

# LAKEs Letter

*This issue shares Indigenous perspectives, stories on efforts to connect Indigenous and Western knowledge, and resources to learn more*

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## A letter from Henry Lickers

**S**hekon (Greetings), people of IAGLR and the Great Lakes. I hope this letter finds you and your family in good health and spirits during these trying times. I write this letter to share my experiences as an Indigenous scientist. I, too, have had problems talking to and understanding the knowledge of my people, the Haudenosaunee. I hope that by sharing my story, you will become more aware of and curious about Indigenous ways and the importance of drawing from multiple knowledge systems.

I was encouraged by my grandparents and my mother to get an education to understand the ways of science and technology. I was never a really good student since I was too busy observing and living in the environment. Book learning was seen as important, but only as long as it didn't interfere with my experiences.

When I was 12, I left the Six Nations Indian Reserve and moved to downtown Toronto. What a culture shock! People in Toronto were always busy and placed entirely too much emphasis on progress to notice their beautiful surroundings. But for a boy with a bicycle, Toronto was a wondrous place. Within the first few months, I knew where all the nut, fruit, and medicine trees were within 10 kilometers of my house. I also found out that a young ragamuffin was not viewed as suspicious, so I knocked on people's doors to ask if I could harvest the nuts, apples, and chestnut husks from their trees. In most cases, the homeowners saw these trees as nuisances that dirtied their lawns, so I always agreed to clean up their yards and make them look nice. Sometimes the homeowners even paid me!

I took the fruit, nuts, and medicines home, where my mother made pies, apple sauce, and nut cakes and used the money for important things like clothes and shoes. I felt like a real hunter in the big city helping to take care of my family. Some months later, I realized that Toronto's alleys were home to some of the biggest raccoons, squirrels, and skunks that I had ever seen. I decided to operate a trapline in the alley north of Bloor Street. I'd take the skins home to Brantford, where the fur buyers would ask where I got such high-quality pelts. I'd just cross my arms as only a boy can do and say that this was Traditional Knowledge of my people that I couldn't divulge. I later learned that harvesting Canada geese for my mother's wonderful goose soup was perhaps illegal at the time—indigenous harvesting practice hadn't yet been won—but I only took what was needed and helped keep the population down.

My school friends must have thought it strange that the apple sauce in my lunch was red (apples with the skins) and my "chicken" and rice soup (goose and wild rice) smelled different from theirs; even my bread was strange—Indian fry bread. They liked my nut loaf and maple tarts and would trade handsomely for these. I discovered that the Traditional Knowledge of the Haudenosaunee was not only important to my well-being and prestige, it was also profitable.

Lake Ontario, Toronto Islands, and the many ravines in the city were the places where I could be myself, an Indigenous boy looking for a natural adventure. On the reserve, I had always wondered what job and who would pay me to play in nature. I was naturally drawn to the water, which seems to link everything together, and I decided to become a biologist. I worked as hard as I could, sometimes being irresponsible and crazy but always focused on the



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goal. I went to a new university in Peterborough called Trent University, which seemed perfect for me, got married, and ended up in graduate school at the University of Waikato in New Zealand. The Maori people there taught me to be myself and that the knowledge of the Indigenous Peoples may not be understood by the “new people,” but it was our responsibility to show the “new people” the way to live peacefully on the land. This was the same message I had heard from my great grandmother and grandparents.

So, what does this have to do with science and Traditional Knowledge? I think everything. All my experiences have led me to this truth: that science and Traditional Knowledge need each other to be a whole knowledge system. This system includes both community knowledge and the ways in which knowledge is passed from one person to another, one group to another, and one nation to another. I call this a Naturalized Knowledge System that is connected to a given place. It is the knowledge gathered by the people in order to live in that place, and it allows the transfer of knowledge.

My knowledge includes that which I have gained from all the areas and peoples I have met along the way. I keep their stories, understanding, and wisdom as if they were my own, but remember these people and acknowledge them whenever I use their knowledge. Some of my teachers were not even humans. As a boy, I believed that animals and plants could talk to me, but just used different forms of communication. Trees and plants used smells and colors to tell me about their lives, and the badger talked to me using his language of grunts and whistles. Sometimes I didn't understand, but if I listened hard enough I could understand which grubs he liked the best. I lived in a magical world of sights, sounds, smells, and feelings. My grandfather told me everything had a spirit, and that I could talk with them if I listened closely enough. Only recently through my daughter did I learn that the stones on the ground could tell us very old stories, although they talk very, very slowly. All knowledge is story told to us in different forms—from scientific journals and great tomes to jokes and tales—each with their own lessons and facts.

When I lived in the city, I met people who carried just one story as their profession. Scientists believed that science was the only factual story, economists believed that finance was not connected to the physical world, and doctors that the body acted like a machine. While these stories are useful, they don't describe the world entirely. To carry out their work, these professionals need to reduce their understanding to a very small portion of the whole, and by doing so, they lose much of their ability to understand the world. I have been blessed to have met some giants in the fields of knowledge whose very presence has influenced how I think, and not all of them have been indigenous peoples. Truly great scientists are interested in everything, truly great economists see the links between the physical world and finance, and the greatest doctors see the humanity and spirits of their patients—and they use these attributes as tools in their professions.

Naturalized Knowledge Systems expand the way we look at the world, and their tenets become important to people who live close to the land and environment. The basic tenets are as follows:

- The Earth is our mother;
- Cooperation is the way to survive;
- Knowledge is powerful only if it's shared;
- Responsibility is the best practice;
- Everything is connected to everything;
- Place is important, and finally,
- The spiritual world is not distant from the Earth.

As a society removes itself from the environment, these tenets are lost, and the first loss seems to be the recognition that the earth is our mother. With this loss, the society begins to lose its respect for women at the basic level. Yet as the environment and the tenets become more important, women become more important, too. Each of these tenets can be expanded with a little thought, and people who live on the land and depend upon the land and waters soon become steeped in these themes.

The question that seems to occupy everyone's mind is how do scientists integrate Traditional Knowledge into

**All my experiences have led me to this truth: that science and traditional knowledge need each other to be a whole knowledge system.**

modern sciences. In order to evaluate a scientific fact's validity, there are a number of tests that it must pass. The fact has to be reproducible, consistent, and verifiable. Traditional Knowledge uses these same tools to judge the worthiness of a fact. Description, observation, and analysis all combine to establish the truth of a fact. The reliance on a fact is tested every time that fact is needed. In the natural environment, the result of a bad fact is usually more catastrophic than in a lab. The placement of known fruit and nut trees in Toronto was tested every time I left the house to harvest. If I could not reproduce the experiment, it meant no food. While this may not have meant death to my family, it could have meant hardship. Not having the right facts or knowledge meant a loss of prestige for the hunter. Getting it right meant honor and respect in my community. Scientists are honored for being right, and they take precautions to test and validate their information in the same way a hunter validates his.

Scientists and Indigenous People can work together by building a relationship with each other and benefitting from

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the knowledge they both have. This relationship is based upon the science of relationship that the Haudenosaunee have been practicing for hundreds of years. The Haudenosaunee call this the Great Law of Peace, the Great Way of Peace, or the Way to be Nice, and it can be explained using three words. I have taken the liberty of translating these words into English as closely as possible: respect, equity, and empowerment (see sidebar).

The Haudenosaunee say that with a little respect, equity, and empowerment, we build a joyful relationship, and we want to do it again. Only this time, we are willing to add more respect and equity and empower ourselves to build better and better relationships. In my grandmother's words, "we learn how to be nice to each other" and the Great Way of Peace has accomplished a seemingly impossible task. It is interesting that the Great Way of Peace can be used to build a relationship, but it can also be used to analyze our failures to do so.

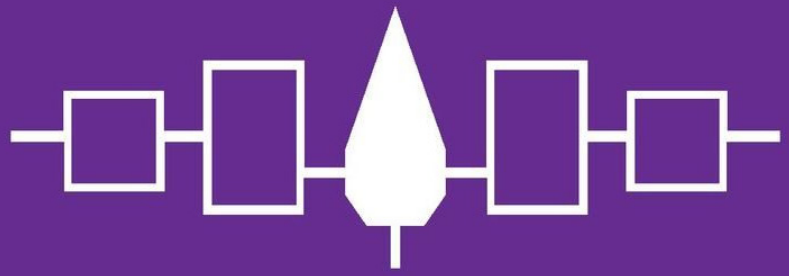
I know this narrative is part story, part fact, and part reminiscence; that is the way Indigenous People pass knowledge to one another. When I was a boy, my great grandmother would tell me stories that I didn't always understand, but the stories were exciting and I liked them. It wasn't until years later that I got the "a ha" moment when I understood the story. In the relationship between IAGLR, the Great Lakes, and Indigenous Peoples, there will be many "eureka" moments in the future. I just hope that you'll remember this story as well. My great grandmother would be pleased.

