

Lake Kivu: food web structure and energy flows

J.-P. Descy, H. Sarmiento, P. Isumbisho, P. Masiya, A.V. Borges, C. Morana, M. Llíros, P. Servais, J. Guillard & F. Darchambeau

The pelagic food web of Lake Kivu, Eastern Africa, has been presented as rather simple: a linear food chain involving phytoplankton dominated by cyanobacteria and diatoms, mesozooplankton with three copepod species, and the introduced sardine, *Limnothrissa miodon*, at the top. Recent data reveal different features that determine energy flows in this tropical great lake. First, phytoplankton composition determines the fate of primary production. Second, contrary to predictions based on the trophic cascade theory, mesozooplankton biomass and production are not lower than in other, oligotrophic, African great lakes. Third, the microbial food web of Lake Kivu seems to contribute significantly to consumer productivity. We discuss these different points and propose a synthesis of carbon flows in the pelagic of Lake Kivu. We also examine hypotheses as to why the fish yield is low in Lake Kivu, involving reduced predation efficiency and low larval survival.