

## Article: Lake Victoria—A Brief History

Much has been written on the dilapidated condition of the once pristine Lake Victoria region. Man's influence has horribly altered the flora and fauna in the region. John Speke first laid eyes on Lake Victoria in 1858 while on his quest for the source of the Nile. This grand freshwater lake, with the second largest surface area on the planet, was named after Queen Victoria. The clear blue waters that abound with life have undergone drastic changes in last 150 years. The first event leading to Lake Victoria's demise began in the late 1800's. European led industry began harvesting the great trees that stood in massive stands along the lake. Erosion, brought about by seasonal rains, caused a massive addition of silt to the lake. This has turned much of the water, especially along the shoreline, a murky brown. This problem with water clarity plays a huge role in cichlid diversity where the hobbyist is concerned. I will come back to this further on. Railway construction in the 1920's

began opening the region making Lake Victoria much more accessible to people. Somewhere around 1950, settlers to the region began stepping up agricultural operations. Areas adjacent to Lake Victoria were developed to produce crops such as tea, sugar and tobacco. Chemical runoff from these industries leached directly into swamps, feeder streams and rivers, and eventually into the lake itself. Dramatic population growth in the region brought with it heavy industry. One only has to walk along the shores of the St. Lawrence River to see how detrimental this can be to an aquatic ecosystem.



Raw sewage, industrial effluent, and heavy silt-laden runoff has (and still is) caused huge algae blooms. The recent invasion of water hyacinth to Lake Victoria has covered the surface of large areas exacerbating an already epidemic problem; oxygen depletion. With everything the endemic cichlid populations had working against them, introduction of the predatory Nile perch (*Lates niloticus*), although initially uneventful when first planted in the 1950's, eventually became the dominant aquatic species by the 1980's. This huge creature is believed to have thus far been responsible for the extinction of at least half of the cichlid population of Lake Victoria. The perch effectively patrols the lake pushing remnants of the once plentiful cichlid population close to shore where they can seek refuge amongst papyrus roots and any other available shelter. This environment in many cases is eutrophic. One can only imagine the massive numbers of



[http://www.gallatin.net/KIM/lake\\_victoria.htm](http://www.gallatin.net/KIM/lake_victoria.htm)

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fish that must suffocate here everyday.

Lake Victoria is a baby. Core samples taken from the lake indicate that the entire area was dry land terrestrial as recently as 13,000 years ago. If this is indeed the case, the endemic lake Victorian species flock has evolved in a remarkably short period of time. We have caught the haplochromines in the process of radiating and diversifying, finding what works and what doesn't, in their initial developmental stages. These fish are readily adaptable, seizing any opportunity they are presented with. In at least some species, dentition, coloration, and actual anatomical structuring can be altered in a matter of a generation or two in order to take advantage of their changing environment. Rapid specialization is what has made the whole cichlid family such a success world wide, but Victorian cichlids have taken it one step further. For this reason cichlids from this region make wonderful aquarium specimens. Usually not too large, able to withstand a wide range of water conditions, willing to eat anything presented to them resembling food, a willingness to breed profusely, and colors that rival some salt water fish, cichlids from the Lake Victoria region are a welcomed addition in our aquaria.

The first reference I was able to find concerning cichlids from Lake Victoria occurred in the late 1880's when G. Fischer sent a collection of new cichlids to Dr. Franz Hilgendorf at the Berlin Museum. In 1888, Hilgendorf erected the genus *Haplochromis* based on Fischer's specimens. In the early 1900's, George Boulenger and

Jacques Pellegrin examined cichlids from the region and published papers of their



discoveries. Others have made contributions throughout the century as well but it seems that when the scope of destruction to the lake and its inhabitants was beginning to be fully realized, an urgency to salvage what was left of the cichlid population arose. Dr. Les Kaufman of Boston University was among the initial group to erect the Lake Victoria Species Survival Plan (LVSSP). In addition to cataloguing, the LVSSP acquired wild colonies, which were distributed to zoos and aquariums worldwide. Many of the species collected have since disappeared from original collecting areas and may well be extinct. Many of these institutions have been successful in propagating captive populations of Victorian cichlids and have since exchanged and distributed stock to others involved in the LVSSP. Each year, a few cichlids from these colonies seep their way into the hands of aquarists.

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are quite genetically similar. Most will interbreed freely if kept together and will produce fertile fry. Herein lies a problem. Due to the rarity of most of these fish, it is the hobbyist that must realize his or her responsibility in merely having these beautiful, brightly colored gems in their aquaria. We must do all we can to keep colonies of our fish species (or variants) as pure as we can. That said, it has been shown that at least some Victorian cichlids use visual cues in mate recognition. A female knows what male to spawn with through sight. If another fish swims near it is difficult to distinguish among color variants. As fish density is low due to predation by Lates, any closely-related mate may be chosen. Spawning under these conditions produce hybrid fry of unknown lineage. This is compounded generation after generation until the parent color morphs are so genetically blended with each other that they go extinct as genetically distinct species. Victorian haplochromines that have been in the hobby for over twenty years still retain the original strains through careful husbandry. In my opinion, there is a unique situation occurring here. We have fish species in our tanks that are more genetically "pure", than their the source populations.

Lake Victoria is huge. The area houses countless unique ecosystems. It is easy to imagine how parts of the lake could be polluted to the point where any form of life but viral or bacterial would perish. One would expect to find these pockets in densely populated areas and near industry. There are near pristine areas of Lake

Victoria. The situation here is that as stressors are left unchecked, these areas are sliding into extinction as quickly as the cichlids. However it is probably too late to save many of the affected areas of Lake Victoria. At least 200 cichlid species are thought to have recently gone extinct.



Although the problems in Lake Victoria have been going on for some time, it is only within the last twenty years that we have seen so many species (some described and some we will never know even existed) perish. If nothing drastic and miraculous is done immediately, and there is really no reason to believe anything will, the next 20 years is likely to us just as many extinctions. With that will come of the death of a colossus; Lake Victoria.

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— by Greg Steeves