
IAGLR
LAKES Letter
Early Career Research
Summer 2026, No. 30

IAGLR 2027

70th

DULUTH, MN

MAY 24–28

Call for Sessions

You're invited to propose a session for our 70th Annual Conference on Great Lakes Research, taking place next May in Duluth, Minnesota. The theme is *Great Lakes, Global Impacts.*

Learn more at iaglr.org/iaglr2027

DUE SEPTEMBER 18

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Crossing acid mine drainage (Poopó River) near the community of San Agustín de Puñaca, Oruro, Bolivia. *Photo by Misael Mamani - HydroBot Project.*

Features

On the Cover. Lyndsie Collis examining zooplankton. *Photo by Katherine Glassner-Shwayder.* See page 34.

LAKES *Letter*
Summer 2026, No. 30
iaglr.org/lakesletter

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A note from the SEC Committee co-chairs

Dear IAGLR members and friends,

Students and early career researchers (ECRs) are critical to the future of the Great Lakes. They bring new questions, methods, perspectives, insights, and energy to Great Lakes work, while also navigating many of the challenges in starting a career in science, policy, management, and community-based work across large global freshwater systems. This issue of *Lakes Letter* celebrates their dedication to these waters and reflects on the importance of creating spaces where students and ECRs can connect, learn, share, and lead.

In 2025, IAGLR formed the Student and Early Career Committee to better connect, represent, and empower students and early career researchers within the association. The committee serves as a conduit between emerging and established practitioners of research and knowledge in large lake systems. It now has more than 30 members across four countries, ranging from undergraduate students to postdocs. In addition to shaping this issue of *Lakes Letter*, the committee has worked to organize events and networking platforms such as a workshop at IAGLR's recent joint conference with the Society of Canadian Aquatic Sciences (SCAS) as well as an emerging mentorship program.

During conference week in May, the committee co-hosted a Monday morning networking workshop designed to help students and ECRs navigate what lay ahead (see page 22). The workshop featured a panel discussion with individuals from different career stages and fields, plus facilitated breakout conversations that gave participants a foundation to build on. When the official scientific program began on Tuesday, students and ECRs were primed to share their research, host sessions, develop new relationships, and engage in conversations about large lake research. The committee also co-organized a student social with the SCAS team to connect students and ECRs outside the formal conference space.

As we look ahead, we hope IAGLR members will continue to champion the committee and support future student- and ECR-led initiatives. This support can take many forms: offering mentorships, participating in events, sharing opportunities, and creating meaningful pathways for them to succeed, contribute, and lead. Sustaining a strong Great Lakes research community requires more than welcoming new faces into existing spaces; it requires valuing their perspectives and giving them a role in shaping what comes next. Supporting emerging researchers and practitioners is an investment in both individual careers and the relationships, ideas, and collective capacity that will influence the future of lake systems globally. As one of our committee members reminds us, "Youth are the future but also the present."

Navjot Dhaliwal
Alexander T. Duncan
SEC Committee Co-Chairs

IAGLR award and scholarship winners

Congratulations to the following recipients of IAGLR's awards and scholarships, presented at the annual conference in May.

Lifetime Achievement Award

Gail Krantzberg

McMaster University

John R. (Jack) Vallentyne Award

Joan Schumaker Chadde

Michigan Technological University

Anderson-Everett Award

Scott McNaught

Central Michigan University

Journal awards

Jay A. Austin, Eric J. Anderson, Andrew D. Gronewold, Steven A. Ruberg, Craig A. Stow, and **Mathew G. Wells** received the **Chandler–Misener Award** for their paper "Winter thermal structure across the Laurentian Great Lakes" published in the *Journal of Great Lakes Research* 51, Issue 3, 2025. Pictured, Austin accepting the award from JGLR Editor Margaret Docker at the awards ceremony in May.

Tyler Harrow-Lyle (Environment and Climate Change Canada) received the **Elsevier Early Career Scientist Award** for the article "Developing the first binational dreissenid mussel biomass map for Lake Erie," published in the *Journal of Great Lakes Research*, Volume 51, Issue 6, 2025.

Herbert Nakiyende (National Fisheries Resources Research Institute and Makerere University) received the **Elsevier Student Author Award** for the article "Light-based small pelagic species fishing in Lake Albert: Divergent perceptions, conflicts, and implications for multispecies fishery management," published in the *Journal of Great Lakes Research*, Volume 51, Issue 5, 2025.

Editor's awards

The editor's awards honor outstanding support of the review process for the *Journal of Great Lakes Research*.

Michael Twiss (Algoma University) received the **Outstanding Associate Editor 2025 Award**. Twiss is pictured here accepting the award from JGLR Editor Margaret Docker at the awards ceremony in May.

Scott McNaught (Central Michigan University, pictured above) received the **Outstanding Reviewer 2025 Award**.

Appreciation awards

Upon completion of their terms of service, the following board members received the **IAGLR Board of Directors Appreciate Award:**

- **Jada Langston**, University of Michigan
- **Neil Rooney** (IAGLR Past President), University of Guelph
- **Zanko Zandsalimi**, University of Virginia

In addition, we were pleased to recognize the 2026 conference chairs with the **IAGLR Conference Appreciate Award:**

- **Pauline Gerrard**, IISD Experimental Lakes Area (Site Chair)
- **Vince Palace**, IISD Experimental Lakes Area (Program Chair)

Thank you also to **Marc Gaden**, Great Lakes Fishery Commission, recipient of the **JGLR Outgoing Associate Editor Appreciation Award.**

Scholarships

Congratulations to this year's scholarship recipients. Their research is featured in articles throughout this issue.

Jeffrey Ashby, Indiana University, received the **IAGLR Outstanding Student Paper Award** for research on "CRASID: A new community-based tool for risk, resilience, and evacuation planning" presented at the IAGLR 2025 conference.

Emily Bardwell-Patino, Michigan State University, received the N**orman S. Baldwin Scholarship** for research on "Assessing the genomic impacts of stocking on lake trout (*Salvelinus namaycush*) recovery in Lake Superior."

Lyndsie Collis, The Ohio State University, received the **IAGLR Scholarship** for research on "Interactions between zooplankton and cyanobacterial harmful algal blooms in western Lake Erie."

John Gargasz III, Grand Valley State University, received the **IAGLR Outstanding Student Poster Award** for research on "Macroinvertebrate community development in newly constructed interdunal wetlands of Lake Michigan" presented at the IAGLR 2025 conference.

Emma Rice (Clarkson University) received the **IDEA+ Research Scholarship** for the presentation titled "Great Lakes fish food systems in a changing world: The diverse values of Lake Erie and Lake Victoria."

Gadfly Stratton received the **IDEA+ Presenter Scholarship** for the presentation titled "Priorities for diversity, equity, inclusion & accessibility in aquatic sciences" at the 2026 conference.

Grace Watson, The Ohio State University, received the **David M. Dolan Scholarship** for research on "Quantifying bioavailable phosphorus flux in a sub-watershed of the Maumee River."

Demetra Williams, The Ohio State University, received the N**orman S. Baldwin Scholarship** for research on "Investigating the impacts of dam removal on walleye spawner movements, juvenile recruitment, and fisheries harvest in Lake Erie."

IAGLR adds fourth staff position

Recognizing both IAGLR's ongoing needs and the importance of dedicated conference management, the association has created a new full-time program manager position.

"We are very excited to welcome Brianna Ellis in a more formal, full-time capacity as part of the IAGLR team," notes IAGLR Executive Director Jérôme Marty.

Ellis served as conference coordinator, a contract position, since 2022. In her new position, she will continue to help lead the planning and delivery of the annual conference while supporting other programs such as IAGLR's growing science-policy initiatives.

IAGLR opposes proposed changes to federal assistance rules

IAGLR is deeply concerned about the proposed revisions to federal financial assistance regulations by the Office of Management and Budget (Docket OMB-2026-0034). These changes would reshape the funding, management, and sharing of scientific research in the United States. Should they be enacted, these changes would undermine the foundation of U.S. science by placing political review above peer review, restricting scientific collaboration, and endangering the sustainability of scholarly publishing, including our own *Journal of Great Lakes Research*.

In June, IAGLR submitted comments opposing these changes, emphasizing that Great Lakes management and stewardship depend on rigorous, independent science and international collaboration, not political gatekeeping. In doing so, we joined other scientific societies in urging the administration to withdraw or significantly modify this proposal.

Member kudos

Every quarter brings new reasons to celebrate the people who make up IAGLR. Join us in congratulating these members on their achievements.

Michael Back for defending his dissertation at Kent State University and starting a postdoc at The Ohio State University. His Ph.D. with Lauren Kinsman-Costello focused on sediment nutrient cycling in restored wetlands across Ohio, and he is now transferring those skills to work on a project with Steve Lyon assessing the efficacy of cascading waterways at retaining water, sediment, and nutrients flowing directly off agricultural fields in northwestern Ohio.

Kate Brown (University of Windsor) for being awarded a research fellowship through Viking's onboard science program. She will continue collaboration with Viking by studying microbial diversity in the Great Lakes through a two-month placement on the expedition vessel *Viking Octantis*.

Yvonne Drebert (Inspired Planet Productions) for being named by the National Geographic Society as one of 15 recipients worldwide of the 2026 Wayfinder Award presented by Kia. The Canadian filmmaker was noted for her use of "advanced underwater drones to reveal the unseen depths of freshwater systems, applying an ocean exploration approach to inland waters. She leads expeditions in the most extreme and least-studied environments in the Great Lakes, the world's largest freshwater system. Through her work, Drebert promotes lower-impact research methods while expanding how freshwater ecosystems are explored and documented."

Jill Furgurson (North Carolina State University) for successfully defending her dissertation. Furgurson's Ph.D. research examined engagement and governance of emerging environmental biotechnologies, including research with Tribal and Indigenous partners on perspectives and governance of genetic biocontrol for invasive species in the Great Lakes.

Marc Gaden (Great Lakes Fishery Commission) for receiving the 2026 Chuck Pistis Award from the Michigan Charter Boat Association. The award recognizes individuals outside the charter industry who have provided meaningful support, assistance, and contributions to Michigan's sport fishing community and Great Lakes resource management. Gaden has been with the Commission since 1995, spending three decades connecting fishery science and management with legislators, anglers, and fishing communities across the basin. He has served as executive secretary since 2024.

Michael L. Jones (Peter A. Larkin Professor of Quantitative Fisheries, Emeritus, Michigan State University) for receiving the Great Lakes Fishery Commission's Jack Christie/Ken Loftus Award for Distinguished Scientific Contributions Toward Understanding Healthy Great Lakes Ecosystems. Commissioner Niall Cronin, who presented the award, noted, "Mike is one of the most productive, thoughtful, and visionary scientists the Great Lakes community has known. His 123 publications and more than 9,000 citations speak for themselves—but the number that tells the real story is his more than 200 co-authors. Sure, that reflects productivity, but it truly reflects partnership. Mike's ability to build relationships and foster collaboration across disciplines is at the heart of everything he has built."

Don Felix Ouma (Mbarara University of Science and Technology) for successfully defending his master's thesis on "Interspecific competition, biological status and distribution of *Labeo victorianus* and *Labeobarbus altianalis* in R. Nyando and R. Yala systems, Kenya."

Nhu Hoang Van Pham (Purdue University) for successfully defending her dissertation. Her Ph.D. research focused on "Physical processes and water quality effects in a flood control river-reservoir system."

Titus Seilheimer (Wisconsin Sea Grant) for being named one of the 2026 Champions of Conservation by the Lake Michigan Stakeholders. He also was elected chair of the U.S. Committee of Advisors for the Great Lakes Fishery Commission.

Molly Wick (Lake Superior National Estuarine Research Reserve) for her new position as research coordinator with the Lake Superior National Estuarine Research Reserve in Superior, Wisconsin. Wick serves as the lead scientist at the reserve, developing and directing a collaborative and applied research program that works across scientific disciplines to advance knowledge and understanding of freshwater social-ecological systems on the St. Louis River estuary and coastal Lake Superior. Wick holds expertise in cultural ecosystem services, human-nature relationships, aquatic ecosystem assessment, coastal and estuarine habitat restoration, and environmental decision making.

Submit a kudo

Have a recent achievement, award, or milestone you'd like to celebrate? Let us know! Submit a kudo to lakesletter@iaglr.org, and we'll share your accomplishment with the IAGLR community. Your success inspires us all.

Welcome new IAGLR members!

Please join us in welcoming the following members who joined the association between May and July 2026.

Omotoyosi Banjo
Owen Bear
Joshua Berry
Julia Bradshaw
Sarah Buffett
Eric Collins
Seth Franklin
Claire Herbert
Bailey Hill
Aiden Hindmarch
Clinton Jacobs
Rachael Keighan
Benjamen Kline
Dawn Martin-Hill
Amber McKay
Harshi Pankesh Modi
Carolina Montes
Michael Nagel
Jadyn Piatt
Kevin Rath
Brittany Sanders
Brianna Sands
Shannon Seneca
Lienne Sethna
Emiigwed Shognosh-Diaz
Sara Smith
Matthew Trzcinski
Alice Turnham
Courtney Vaughan
Ray Watkins
John Wells

Opportunities for students and early career members

Apply for a scholarship

See page 35 for more info. Applications will open soon and be accepted through November 1.