*Skennen (In Peace),*

Henry Lickers

*Henry Lickers is a Haudenosaunee citizen of the Seneca Nation, Turtle Clan. He is a Canadian commissioner of the International Joint Commission and was the director and environmental science officer of the Mohawk Council of Akwesasne for 43 years.*

The illustration above, right, represents the Hiawatha Belt. It depicts the original Five Nations of the Haudenosaunee that pledged their loyalty to the Great Peace.



## The Great Way of Peace

### Respect

While respect sounds simple, it has some tools that can assist us: **Understanding.** You can't have respect for someone unless you try to understand them. **Communication.** You can't respect someone unless you communicate with them. **Consensus.** There is not respect unless you form some type of consensus with each other. You do not need total agreement. **Mediation.** When you disagree, you need a process of mediation to get to consensus. **Honor** is that quality of truth that builds up through actions or deeds. As we say, respect is earned, not given. It is amazing how little respect is needed to start a relationship.

### Equity

In the modern world, equity is automatically thought of as money, but in the building of a relationship, knowledge is far more important. **Knowledge** brings us together and helps solidify the respect we have for one another. Also important to equity are **networks**—who knows whom and how they can help bring sweat equity to the relationship. **Personnel** are the people skilled enough to carry out the work, and having the **time** to do it is also equity. **Social/political power** or the prestige a person brings to the relationship can also help drive the action forward as more people add their skills to the relationship, but **money** and finance are also important. We say that equity must be balanced or someone will feel cheated and disrespected. A small amount of equity at the beginning of a relationship may prove vital to its existence. Among Indigenous People, the expression of thanksgiving in an opening or a meal shared are seen as respectful equity.

### Empowerment

Since the Haudenosaunee languages are verb based, we use peace as a verb; you must *do peace* or *wage peace*. These actions help to build relationships and show our sincerity in doing so. Application is to do what we say we will do. So many times we only discuss but never act. Consider authorship, which to academia is a tool of empowerment. When people come to our community to build a relationship, they collect information to use in a book or for the advancement of their careers, but often they don't acknowledge the people who supplied the information. Sharing authorship of a paper can increase the empowerment of all the people who took part, even the local sources of information. Credibility and partnerships are built, and we accept the responsibilities for our actions and deeds. All of this adds to the empowerment of the relationship.

# Since time immemorial

by Valoree S. Gagnon, Bizhikiins Dylan Jennings, Michael Waasegiizhig Price, and Evelyn H. Ravindran

**N**ayaano-nibiimaang Gichigamiin (the Great Lakes) is a physically dynamic land and water system and a diversely complex political landscape. But what do we really know about the region's diversity? Beyond recognition of two countries, eight states and one province, 163 Indigenous nations, and hundreds of municipalities, what understandings do we have about Nayaano-nibiimaang Gichigamiin?

For 2021, IAGLR conference organizers embraced their responsibilities to share more about Nayaano-nibiimaang Gichigamiin and the rich and diverse history of place, people, and life. These intentions are reflected both in the 2021 conference theme, *Bridging: Knowledges • Seven Generations • Land-to-Lake*, and in our acknowledgement statement in the box at right. In this article, we explain the significance of acknowledgement and provide an Indigenous understanding of sovereign nations and the First Treaty of Nayaano-nibiimaang Gichigamiin. We also illustrate relevance for today's governance and stewardship and conclude with thoughts on knowledge and practice for seven generations.

## Acknowledgement

Acknowledgement is more than a collection of articulated words; it is a mindset that provides a lens into the journey of relearning. Acknowledgement conveys personal understanding of the obligations to Indigenous place, people, and life. The IAGLR 2021 statement acknowledges that U.S. and Canadian citizens share lands, waters, and responsibilities with Indigenous Nations who have cared for Nayaano-nibiimaang Gichigamiin since time immemorial, practicing stewardship principles informed by trusted Indigenous Knowledge Systems passed from one generation to the next, and through mutual respect and reciprocity for balanced relationships with living beings of many kinds. These are not mystical knowledge systems and practices—we use Traditional Knowledge Systems and approaches alongside science tools and

## IAGLR 2021 Acknowledgement

IAGLR 2021 planners acknowledge that Nayaano-nibiimaang Gichigamiin (the Great Lakes) bioregion is the ancestral, traditional, and contemporary lands and waters of numerous Indigenous nations. We acknowledge Indigenous Peoples as the region's original caretakers and knowledge keepers, and recognize their contributions to the stewardship and governance of the world's largest system of freshwater. We extend our gratitude to members and staff of the Keweenaw Bay Indian Community, Chippewa Ottawa Resource Authority, Great Lakes Indian Fish and Wildlife Commission, and the 1854 Treaty Authority for their commitment to the planning and organization of the 2021 conference. Such partnerships are critical to bridging diverse knowledges, seven generations care, and sustaining land-to-lake relations in Nayaano-nibiimaang Gichigamiin. Finally, we remember that the teachings and practices we carry today were built and shared by many who came before us, including our human ancestors and many relatives with fins, wings, legs, and roots.

approaches to work in partnership with other governments every day. Acknowledging the sources of knowledge is common practice, and for Indigenous Peoples, our teachings are gained from relationships, observations, and interactions with our non-human relatives. Plant beings, for example, are known as some of our wisest teachers on Earth.

## Indigenous sovereignty and the First Treaty

Sovereignty is often described in terms of authority and power. Indigenous Nations' sovereignty centers on autonomy, often articulated as self-determination and self-governance. It is also about collective strength in sustaining diplomacy with other sovereigns.

Indigenous agreements between Nations were common practice prior to the establishment of the U.S. and Canada. In Nayaano-nibiimaang Gichigamiin, the Haudenosaunee Six Nations Confederacy includes Mohawk, Oneida, Onondaga, Cayuga, Seneca, and Tuscarora Nations; and the Anishinaabeg Three Fires Confederacy includes Ojibwa, Odawa, and Potawatomi peoples.

Indigenous Nations remain rights holders, affirmed by a series of 18th-

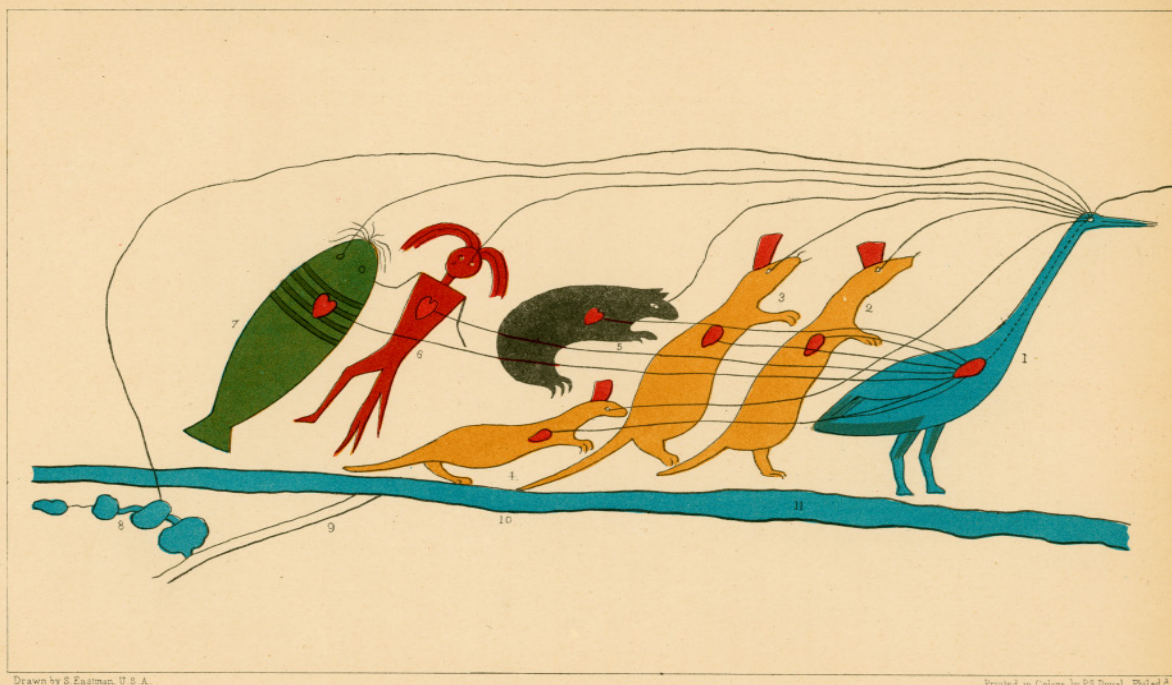
and 19th-century treaties negotiated with federal governments. In exchange for millions of acres of ceded territory, Indigenous Peoples reserved existing rights to hunt, fish, and gather, and secured "usual privileges of occupancy" throughout the land cession. Indigenous sovereignty is inherent—sovereignty was not granted to Indigenous Nations by the U.S. or Canada. In fact, these governments recognized the sovereignty of these Indigenous Nations, as treaties can only be established between sovereigns.

