

## Lake Victoria and Its Associated Impediments

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### Abstract

Lake Victoria is the second largest lake in the world. It occupies an area of 86,600 sq. meters and is about 70 meters deep. This lake is faced with the following challenges such as pollution, algae growth and eutrophication, efficient jumping to mention a few. Because of this, man finds himself on the horns of dilemma to continue with trial and error of the past means irreparable damage to his habitat.

The study found that the endemic Haplocromis, Zoo plankton and phyto planktons gradual disappearance. It was also found out that there is increased pollution dump and efficient. There is an increase of chromium phosphorus and nitrogen in the lake hence death of fish. The lake and resource units are reciprocal with the species. It mainly consists of Nile perch, Cypriamid and Tilapia. Dumping in subsequent years has increased owing to population, dumping, construction of sites and sand extraction. Some of the recommendations include controlled fishing, re-introduction of endemic species, pollution regulation, monitoring of the lake and polluters pays principle.

**Keywords:** Lake Victoria; Haplocromis; Zoo plankton; Phyto planktons; Pollution regulation

### Problem Statement

Man, finds himself at the horns of a dilemma leading to the damage of Lake Victoria and its habitat. It is worth noting that damage inflicted on different species due to encroachment leading to destruction, cultivation, damage and pollution of streams is irreparable [1]. The study therefore sought to find out the extent of damage and come up with possible ways of mitigation.

### Objectives of the Study

1. To provide the trend of devastating disappearance of endemic species.
2. To provide necessary data on increased pollution dump and efficient with references.
3. To provide data showing spatial-temporal loss as well as decal rate of loss of species with cross refund.
4. To provide figures of algae growth and Eutrophication with references.
5. To establish efficient dumping, destructive biological means and provide necessary original results.

### Methods

1. Literature review
2. Remotely sensed data
3. Secchi disk
4. Test for nutrients
5. Transparency test :test for algae
6. Observation: viewing to see actual changes on water using eye sight
7. Interviewing

### Findings

#### Providing the tread of devastating disappearance of endemic Cichlid species

The year 1954, Lake Victoria had over 500 species of fish. The Tilapia introductions started in early 1950s with *Oreochromis leotias* from Entebbe, *Tilapia zillls* (winam guff, 1953), *T. rendall* I (Winam Gulf, 1953), *O. rueticus* (Kagera, River, 1954) and *O. Mossimbicus* (Entebbe 1961, 1962).

*Oreochromis niloticus* and *O. zilli* were able to firmly establish themselves 65% of *Haplochromis* stocks were driven out of the lake [2].

Silver Cyprian flourished in large quantities. The endemic *haplocrous*, zoo plankton were exploited hence their gradual disappearance.

Spatial-Temporal as well as dedcal rate of loss of species with proper cross reference. Land, lakes and resource units are reciprocal with species. When the resources as phytoplantation are high certain species will flourish while others get less. For instance where there was a Nile perch increase in population led to a decline of Cyprimaide and Tilapia in Lake Victoria.

#### Providing data on increased pollution dump

Industrial wastes owing to increase of industries in Lake Victoria hence high winds of ammonia which separates the lake. National fisheries resources research industry noted of increased human activities, agriculture and industry hence municipal effects. Hence the risk of dumping of toxic chromium phosphorous and Nitrogen into the lake has led to death of fish [3]. Pollution menacing Lake Victoria: Qualification of point sources around Jinja town, Uganda 85% of water ensuring the lake is for precipitation. Remainder comes from surface of the catchment. Kenya produces 7% of total in flow.

### Providing figures of algae growth and eutrophication with references

The lake exhibits eutrophication and condition in 1990–1991, oxygen conditions in the mid layer were higher than in 1960–1961, with nearly continuous oxygen super saturation in surface waters, oxygen concentration in hypolimnetic waters were lower in 1990–1991 for a longer period than in 1960–1961 with values of less than 1 mg per liter occurring in water as shallow as 40 meters (130 ft) compared with a shallower occurrence of greater than 50 meters (160 ft) in 1961. The changes in oxygen levels are conducted compared with measurements of higher biomass and productivity.

Thus changes have mainly for multiple resources the magic being with in its beam, silt and earth from which has been deposited and lakes wide area, from intended moments in flows and from pollution associated with settlement along its shores.

The extinction of Cichlid *Haplochromis* has also been blamed on the lakes Eutrophication.

The fertility of tropical waters depends on the rate at which nutrients to the lake in relation to its size. Because of this, most of the lakes nutrients are thought to be locked up in later bottom deposits.

By itself, vegetative matter decays slowly. Annual flesh decays conditionally faster. So the fertility of the lake is dependent on the rate at which the nutrients can be taken up by fish and other organisms.

*Haplochromis* played a role in returning detritus and phytoplankton back in and surplus with some 80% of *Haplochromis* species feeding detritus and equally capable of feeding off one another, they inspected a tight nutrient relying system, normally nutrients and biomass both vertically and horizontally through the water column and aim out of the lake via predation by human and terrestrial animals.

The removal of *Haplochromis* contributed to the removal of algae blooms responsible for man's fish kills [4]. According to Gikuma, increasing human population and associated activities have been associated with the rate of delivery of nutrients and have caused Eutrophication.

### Establishing effluent dumping, destructive biological means and provide necessary original results

Lake Victoria Environmental project working paper (2013). The lake holds 2760 km<sup>3</sup> of water and only 15% of the volume of the lake gets contaminated water. Lake Victoria Ecology resources Environment Joseph Awanga, Obiero Onganga (2006) 29 facilities use agro chemicals that leak into the Lake.

Dumping of slum areas waste into the Lake. This can be mitigated by stringent measures.

Destructive biological means. Under this the beetle can be used eat up unnecessary water hyacinth which exacerbates dumping.

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