Run for the IAGLR Board

We're looking to fill one Canadian student member position as well as one Canadian and one International regular member positions. Gain leadership skills, make meaningful connections, and help shape IAGLR programs. View the Call for Nominations and submit your information by October 2.

Join IAGLR's SEC Committee

This is an exciting opportunity to be part of something new—where your voice and ideas will directly shape the Student and Early Career Committee's activities and vision from the ground up. To sign up please, complete the registration form. We'd love to hear from you!

Host an IAGLR conference

We're looking for a Canadian host for our 2028 conference and a U.S. host for 2029. Is that you?

We consider proposals from host institutions based on the following criteria:

- Proposed scientific program
- Conference facilities and logistics
- Location

If you're interested in hosting an IAGLR conference, please contact Conference Committee Chair Ed Verhamme at confchair@iaglr.org.

In memoriam: G. Douglas Haffner (1948–2026)

THE GREAT LAKES RESEARCH COMMUNITY mourns the loss of Gordon Douglas Haffner, "Doug" to all his acquaintances. Dr. Haffner was emeritus professor of biology at the University of Windsor. Doug was a towering figure in large lake science, whose career spanned more than five decades and whose influence shaped generations of scientists and institutions alike.

Doug's path to becoming one of Canada's most respected aquatic scientists began with achieving his Bachelor of Science degree at Queen's University in Kingston, Ontario, followed by a Ph.D. at Royal Holloway College, University of London, United Kingdom. Before joining the University of Windsor in 1986 as an associate professor in biology, he held senior positions with the Ontario Ministry of Environment (head of Lake Systems, 1974–1979), the International Joint Commission (senior biologist, 1979–1981), and Environment and Climate Change Canada (head of the Water Quality Program, 1981–1986). This breadth of agency experience gave Doug an unmatched understanding of how science informs policy—knowledge he used throughout his academic career.

In 1992, Doug was promoted to full professor and became the inaugural director of the University of Windsor's Great Lakes Institute for Environmental Research (GLIER), the first Canadian university research institute dedicated to the Laurentian Great Lakes and other large lakes around the world. As a founding member of GLIER, Doug contributed to the growth and direction of the institute throughout his career. In 2001 he was awarded a Tier 1 Canada Research Chair in Great Lakes Research, which he held until 2017.

Doug's scientific output was extraordinary for a researcher specialized in large lakes. Google Scholar lists more than 325 entries spanning from 1974 to 2026—a remarkable arc of over 50 years of continuous publication. A trained phycologist, Doug studied eutrophication throughout his career, from early work on Great Lakes nutrient dynamics to contemporary studies of primary production in western Lake Erie and a 2026 paper on harmful algal blooms in China's Three Gorges Dam reservoir. For many years, he collaborated on landmark studies of organic contaminant biomagnification in aquatic food webs, work that bridged aquatic ecology, toxicology, environmental chemistry, and food web modeling. Beyond the Great Lakes, Doug played a pivotal role in addressing primary production and speciation in Indonesian lakes, notably examining diatom evolution over millennia in deep cores from Lake Matano. This work, conducted in partnership with Inco Mining, demonstrated Doug's ability to bridge academia and industry with mutual respect and scientific rigor.

Doug's contributions were recognized by numerous awards, including the Ontario Research Excellence Award in Water Quality. His service to the community was equally distinguished. Doug served on the IAGLR Board of Directors from 1989 to 1993, including a term as president from 1991 to 1992. He also co-chaired the Detroit River Monitoring and Research Area of Concern Implementation Committee and served multiple terms on NSERC's Ecology and Evolution Discovery Grant Review Committee. As a mentor, Doug trained a large contingent of undergraduate students, graduate students, and postdoctoral fellows. Many of these individuals went on to outstanding careers in academia, government, and industry while continuing to collaborate and publish with him. He maintained an exceptional standard of excellence in every scientific publication bearing his name.

Above all, Doug was one of the most down-to-earth persons one could meet. He filled the halls of GLIER's second floor with his jubilant laughter and was able to cut through institutional nonsense better than any contemporary, keeping the institute's priorities at the forefront. His course on limnology was beloved by students in the biology program, and he had an uncanny ability to keep student attention during entire lectures using nothing more than a single slide projected on screen. He was an effective and animated communicator with a talent for winning the room to his position, whether they were students, colleagues, members of the public, or funders. There is so much to celebrate about Doug Haffner and his life. He has left an everlasting impression and made contagious the quest for knowledge through the scientific method to all in his presence.

Doug Haffner leaves a legacy etched into the institutions, science, and people of the Great Lakes. He will be profoundly missed. Doug is survived by his wife Margaret, two sons, and three grandchildren.

Contributed by Ken Drouillard, Hugh MacIsaac, and Robert Letcher, Doug's colleagues at GLIER. In addition, Ken did his undergrad thesis with Doug, who inspired him to go to grad school. Rob obtained a Canada Research Chair (Tier 2) after coming to GLIER, working with Doug on the environmental chemistry and ecotoxicology of chemical pollutants.

Sullamithe Mercy Manduwa

Research Scientist, University of Malawi, AWIS 2025 alumus, and IAGLR's International Student Board Member

Describe your work.

I study fish communities in Lake Malawi, one of the African Great Lakes and home to more than 800 endemic and rapidly diversified cichlid species. I use environmental DNA metabarcoding to read the genetic material the fish species shed in the water. My graduate research at the University of Malawi—the first project of its kind there—used a universal fish marker, coupled with three novel cichlid-specific nuclear markers designed from whole-genome data on 1,375 cichlids. This captured the broader community including rare and endemic taxa missed by trawl surveys, opening a new route for monitoring one of the most diverse and taxonomically challenging fish communities known to science. After training in Professor Richard Durbin's lab at the University of Cambridge, I now work in the eDNA laboratory at the University of Malawi, built through the Science and Technology Research Partnership for Sustainable Development Japan-Malawi research cooperation. While collaborating with researchers at the universities of Antwerp, Tübingen, and Senckenberg, I also train students and technicians in eDNA methods. I also serve as the international student member on IAGLR's Board of Directors for 2026 to 2028, and I am a member of the African Women in Science program.

What inspired you to enter this work?

I was driven by how much remains unknown about Africa's Great Lakes and by the lack of research capacity available to the people, myself included, who depend on these waters for food and income. Innovative, sensitive, faster, and lower-cost methods like eDNA open greater channels for biomonitoring research in a country with limited resources and put the tools directly into local researchers' hands. For me, that was the real win, not just for Malawi, but for research capacity across Africa.

How has collaboration shaped your work, and how do you hope it will influence the future of large lakes research?

All this work was only possible for me because of collaboration, from the infrastructure and the training to the tools. Collaborations have played an even larger role in connecting me with renowned scientists, allowing me to contribute to Great Lakes research. This experience has shown me large lake science at its best: generations and disciplines pooling knowledge, with local researchers trained to lead their own molecular work rather than supplying samples elsewhere. I hope this model becomes what unifies large lake research globally, linking African Great Lakes like Malawi with the Laurentian Great Lakes and other systems IAGLR represents, around a shared commitment to building capacity wherever the research is conducted.

My commitment to research capacity in Malawi has been recognized through several awards: a small research grant from the Nyika-Vwaza Trust for a fish assessment of Lake Kazuni using eDNA metabarcoding; a microgrant from the eDNA Collaborative, providing equipment for eDNA training in Malawi; and the Global Engagement Travel Grant to present at the Cichlid Science 2026 meeting this September at the University of Antwerp, Belgium.

What is something about yourself that you'd like to share with other IAGLR members?

I love my work, and for me, there is nothing quite like answering a question about a lake I have known my whole life with a tool built with my own hands. I am currently exploring Ph.D. opportunities and welcome contact from anyone looking to collaborate on such research, particularly across Africa's Great Lakes. Malawi's untapped potential for ancient eDNA research, among other questions, would open doors for more collaboration and capacity building.

Julie Maurer

ORISE Fellow, U.S. Environmental Protection Agency, Great Lakes Coastal Science Division

Describe your work.

I am an Oak Ridge Institute of Science and Education (ORISE) Fellow at the U.S. Environmental Protection Agency's Great Lakes Coastal Science Division. I have been fortunate to work on a variety of projects throughout my early career, but phytoplankton ecology and water quality are common threads that have connected my graduate and post-graduate research. My master's research in Narragansett Bay, Rhode Island, focused on microbial community shifts driven by algal toxins produced by the diatom *Pseudo-nitzschia*. When I joined the EPA as a post-graduate fellow in 2024, I moved to the Great Lakes region and shifted my focus to freshwater algal communities and water quality. I joined a water quality modeling research group where I learned how to apply hydrodynamic and ecosystem models to study the fate and transport of nutrients in the Great Lakes. Following the EPA's reorganization, I moved to a team studying phytoplankton community responses to nutrients, while continuing to collaborate with modelers on Lake Erie adaptive management efforts. My current project investigates emergent harmful algal blooms in Lake Superior. Using in-situ nutrient uptake experiments, I measure phytoplankton community responses to nutrient influxes and identify which species respond the quickest. Ultimately, I hope to apply the data from these experiments to refine algal parameters in ecosystem models, helping resource managers assess risk and predict blooms in the future.

What inspired you to enter this work?

I've held a deep love and appreciation for the natural world since I was a child, and I wanted to be a biologist from the age of five. I was inspired to focus my career on phytoplankton from a class I took in college simply called "Algae." I went to college in the Pacific Northwest, where I spent a semester at a marine science campus collecting water samples, surveying seaweed on the rocky beaches and tide pools, and learning about the fascinating world of phytoplankton. Beyond the subject itself, I was inspired by my professor, who effortlessly blended her love of the outdoors and community engagement into her research.

How has collaboration shaped your work, and how do you hope it will influence the future of large lakes research?

When I graduated college, I was fixated on pursuing a research career, though I decided to take some time to work before going back to school. I ended up working as an invasive species inspector for several years. At the boat launch, I spoke with diverse community members about invasive species and their concerns about the health of their pets, children, and the local lakes we shared. I came out of that experience wanting to do research that could make a positive difference for our shared waters. At the EPA, I have been fortunate to collaborate on multi-generational teams of scientists and learn from multiple knowledge systems. These collaborations taught me that the transfer of knowledge from one generation to the next is vital—a lesson underscored abruptly during last year's federal restructuring. I'm inspired by the Great Lakes scientific community's efforts to blend knowledge systems across disciplines and cultures to tackle big problems that affect us all, like climate change, and I hope to remain a part of that work.

What is something about yourself that you'd like to share with other IAGLR members?

Having lived near salt water most of my life, I never expected to live in the Great Lakes region or become a fan of the "fresh coast"! Now nearing the close of my second year living on Lake Superior's North Shore, I've enjoyed exploring its forests, coastline, and cold waters—which call to mind my childhood home, Puget Sound.

Science is a verb

A conversation with 2026 Vallentyne Award winner Joan Chadde

By Julia Obuya

WHEN JOAN CHADDE was named the 2026 recipient of the IAGLR Vallentyne Award, the recognition celebrated more than three decades of leadership in Great Lakes education and outreach. Throughout her career, Joan has inspired thousands of students, teachers, community members, and future scientists to engage with freshwater science, not simply by learning about it, but by experiencing it firsthand. As part of the magazine's new mentoring series, I had the opportunity to speak with Joan about her career, her philosophy of education, and the lessons she hopes the next generation of scientists will carry forward.

Joan Chadde teaching an after-school science class. Credit: Michigan Technological University.

Congratulations on receiving the Vallentyne Award. What does this recognition mean to you?

Joan: Reading the award letter was a walk through my career. I kept thinking, "Oh yeah, I remember that. Oh, that was so much fun." It brought back so many wonderful memories. I wasn't doing the work because I expected recognition, so having my peers acknowledge it meant a great deal. It made me feel grateful, recognized, and incredibly happy. It was really the frosting on the cake after doing work that I genuinely loved.

What of your experiences best reflect the values recognized by this award?

Joan: One of the greatest opportunities I had was the freedom to be creative. When I arrived at Michigan Tech in 1995, my supervisor told me, "You know what is best to do! Run with it!" That trust allowed me to develop a wide variety of innovative programs that connected people with science in meaningful ways. Because grants entirely funded our work, every proposal became an opportunity to ask what would make the biggest difference. That is how programs like the Great Lakes Teacher Institutes, family science and engineering nights, water festivals, after-school and summer science programs, and Great Lakes research vessel experiences came to life. Every project was different, and I loved that variety. I probably worked a lot of 12-hour days, not because I had to, but because I loved what I was doing.

You have worked with diverse groups of people throughout your career. What made those programs successful?

