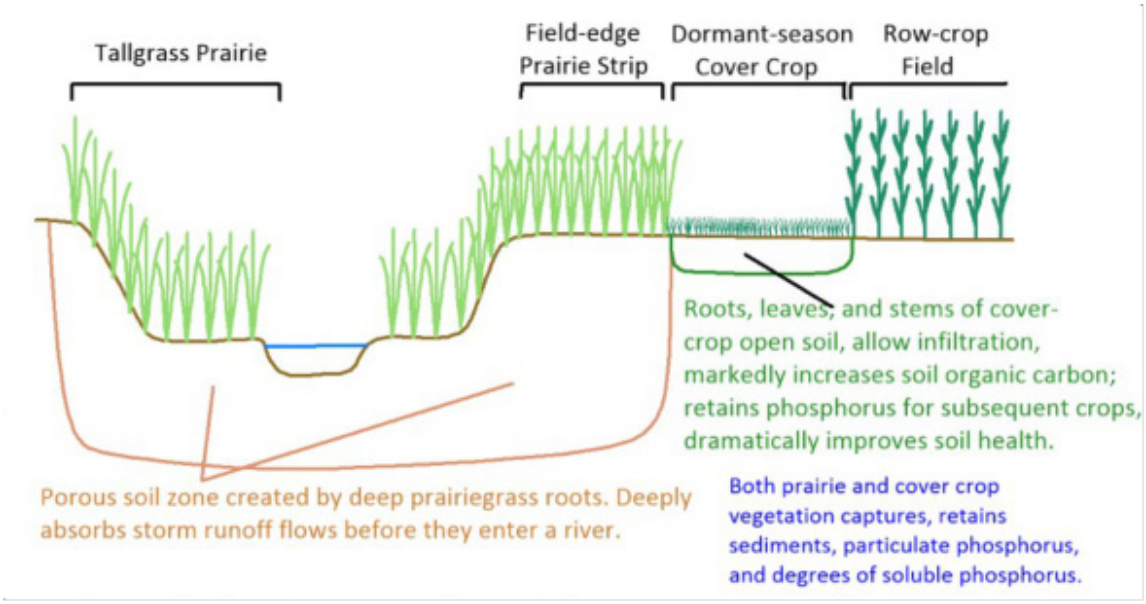
Kristy Meyer, Freshwater Future

Member Spotlight

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.

Innovative Vegetation-Based HAB Solution Research Begun in Ohio

A research team at the University of Akron Research Foundation (UARF) has received a $659,260 grant from the Great Lakes Restoration Initiative to implement and assess the unique abilities of selected vegetation to capture and retain both algal nutrients and eroded sediments. The team, including soil health and cover crops expert Jim Hoorman, Ohio prairie biologist John Blakeman, and OSU agriculture drainage engineer Dr. Jon Witter, will implement, at least in part, the successes of the Iowa State University STRIPs program on the soils and topography of NW Ohio, measuring changes in water quality.



Schematic of new program in Ohio to demonstrate and assess ability of selected vegetation to capture and retain algal nutrients and sediments.

Two types of vegetation will be utilized. First, in both ditches and along downslope field edges, strips and stands of selected Ohio-native prairie grasses and wildflowers ("forbs") will be planted. Those selected plants have profound sediment and algal nutrient capture capabilities, far exceeding conventional "buffer strips" of cool season grasses. Prairie strips in Iowa have captured high percentages of both nutrient ions and sediments, typically in the 80 to 90% ranges. To selectively capture and retain algal nutrients in field-edge strips, prairie vegetation has not yet been assessed in Ohio. This project will do that.

The second type of vegetation will be in adjacent row-crop fields, where selected dormant-season cover crops will be planted to increase soil health, microbially capture plant nutrients, minimize erosion, and increase percolation. Initially, five farm sites in the Maumee River basin will be planted and precisely assessed. For information, contact Wil Hemker, Fellow, UARF, **hemker@uakron.edu,** 330-208-6104.