Nayaano-nibiimaang Gichigamiin is and has always been governed by law. The foundation for sovereignty is rooted in the First Treaty, also called Sacred Law, Original Instructions, and the Great Laws of Nature. The First Treaty is the long-standing agreement between the Creator and all orders of creation that all beings are relatives of one another, will be interdependent upon one another, and honor, respect, and care for each other.

These relationships and obligations are timeless across generations. They are also depicted in the pictograph on the next page, the Symbolic Petition of Chippewa Chiefs. In 1849, a Chippewa delegation journeyed to Washington with

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Drawn by S. Eastman, U.S.A.

Printed in Colors by P.S. Duval, Philad.

SYMBOLIC PETITION OF CHIPPEWA CHIEFS,  
presented at Washington, January 28<sup>th</sup> 1849, headed by Oshcabawis of Monomoneau, Wisconsin.

Reprinted with permission from The Wisconsin Historical Society.

this pictograph sketched on birch bark to petition Congress and the president to protect their residence in Nayaano-nibiimaang Gichigamiin. The figures symbolize the clan memberships of the Chippewa delegation, with all of their hearts and minds connected while also being connected to the region's lakes. Soon after, the 1854 Treaty With the Chippewa established reservations as permanent homelands throughout the region.

As represented in the pictograph, human nations are one sovereign among many sovereigns—fish nations, plants and tree nations, and many other wildlife beings are sovereigns as well. Being sovereign requires diplomacy between nations, and that is Sacred Law, that nations acknowledge and have respect for one another's autonomy.

### Seven generations

Significantly, U.S. treaties and the Constitution are recognized as "supreme Law of the Land," and as such, take priority over all other laws (Article VI, Clause 2). For several decades, U.S. statutes and resolutions have reaffirmed treaty law. We underscore the following: U.S. citizens greatly value constitutional rights after more than 230 years, and

similarly, Indigenous Nations value treaty rights as supreme law.

Revitalizing shared Nayaano-nibiimaang Gichigamiin governance and stewardship has been the work of Indigenous Peoples. Today, it is an ongoing commitment to ensure that Indigenous rights and responsibilities are protected for seven generations to come, and simultaneously, to honor the past seven generations, including our treaty makers.

To learn more about Nayaano-nibiimaang Gichigamiin places, peoples, and life, visit the Great Lakes Indian Fish and Wildlife Commission [Public Information Office](#) and the Keweenaw Bay Indian Community Natural Resource Department [Knowledge Center](#).

*Valoree Gagnon is director of University-Indigenous Community Partnerships, Great Lakes Research Center, and an assistant research professor with the College of Forest Resources and Environmental Science at Michigan Technological University. Bizhikiins Dylan Jennings is a member of the Bad River Band of Lake Superior Ojibwe and is public information office director at the Great Lakes Indian Fish and Wildlife Commission (GLIFWC). Michael Waasegiizhig Price is Anishinaabe and is a Traditional Ecological Knowledge specialist at GLIFWC. Evelyn Ravindran is director of the Keweenaw Bay Indian Community Natural Resources Department and a member of the Keweenaw Bay Indian Community.*

*Kitche Manitou then made The Great Laws of Nature for the well-being and harmony of all things and all creatures. The Great Laws govern the place and movement of sun, moon, Earth and stars; govern the powers of wind, water, fire, and rock; govern the rhythm and continuity of life, birth, growth, and decay. All things live and work by these laws.*

*Excerpted from "The Creation Story of Kitche Manitou (The Great Spirit) of the Ojibwe." Adapted from Basil Johnston's Ojibway Heritage: The ceremonies, rituals, songs, dances, prayers and legends of the Ojibway. McClelland and Stewart 1976, reprinted 1998; Toronto.*

# Traditional Ecological Knowledge

by Jessica Owen, Katrina Keeshig, and Catherine Febria

Panelists and Organizers: Myrle Ballard, Candy Donaldson, Catherine Febria, Pauline Gerrard, Chris Herc, Clint Jacobs, Katrina Keeshig, Jessica Owen, and Dilber Yunus

**B**oozhoo; *She:kon*; hello, IAGLR community. The pandemic has changed many plans this year, including those for the IAGLR 2020 conference that was to be held in Winnipeg, Canada. Winnipeg is home to many Indigenous groups and is part of the traditional lands of the Anishinaabe, Cree, Oji-Cree, Dene, Dakota, and Métis Nation. Our plans were to feature an Indigenous-centered session highlighting the work of Indigenous Peoples working alongside and within STEM.

Although IAGLR 2020 was not physically held in Winnipeg, the virtual conference allowed for Indigenous voices to be heard through a live discussion titled “Traditional Ecological Knowledge (TEK) and the Great Lakes Basin,” initiated by Catherine Febria of Healthy Headwaters Lab (HHL) and Dilber Yunus of the International Institute for Sustainable Development Experimental Lakes Area (IISD-ELA), and facilitated by Katrina Keeshig (HHL). This session sought to explore new and growing research partnerships with First Nations as well as how TEK can enrich our scientific understanding of aquatic ecosystems.

The session featured three key speakers: Clint Jacobs, supervisor of NinDaWaabJig Heritage Centre on Walpole Island First Nation (Bkejwanong), Chris Herc, environmental monitoring coordinator for Grand Council Treaty 3, and Myrle Ballard, assistant professor and Indigenous scholar for the Department of Chemistry at the University of Manitoba. The session was attended by more than 100 individuals who were able to hear about the work being undertaken by our key speakers and their affiliations, and who were invited to ask questions and share insights with the panel.

While the conference normally has individuals giving presentations for a specific time, the virtual conference allowed for individuals to interact through many means including the virtual library, video conferencing, and virtual Q&A

forums. The TEK session echoed similar themes as those featured and discussed in the justice, equity, diversity, and inclusion panel; namely, Black, Indigenous, People of Color—specifically Indigenous—are knowledge holders of Turtle Island (North America) and have been excluded from many scientific research pursuits despite their diverse ways of knowing and understanding nature that are embedded in multiple cultures. Therefore, there is great potential in alignment and more impactful science in the Great Lakes.

**Fostering a deeper connection with Indigenous People will not only help our sciences, but can strengthen and, in some cases, repair relationships.**

Knowing and understanding nature is central to Indigenous communities, and they have held this knowledge for thousands of years. It was emphasized in the session that the sciences must center the voices of Indigenous People. Fostering a deeper connection with Indigenous People will not only help our sciences, but can strengthen and, in some cases, repair relationships, which every Canadian and American should aim to do. This includes connecting with groups across Turtle Island to share knowledge, being involved in community not only through research but through community events and volunteering, and properly citing knowledge and its origins. We suggest that all members of the IAGLR community start and/or continue their relationship with local Indigenous groups and make their research more holistic. While 45 minutes was not enough time to fully and properly discuss TEK and the aquatic sciences, nor for our invited experts to thoughtfully respond to questions, the session was

clearly welcomed by the IAGLR community and will continue to be a presence at future meetings. All panelists were grateful to connect with others, and for that we are deeply grateful.

Since the conference, HHL and IISD-ELA, which reside in the Three Fires Confederacy and Treaty 1 Territory (with IISD-ELA’s research facility located in Treaty 3 Territory), have continued to connect. Both HHL and IISD-ELA have prioritized working alongside Indigenous groups in multiple aspects of their engagement and research. Both groups have benefited from their relationships with local Indigenous groups and their sharing of TEK. An example of this relationship is one between the HHL and Bkejwanong (Walpole Island First Nation), where a land-based field course and multiple funded projects have been underway since 2019. Moreover, because of COVID-19 closures, HHL began hosting listening circles with aligned partners and Indigenous Elders, which now include Bkejwanong’s NinDaWaabJig (Heritage Centre), Dr. Ballard, the IISD-ELA group, and other invited Indigenous and non-Indigenous guests. These meetings focus on topics of inclusion of Indigenous groups in ecological sciences, land preservation and ecological restoration, and how research is enriched and more impactful by including Indigenous groups, their knowledge, and communities. This circle of understanding will continue to grow. If you would like to learn more, please feel free to connect with the HHL’s Indigenous Allyship Program ([healthy.headwaters@uwindsor.ca](mailto:healthy.headwaters@uwindsor.ca)) and the IISD-ELA: Pauline Gerrard and Dilber Yunus ([pgerrard@iisd-ela.org](mailto:pgerrard@iisd-ela.org), [dyunusi@iisd-ela.org](mailto:dyunusi@iisd-ela.org)).