Joan: We always tried to remove as many barriers as possible. If transportation was a challenge, we found funding. If schools couldn't come to us, we went to them. One of my favorite programs was taking students and community members aboard Michigan Tech's research vessel to learn how scientists assess the health of the

Welcome to

Mentoring Q&A

This issue launches a new regular department pairing a student or early career member with an established professional for a conversation about career, science, and lessons learned along the way. If you would like to suggest a topic or a mentor to feature, please email us at lakesletter@iaglr.org. We would love to hear your ideas for future issues.

Great Lakes. We also brought teachers together for week-long field institutes where they worked directly with scientists. Everything was hands-on because that is how people learn best. Science is a verb. It's not something you sit in a classroom and memorize facts about. Students have to *do* it. Whether digging soils, identifying wetland plants, or collecting water samples, students were doing science instead of simply hearing about it. That is what makes learning memorable.

What science communication strategies have you found most effective?

Joan: Scientists are excellent at communicating with each other, but how can they make their research accessible to a lay audience? I recall one colleague saying, "I can publish a paper, and I'll be lucky if seven people read it." We held our first water festival in 2012 at Michigan Tech's new Great Lakes Research Center where more than 500 students, grades 4–12, experienced Great Lakes science through hands-on activities presented by Michigan Tech students and faculty and community experts. That comparison always stayed with me. I believe in visibility. People have to know what you're doing. Whenever we organized a workshop, field day, or community event, I invited the media—TV stations, newspapers, whoever would come. You might have 15 teachers at a workshop, but if the media reports on the event, you've reached thousands more.

You mention *place-based learning*. What does that mean?

Joan: Environmental education starts close to home. Students connect most deeply with the environments they experience every day. People often talk about protecting places that are far away, like tropical rainforests. That is important, but students also need to understand and value the environment where they live. Place-based learning is about helping students identify a need in their school or community and developing a plan to address it. It could be a new school recycling program or a school garden to provide vegetables for lunch. It is incredibly empowering because stewardship becomes something they practice, not just something they learn about.

What gives you hope for the future of the Great Lakes?

Joan: My hope is that we are raising enough young people who not only understand the Great Lakes but also develop a passion to protect them. Education matters. Helping young people understand watersheds and the relationship between land use and aquatic ecosystems prepares them to become future scientists, educators, community leaders, decision makers, and responsible citizens. Programs like the Lake Superior Youth Symposium for middle and high school students, held every two years since 1995, demonstrate the value of connecting students across state and international boundaries and encouraging them to view freshwater stewardship as a shared responsibility. Another project with broad impact involved creating more than 80 12x15-foot canvas floor maps of the Great Lakes basin and several dozen maps of the Lake Superior watershed. Students can gather around a map, locate the rivers flowing into the lake, and trace the watershed boundary. This activity shows them that what happens on the land in a watershed can affect the water quality of the lake. Students then work together to remove "pollution" (cans with labels like "sediments," "livestock waste" etc.) from the lake, acting out how states and provinces cooperate to clean them up.

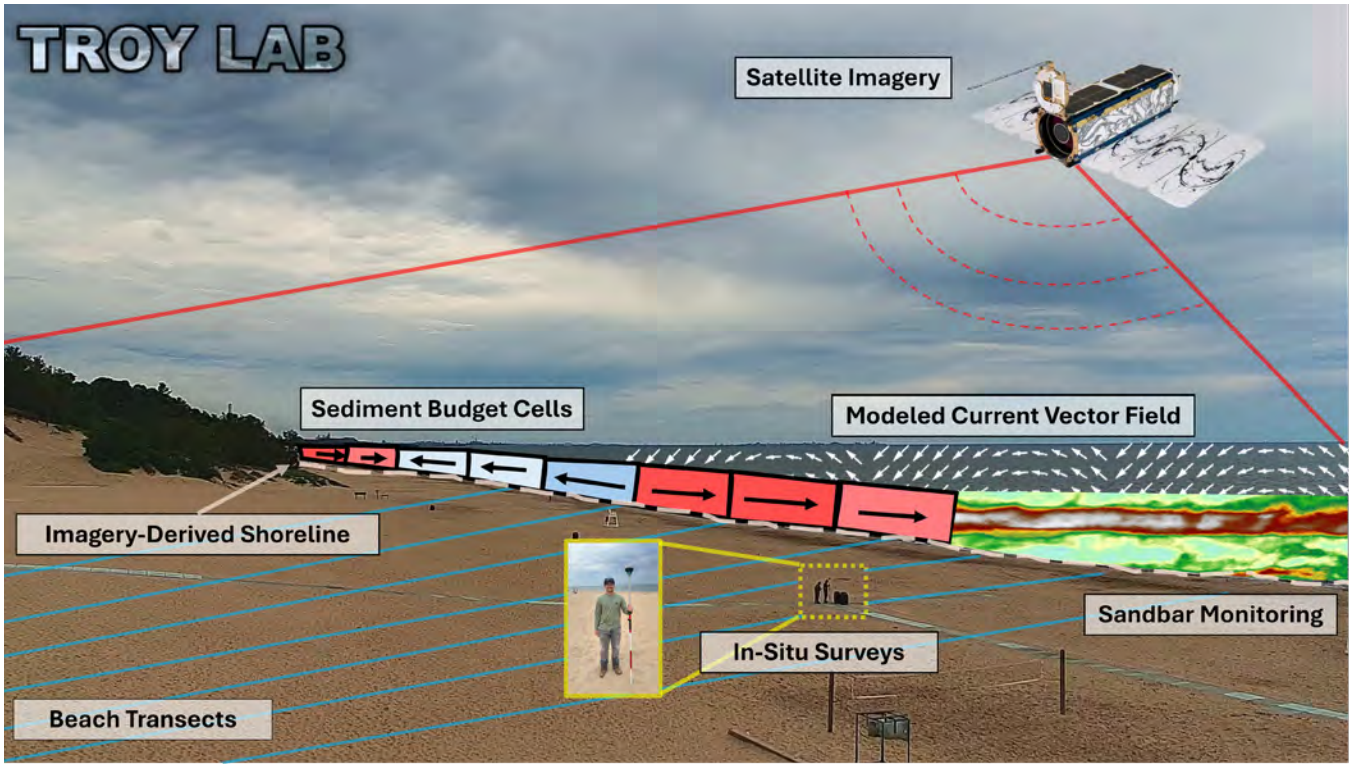
Finally, what advice would you offer students and early career scientists?

Joan: Share your science beyond academia. Be an enthusiastic educator—your excitement is contagious! Make science relevant. Collaborate. Find ways to remove barriers so more people can participate. A scientifically literate citizenry is essential to improving the environmental quality of our communities, our country, and the world.

Students at the 2023 Lake Superior Youth Symposium at Northland College in Ashland, Wisconsin, using a Lake Superior floor map. The students are "removing pollution" (represented by cans) from Lake Superior as part of a cooperative cleanup activity.

JOAN'S CAREER shows that meaningful science communication is not simply about making research easier to understand. It is about creating opportunities for people to participate, ask questions, and see themselves as part of the solution. Her stories demonstrate how much impact one person can have by remaining passionate, persistent, and willing to invite others in. For students and early career scientists, her message is clear: sharing knowledge is not enough. Engage youth and adults in learning on-site whenever possible, communicate with diverse audiences, and use your knowledge to serve the communities and environments around you. As Joan reflected on the future of freshwater stewardship, she left me with one final thought that perfectly captured both her career and her philosophy: "You can't complain if you're not going to do something about it. There is no time like the present!"

Julia Obuya is a graduate research assistant in the Department of Biological Sciences, Aquatic Microbiomes at Bowling Green State University. She currently serves on the IAGLR Board of Directors.



Collaborative framework illustrating how complementary methods come together to characterize the same stretch of coastline.

Creating a collaborative environment for coastal research

By Kendahl Klatt, Owen R. Hodges & Muhammed Nedim Sahvelet

WITHIN THE TROY LAB at Purdue University, early career research is united by common coastlines but shaped by distinct engineering and scientific backgrounds. Before engaging with Great Lakes research, members of our lab worked on geotechnical engineering projects, space and satellite technologies, and hydraulic modeling. Our unique disciplinary backgrounds influenced the questions we asked and the methods we applied to study the Great Lakes coastal system.

Initially, we set out to answer our questions through individual theses. Kendahl's work investigated shoreline change and river plume dynamics from satellite imagery. Muhammed examined how waves drive sediment transport through numerical modeling. Owen explored how nearshore sandbars evolve and migrate using remote sensing. As our research progressed, we discovered that understanding one process depended on understanding another. A changing shoreline can be mapped from satellite imagery, but its evolution depends on sediment transported by waves and temporarily stored within migrating sandbars. River plume behavior reflects many of the same hydrodynamic conditions that influence sediment redistribution, while observations collected in the field give context needed to interpret patterns visible from above. These connections revealed that our projects examined different stages of the same coastal processes, such that answering our individual research questions increasingly required one another's data, expertise, and analyses.

That realization has changed the way we think about Great Lakes research. Coastal science is often organized into disciplines such as geomorphology, hydrodynamics, ecology, remote sensing, and water quality, but the lakes themselves do not function within rigid boundaries. Understanding coastal evolution ultimately requires understanding of how

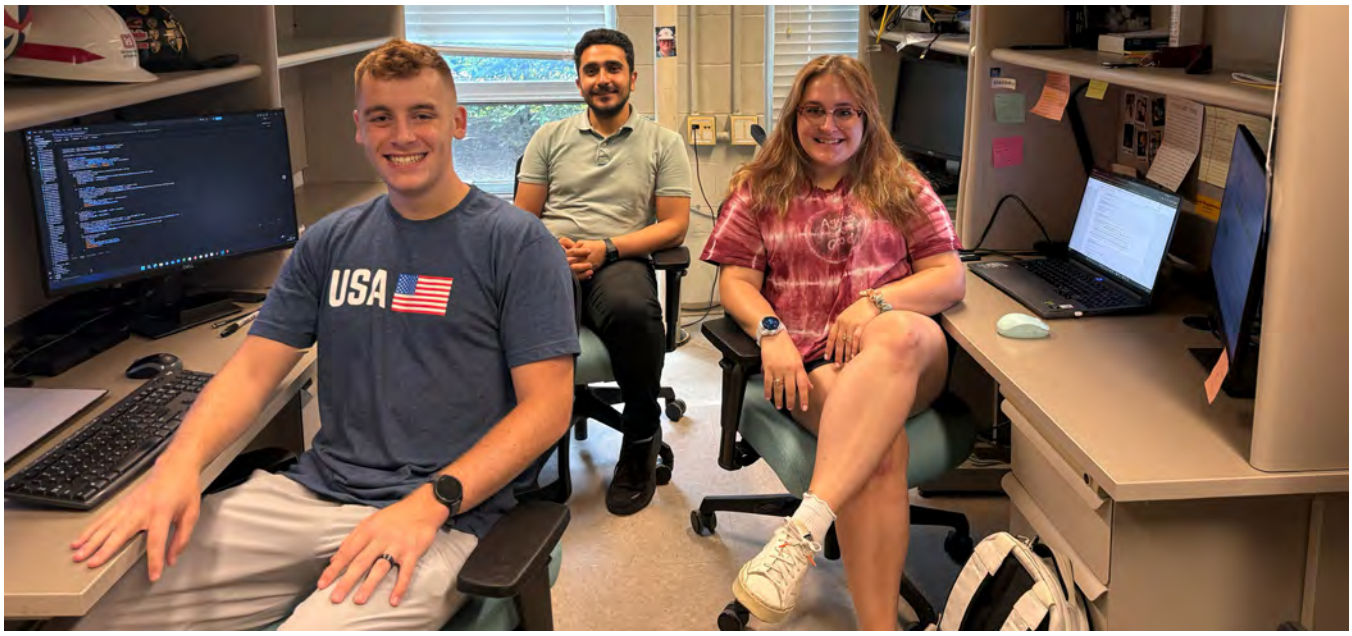
Our projects captured different stages of the same coastal processes, such that answering our individual research questions increasingly required one another's data, expertise, and analyses.

these processes and disciplines interact. Collaboration in our lab became more than sharing space. Rather, collaboration grew into designing field campaigns that support multiple projects, ensuring data are accessible to other members of the lab, and fostering a culture that encourages researchers to share expertise openly, regardless of experience or discipline. These efforts made our individual projects stronger and more complete.

One of the most rewarding outcomes of this collaboration has been its impact on mentoring new researchers. This summer, when an undergraduate student joined our lab to study shoreline dynamics, his project naturally drew upon the complementary expertise of multiple graduate students. His research used satellite imagery for shoreline modeling while incorporating hydrodynamic model outputs to better understand the physical processes driving the changes he observed. Rather than learning a single methodology, he developed an appreciation for how shoreline position, wave dynamics, sediment transport, and numerical modeling all contribute to coastal evolution. Watching a first-time researcher connect these perspectives and begin asking interdisciplinary questions of his own has been one of the clearest examples of what a collaborative lab culture can achieve.

