

Edwin O. Wagah

Student Corner

Voices from the Water: Fishers' Ecological Knowledge and Governance Gaps on Lake Victoria, Kenya

Lake Victoria, Africa's largest freshwater lake, is home to one of the continent's most vital and most threatened fisheries. Shared by Kenya, Uganda, and Tanzania, the lake supports the livelihoods of millions of people – yet its fish stocks are declining, invasive species are spreading, and governance remains fragmented. Amid these pressures, one resource is consistently overlooked: the deep ecological knowledge held by the fishers who have lived and worked on the lake for generations.

My research, conducted at two contrasting sites on the Kenyan shore of Lake Victoria – Muhuru Bay and Mgingo Island – set out to document that knowledge, understand how fishers adapt to environmental change, and identify the governance gaps that prevent their voices from shaping the policies that affect them. The findings were recently published in *Ecology and Society* (Wagah et al., 2026).

Two very different communities, one shared lake

Muhuru Bay is a mainland fishing community with deep roots in the lake's traditional fishing culture. Life here revolves around Nile perch, tilapia, and dagaa (silver cyprinid), and the community has developed nuanced practices shaped by decades of watching the lake change. Mgingo Island, by contrast, is a tiny, rock-strewn outcrop barely 2,000 square metres in size, yet home to hundreds of fishers from both Kenya and Uganda. It sits at the centre of an unresolved territorial dispute between the two countries, creating a uniquely complex governance environment where even basic questions – who makes the rules, and who enforces them? – lack clear answers.

Studying these two sites together allowed us to compare how fishers in very different social and political contexts generate, maintain, and act on local ecological knowledge.

What fishers know – and how they know it

Fishers at both sites demonstrated rich, place-based ecological knowledge accumulated over lifetimes of observation. They could describe seasonal fish movement patterns, identify changes in water colour and temperature as indicators of fish presence, and recount long-term shifts in catch composition that mirror what scientific monitoring has documented – often without access to that monitoring data.

This knowledge is not static. Fishers actively adapt their practices in response to environmental cues: adjusting fishing grounds seasonally, switching gear types as target species shift, and altering hours of operation in response to changes they observe in the lake. Many of these adaptive strategies represent sophisticated responses to ecological variability that formal fisheries science is only beginning to capture.

The governance gap

Despite this wealth of knowledge, fishers at both sites described a persistent sense of exclusion from the decisions that most affect them. Regulations – on gear types, closed seasons, and licensing – are typically designed at the national or regional level, with little meaningful input from fishing communities. Fishers described rules that are difficult to comply with, poorly communicated, and unevenly enforced, particularly on Mgingo Island where overlapping Kenyan and Ugandan jurisdictions create confusion and opportunity for exploitation.

The result is a growing disconnect between formal governance and the lived realities of lake-dependent communities. Rules that might work in theory fail in practice because they are designed without the contextual knowledge that fishers hold.

Why this matters beyond East Africa

The challenge of integrating local ecological knowledge into formal governance is not unique to Lake Victoria. Across North America and beyond, lake managers are grappling with similar questions: how do we move from top-down regulatory frameworks to more inclusive, adaptive co-governance models? How do we formally recognize the knowledge of people who have spent decades watching a lake from the water rather than from a laboratory?

NALMS members working on volunteer monitoring, community engagement, and adaptive management will recognize these tensions immediately. The East African context offers both a cautionary tale and a source of inspiration. Fishers on Lake Victoria are not passive observers of decline – they are active problem-solvers whose knowledge and adaptive capacity represent an under-utilized asset for sustainable lake management.

A call for co-governance

Our paper argues for a fundamental shift in how fisheries governance on Lake Victoria – and in freshwater systems more broadly – is approached. Specifically, we call for the formal recognition of fishers' ecological knowledge as valid evidence in policy processes, the meaningful inclusion of fishing communities in governance structures, and the development of co-management frameworks that bridge local adaptive strategies and formal regulation.

Sustainable freshwater stewardship in the African Great Lakes, as elsewhere, will require that we listen to the people who know these waters best. Their knowledge is not merely anecdotal – it is a resource we cannot afford to ignore.

Reference

Wagah, E. O., E. A. Nyboer, Z. M. Gichana, E. O. Ogello, J. Bonzo Osodo, O. Ogeda, T. Kalapos, and Z. Molnár. 2026. Negotiating change in the African Great Lakes: Fishers' knowledge, adaptive strategies, and governance gaps in Lake Victoria's Muhuru Bay and Mbingo Island, Kenya. *Ecology and Society* 31(2):12. <https://www.ecologyandsociety.org/vol31/iss2/art12>

Edwin O. Wagah is a PhD Candidate at Eötvös Loránd University, Budapest, in the Traditional Ecological Knowledge Research Group. His research focuses on local ecological knowledge, fisheries governance, and community-based conservation in the African Great Lakes region. He can be reached at edwinwagah@gmail.com.



UPCOMING IN LAKELINE

Below is a list of the proposed topics for upcoming issues of *LakeLine*. Please take a look and consider submitting an article for a topic of interest. Articles are generally 2000 words or less in length, and should include photos, graphs and/or tables. Co-authors are welcome.

FALL 2026: TOPICS IN LAKE MANAGEMENT – Draft articles are due by September 30, for publication in October.

The fall issue will include a range of topics on lake management, without a specific theme. Please consider sharing one of your projects or some aspect of your work related to lakes and lake management for this issue.

WINTER 2026: AGRICULTURE IN WATERSHEDS – Draft articles are due by December 30, for publication in January.

A range of topics related to agriculture in watersheds is welcome, including farm pond management, nutrient runoff, erosion, agriculture BMPs for lake protection, and more.

SPRING 2027: FISHERIES – Draft articles are due by March 30 for publication in April.

Topics related to fisheries ecology, biology, food webs, and management, along with toxins in fish tissue, fish habitat, and other fisheries related topics are welcome.

Please contact Amy Smagula, *LakeLine* Editor, with any questions, or to propose an article for one of the above-listed themes. Do you have a topic that doesn't match a theme? That's ok, we can include the article in any of these issues or use it to build a themed issue. Amy can be reached at Lakeline@nalms.org.



PhycoTech, Inc.

620 Broad Street, Suite 100
Saint Joseph, Michigan 49085
269-983-3654
Info@phycotech.com
www.phycotech.com

HAB Sample Kits (IFCB Service) 24 hour results

Includes Sample Bottle, label,
Cooler, Ice Pack, Shipping Box
Overnight Return Shipping Label



Phytoplankton, Periphyton,
Zooplankton, Macroinvertebrates

Permanent Reference Slides
and Archival Services

Naphrax, HPMA, Counting Chambers



Dr. Ann St. Amand, Founder

Rapid Harmful Algal Bloom Analysis

HAB - 24/72 hour response

Full Assemblage - 1 week/1 month