*Jessica Owen and Katrina Keeshig are research associates with the Healthy Headwaters Lab at the University of Windsor’s Great Lakes Institute for Environmental Research. Catherine Febria is a Canada Research Chair in Freshwater Restoration at GLIER and director of HHL.*





## I am one with everything

by Mariah Alexander / Baashkooniingad Kwe\*

I created this piece, “I am one with everything,” after reading a poster about primary producers, primary consumers, and secondary consumers in the water. I have often seen in scientific contexts that the size and diet of animals place them into hierarchies, so I thought there must be a more accurate representation of my connection to different beings. This piece illustrates how I become a part of creation as I consume; how, eventually, we all give back to one another something that promotes the continuation of the circle of life. I eat the fish, who eats the smaller insects, who eats phytoplankton, and eventually we all go back to the earth and are recycled by the plant beings. The water droplets represent that connection water gives us before, during, and after we consume each other. There is no hierarchy in the image because we are equally powerful and important to each other’s existence. Our interdependence, taking on the life that we take, is a truly beautiful and humbling thing to me.

*\* Baashkooniingad Kwe translates to “buds on the tree beginning to open woman” in Anishinaabemowin, the Anishinaabe/Ojibwe language*

## An Indigenous artist’s perspective on the ecology of the Great Lakes

Before the global pandemic arrived, the [Healthy Headwaters Lab](#), the [Incubator Art Lab](#), and other collaborators at the University of Windsor were excitedly planning the second offering of the land-based [Traditional Ecological Knowledge field course](#) to take place at Bkejwanong Territory (Walpole Island First Nation) at the start of the summer solstice and in alignment with the annual pow wow in June of 2020. As part of that effort, Clint Jacobs, the course instructor from Bkejwanong and newly appointed adjunct Indigenous scholar, received a small teaching award along with me, Candy Donaldson, and Jennifer Willet to develop an art module as part of the 2020 course. When communities around the Great Lakes shuttered to help curb the spread of COVID-19 in March, so did plans for the course.

Instead, we pivoted our support to Clint and his team at NinDaWaabJig (Walpole Island Heritage Centre) to empower and train youth through the Bkejwanong Eco-Keepers program virtually, and also extended opportunities for mentorship to Indigenous artists to explore science, art, and Traditional Ecological Knowledge (TEK). The aim was to create teaching resources for diverse groups of learners engaged in TEK and Indigenous-led environmental stewardship in the Great Lakes.

Above, in gratitude and excitement, we share one of the works created by our featured Indigenous artist, Mariah Alexander/Baashkooniingad Kwe. Mariah is a recent B.Sc. graduate in environmental and Indigenous studies from Trent University, and as a recent grad, she spent much

of the summer working alongside Indigenous youth engaged in the Bkejwanong Eco-Keepers and part of a community-based effort to rematriate native Walpole Island corn back to its ancestral lands for the first time in generations. She will continue to be mentored by artists in the Incubator Lab, engage with the Healthy Headwaters Lab’s research underway at Bkejwanong, and work in her community. This work was supported by the University of Windsor’s Seek to Know Nanadagikenim grant from the Centre of Teaching and Learning at the University of Windsor.

As a group, we are continuing our efforts to deliver land-based courses in the future—in person and virtually.

*Baa Maa Pii and Miigwech,*  
Catherine Febria

# How we collaborate with First Nation communities at the world's freshwater laboratory

by Dilber Yunus

In 2014, a brand-new chapter began at the Experimental Lakes Area (ELA) when the International Institute for Sustainable Development (IISD) saved it from imminent closure. Now operating as a nonprofit, we here at IISD-ELA have seized the opportunity to work closely with our neighboring Indigenous Nations, recognizing that we have been operating on the traditional land of Treaty 3 since we opened in 1968.

Initial meetings between IISD-ELA senior staff and the chiefs and councils of several communities took place in the summer of 2014. Following these meetings, common areas of interest emerged; in particular, environmental monitoring and support for youth engagement and education. These discussions helped conceptualize some of the collaborative projects that were later developed, and we committed to hosting an annual Fall Feast at our research site.

Since 2015, IISD-ELA has hosted five Fall Feasts. With a different theme each year, these feasts have brought Elders, knowledge holders, youth, and helpers together with our staff to honor the abundance that the season has brought, and most importantly, to open up discussions and continue conversations.

In 2018, the Grand Council of Treaty 3 launched a community-based monitoring (CBM) training program with a goal to establish monitoring baseline data for the lakes in the area. As a result of the discussion at one of the Fall Feasts, IISD-ELA's role to provide technical support in the CBM program was conceptualized. IISD-ELA has since welcomed participants, mainly youth, from three communities to the facility to learn about CBM. With an emphasis on lake health, the program provides first-hand experience in monitoring water quality and characteristics as well as sampling fish tissue for mercury. But what's more exciting about the program is that it creates a pathway for knowledge exchange and sharing among the community members and our researchers.

Over the years and through sharing circles at Fall Feasts, the importance of language and culture in connecting

youth to the land and, in turn, to field-based research like we do at IISD-ELA has become evident.

In early 2018, we initiated a collaboration with a group of Elders and language experts from the Treaty 3 community to translate IISD-ELA's series of infographic videos on various research topics into Ojibwe. We wanted to make research findings more accessible to the communities in their language. We soon realized that this project has done more than just broaden our audience. It has produced Ojibwe transcripts for two research videos supplemented by lesson plans for language learners, created vocabulary, and helped facilitate a deeper connection with Elders and partners.

In addition to the collaborations highlighted above, there are other ongoing projects and future initiatives, including a land-water-based traditional and scientific knowledge camp for youth (currently postponed due to COVID-19), a resources bundle to support and supplement the CBM training program, and a potential project looking into what Indigenous-led research would look like and how the two ways of knowing can work together in understanding emerging environmental issues.

The work engaging Indigenous communities in Treaty 3 is a journey of learning, sharing, and reconciliation. We



Team photo taken after a full-day translation session. Pictured are Dilber Yunus (IISD-ELA), Grandmother Nancy Jones, Elder Don Jones, IISD-ELA Deputy Director Pauline Gerrard, and language teacher Jason Jones. Photo courtesy of IISD Experimental Lakes Area.

have learned that building long-term and in-depth relationships based on trust and respect with both communities and individuals is the first step toward many meaningful collaborations and partnerships; knowledge sharing is a two-way exchange of information; listening and continuous learning are key; and that we must always keep in mind the importance of language and culture.

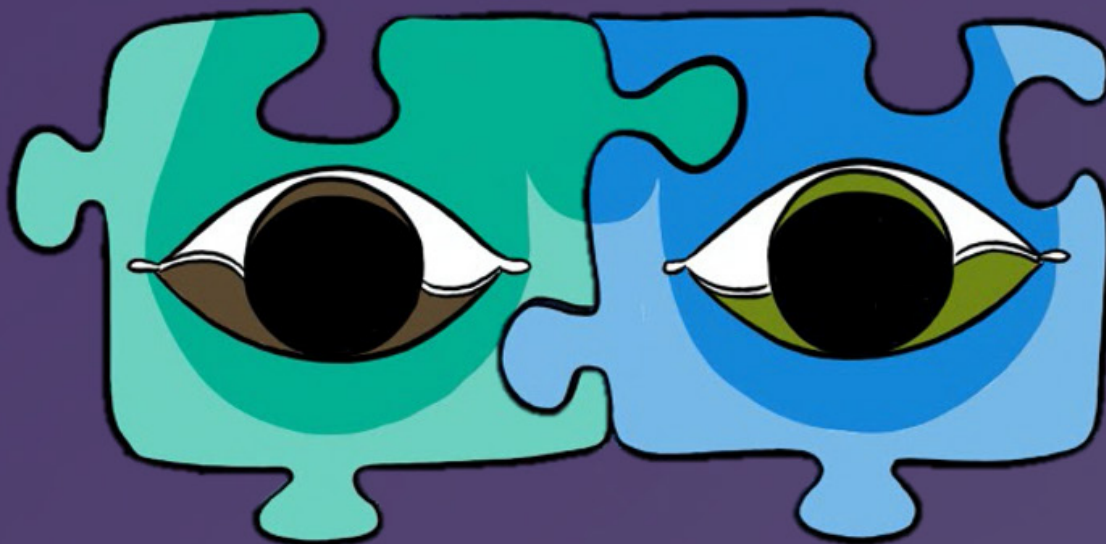
Looking ahead, here at the world's freshwater laboratory we will continue to nurture established connections with communities and individuals, learn from knowledge holders, and create opportunities for knowledge exchange; continue to support CBM and youth engagement in language, culture, and land-based research; and explore ways to bring two ways of knowing and to create space for Indigenous wisdom and participation.