Perhaps the most valuable lesson we've learned as early career researchers is that interdisciplinary collaboration combines our expertise and expands the questions we can ask. The complexity of the Great Lakes means that no single researcher can fully understand every process shaping a coastline. Coastal evolution emerges from the interaction of countless physical, ecological, and environmental processes across space and time, making diverse expertise valuable and essential. By working together, we can produce research that serves engineers, scientists, decision makers, and the broader public. By integrating observations and numerical models, we move beyond merely documenting coastal change toward understanding the mechanisms that drive it. That broader perspective not only improves our understanding of how coastlines evolve today but also strengthens our ability to anticipate how they may in the future.

Kendahl Klatt, Owen Hodges, and Muhammed Nedim Sahvelet are graduate students at Purdue University.



From left, Owen Hodges, Muhammed Nedim Sahvelet, and Kendahl Klatt working together to interpret coastal data and integrate perspectives across research specialties.

Boating along the shores of Lake Titicaca to reach the water monitoring points. Photo by Universidad Católica Boliviana San Pablo.

Learning to row together

What community science and Indigenous communities taught me about water

By Carolina Montes

LABORATORY SCIENCE and field science complement each other. They are intertwined; one does not exist without the other in environmental research. As an early career researcher in Bolivia, I am motivated to inspire young people from rural areas in my country to believe that science is for everyone and that local knowledge should be integrated in decision making for projects. Water management should not treat water only as a resource, but also should help us see the connections and dependencies that exist around a lake, a river, or a wetland.

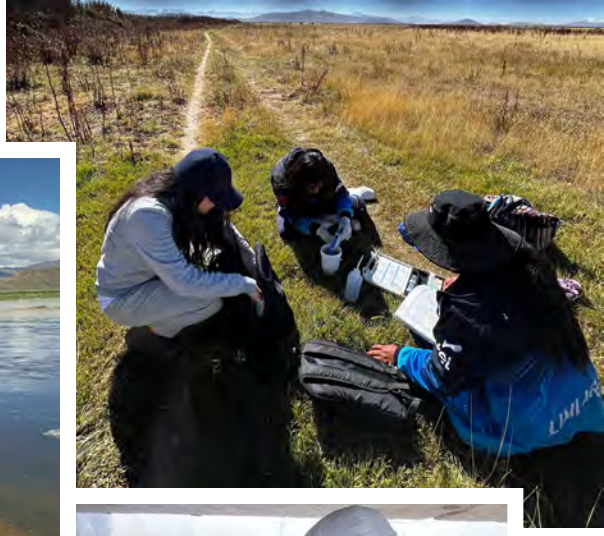
In 2024, I led a community science project with high school students from the Indigenous community of Chojasivi in Bolivia. The community sits in a pollution hotspot where the Katari River empties into the southeastern end of Lake Titicaca, the highest navigable lake in the world. Over six months, my role was to train the students in water quality monitoring using laboratory equipment. During the first few months, we navigated in their boats, building a friendship as they taught me how to row. Later, as drought set in, we had to travel on foot. One of the local students warned us that our sampling points would dry up by July, prompting us to redesign the study and select new sites together as a team. In the end, we successfully gathered all water sample measurements. That is what gets reported and expected in scientific literature—the data often seen as the heart of any project. But behind the data, between traditional dances and shared stories, the students told me about their childhoods and diets before urban pollution marked the Katari River. I learned that true community science listens to local voices and builds on teamwork, and that behind every paper lies a deeply human experience.

Following this project, I worked as a consultant on a project funded by the Canada Fund for Local Initiatives of the Canadian Embassy, evaluating heavy metal contamination in Lake Uru Uru. Over the course of a year, I conducted sampling across both the rainy and dry seasons. This work brought me to the Ayllu San Agustín de Puñaca, an Indigenous community deeply affected by local mining pollution. Although the study was originally restricted to Lake Uru Uru, I chose to extend a monitoring point downstream along the Desaguadero River—where the community lives—to help make the severity of the contamination visible. In this Ramsar wetland, I witnessed a stark environmental contrast: during the rainy season, a rich biodiversity featuring endemic birds; in the dry season, a desolate landscape where the wetland was reduced to a stream of acid mine drainage, displacing local wildlife. I came to realize that

behind every pH or turbidity measurement, there are people whose daily lives are directly shaped by what the water carries. I am currently awaiting journal acceptance for the manuscript, and nothing excites me more than the prospect of sharing these findings with the community.

Researching the environment teaches you that you are never fully prepared. Water is dynamic, always transcending its physical form, and impossible to control, which is precisely why I love studying it. I never know who it will lead me to meet or what experiences it will bring into my life as a researcher. Water manifests differently across the globe, carrying the very identity of each territory it flows through. Ultimately, water connects us as human beings: it ties us to local communities in the field, while bringing researchers together in urban spaces.

What has marked my life as a researcher, and my decision to keep on this path, is knowing that data in my country are lost because they go unrecorded and unreported. While I may be at the start of my career and my research is new, I believe we will grow together. As environmental engineers, we are often trained to monitor water resources. I love the technical side—getting to the lab, analyzing samples, and studying results. But the experience of stepping out of your comfort zone—walking over acid mine drainage, talking with local people, packing your field bag, organizing the trip, finding paths where none exist, navigating complex territories, traveling hundreds of kilometers, getting into the boat, and reaching the lake—that is what truly gives meaning to doing research.



Grouped Photos Above

Left: Members of Ayllu San Agustín de Puñaca observing water sample collection during the rainy season in 2025. *Photo by Marcelo Herrera.*

Right: Teaching water quality monitoring to students from Chojasivi, La Paz, Bolivia. *Photo by Chantal Sancam.*

Bottom: Analyzing water quality near the Desaguadero River, between Lake Uru Uru and Lake Poopó, using reagent kits and portable in-situ measurement equipment. *Photo by Marcelo Herrera.*

Carolina Montes is a research assistant in genomic surveillance at Instituto Nacional de Laboratorios de Salud, Bolivia. Looking ahead, she wants to keep studying water through the lens of One Health.

Crossing acid mine drainage (Poopó River) near the community of San Agustín de Puñaca, Oruro, Bolivia. *Photo by Misael Mamani - HydroBot Project.*

Lab members Andrew Pezda, Andrei Skelly, Lindsay Stankus, Kaylynne Dennis, and Bopi Biddanda (left to right) displaying books that have been reviewed or are under review by the lab.

Beyond the bench: How book reviews build better lab communities

By Bopi Biddanda

WHO READS BOOKS these days? For the most part, multimedia options have limited the use of physical books. Most students and scholars barely keep up with the key developments in their chosen field given the deluge of journal articles that regularly show up in their inboxes. Yet books that are scholarly works covering in-depth aspects of various subjects fill an important niche in everyone's growth, both in the sciences and humanities.

About two decades ago, I stumbled upon the idea of involving my lab members in group reading over the summer and preparing reviews of select recently published books in the field. Over the years, these summer activities have helped expand everyone's topical expertise, trained lab members in science communication, and, importantly, contributed to team-building among lab members.

I choose from a pool of books that I come across, such as those reviewed weekly in journals such as *Science* and *Nature*, those discussed on National Public Radio, or those recommended by colleagues or friends. I then buy a copy of the book for lab members to share, encouraging anyone who is especially inspired by the book's topic to take the lead on reading and writing the first draft of a review. Commonly, a student serves as the first author, and it is their first chance at being the lead on a collaborative writing project outside the classroom. As the book is circulated among the lab members, I encourage them to take notes, mark the margins with pencil, and collect their thoughts in advance of short group discussions that I help to schedule once everyone has completed the book. I typically choose books on broad, accessible topics (such as popular science), and I often collaborate with colleagues on multidisciplinary books covering more specialized subjects, where I can benefit from another's expert perspective.

> Like many shared activities, collective book reviewing strengthens communication, enriches learning, and fosters social cohesion within a group.

Not all reviews end up suitable for publication, but all carefully selected books provide authors with a valuable learning experience. Taking the pulse of an entire book in a few hundred words is challenging. First drafts occasionally

lack focus or are biased in some way. Collaborative input and discussions with co-readers often reset the focus and help develop a complete review worthy of submission to a publication. For students and early career scholars, published reviews showcase their interpretive and writing abilities to a broader audience. Book reviews in magazines and society newsletters reach wider audiences than articles in specialized journals, helping to communicate science and the humanities to the public. Moreover, collective review work connects participants—especially when the exercise actively incorporates input from all readers.

Some of the books my lab has recently reviewed are shown in the preceding photo. We are also expanding the scope of our reviews to include online-only publications (e.g., *Hoodwinked in the Hothouse: Resist False Solutions to Climate Change* and *UN World Water Development Report 2026 Water for All People*).

Like many shared activities, collective book reviewing strengthens communication, enriches learning, and fosters social cohesion within a group. Just choose a recently published book or report that piques your interest, gather your team, and dive in. The experience will not only deepen your lab's shared knowledge and connections, but it may even open exciting new avenues for your teaching or research.

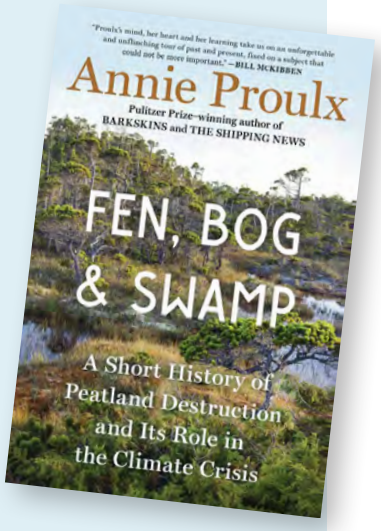
Bopi Biddanda is at the Annis Water Resources Institute, Grand Valley State University.

BOOK REVIEW

Ode to our vanishing wetlands

In *Fen, Bog & Swamp: A Short History of Peatland Destruction and Its Role in the Climate Crisis*, American writer and PEN/Faulkner Award winner Annie Proulx celebrates the significance of wetlands to humanity, biodiversity, and climate change, while describing their disturbing worldwide decline driven by drainage for resource extraction, farming, and development. Though waterlogged wetlands cover only about 5% of Earth's land area, they play an outsized role in filtering large amounts of water and carbon, serving as critical habitats for both terrestrial and aquatic life. As wetlands have been drained and peat harvested, the carbon dioxide and methane stored within them have been released back into the atmosphere. Large-scale degradation of wetlands began in 17th century England with the draining of fens. In the North American Great Lakes basin, more than half of the wetlands have been lost since European colonization.

Proulx's book covers wetlands across the world—from Siberian bogs and Brazil's Pantanal wetlands to the Okefenokee Swamp in the U.S.—while simultaneously comparing the similarities, differences, and intricacies of the various wetland types. In Chapter 1, "Discursive Thoughts on Wetlands," Proulx makes a historical accounting of wetlands over thousands of years, until the post-Columbian global colonization, when wetland loss reached levels great enough to impact global water resources and climate. In Chapter 2, "The English Fens," she describes how fens, an integral part of human societies from prehistoric times (Fen Peoples of old Britain), have been mostly lost in just the last two centuries. In Chapter 3, "Bogs," Proulx describes the bogs of the world, comparing their past and present states. In the final chapter, "Swamp," which also includes mangroves, she emphasizes the importance of knowing historical baselines for dealing with changing realities such as the sinking shorelines of Louisiana and its drowning marshes as sea level rises. Throughout the book, Proulx explores the common theme of how shared histories, human use, and climate change have combined to shape Earth's wetlands over time.



Ultimately, Proulx's book is both a tribute to the world's wetlands and a timely call to action for their protection and conservation. Since its 2022 publication, however, new threats have emerged. For example, projected water consumption by burgeoning AI data centers is alarming, and widespread damage to wetlands is already being reported. Wetlands that take weeks to drain can take millennia to recover. However, wetland restoration is possible, and Proulx documents some notable successes. For example, a recent report has recorded encouraging signs of a worldwide recovery of coastal mangrove swamps over the last four decades, as natural regeneration has gradually overtaken anthropogenic degradation. There is hope. It is time to heed Proulx's plea to let live, conserve, and restore our wetlands.

By Kaylynne Dennis, Lindsay Stankus, Andrew Pezda, Andrei Skelly, and Bopi Biddanda. All authors are at the Annis Water Resources Institute, Grand Valley State University.

Ali Iqbal, Abigail Wallace, and Hassan Ezzeddine at various shorelines around the Great lakes.

Stewarding the Great Lakes we inherit

By Hassan Ezzeddine, Ali Iqbal & Abigail Wallace

WHAT DOES IT MEAN to prepare for a future where the Great Lakes and professions dedicated to protecting them are changing faster than ever before? At three different points along the Great Lakes, each of us has stood on the shore experiencing the same mix of wonder, curiosity, and anticipation. Though our career stages and future goals differed, the same freshwater system and questions about its future brought us together on a new collaborative project. One of us is an undergraduate student, another is immersed in graduate research, and the third is applying graduate work to an early and accomplished career.

