MEMBER PROFILE

PIERRE-DENIS PLISNIER

Ph.D. (Université Catholique de Louvain, Belgium), GL Eco consulting

My research mainly deals with climate impacts on the limnology of the African Great Lakes. This may be applied to various fields, including fisheries, paleoclimatology, and health (the latter via a possible plankton-cholera relationship). I am particularly interested in helping to set up long-term, continuous environmental monitoring of the African Great Lakes to better understand their functioning. Those lakes and their ecosystem services are facing serious threats, including oil exploitation.



On Lake Tanganyika

What inspired you to enter this work?

For my thesis, I worked on lakes Ihema and Muhazi in Rwanda in the 1980s. I enjoyed the extraordinary lacustrine environment and the work in Central Africa, a region with historical links to my family. (My grandfather lived in the Congo from 1910 to 1925 and my parents from 1952 to 1963, in addition to other members of my family in other periods. I was born along the Congo River.) Several more years spent in Africa working on Lake Tanganyika on a project for the Food and Agriculture Organization of the United Nations confirmed my interest in this work.

What body of knowledge would you like to build on?

Great lakes such as the African Rift Valley lakes are extraordinarily climate sensitive. The abundance of pelagic fishes in Lake Tanganyika, for example, has been well correlated to oceanic anomalies such as El Niño through climate teleconnections. This could allow for possible forecasting about future catches and could also help our interpretation of the paleoclimate signals in this ancient lake (>10 million years old). I also find hydrodynamics to be of considerable interest. Upwelling, internal waves, surges, turbulence, and other limnological events can reach considerable amplitudes, strongly impacting lake organisms and ultimately the human population. These aspects make up the pieces of some kind of puzzle that researchers enjoy trying to put together. If my work can help to assemble even some parts of this puzzle, that would make me happy.

If you could change something about the way science is done, what would it be?

Multidisciplinary projects should be much more encouraged. Topics are varied, and so they need broader teams of both specialists and generalists to work on them in a coordinated way.

The timeframes of projects on the African Great Lakes need to be longer: at least five to six years instead of the approximately four years that is often the case today. For some lakes, there is a great challenge to build networks, prepare material, implement training, etc., before the monitoring program becomes fully operational. Once the program is launched, having several years of observations rather than just a few can allow for the acquisition of knowledge in a much better, more cost-effective way.

There should be baseline continuous monitoring of each great lake. At some great lakes, several parameters are not being measured (including temperature profiles and other essential parameters) when no short-term projects are taking place. An international consortium linking local authorities and research institutions could be developed for each great lake to help ensure such a continuous collection of basic but essential parameters. For African Great Lakes investigation, it is also important that the continuous monitoring stations be situated at some key sites (in particular, the north and south ends), while lakewide cruises would be more useful for additional specific studies.

How long have you been an IAGLR member and why did you join?

I joined IAGLR three years ago when I realized how urgently necessary it is to develop long-term monitoring of the African Great Lakes presently threatened by oil exploitation. A better knowledge of the environmental monitoring taking place in the North American lakes is useful for this development, as is access to the *Journal of Great Lakes Research*.