MEMBER PROFILE

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I currently mentor students and teach at the University of Eldoret in Eldoret, Kenya. I also conduct research in Lake Victoria's Winam Gulf and catchment. There, I investigate anthropogenic activities and their impact on water quality and the invertebrate and fish communities within the major rivers originating from the Kenyan side of Lake Victoria. My Ph.D. research will assess various components of Lake Victoria's cage culture; these include the lake's ecological carrying capacity for cage aquaculture, surveillance and modeling of bacterial communities and nutrient cycling linked to cage culture, and paleolimnological comparisons via sediment core analysis of modern and prior lake conditions.



What inspired you to enter this work?
The need for conservation and management of our natural resources is a fundamental concern, given the rapidly increasing rates of their overexploitation and degradation. Population growth and settlement, unsustainable use of natural resources, pollution of water bodies, industrialization, infrastructure development, deforestation, and agricultural activities have led to, among other things, a drastic decline in renewable water resources, a drying of river channels, a decline in fish catches, and challenges in food and nutritional security. In addition, management limitations are numerous and include lack of skilled personnel plus inadequate and/or inaccessible research data for historic and current trends to be determined and evaluated. Yet proper conservation and management through well-informed policy making and sustainable resource use require credible research and reliable, long-term data.

Without proper management, projections indicate worsening future conditions. The United Nations predicts that Kenya, currently a water-scarce country, will plunge into absolute water scarcity while continuing to experience rapid population growth and exploitation of natural resources. Notwithstanding, some efforts have been made toward finding solutions to these challenges. These include funding from national and international efforts, regionally collaborative research endeavors, and, recently, the internationalization of research within the great lakes of the world through the African Center for Aquatic Research and Education (ACARE).

In my career as an aquatic scientist, I am motivated to be involved in and contribute to the current efforts to provide tangible and transformative solutions to the multifaceted problems of Lake Victoria through mitigation measures, conservation, and sustainable use of its resources.

What body of knowledge would you like to build on?
The mapping and modeling of aquatic ecosystems and catchment activities for use in sustainable management practice development.

If you could change something about how science is done, what would it be?
Since most of the quality research on ecosystems is multidisciplinary, it is important that the concepts, theories, and guiding principles of the various disciplines involved in the research are discussed and understood before the research proceeds. Understanding our terminologies and frameworks can improve the approach to solving ecosystem problems holistically.

What might be surprising about research or lakes in your area?
Lake Victoria is the largest tropical freshwater lake and the second largest freshwater lake by area in the world. It is the source of the world's longest river, the Nile. The lake's catchment unifies five East African countries, with 44% of the catchment being in Tanzania, 22% in Kenya, 16% in Uganda, 11% in Rwanda, and 7% in Burundi. The basin is recognized for its exceptionally high diversity and endemism of freshwater species. The stressors and impacts noted previously combined with factors hampering reliable research within the region have drawn regional and international interest as the changed lake ecology and ecosystem services threaten its sustainble use by the basin's community.

How long have you been an IAGLR member and why did you join?
I joined two years ago, when I attended the annual conference for a session facilitated by ACARE on the African Great Lakes. ACARE introduced me to the annual conferences and facilitated my travel to attend. IAGLR provides a wealth of knowledge from researchers studying aquatic ecosystems and their catchments. I'm privileged to be a member, interact with the association, and learn from members' experience and expertise.