For students and early career professionals in environmental science, those same feelings of wonder, curiosity, and anticipation accompany the transition from the classroom to the professional world. We are entering a future shaped by rapid environmental change, new technologies like artificial intelligence, the growing concern of emerging contaminants, and increasingly complex decisions about how to steward one of the world's largest freshwater ecosystems.

Every generation inherits changed lakes, and what we consider "normal" is shaped by the conditions we grow up with. But understanding today's lakes requires actively looking for stories about previous baselines—past conditions that serve as reference points (Pauly 1995). Contaminants, for example, have affected the lakes for generations, and new ones will continue to impact them in the future. How should our generation, one that's increasingly desensitized to disaster, grapple with the disturbed lakes we inherit and reject their state as "normal"? This realization has taught us that preparing for the future means more than learning scientific concepts. It means learning to work across disciplines, organizations, and communities so we can help shape the future of the Great Lakes rather than simply accept the lakes we inherit.

A center without walls

The Great Lakes Environmental Advocacy Collaboratory (or *GLEAC*, for short), models how universities can tackle these threats while simultaneously preparing students to work in a collaborative environment across multiple disciplines to create science-informed policy. GLEAC pairs researchers at Wayne State University and Michigan's largest environmental advocacy organization, the Michigan Environmental Council. Together they work to uncover critical issues threatening the Great Lakes, how institutions interact around them, and what opportunities exist to strengthen collaborative governance.

Collaboratory, as a noun rather than an adjective, was coined by William Wulf as "a center without walls," joining *collaboration* and *laboratory* (Wulf 1993). GLEAC began with five faculty from Wayne State University spanning five disciplines and the chief executive officer of the Michigan Environmental Council, a team built around difference rather than sameness from day one.

As students and early professionals, we have each stepped into this work through different lenses. As depicted in the table on the next page, our journeys through GLEAC reflect distinct yet complementary learning objectives. Undergraduate Ali Iqbal has been working on recording organizations and networks across the basin. We have

Learning Objectives at Different Career Stages

Undergraduate	Graduate	Early Career
Science is comprehending data	Science is producing knowledge	Science is creating partnerships
Classroom & lab	Publishing research	Collaboration
Learning concepts	Learning methods	Learning leadership

found potential survey respondents by locating advisory boards and organizational webpages across the basin. "Old-fashioned" googling proved tedious, so this project became an opportunity to explore Python for web scraping, a reminder that even data collection now depends on new technical fluencies.

"This project has provided a lot of data on the professional world as well," Iqbal says. "It has given invaluable experience on how to apply research skills from the classroom in a professional setting, paving the way to graduate education and my ultimate goal of becoming a scientist."

Hassan Ezzeddine, the graduate student, is designing a survey to capture organizations' priorities across the basin, crafting questions that work equally well for all involved. Building those questions as a team, testing them at GLEAC's workshop at the IAGLR conference this past May, and revising based on community feedback has been a lesson in research methods and international perspectives no classroom could fully teach.

"This process has been a crash course on co-production and survey design," Ezzeddine notes. "As we seek to balance the different perspectives across the basin, it's been super cool being a part of a team that values student engagement, as these perspectives will largely inform the professional world I enter."

Abby Wallace, the early career professional, is using science to build partnerships, facilitate workshops, and translate those conversations into actionable next-steps. Serving as a key liaison between MEC and WSU brings its own challenges. Working with five faculty, an outside partner organization, and students learning on the fly requires navigating different vocabularies, priorities, and schedules.

"I've gained invaluable experience working alongside researchers and academic professionals," Wallace shares. "They offer a completely different outlook on changemaking than that of the stakeholders I usually work with. It's been incredibly rewarding to get an inside look at how the research that environmental advocates rely on to effect policy change is developed."

GLEAC has taught us much more than survey design, stakeholder mapping, or collaborative governance. It has shown us that preparing the next generation of Great Lakes professionals is about creating opportunities to listen, to collaborate, and to become comfortable working in the spaces where science, policy, and community intersect. The future of the Great Lakes will depend not only on the science we produce, but on the relationships we build. Each generation inherits the Great Lakes in a different state. Ours has both the opportunity—and the responsibility—to shape what the next generation will inherit.

We invite you to share your organization's priorities through the GLEAC survey.

Hassan Ezzeddine is an environmental science master's student and Ali Iqbal an undergraduate student majoring in biological sciences and philosophy, both at Wayne State University. Abby Wallace is the Special Projects and Research Manager at Michigan Environmental Council and MBA student at Northern Michigan University.

Preparing the next generation of Great Lakes professionals is about creating opportunities to listen, to collaborate, and to become comfortable working in the spaces where science, policy, and community intersect.

Participants, organizers, mentors, and panelists following the *From Here to There* pre-conference workshop at the 2026 IAGLR & SCAS Joint Conference in Winnipeg, Manitoba.

From here to there: Bridging people, pathways, and possibilities

By Ruth Duncan, Ella Kinart, Ian Stone, Erin Smith & Navjot Dhaliwhal

Building the workshop

Students and early career researchers (ECRs) often see established researchers and professionals and find themselves asking "how can I get there?" The newly formed IAGLR Student and Early Career (SEC) Committee recognized the need for opportunities to bridge the gap between these two groups, sparking the idea for a pre-conference workshop.

While conferences provide valuable spaces to present research, they can also be intimidating, particularly for those attending for the first time or navigating the many possible career paths within aquatic sciences. Recognizing the success of a previous IAGLR conference workshop led by FishCAST, an NSERC-funded co-curricular training program, the SEC Committee reached out to them to help bring this vision to life at the 2026 joint conference with the Society of Canadian Aquatic Sciences (SCAS) in Winnipeg, Manitoba. Together with the SCAS Student and ECR Engagement Committee, organizers spent four months designing a workshop that would encourage meaningful conversations, mentorship, and community building in an inclusive and welcoming environment. Rather than focusing solely on academic careers, the workshop highlighted the many directions a career in fisheries and aquatic sciences can take, reinforcing that there is no single path to success.

The workshop, *From Here to There: Connecting People and Pathways in Fisheries and Aquatic Sciences*, was held before the conference began to give participants an opportunity to first make connections with fellow students, ECRs, and established professionals. The welcoming space for open conversations helped participants feel safe sharing their experiences, asking honest questions, sharing practical advice, and building professional relationships that continued throughout the week. More than 80 participants registered, demonstrating a clear demand for spaces that foster mentorship, connection, and career development within the aquatic sciences community. With participants representing a wide range of backgrounds, experiences, and career stages, the workshop created an environment where learning flowed in every direction, reinforcing the idea that everyone has something to teach and something to learn.

The workshop experience

The workshop's interactive design encouraged participants to engage with one another rather than simply listen to presentations. The afternoon began with Ruth Duncan, Anishinaabe Kwe and Trent University graduate student, grounding participants by sharing a water song and offering tobacco. This was followed by A "Privilege for Sale" activity,

The discussion highlighted that careers in fisheries and aquatic sciences are rarely linear, and that flexibility, curiosity, and meaningful relationships often shape opportunities as much as technical expertise.

which prompted participants to reflect on the different experiences and opportunities that shape individual career journeys. By acknowledging that not everyone begins from the same starting point, the activity helped establish an environment where openness, empathy, and honest conversations could flourish throughout the day.

Building on this foundation, the workshop featured a diverse panel representing careers across academia, government, consulting, non-profit organizations, and community-based research. Panelists reflected on the realities of their own career journeys, discussing how their paths evolved in unexpected ways, the skills they found most valuable, and the advice they would offer to students and ECRs entering the field today. Rather than presenting a single roadmap to success, the discussion highlighted that careers in fisheries and aquatic sciences are rarely linear, and that flexibility, curiosity, and meaningful relationships often shape opportunities as much as technical expertise.

One theme surfaced repeatedly throughout the discussions: there is no single "right" career path. Every panelist arrived where they are today through a unique combination of opportunities, challenges, detours, and relationships.

The afternoon concluded with small-group discussions where participants explored topics including navigating career pathways, developing professional skills, building networking strategies, and transitioning into the workforce. These conversations provided opportunities to ask candid questions, exchange experiences, and build relationships in a more informal setting. For many participants, the workshop served not only as a chance to learn from established professionals, but also to connect with peers facing similar questions and challenges. By the time the conference officially began the following morning, many attendees had already formed new friendships, identified potential collaborators, and developed a stronger sense of belonging within IAGLR, SCAS, and broader aquatic science community.

Looking Ahead

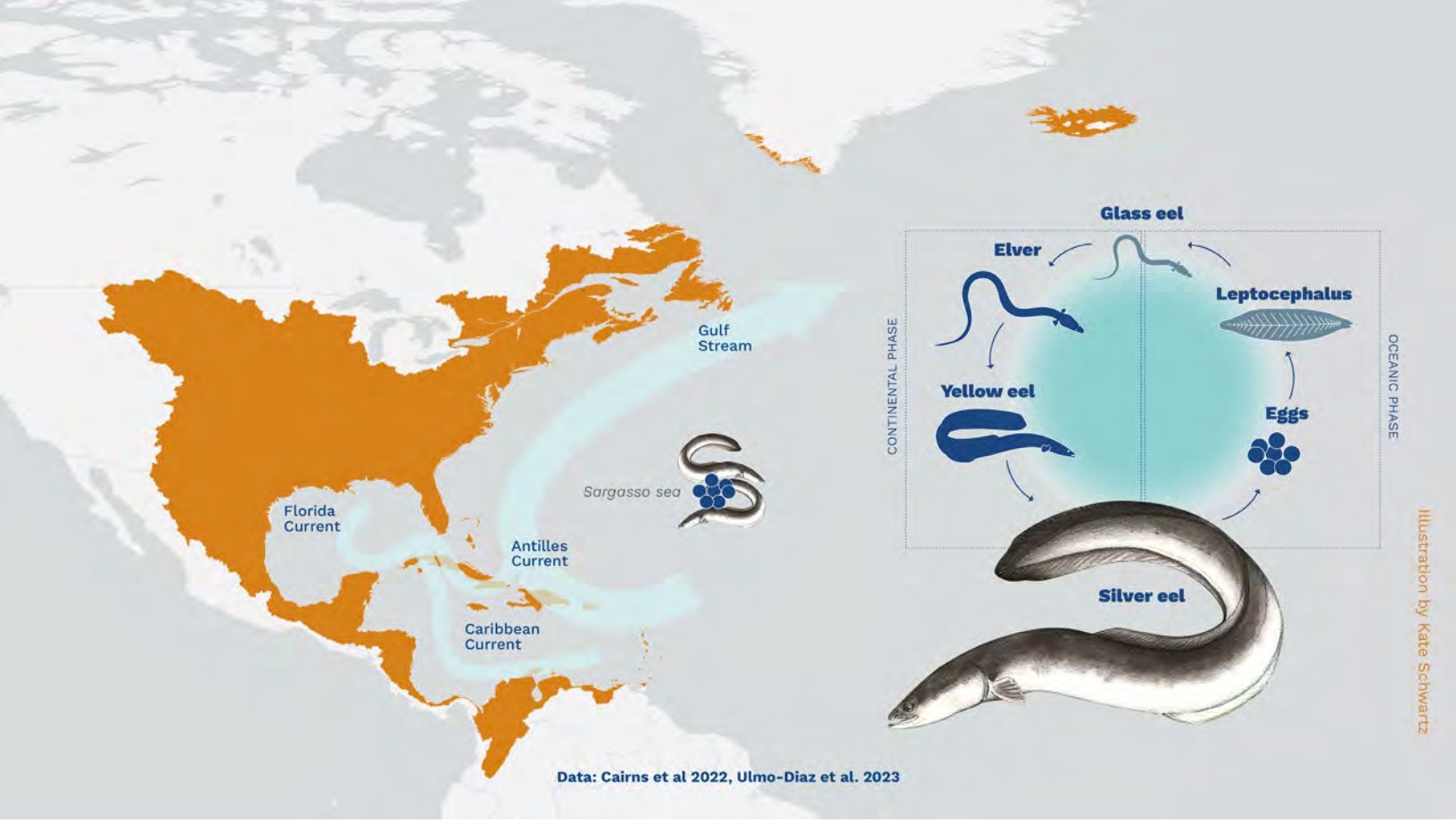
The impact of *From Here to There* continued throughout the week as participants carried new connections and perspectives into conference sessions, poster presentations, and social events. Conversations sparked during the workshop extended well beyond the scheduled program, including discussions around developing a collaborative manuscript to capture the ideas, experiences, and perspectives shared throughout the afternoon.

For the nascent IAGLR SEC Committee, the workshop marked an exciting milestone as its first major initiative. Overwhelming interest in the workshop highlighted a strong appetite for opportunities that foster mentorship, professional development, and meaningful connection within the IAGLR community. The success of this collaborative effort has inspired the SEC Committee to set a new goal of establishing a mentorship program to expand future opportunities for students and ECRs.

None of this would have been possible without the collaboration and enthusiasm of FishCAST, the SCAS Student and ECR Engagement Committee, our panelists, mentors, volunteers, and every participant who contributed their experiences and perspectives. The workshop demonstrated that a strong scientific community requires just that: community. This means going beyond merely sharing research. Instead, we need to build bridges and create spaces where people feel welcomed, supported, and inspired by one another.