*Dilber Yunus is the outreach officer at the IISD Experimental Lakes Area.*

"Sharing our teachings of the water with our friends at ELA was paramount to what is needed for the longevity of all types of water. Together we learned about what is going into our water systems, and how we can work with our leaders of tomorrow to help us keep the next Seven Generations safe. Our water beings will greatly benefit from this important collaboration. Together, we are stronger!"

*From Grandmother Nancy Jones, Elder Don Jones, and Ojibwe Language Teacher Jason Jones from Ninigoonsiminikaaning First Nation*





A visual representation of *Two-Eyed Seeing*, or *Etuaptmumk* in Mi'kmaw, which, like binoculars, leads to a wider and deeper field of view than a single lens alone. Courtesy of Nicole Marie Burton and Andrea Reid.

# 20 Essential Reads

## to Enable Two-Eyed Seeing in Aquatic Research and Management

by Andrea Reid, Jesse Popp, Deborah McGregor, Jacquie Miller, and Albert Marshall

*Two-Eyed Seeing*, or *Etuaptmumk* in the Mi'kmaw language, is defined by Mi'kmaw Elder Dr. Albert Marshall as “learning to see from one eye with the strengths of Indigenous Knowledges and ways of knowing, and from the other eye with the strengths of Western knowledges and ways of knowing ... and learning to use both these eyes together, for the benefit of all.” (Read more about this concept on the [Institute for Integrative Science & Health's website](#).)

There has been a proliferation of interest in this guiding principle for bridging knowledge systems and creating space to learn from multiple ways of knowing and being.

In October 2020, a paper in the journal *Fish and Fisheries* reviewed the transformative potential for Two-Eyed Seeing for fisheries research and management if carried out in a good way. Following this, the lead and senior authors of this article, Drs. Andrea Reid and Albert Marshall, joined [a dialogue](#) as part of the *Reconciling Ways of Knowing* forum, alongside fellow Indigenous scholars Drs. Jesse Popp and Deborah McGregor to speak to these very subjects. Together with forum host Jacquie Miller, this team has compiled a list of essential reads for applying Two-Eyed Seeing in a good way to research and management in the aquatic realm and beyond. Please see the following page.

## 20 Essential Reads

### On bridging knowledge systems in the aquatic sciences:

1. McGregor, D.M.D., 2008. Linking traditional ecological knowledge and western science: Aboriginal perspectives from the 2000 State of the Lakes Ecosystem Conference. The Canadian Journal of Native Studies, 28(1), pp. 139-158. [Link](#).
2. Reid, A.J., Eckert, L.E., Lane, J.F., Young, N., Hinch, S.G., Darimont, C.T., Cooke, S.J., Ban, N.C. and Marshall, A., "Two-Eyed Seeing": An Indigenous framework to transform fisheries research and management. Fish and Fisheries. [Link](#).

### For researchers seeking to decolonize research, aquatic or otherwise:

3. Cajete, G., 2000. Native science: Natural laws of interdependence. Clear Light Pub. [Link](#).
4. Wilson, S., 2008. Research is ceremony: Indigenous research methods. Fernwood Publishing. [Link](#).
5. Kovach, M., 2010. Indigenous methodologies: Characteristics, conversations, and contexts. University of Toronto Press. [Link](#).
6. Smith, L.T., 2012. Decolonizing methodologies: Research and indigenous peoples. Zed Books Ltd. [Link](#).
7. McGregor, D., Restoule, J.P. and Johnston, R. eds., 2018. Indigenous research: Theories, practices, and relationships. Canadian Scholars' Press. [Link](#).
8. Wong, C., Ballegooyen, K., Ignace, L., Johnson, M.J. and Swanson, H., 2020. Towards reconciliation: 10 Calls to Action to natural scientists working in Canada. FACETS, 5(1), pp. 769-783. [Link](#).

### On interweaving knowledge systems:

9. Battiste, M. and Henderson, J.Y., 2000. Protecting Indigenous knowledge and heritage: A global challenge. UBC Press. [Link](#).
10. Ransom, J.W. and Ettenger, K.T., 2001. 'Polishing the Kaswenha': a Haudenosaunee view of environmental cooperation. Environmental science & policy, 4(4-5), pp. 219-228. [Link](#).
11. Bartlett, C., Marshall, M. and Marshall, A., 2012. Two-eyed seeing and other lessons learned within a co-learning journey of bringing together indigenous and mainstream knowledges and ways of knowing. Journal of Environmental Studies and Sciences, 2(4), pp. 331-340. [Link](#).
12. Kimmerer, R.W., 2012. Searching for synergy: integrating traditional and scientific ecological knowledge in environmental science education. Journal of Environmental Studies and Sciences, 2(4), pp. 317-323. [Link](#).
13. Kimmerer, R.W., 2013. Braiding sweetgrass: Indigenous wisdom, scientific knowledge and the teachings of plants. Milkweed Editions. [Link](#).
14. Kimmerer, R.W., 2013. The fortress, the river and the garden: A new metaphor for cultivating

mutualistic relationship between scientific and traditional ecological knowledge. In Contemporary studies in environmental and Indigenous pedagogies (pp. 49-76). Brill Sense. [Link](#).

15. Latulippe, N., 2015. Bridging parallel rows: Epistemic difference and relational accountability in cross-cultural research. International Indigenous Policy Journal, 6(2). [Link](#).
16. Johnson, J.T., Howitt, R., Cajete, G., Berkes, F., Louis, R.P. and Kliskey, A., 2016. Weaving Indigenous and sustainability sciences to diversify our methods. Sustainability Science, 11(1), pp. 1-11. [Link](#).

### On bridging knowledge systems beyond aquatic sciences:

17. Reo, N.J. and Whyte, K.P., 2012. Hunting and morality as elements of traditional ecological knowledge. Human Ecology, 40(1), pp. 15-27. [Link](#).
18. Reo, N.J., Whyte, K.P., McGregor, D., Smith, M.A. and Jenkins, J.F., 2017. Factors that support Indigenous involvement in multi-actor environmental stewardship. AlterNative: An International Journal of Indigenous Peoples, 13(2), pp. 58-68. [Link](#).
19. Nelson, M.K. and Shilling, D. eds., 2018. Traditional ecological knowledge: learning from indigenous practices for environmental sustainability. Cambridge University Press. [Link](#).
20. Popp, J.N., Priadka, P., Young, M., Koch, K. and Morgan, J., 2020. Indigenous Guardianship and moose monitoring: weaving Indigenous and Western ways of knowing. Human-Wildlife Interactions, 14(2), p. 17. [Link](#).

**Andrea Reid** is a citizen of the Nisga'a Nation and an incoming assistant professor with the University of British Columbia's Institute for the Oceans and Fisheries (starting January 2021), where she will help lead the new Indigenous Fisheries Research Unit. **Jesse Popp** is Chair in Indigenous Environmental Science at the University of Guelph. She is an emerging scholar and member of Wiikwemkoong Unceded Territory. **Deborah McGregor** is Anishinaabe, from Whitefish River First Nation, and associate professor and Canada Research Chair in Indigenous Environmental Justice at York University's Osgoode Hall Law School and Faculty of Environmental Studies. **Jacquie Miller** is part of the first cohort in the University of Victoria Faculty of Law's Juris Doctor/Juris Indigenarum Doctor program in Canadian common law and Indigenous legal orders and a lead organizer for the Reconciling Ways of Knowing: Indigenous Knowledge and Science Forum. **Albert Marshall** is an Elder of the Mi'kmaw Nation of Unama'ki (Cape Breton Island), Nova Scotia, and the 'designated voice' on environmental issues for the Mi'kmaw Elders. He is the co-developer and co-steward of the Integrative Science program at Cape Breton University.

# Welcome new IAGLR members



## EVA ENDERS

Research Scientist  
Fisheries and Oceans Canada, Freshwater Institute

### About my work

My research interest lies in studying the effects of natural and anthropogenic changes of flow and climate on fish and fish habitat. In my research, I enjoy working in large multidisciplinary research teams. Most of my lab's research relates to conservation physiology, fish behavior and bioenergetics, and aquatic ecology to provide science advice for Fisheries and Oceans Canada's Species at Risk, Fish and Fish Habitat Protection, and Aquatic Invasive Species programs. We are combining controlled laboratory experiments on freshwater fishes that facilitate hypothesis testing with field experiments to validate developed models.