Cleveland Water Alliance

For over four years the **Cleveland Water Alliance (CWA),** a Water Innovation Engine, has been working with partners across the region to build a next-generation data infrastructure for Lake Erie. This **"Smart Lake Initiative"** is launching several new smart water technology programs this summer.

Kelly Siman of Erie Open Systems demonstrates how to measure phosphates and nitrates using a smartphone and a 3D-printed spectrometer.

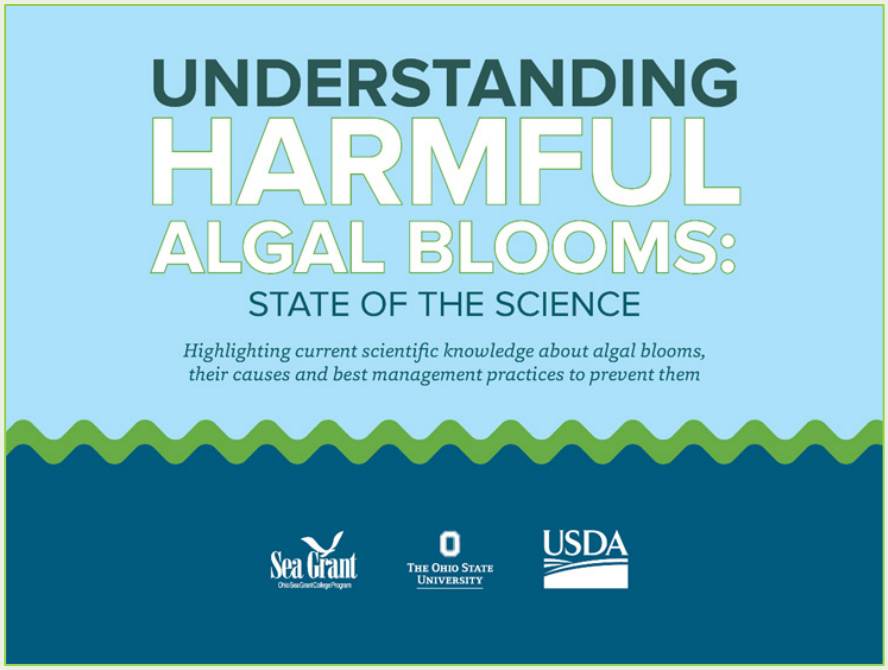
CWA is partnering with community foundations and local organizations around the Lake Erie basin to build a basin-wide movement of **citizen scientists armed with low-cost, 3D-printed spectrometers** to test phosphate and nitrate levels. The coordinated network of citizen scientists will leverage a common data platform to facilitate high volumes of crowd sourced research-grade water quality data across the region, providing for a clearer picture of water quality in previously under-monitored areas.

In June, CWA is launching a Smart Watershed Pilot in Old Woman Creek in partnership with LimnoTech and the Ohio Department of Natural Resources to show how inexpensive sensor technology used in everyday products such as dishwashers and cell phones can effectively monitor water quality to improve the health and safety of Lake Erie. These low-cost sensors will measure and collect data in several key areas, including wind speed, air temperatures, solar energy, water temperature, water levels and flow, and turbidity. To learn more, visit **https://clevelandwateralliance.org.**

Understanding Algal Blooms: State of the Science Virtual Conference

The Understanding Algal Blooms: State of the Science Virtual Conference, held online on September 2, 2020, will highlight current scientific knowledge related to algal blooms. Research and outreach leaders will present findings from recent studies and identify important areas of uncertainty. Specific topics will include collaborations and partnerships critical for improving water quality, understanding lag times and soil phosphorus dynamics, the latest in edge-of-field research and best management practices.

Members of the academic research community, state and federal agencies and the agricultural community are especially encouraged to attend. The event is free, but **registration** is required.



Get involved and stay in touch!

Find us on Twitter

The Collaborative is active on Twitter! Follow us to get up-to-date information about our work and other HABs-related content. @GLHABsCollab

Join our Listserv

To join our Listserv and receive announcements about the Collaborative, please email Ken Gibbons at kgibbons@glc.org