As the aquatic sciences community continues to grow, we hope *From Here to There* becomes a lasting pre-conference tradition, bringing together current and future generations of researchers, practitioners, and leaders to share stories, build connections, and support one another as they navigate their own careers. After all, every career journey begins with a new connection, and sometimes, getting from here to there starts with simply sitting down at the same table.

The authors are members of the IAGLR Student and Early Career Committee. Ruth Duncan and Ella Kinart are students in the Environmental & Life Sciences Graduate Program at Trent University. Ian Stone is collaborative research specialist with the University of Michigan Graham Sustainability Institute's Water Center. Erin Smith is a post-doctoral researcher at the River Institute. Navjot Dhaliwhal is a Ph.D. candidate at York University.



Kiawerón:ko (American eel, *Anguilla rostrata*) lifecycle and plausible range in orange.

THE ART OF THE EEL

By Mary Ann Perron, Abraham Francis, Erin Smith, Kayla Sunday, Mackenzie Wylie-Arbic, Stephany Hildebrand, Yanik Rozon & Anthony Wallace

"Kiawerón:ko. Relative, connector, medicine, and mystery."

KIAWERÓN:KO, KANIEN'KÉHA (Mohawk for American eel, *Anguilla rostrata*) is a fish species that undertakes an incredible migration spanning thousands of kilometers between the Sargasso Sea, where they are born, and their rearing habitats. As a *panmictic* species—meaning every individual belongs to a single breeding pool—all Kiawerón:ko are connected to one another. Whether they mature in the waters of South America, Greenland, Lake Ontario, or Kaniatarawane:neh (the "great waterway," referring to the St. Lawrence River), they all hatch together in the Sargasso Sea. The abundance of Kiawerón:ko has dramatically diminished, especially within Kaniatarawane:neh watershed, where numbers have fallen as low as 1% of their historic levels.

This statistical collapse echoes the stories told by Akwesasronon, who have observed this change over generations. It is our collective responsibility to prevent the loss of this ecologically and culturally important species and ensure its survival for those to come.

In the summer and fall of 2025, the St. Lawrence River Institute set out to celebrate and reconnect people with Kiawerón:ko as part of the Great River Rapport, a holistic ecosystem health assessment addressing community concerns in the Upper St. Lawrence River. The celebration of Kiawerón:ko through a call for art was carried out in partnership with the Mohawk Council of Akwesasne, Abraham Francis, Dr. Kathleen Vaughan and her team at Concordia University, and with the support of the

Brace Water Centre at McGill University and the Natural Resources Institute at the University of Greenwich, UK.

The submissions showcased a wide range of creativity and originality. We received over 60 art pieces including poems, paintings, beaded works, and quilts. The call for art benefited greatly from the diverse partnerships established as part of the Great River Rapport, which resulted in submissions from different regions along the range of Kiawerón:ko, including many Indigenous artists. The artist statements told stories of personal journeys alongside Kiawerón:ko. We found that some people had a depth of knowledge of Kiawerón:ko, while others were introduced to the species through this call for art. We were excited to see that people took time to learn about the threats to Kiawerón:ko and its precarious status in the river while creating their artworks.

While the call for art engaged many people in Kaniatarawane:neh watershed and beyond, there are still more people who do not yet know about the challenges that Kiawerón:ko face in completing their lifecycle. In Kaniatarawane:neh, this perilous journey includes surviving the passage through turbine blades at two hydropower dams, the Moses-Saunders Power Dam and the Beauharnois Hydroelectric Facility, which collectively kill 44% of outmigrating Kiawerón:ko every year. Additional threats from habitat loss, fishing pressures, invasive species, contamination, and climate change also negatively impact Kiawerón:ko and reduce their ability to thrive as they once did.

Our call for art successfully connected people from all walks of life to this important species, fostering a sense of caretaking. Without caretaking, Kiawerón:ko face the threat of disappearing from our river, along with the medicines, story, language, and culture they bring. They are teachers.

Over the past decades, various initiatives have been dedicated to finding ways to mitigate the threats, though the numbers remain at all-time lows. Thankfully, there is hope. New technology in the form of fish-friendly turbines show great promise and could potentially allow the safe passage of Kiawerón:ko at hydropower dams.

With the amendments to the Canadian Fisheries Act in 2019, Canada is now well-positioned to assess mitigation options to support the recover of Kiawerón:ko. For this

“Without caretaking, Kiawerón:ko face the threat of disappearing from our river, along with the medicines, story, language, and culture they bring.”

The top adult submission, titled “Sisters in Survival.”

Artist statement: Pollution, environmental change and the massive turbines of the power dams on the rivers have decimated the eels as they return to the sea to spawn. The quilt depicts the baby eels in the ocean and the healthy eels traveling to their freshwater homes. It also depicts the eels after passing through the turbines. Haudenosaunee and our neighbors are also affected by the environmental changes and our way of life is in jeopardy. The Wampum people represent the Haudenosaunee Confederacy Nations along the St. Lawrence River watershed. The quilt is 75 inches by 76 inches, made of cotton, wool and glass beads. Created and sewn by Iakonikonkonriiosta, 2025. Mature Eel drawn by Gareoji Shoma, 2025. Quilted by Robynne Dorion, 2025. Beadwork by Anna Thompson, 2025.

Top youth submission by Sawyer F. who loves the river.

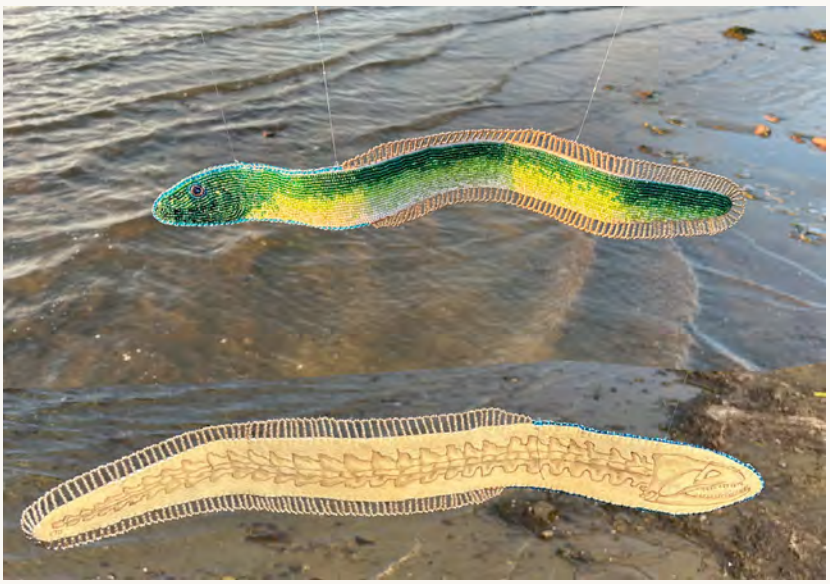
to become a reality, support from the public needs to be combined with respect for Indigenous Rights, enforcement from government agencies, and buy-in from industry. Through the call for art, we were encouraged to see that community members are looking for ways to connect with nature. We look forward to finding news ways to inspire people to connect with the natural world and share the story of Kiawerón:ko—through conversations, art, and other creative outlets. Such meaningful engagement can foster the love and care required to protect these relatives.

"Let us construct communities of caretaking for all of creation—our futures are woven together!"

Authors from the River Institute include Mary Ann Perron, Liber Ero postdoctoral fellow; Erin Smith, post-doctoral researcher; Mackenzie Wylie-Arbic, research assistant; Stephany Hildebrand, visual communications coordinator; and Anthony Wallace, visual communications coordinator. Abraham Francis is Akwesasronon and a Ph.D. candidate at Clarkson University. Kayla Sunday is the head of the environment program at the Mohawk Council of Akwesasne. Yanik Rozon is an Indigenous Protected and Conserved Areas coordinator at Canadian Parks and Wilderness Society.

The most thought-provoking, titled "Profit over Preservation."

Artist statement: The silent ecocide of the American Eel population. Many left slaughtered and suffering at the hands of the razor-sharp turbines from hydropower dams. Over 99% of American Eels have been lost in the St. Lawrence River. An ecosystem forever changed. By Jessica Farmer.



The most creative by Kaysun Oke. First side fully beaded (full of life) back side is leather with pyrography design.

IDEA and the need to move beyond principles to practice

By Gadfly Stratton

SOMETIMES ORGANIZATIONAL commitments to IDEA—inclusion, diversity, equity, and accessibility—create a phantasm of sorts, convincing people that promising a more inclusive world is the same as building one. At the IAGLR & SCAS Joint Conference this May, I gave a talk on the experiences of marginalized genders in the sciences. My ultimate goal was to remind people that IDEA statements are not performative utterances; that is, declaring that people of all genders are safe and welcome in your lab does not make it so.

We can make these declarations, but women in our field still report a lack of adequate training and access to personal protective equipment. They still report misogyny from men who doubt their abilities, resent their promotions, and think women do not belong out in the field without a male chaperone. In the U.S., there is an ongoing "full-scale onslaught on women's rights." In Canada, we still have "staggering rates of violence against Indigenous women, girls and 2SLGBTQQIA people."

We can declare that all genders are safe and welcome in our labs, but there is an ongoing genocide against transgender people in both the U.S. and Canada. During my talk, I asked folks to imagine they were inviting me to come work in their university lab or department. Do you know whether it is legal for me, as a trans person, to tell people my pronouns? In some states, it is not. Do you know whether it is legal for me to use the bathroom during my long workday? In some states, it is not, with states like Idaho currently fighting in court to make it a felony. Do you have a plan if someone finds out I am trans, or recognizes me in the field, and responds with violence?

These are significant and systemic workplace safety issues that impact whether someone is safe or feels welcome in your lab. And they underscore that we all need to grapple with a harder truth: social progress and personal commitments alone don't determine whether we can live up to our IDEA principles. The jurisdictions where we operate may prevent us from doing so.

Scientists, particularly those with greater power and privilege, need to advocate for improved safety and wellbeing of all genders in our field. If recruiting marginalized genders is not a priority for your organization, create opportunities to explain why it should be. Advocate for the services they need to be made available and accessible. Finally, we need to reach beyond the lab and advocate for policies and laws that enable all scientists to participate in science, and to do so safely.

We made these commitments. We need to find a way to keep them. And we need everyone.

Gadfly Stratton (they/he) is a socio-environmental researcher and IDEA educator and facilitator. They received the 2026 IDEA+ Presenter Scholarship.

Gadfly Stratton receiving the IDEA+ Presenter Scholarship for their presentation titled "Priorities for Diversity, Equity, Inclusion & Accessibility in Aquatic Sciences" at the annual conference in May.

These are significant and systemic workplace safety issues that absolutely impact whether someone is safe or feels welcome in your lab.

RESEARCH BRIEFS

Fishing beyond fun: The importance of recreational fish consumption in the Great Lakes

By Emma Rice

FOR DECADES, recreational fishing has primarily been viewed by scientists and managers as a leisure activity. However, this narrow lens often overlooks other important benefits like food security, food sovereignty, and sociocultural contributions. A recent study of shore-based recreational fishers in Detroit, Michigan, applied food systems thinking, an approach linking food to culture and economics, to examine these often-neglected dimensions of recreational fishing on the Detroit River and Lake Erie.

The study found that consumption of recreationally caught fish contributed to food security, with some fishers partially relying on it to reduce their grocery bills. It also supported food sovereignty by providing fishers with greater autonomy over where their food came from and how it was handled. Informal food-sharing networks among family, friends, and neighbors extended these benefits beyond individual households and strengthened community connection and well-being. Fish consumption also shaped angler motivation and satisfaction, particularly among nonwhite fishers who were significantly more likely to fish for food and view a fishing trip as successful if they brought fish home to eat.

This work has implications for managing the human dimensions of recreational fisheries. It highlights the value of extending creel data beyond harvest to include collection of demographic and consumption data for informing more equitable fisheries management. Understanding recreationally caught fish as part of a broader food system may also draw more attention to consumption-related contaminant concerns and shoreline access issues, while helping managers make decisions that better reflect how people use, value, and depend on Great Lakes fisheries.

Emma Rice is a Ph.D. candidate in the Department of Fish and Wildlife Conservation at Virginia Tech. Rice received IAGLR's 2026 IDEA+ Research Scholarship for her work.