Due to the Government of Canada's interest in the protection of Lake Winnipeg, the focus of my research program has shifted in recent years from small stream systems to the Lake Winnipeg basin. In collaboration with several provincial, federal, and state agencies, as well as universities, we are currently conducting a large-scale telemetry project to analyze fish movement and habitat use, a long-term pelagic fish survey, a bathymetry and substrate survey, and a near-shore monitoring program. In these projects, we are particularly interested in studying species at risk and understanding the impacts of non-native species on the ecosystem.

### Why IAGLR?

Due to my recent research focus on Lake Winnipeg, I joined IAGLR to become an active member of the community and learn about advances in Great Lakes research. The new research focus has also led to my involvement in the *Journal of Great Lakes Research* as guest editor for a special issue on "Lake Winnipeg – the emerging view after 15 years of whole-lake, whole-ecosystem science." I was hoping to attend IAGLR 2020 in person to meet and network with scientists, managers, and stakeholders concerned with large lakes and am looking forward to meeting members at future events.



## KIRSTEN ROBINSON

Blue Accounting Coastal Wetlands Technician  
The Nature Conservancy

### About my work

I am beginning a new career in conservation at The Nature Conservancy in Michigan, USA, as a technician for the Blue Accounting Coastal Wetlands program. [Blue Accounting](#) is an initiative that was created in response to a call from both the U.S. and Canadian governments for a more efficient way to account for progress from investments in the Laurentian Great Lakes Basin. At this time, the focus areas on Blue Accounting include coastal wetlands, aquatic invasive species, source water, ErieStat (phosphorus levels in Lake Erie), and maritime transportation. I work with the coastal wetlands team to identify metrics for measuring progress, research the literature, write and publish material on the site, and update our content. Some of the ecological metrics I've worked on include a wetland breeding birds index, wetland breeding amphibians index, and the acreage of wetlands that are being protected, restored, or enhanced around the Great Lakes. I'm currently working to help develop socioeconomic metrics, such as the relationship of coastal wetlands to flood impacts on Great Lakes coastlines.

### Why IAGLR?

Early this year, I collaborated with our team to create two presentations for the IAGLR 2020 conference related to our work on the socioeconomic benefits of coastal wetland projects. I was delighted when it turned out I could attend due to the conference going virtual. I enjoyed the variety and diversity of presentations from around the world. I also learned that access to IAGLR's *Journal of Great Lakes Research* could help me in my background research for Blue Accounting's Coastal Wetlands metrics. So I joined IAGLR, and I am excited to learn more about current happenings and research in all of the world's Great Lakes. As I grow professionally, I hope to stay a member of IAGLR and continue to discover new opportunities.



# MEMBER KUDOS

Congratulations to the following IAGLR members on their accomplishments.

**JIM BENCE** (Michigan State University) for being named a fellow of the American Fisheries Society.

**SCOTT COLBORNE** for his new position as postdoctoral researcher with University of California–Davis, which he will conduct remotely from Ann Arbor.

**LINDA CORKUM** (University of Windsor, retired) for being named a “Legend of Canadian Fisheries Science” by the Canadian Branch of the American Fisheries Society.

**DANIEL HOFFMAN** (Environmental Sciences, Wright State University) for successfully defending his Ph.D. dissertation in the titled “The Fate of Anthropogenic Nitrogen Along Hydrologic Continuums: Patterns of Transformation and Recycling in a Eutrophic Lake and Coastal Marine Sediments.”

**JESS IVES** (University of Windsor), **MATT MCCANDLESS** (Institute for Sustainable

Development-Experimental Lakes Area), **KEVIN OBIERO** (Kenya Marine and Fisheries Research Institute), **TED LAWRENCE** (African Center for Aquatic Research and Education) and the many IAGLR members and award recipients who collaborated, and were inspired by IAGLR conferences and events, to bring the IISD and ACARE together for a recently announced partnership. This new project means that world-class scientists and researchers from across North America and Africa will be putting their heads and expertise together to tackle some of the most pressing issues—algal blooms, climate change, invasive species, fragile fisheries, to name but a few—facing the African Great Lakes today. Want to learn more, or even get involved? Visit the [IISD](#) and [ACARE](#) websites.

**MATT MCCANDLESS** (Institute for Sustainable Development-Experimental Lakes Area) for joining the African Center for Aquatic Research and Education Board of Directors.

**MATT PAWLOWSKI** on his new position as physical scientist at the EPA Great Lakes National Program Office. Pawlowski is the technical lead for GLNPO’s Great Lakes Coastal Wetland Monitoring Program.

**ANNIE SCOFIELD** on her new position as life scientist at the EPA Great Lakes National Program Office. Scofield is the technical lead for GLNPO’s Great Lakes Long-term Biology Monitoring Program and the U.S. co-chair of the GLWQA Science Annex Cooperative Science and Monitoring Task Team.

**PAUL SIBLEY** for being appointed as interim director of the School of Environmental Sciences at the University of Guelph.

## Celebrating 50 years of science, service, and stewardship!

[www.noaa.gov/50-years](http://www.noaa.gov/50-years)

A large graphic with a blue background featuring white contour lines. On the left, a circular gauge-like graphic contains the text "NOAA provides products & services in 5 key areas". To the right of this are five circular icons arranged vertically, each with a label to its right: "Weather" (a storm cloud), "Research" (people on a boat), "Coasts" (a person on a beach), "Habitat" (a wetland landscape), and "Climate" (a map of the United States).

NOAA provides products & services in 5 key areas

**Weather**

**Research**

**Coasts**

**Habitat**

**Climate**

To learn more about NOAA's products and services in the Great Lakes visit: [regions.noaa.gov/great-lakes](http://regions.noaa.gov/great-lakes)

## In memoriam: David L. Spangler (1946–2020)

**THE LAKE ERIE** community is saddened by the passing of David L. Spangler, a gentle soul and beloved charter boat captain who fiercely devoted many of the final years of his life to educating others about the science of algal blooms, efforts to keep Asian carp out of the Great Lakes, and why the 30 million Americans and 10 million Canadians who live in the Great Lakes basin deserve better water quality in general.

Dave, who lived along the Lake Erie shoreline near Oak Harbor, Ohio, was well-known among and highly respected by many of the International Association for Great Lakes Research's leading scientists.

He died of leukemia on Oct. 21 at Heroes Harbor Hospice, part of the Cleveland Veterans Administration Medical Center.

"Dave and I fed off each other. I mean, we really did," his long-time counterpart, Paul Pacholski, told *The (Toledo) Blade* for a [news obituary](#) published the day after his death. "Without question, he made me a better person and a better advocate."

Pacholski is the longtime president of the Lake Erie Charter Boat Association. As the same group's longtime vice president, [Spangler was his right-hand man](#).

Tributes have poured in from past and current governors, members of Congress, and other dignitaries.

Dave was "an enthusiastic supporter of all the work we do," noted IAGLR member George Bullerjahn of Bowling Green State University.

"A day on the water with Dave was fun, enlightening, and always led to a successful research trip. I looked forward to catching up with him at all the conferences we have held. The fact he attended every meeting shows how much he cared about the lake and our research," Bullerjahn said.



Dave Spangler along the Lake Erie shoreline across from the University of Toledo Lake Erie Center on Aug. 14, 2019. Photo courtesy of *The (Toledo) Blade*/Tom Henry.

We "have lost a voice of reason among those concerned with Lake Erie," said Ohio Sea Grant/Ohio State University Stone Laboratory Director Chris Winslow. "Dave will be missed, but we can remember him in our words, actions, and efforts going forward."

That sentiment was echoed by Justin Chaffin, Ohio Sea Grant/OSU Stone Laboratory research coordinator, who called Dave "a true champion for Lake Erie sport fishing and water quality."

Chaffin added, "It was a pleasure working with Dave on research projects and then chatting with him about hot spots and baits for walleye after our business was completed. He understood that fishing success and water quality are tightly connected. He and his advocacy for Lake Erie will be missed."

Mike McKay, executive director of the University of Windsor's Great Lakes Institute for Environmental Research, lauded Spangler and Pacholski for the citizen science sampling program they initiated

in 2012 with help from other charter boat captains.

Samples drawn simultaneously by charter boat captains give the Ohio EPA and other agencies field data from a vast expanse of the lake on the same date and at the same time, information the agencies otherwise wouldn't have.

McKay was pleased Spangler worked closely with so many IAGLR members.

Tom Bridgeman, the University of Toledo Lake Erie Center's director, said he "had the greatest respect and affection for Dave," and BGSU's Tim Davis called him "a tireless advocate for Lake Erie."

*by Tom Henry, The (Toledo) Blade*

# News from the IAGLR Board of Directors

In September, the IAGLR Board of Directors launched several ad-hoc committees to bring increased attention to four strategic initiatives that will impact the make-up and focus of the association for years to come. As a volunteer-led organization, we rely on the work of these committees and members to push our association forward and expand the impact and reach of our members. The new committees include the following:

- a meetings committee to evaluate all IAGLR conferences for the next five years,
- a financial strategy committee to organize our collective development efforts,
- a committee to undertake a fact-finding review to have an executive director position for IAGLR, and finally,
- a committee to review the justice, equity, diversity, and inclusion (JEDI) recommendations from earlier panels and workgroups.

Each committee is evaluating past actions and carefully considering how IAGLR can create specific action items and bold visions of the future of our association.

## Meetings Committee

COVID-19 has clearly impacted every conference this year, and the meetings committee has already begun making recommendations to host virtual meetings through mid-2021. The committee is also reviewing where to host the flagship annual IAGLR research conference, annual lake-specific conferences, and future joint conferences with other societies.

## Financial Strategy Committee

The success of any nonprofit organization depends upon a robust financial strategy to support key staff and initiatives to serve its mission. This committee will review funding mechanisms and partnerships with organizations who share our values and support our role in understanding and protecting the world's large lakes ecosystems. IAGLR's long history of publishing a quality scientific journal and organizing international conferences is a testament to the association's value and contribution. Developing a multi-year financial strategy to achieve the association's goals is the aim of the committee.

## ED Fact-Finding Committee

While IAGLR is volunteer-led and has a wonderful business manager and other

contracted staff, it is clear that there is a limit to the amount of work the board can do on its own. For this reason, IAGLR is launching a fact-finding committee to determine the roles, duties, and viability of a part-time or full-time executive director who can expand the association's impact. This committee is gathering data and creating a decision roadmap/timeline that the board will use to fully evaluate the impacts an executive director can have on our association.

## JEDI Committee

And finally, it is clear that IAGLR needs to take immediate action to implement the JEDI recommendations presented and discussed over the last six months. The new JEDI committee will work to implement those recommendations and continue to push for change at all levels of IAGLR (see box below).

All of the committees and initiatives mentioned above require leadership, commitment, and participation from a broad spectrum of our community. Please reach out if you would like to learn more about how to contribute to this work to help IAGLR stay a strong and vibrant gathering place for all. Contact IAGLR President Ed Verhamme at [president@iaglr.org](mailto:president@iaglr.org).

## IAGLR JEDI follow-up

The IAGLR Board of Directors discussed options to follow up with new justice, equity, diversity, and inclusion (JEDI) initiatives. The board reviewed recommendations from the JEDI panel convened during the IAGLR 2020 Virtual conference in June and considered how to make these actions permanent to the board's governance.

Additional ideas generated by the board's discussion included a range of association and board activities, including the following:

- Examine IAGLR publications (JGLR, newsletter) as a venue for new content such as a 'Cultural Corner,' commentaries on traditional management practices, and inclusion of social science perspectives. "Letters to the Editor" and "From the IAGLR President" could also be leveraged to highlight JEDI activities.
- Include regular updates on JEDI and other board actions and IAGLR activities in each *Lakes Letter*.

- Reach out to students in our own organizations to make people early in their career aware of IAGLR.
- Increase board recruitment of members of underrepresented groups.
- With increased virtual meetings, pivot unused travel award funds to support registration for underrepresented groups.
- Engage with students to plan a diversity mixer as part of future conferences (including virtual) with local sponsors' support.

The new ad hoc JEDI Committee (see above) includes Jennifer Boehme (co-chair), Donna Kashian (co-chair), Neil Rooney, Evie Brahmstedt, and Jess Ives, who will represent the *Journal of Great Lakes Research*. The group will start its work by reaching out to panelists from the June 2020 JEDI session for participation as they set up this committee.



# IAGLR's strategic plan takes shape

by Paul Sibley, Past President, IAGLR

One of the most important guiding documents for any organization is its strategic plan. Strategic planning involves setting goals, articulating the actions needed to achieve those goals, determining the metrics by which achievement of the goals can be assessed, and ensuring that sufficient resources are available to execute the actions. To be effective, this effort should be responsive to emerging needs while remaining true to an organization's mission and vision and anchored in its core beliefs and values.

To this end, the IAGLR Board of Directors has been working on developing both the foundational elements of the association's strategic plan, summarized below, as well as a responsive strategic

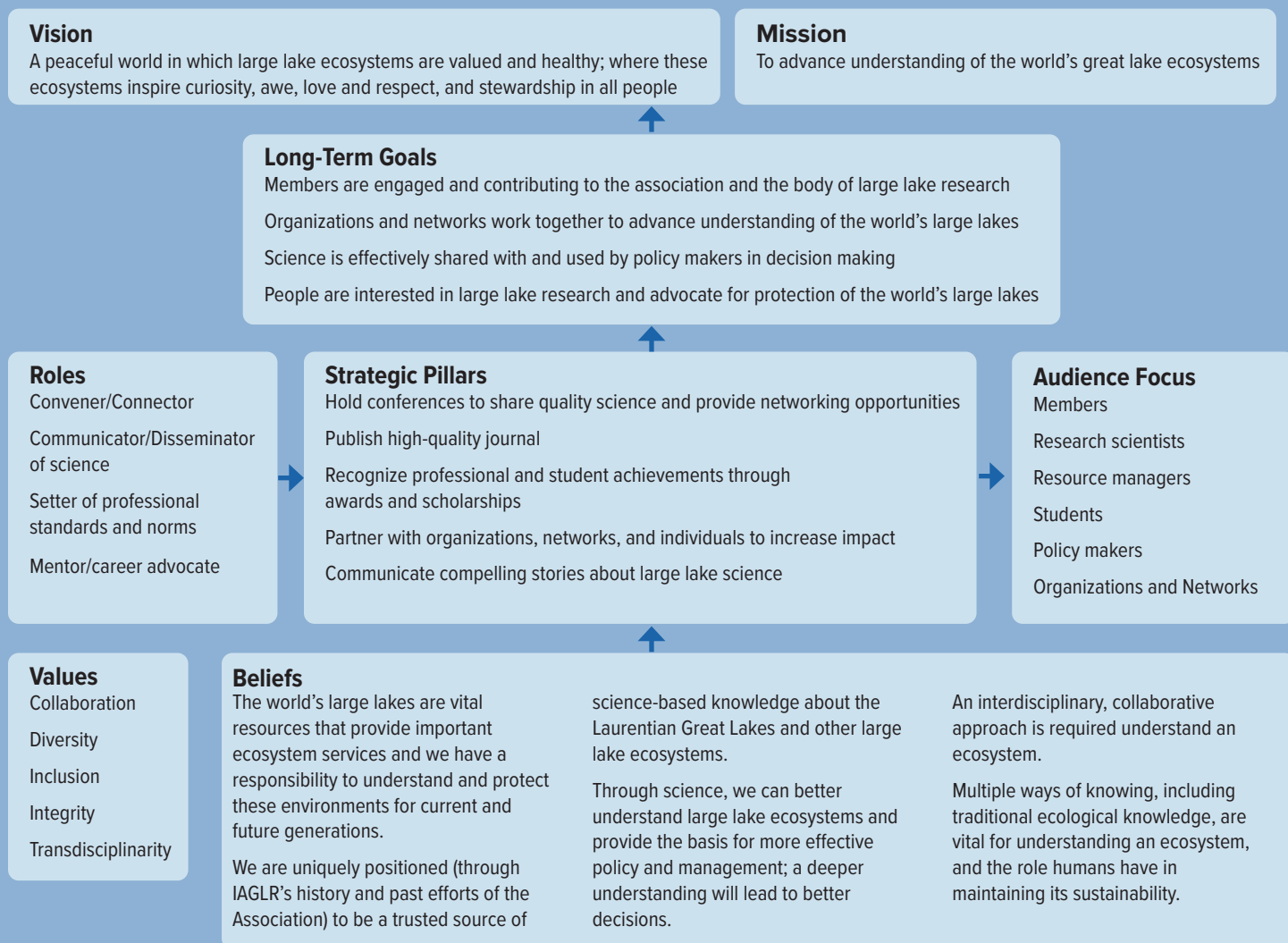
plan that targets our focus over the next three to five years.

The foundational elements shared below emerged from a review of the association's history and responses to our member survey in 2018.

The board will approach the responsive component of the strategic plan as a "living document" wherein the plan is reviewed and updated each year, at minimum. This approach will allow us to be nimble in responding to rapidly changing events. As an example, consider this year's heightened focus on justice, equity, diversity, and inclusion (JEDI) resulting from the killing of George Floyd last May by police in Minneapolis. The foundational components of the new strategic plan

had already identified these attributes as important values for the association, but we updated the strategic plan to identify clearer goals and metrics, and we have formed a JEDI Committee to ensure that these values are reflected in the daily business of the association (see p. 14).