A Detroit River angler filets self-caught white bass to share at a community fish fry. *Photo by Alexandra Benitez Gonzalez.*

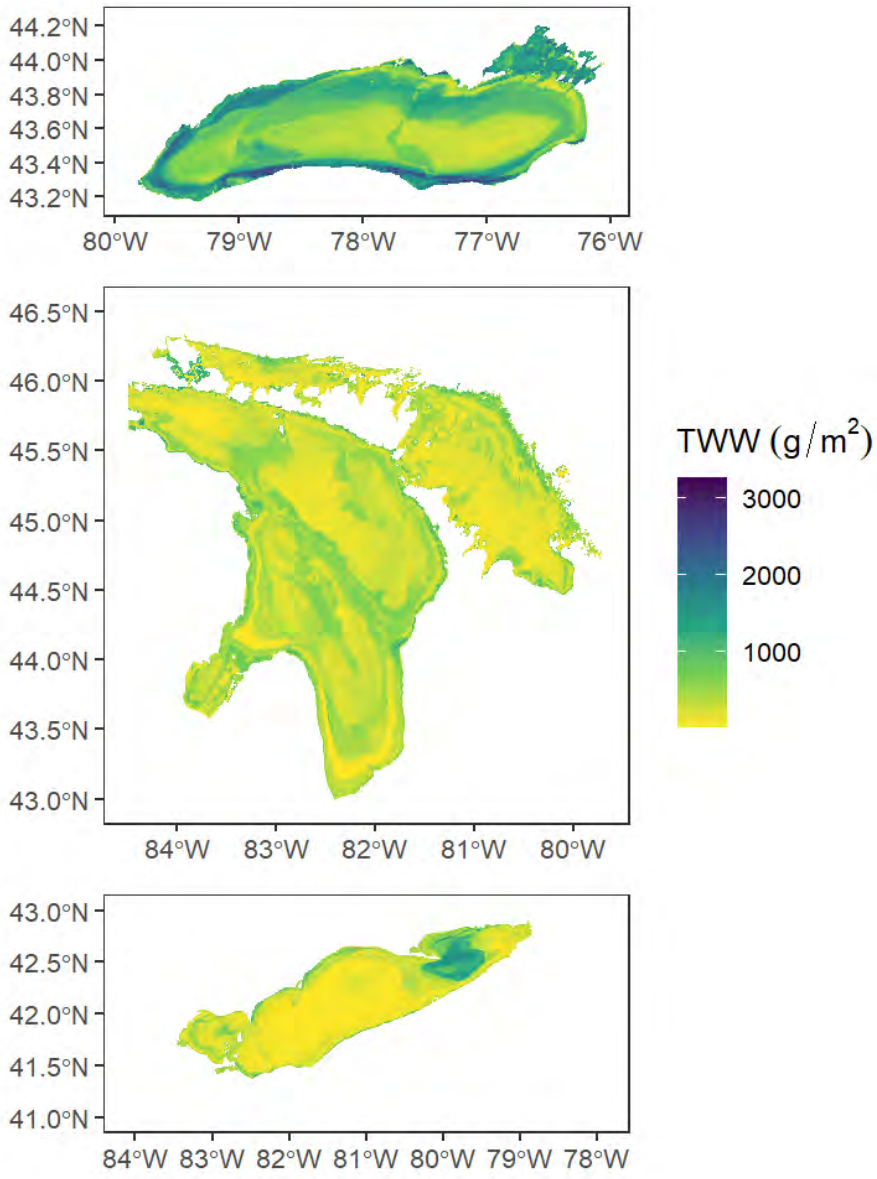
One framework to map them all: A new approach to mapping dreissenid biomass

By Tyler J. Harrow-Lyle

DREISSENID MUSSELS have transformed the nearshore zone of the Great Lakes for more than three decades, yet researchers and managers still lack reliable, lakewide tools to anticipate where dreissenid biomass is highest and how these patterns shift through time. Understanding the distribution of dreissenids is essential given their ability to alter lakewide nutrient dynamics and stimulate nuisance algae growth in the nearshore zone. The challenge of mapping dreissenid biomass is due to the sheer size of the Great Lakes, as well as the extreme heterogeneity and persistent uncertainty of changing environmental conditions.

Recently, my colleagues and I demonstrated that incorporating environmental gradients such as substratum type, wave exposure, and hypoxia duration substantially improve dreissenid predictions within Lake Erie. Building upon this research, our ongoing work has expanded into the creation of a modeling framework that uses machine learning to map dreissenid biomass across the lower Great Lakes (Huron, Ontario, and Erie) with the addition of unique spatial and temporal detail.

A key innovation of this framework is the explicit use of multiple years of observations. Previous Great Lakes dreissenid models aggregate data to a single yearly average; however, this practice removes interannual variability and obscures true variation in populations. By incorporating time as a gradient, the updated modeling framework can learn from year-specific conditions and variability, whilst preserving fine-scale temporal signals. By applying the full temporal record of dreissenid data, the framework also increases the detection of areas outside the model's environmental domain, making uncertainty explicit and informative (i.e., highlighting where additional sampling would most improve future predictions). This is especially valuable for adaptive management, as it consistently identifies nearshore zones as priority areas for expanded monitoring. The same machine learning structure can support benthic monitoring programs in other freshwater and coastal systems, offering a flexible tool for ecosystem managers responding to ongoing environmental change, including climate driven shifts in habitat conditions.



Dreissenid biomass estimates for lakes Ontario, Huron, and Erie produced from the random forest methodology. Dreissenid biomass is reported as total wet weight (g/m²).

Tyler J. Harrow-Lyle, Toronto and Region Conservation Authority and Ontario Tech University. Harrow-Lyle received the JGLR/Elsevier Early Career Award.

The summer phosphorus pulse: Internal loading from agricultural stream sediments

By Grace Watson

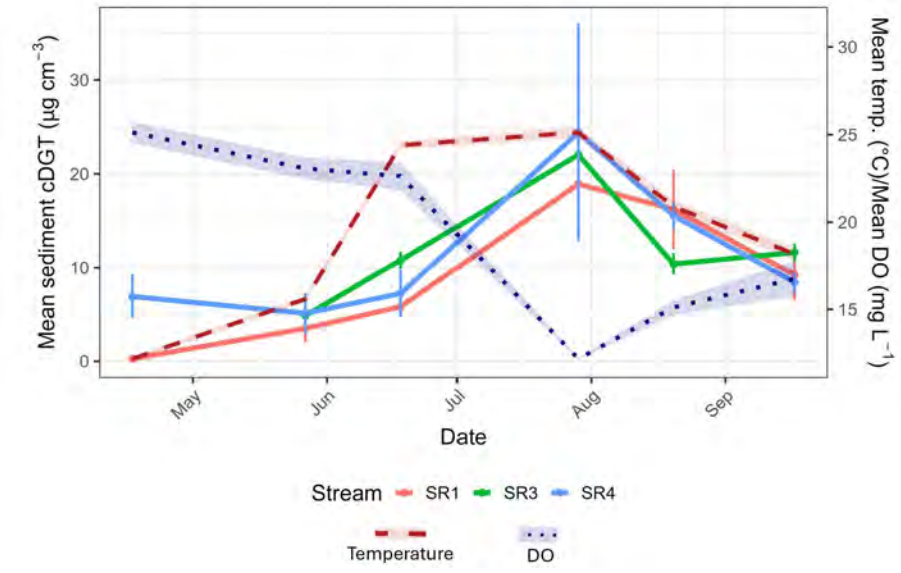
HARMFUL ALGAL BLOOMS in Lake Erie are driven largely by phosphorus runoff from Maumee River tributaries, leading management to focus on reducing losses from agricultural fields. But our research points to a hidden in-stream source: phosphorus mobilized from streambed sediments during summer oxygen depletion.

Last summer, we tracked seasonal phosphorus dynamics across three agricultural drainage streams in northwestern Ohio's Shallow Run subwatershed within the Maumee River basin. To capture readily absorbable phosphorus, we deployed DGT probes into the sediment, alongside sensors tracking stream temperature and dissolved oxygen. This allowed us to monitor how sediment phosphorus stores shifted throughout the growing season. We then used statistical models to evaluate the environmental factors driving this porewater nutrient and scaled our measurements up to all streams in the watershed.

Summer brought warmer water, lower flows, and recurring nighttime oxygen depletion—conditions that break down the iron bonds holding phosphorus in place. By July, bioavailable porewater phosphorus had increased four- to sixfold compared to spring across all three streams. Surface water concentrations rose in parallel, suggesting that this newly released nutrient was escaping the sediment and entering the water.

We estimate roughly 117 kilograms of bioavailable phosphorus accumulates across the 15.6-kilometer drainage network during peak summer, amounting to nearly 34% of the watershed's average spring and summer export. Because this sediment phosphorus reservoir rebuilds each summer to fuel peak downstream algal blooms, it threatens to undermine land-based fertilizer reductions and delay long-term watershed recovery.

Grace Watson is a Ph.D. student in the Department of Evolution, Ecology, and Organismal Biology at The Ohio State University. Watson received IAGLR's 2026 David M. Dolan Scholarship for her work.



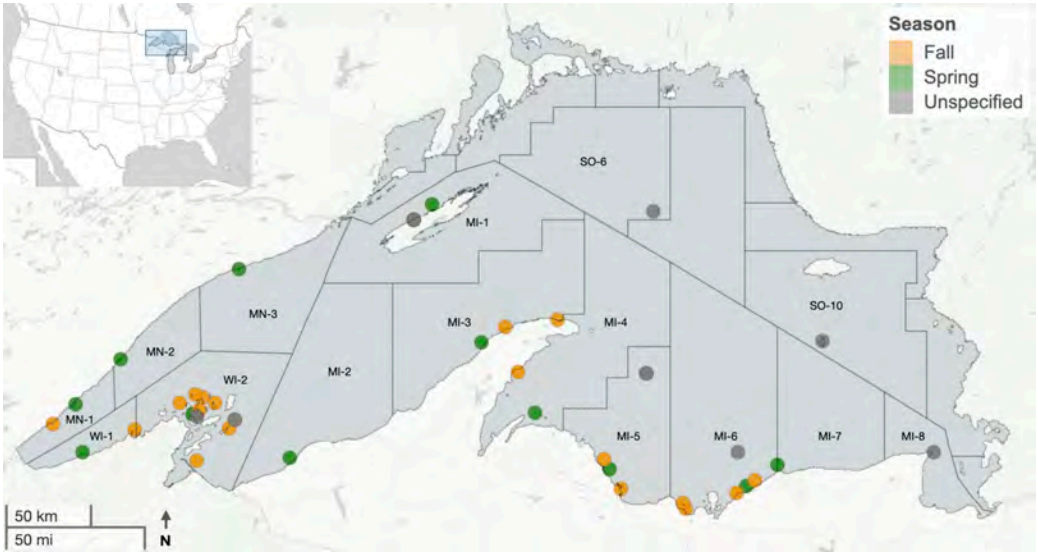
Sediment porewater phosphorus (calculated from DGT measurements, or cDGT; solid colored lines, left axis) rose sharply from spring to midsummer across all three streams as water temperatures climbed (dashed red line, right axis) and dissolved oxygen crashed (dotted blue line, right axis)—a pattern consistent with oxygen-driven phosphorus release from iron-rich streambed sediments.

Grace Watson collecting sediment samples from an agricultural ditch stream. *Photo by Sophie Dziekan.*

Supporting the genetic health and long-term resilience of lake trout in Lake Superior

By Emily Bardwell-Patino

IN LAKE SUPERIOR, the largest freshwater lake in the world by surface area, lake trout (*Salvelinus namaycush*) serve as apex predators, support commercial and recreational fisheries, and hold deep significance for Indigenous and local communities. Lake trout populations collapsed in the mid 20th century due to environmental pressures, including intensive fishing and predation by invasive sea lamprey, prompting decades of coordinated management and stocking with hatchery-raised fish to rebuild wild populations.



Map of Lake Superior summarizing lean lake trout sampling locations and management unit (MU) boundaries. Fall spawning reef collection locations are shown in orange, and spring MU-wide survey collection locations are shown in green. Spring surveys were conducted throughout the MU and are summarized here by a single point per MU. Individuals from previously generated genomic datasets lack information on collection season and are shown in grey.

Lake trout are now considered fully recovered in most of Lake Superior, but fundamental questions remain about their genetic health and resilience. Genetic diversity provides raw material for adaptation to changing environments and serves as a key indicator of population health, making it an important tool for informing management priorities.

We collected genomic data from more than 2,500 lake trout sampled across the U.S. portion of Lake Superior. This effort focused on the lean lake trout ecotype, the form most targeted by fisheries within Lake Superior. We generated the most geographically comprehensive genomic dataset for this ecotype in Lake Superior to date, characterizing population structure to delineate genetic groups and quantifying genetic diversity to gauge population health.

Our findings indicate that lean lake trout in U.S. waters of Lake Superior function as one broadly connected population with low genetic diversity, underscoring the importance of ongoing monitoring to track genetic health alongside abundance. These results offer a comprehensive look at the genetic health of a population only recently declared recovered. Genomic insights can guide management approaches to help ensure lean lake trout remain resilient to future environmental pressures in Lake Superior.

Emily Bardwell-Patino is a recent master's graduate of Michigan State University and a biological science technician with the U.S. Fish and Wildlife Service. Bardwell-Patino received IAGLR's 2026 Norman S. Baldwin Fishery Science Scholarship.

Emily Bardwell-Patino prepares lake trout fin tissue samples for genomic sequencing in the Meek Lab at Michigan State University.