The IAGLR board will present the full strategic plan to the IAGLR membership in the next few weeks. As we finalize the strategic plan before distribution to the membership, I encourage you to review the foundational elements of the plan below. Look for an email in which we will seek your ideas and ask you to share your thoughts.



# Join the IAGLR board!

## IAGLR seeks nominations for board member positions

The International Association for Great Lakes Research is seeking interested people to stand for election to the 2021 IAGLR Board of Directors in the following positions:

- Regular U.S. members (two positions)
- Regular Canadian member (one position)
- International member (one position)
- Canadian student member (one position)
- Secretary, and
- Treasurer.

The IAGLR Board of Directors is responsible for managing all affairs of the association to ensure the long-term continuity of its programs and activities, including the *Journal of Great Lakes Research*. Board members are expected to attend the annual business meeting as well as three board meetings per year. These occur at the annual conference (May/June), in September/October, and in February/March. It is desirable, but not mandatory, that board members attend the annual conferences. People elected to the board must also be members of the association.

### International Board Member

The international board member is anyone representing a nation other than Canada or the United States, including Tribal and First Nations with connections to a large lake. The elected member will serve on the board for three years.

### Secretary

The secretary is elected by the membership of the association for a term of three years and is eligible for reelection once. The secretary conducts the non-financial business affairs of the association. These include dealing with elections, bylaw change ballots, the minutes and agendas of all board and annual business meetings; ensuring the association Standard Operations Manual is updated on a yearly basis; and maintaining a history of the association. The secretary also arranges the three board meeting each year.



Members of the IAGLR Board of Directors in June 2019.

Jessica Ives, outgoing secretary, says of her experience, “over the past two terms (six years), my involvement with IAGLR has enriched my life, both professional and personal. While the secretary position initially seemed daunting, the value I got back from my invested time well exceeded my expectations. I intend to continue to be involved in IAGLR committees and will happily help onboard the new secretary.”

### Treasurer

The treasurer is elected by the membership of the association for a term of four years with eligibility for reelection. The treasurer serves as an ex-officio member of the board of directors. The treasurer conducts the business affairs of the association; keeps accurate records

of financial transactions and accounts of the association; reports the financial status of the association to the board of directors, the general membership, and to the Internal Revenue Service; and advises the president and board of directors on all matters and decisions affecting the financial status of the association.

“It has been a pleasure to serve IAGLR as treasurer and to work with so many talented, creative, and thoughtful people on the Board of Directors,” notes outgoing treasurer Scott McNaught.

### Regular and Student Board Members

Regular board members are elected for a three-year term, and student board members are elected for a two-year term.

IAGLR members are encouraged to nominate potential candidates, including themselves, or to request additional information by contacting Paul Sibley, past president and chair of the IAGLR Nominations Committee, at [nominationschair@iaglr.org](mailto:nominationschair@iaglr.org).

## Upcoming IAGLR conferences

The upcoming State of Lake Ontario Conference and IAGLR 2021 will both be virtual conferences. We hope to see you online!

**MARCH 9–11, 2021**

**State of Lake Ontario Conference**

*Virtual*

[iaglr.org/sol/solo21](http://iaglr.org/sol/solo21)

**MAY 17–21, 2021**

**64th Annual Conference on Great Lakes Research**

*Virtual*

[iaglr.org/iaglr2021](http://iaglr.org/iaglr2021)

Look for the Call for Abstracts next month!

**SEPTEMBER 13–19, 2021**

**European Large Lakes Symposium–IAGLR Conference**

*Petrozavodsk, Russia*

[iaglr.org/ells-iaglr/2021](http://iaglr.org/ells-iaglr/2021)

**FALL 2021**

**State of Lake Erie Conference**

*Dates & Location TBD*

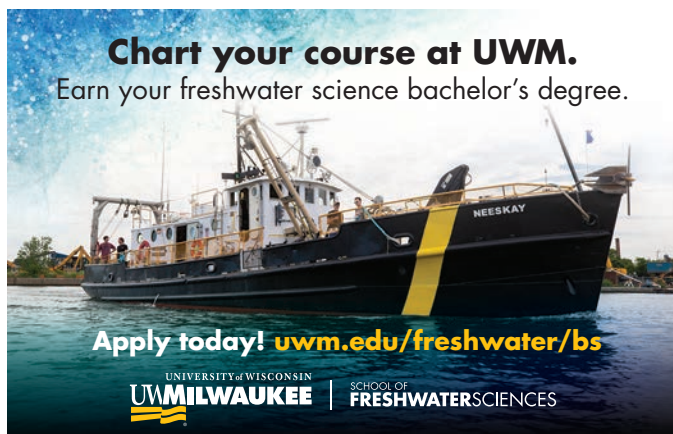
**MAY 6–20, 2022**

**65th Annual Conference on Great Lakes Research at the Joint Aquatic Sciences Meeting 2022**

*Grand Rapids, Michigan*

[jasm2022.aquaticsocieties.org/](http://jasm2022.aquaticsocieties.org/)

*IAGLR is committed to providing a safe and healthy atmosphere for all our members and conference attendees. Due to the coronavirus pandemic, we will continue to evaluate recommendations from local, state, and federal health authorities and may adjust meeting dates and venues as needed.*



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understanding the world's  
large lake ecosystems

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Use the coupon EARLY21 any time  
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[iaglr.org/membership](http://iaglr.org/membership)

## Other ways to support IAGLR

**Make a direct donation**

**Become a conference sponsor**

**Hold a birthday fundraiser on Facebook**

**Select IAGLR on Amazon Smile**

**Become a communications sponsor**

[iaglr.org/support](http://iaglr.org/support)



***IAGLR Members:***  
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**Stepping In and Speaking Out**  
**for the Great Lakes**

**Coming December 2020 to IJC.org:**

2020

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ASSESSMENT OF PROGRESS**

**Report**

*on Great Lakes Water Quality*

#### IAGLR Board of Directors

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*Lakes Letter* is published quarterly by the International Association for Great Lakes Research, a scientific organization made up of researchers studying the Laurentian Great Lakes, other large lakes of the world, and their watersheds, as well as those with an interest in such research.

Edited by Paula McIntyre, *IAGLR Communications Director*

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International Association for Great Lakes Research  
4840 South State Road  
Ann Arbor, Michigan 48108  
iaglr.org

## Nominate a notable JGLR paper

The [Chandler-Misener](#), [JGLR/Elsevier Early Career Scientist](#), and [JGLR/Elsevier Student](#) awards all recognize papers published in the *Journal of Great Lakes Research* based on the following criteria:

- **Originality**—an outstanding original piece of work;
- **Contribution**—a substantial body of theoretical, experimental, or field research;
- **Presentation**—clarity of literary style and illustration.

Did you read a paper published in 2020 that excels in these categories? [Nominate it for an award!](#) Nominations can be submitted at any point and will be considered for the appropriate award based on the career status of their lead author at the time of acceptance.

## Nominate a candidate for IAGLR's lifetime achievement or outreach award

Nominations are also encouraged for the [Lifetime Achievement Award](#) and the [John R. \(Jack\) Vallentyne Award](#). Read up on the criteria and consider nominating someone for either of these prestigious awards. Nominations are due in March. For more information, see the awards page at [iaglr.org/awards/](http://iaglr.org/awards/).



# CALL FOR PROPOSALS

<http://www.glfc.org/for-researchers.php>

The Commission's research programs consist of a portfolio of funded basic (discovery, descriptive, or hypothesis generation) and applied (descriptive or hypothesis-driven) research organized by designated theme areas.

### Fishery Research Themes

- Human Dimensions of Great Lakes Fishery Management
- Re-establishment of Native Deepwater Fishes
- Physical Processes and Fish Recruitment in Large Lakes
- Energy Dynamics of Great Lakes Food Webs
- Council of Lake Committees Research Priorities

### Sea Lamprey Research Themes

- Barriers and Trapping
- Lampricides
- Assessment
- Chemosensory Communication Systems
- Genetic Control **\*NEW THEME\***

## CALL FOR SPECIAL TOPICS

Fishery research projects focused on: human dimensions, specifically economics, understanding values, and changing demographics; coregonine—particular lake whitefish—conservation and restoration; and acoustic telemetry.

Sea lamprey research projects focused on: monitoring for TFM-resistant larvae, the sea lamprey life cycle, and acoustic telemetry.

**Proposals due by January 15, 2021**

Photos: P. Vecsei; GLFC