When the water rises: A new tool helps communities plan for floods

By Jeffrey L. Ashby

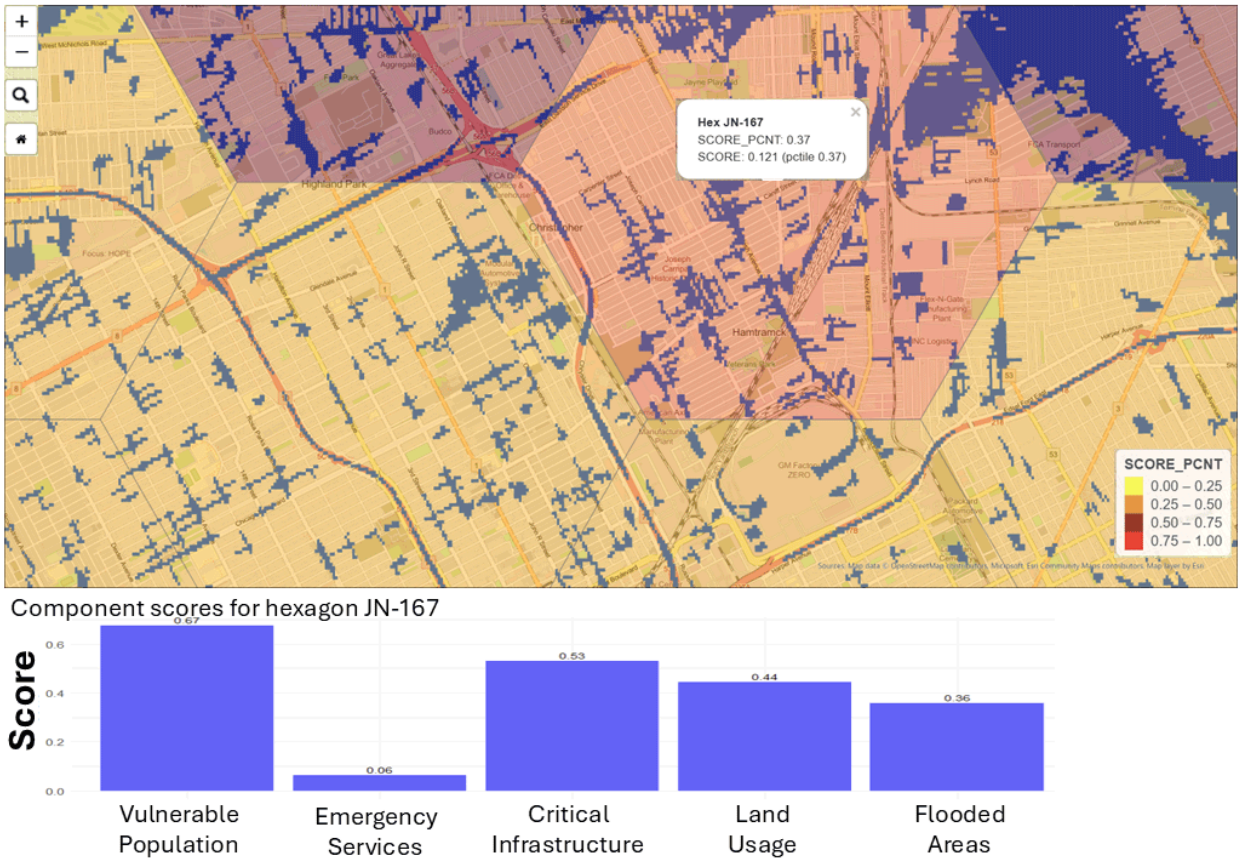
AS THE CLIMATE CHANGES, extreme weather events such as heavier rainfall are becoming more frequent and severe. These events can increase the risk of flooding, yet they are not the only factor. The way cities and rural areas are built and developed also shapes how badly communities flood and how well they recover. Protecting people and the places they live means understanding how climate change affects the roads, buildings, and services that communities depend on every day.

Most existing tools for measuring flood risk take a top-down government perspective. As a result, they often miss how many local factors—from emergency services to neighborhood infrastructure—connect and influence one another on the ground. To close that gap, Diane S. Henshel and I created the Community Resilience and Adaptation Spatial Infrastructure Database (CRASID)—a tool built for the Great Lakes region with communities at the center.

CRASID divides the entire watershed into a grid of hexagons, allowing many different kinds of information to be compared on the same map. The team tested the tool to examine whether people could reach emergency services during extreme flooding.

The analysis showed that a spatial database like CRASID can help identify flood vulnerabilities, such as infrastructure. The findings point to a clear community need: future risk measures will have to focus specifically on infrastructure. The hexagonal design will also support evacuation planning, so that from any location a user can look in six directions, compare routes, and find the safest way out during an emergency.

Jeffrey L. Ashby is a Ph.D. candidate in Public Health at Indiana University Bloomington. Ashby received IAGLR's Outstanding Student Paper Award for the presentation *CRASID: A new community-based tool for risk, resilience, and evacuation planning* at the 2025 annual conference.



Example of CRASID for a suburban community in Detroit, Michigan, showing risk scores by color, flooding areas in blue, and a bar chart of the composite scores used to calculate the risk score. *Credit: Jeffrey L. Ashby and Diane S. Henshel, Indiana University Bloomington. Figure adapted from the authors' presentation at IAGLR's 2025 Conference on Great Lakes Research.*

Reconnecting rivers: Investigating the impact of dam removal on Lake Erie walleye

By Demetra Williams

DAMS HAVE ALTERED riverine ecosystems worldwide to provide benefits such as flood control, water storage, and hydropower. However, dams can negatively impact migratory fish by blocking access to spawning grounds and ultimately reducing population productivity. As dam removals are on the rise across the U.S. and Europe, scientists are working to understand whether reconnecting rivers can help migratory fish populations recover.

One species that may benefit from restored connectivity is Lake Erie walleye (*Sander vitreus*), an important migratory fish supporting one of North America's most valuable freshwater fisheries. In 2018, the Ballville Dam on Ohio's Sandusky River was removed, reopening more than 30 kilometers of upstream habitat that had been unavailable to walleye for over a century.

My research investigates how the removal of the Ballville Dam has affected the Sandusky River walleye population, one of several spawning populations that contribute to Lake Erie's commercial and recreational fisheries. Using acoustic tracking technology, I can assess changes in how walleye use their spawning grounds in the Sandusky River. By analyzing chemical "fingerprints" preserved in ear stones (otoliths), I can identify walleye that originated from the Sandusky River after they enter the open lake. The goal is to determine whether dam removal has increased the number of young walleye entering the downstream population and whether those fish eventually contribute to Lake Erie's fisheries.

These results can help fisheries managers better understand the long-term benefits of restored riverine connectivity. As similar dam removals occur, understanding how reconnecting rivers affects downstream open-water populations will be crucial for conserving migratory fish populations.

Demetra Williams is a graduate student at The Ohio State University. Williams received IAGLR's 2026 Norman S. Baldwin Fishery Science Scholarship.

Graduate student Demetra Williams (right), tags a walleye with an acoustic transmitter on the bank of the Sandusky River, Ohio. She is assisted by Ohio Division of Wildlife (ODOW) biologist Zak Slagle (left). *Photo by Matt Faust, ODOW.*

As similar dam removals occur, understanding how reconnecting rivers affects downstream open-water populations will be crucial for conserving migratory fish populations.

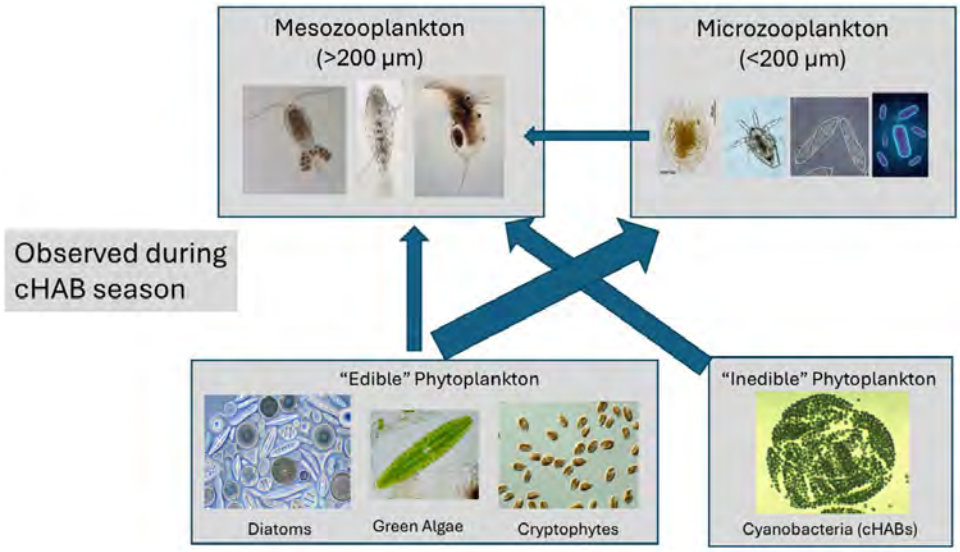
Rethinking who grazes harmful algal blooms in western Lake Erie

By Lyndsie Collis

WHEN WE THINK ABOUT how cyanobacterial harmful algal blooms (cHABs) will affect food webs, we tend to assume they are a dead end for energy transfer. The blooms are considered simply too toxic and nutritionally poor for zooplankton to graze, preventing energy from moving up to the fish that feed on them. Compounding this, the prevailing paradigm also assumes that smaller zooplankton (microzooplankton) will graze cyanobacteria, while larger mesozooplankton will avoid the cHAB and decline, thus lowering energy transfer efficiency from zooplankton to fish. But this view rests largely on single-species lab experiments using zooplankton not previously exposed to cHABs. What actually happens in large lakes such as Lake Erie, which has experienced recurring cHABs for over 20 years? Who really grazes the bloom, and is energy transfer truly restricted during cHAB events?

My Ph.D. dissertation addressed these questions in western Lake Erie by pairing nearly three decades of plankton monitoring data with zooplankton grazing experiments to characterize how meso- and microzooplankton graze on cHABs and to quantify energy transfer from blooms to mesozooplankton. This research was conducted in conjunction with the Hood lab at The Ohio State University, the Ohio Division of Natural Resources, and NOAA's Great Lakes Environmental Research Laboratory.

What we found ran counter to our expectations: mesozooplankton, not microzooplankton, were the primary grazers of cyanobacteria. Moreover, these larger grazers kept feeding at high rates from before the bloom through its peak. This observation was supported by our long-term monitoring results, where cladoceran production and energy transfer efficiency increased non-linearly with cyanobacteria—peaking under moderate bloom conditions before declining slightly during severe cHAB years. Invertebrate predators were positively associated with cladoceran production, and planktivorous fish had only a limited ability to suppress zooplankton populations, emphasizing that cHAB effects must be understood alongside the other stressors that co-occur with blooms. We anticipate this work will help predict how freshwater food webs respond to nutrient pollution and biological invasion and inform ecosystem-based management of the fisheries that communities across the Laurentian Great Lakes and other large lakes worldwide depend on.



Conceptual diagram of energy flow between phytoplankton and zooplankton groups, based on the results of the grazing experiments. Arrow width depicts the relative amount of energy obtained by meso- and microzooplankton from cyanobacteria versus non-cyanobacteria phytoplankton groups.

What we found ran counter to our expectations: mesozooplankton, not microzooplankton, were the primary grazers of cyanobacteria.

Lyndsie Collis (pictured on the cover of this issue) is a Ph.D. candidate at The Ohio State University's Aquatic Ecology Laboratory. Collis received the 2026 IAGLR Scholarship.

Awards & Scholarships

Help us honor excellence

Each year, IAGLR gives out several awards to recognize excellence in Great Lakes research. In addition, IAGLR awards scholarships to students showing great promise early in their research careers. Mark your calendar with these opportunities to apply for a scholarship or nominate a colleague for an award. We encourage applications and nominations that reflect diverse identities, perspectives, and experiences.

Upcoming deadlines

SCHOLARSHIPS

- Norman S. Baldwin Fishery Science Scholarship ($5,000)
- David M. Dolan Scholarship ($3,000)
- IAGLR Scholarship ($2,000)
- IDEA+ Presenter Scholarship ($2,000)
- IDEA+ Research Scholarship ($2,000)
- International Travel Award
- IDEA+ Workshop Award ($2,000)

Applications open soon. Due November 1

PROFESSIONAL AWARDS

- Lifetime Achievement Award
- Large Lake Champion Award
- John R. (Jack) Vallentyne Award

Nominations due February 1

JOURNAL AWARDS

- Chandler-Misener Award
- JGLR/Elsevier Early Career Scientist Award
- JGLR/Elsevier Student Award

Nominations due January 15

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CANADIAN REGULAR MEMBER

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CANADIAN STUDENT MEMBER

View the Call for Nominations

Nominations are due Friday, October 2

* Terms start in May 2027. Student board members serve for two years. The other positions are three-year commitments. The vice president will serve one year as vice president, followed by a year as president, and then past president.

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