**Abstract**

Wetlands are habitat to many species of plants, birds, fish and frogs. Wetlands provide essential habitat for rare or endangered species. Wetlands in general provide us with a vast array of products spawning food, building material, textiles and medicines. Coimbatore’s wetlands, the southern part of Western Ghats region are no exception. Coimbatore is a second largest city and 16th largest urban agglomeration in India. Developed in the watershed stretch of the Noyyal river basin and consists of a network of lakes and canals. Coimbatore district has been ranked lowest in terms of wetlands in Tamil Nadu. Most of the wetlands in Coimbatore are under severe anthropogenic pressure and threat. In the southern, western and northern parts of the city, there are reports of heavy metal pollution (including cadmium, zinc, nickel and mercury from the dyeing, electroplating and jewellery industries) which have affected biotic life in the lakes as well as the Noyyal. Industrial effluents, automobiles, domestic sewage, and urban run-off constitute a large point source for this pollution. Many fishing communities are dependent on these wetlands for livelihood in Coimbatore. The most important wetland product is fish, a constant source of protein. Recent pollution levels in the wetlands have reached alarming levels posing a threat of bio-accumulation in fishes that are consumed by the local population. *Oreochromismossambicus* are highly tolerant of saline waters, although salinity tolerance differs among species, has been chosen for the study. It is a hardy fish, can withstand adverse water conditions such as salinity, dissolved oxygen, temperature, pH, and ammonia levels than most cultured freshwater fishes can. Therefore, in the present investigation an attempt has been made to assess the physicochemical, biochemical composition and accumulation of heavy metals in *Oreochromismossambicus* under changing environmental condition.

The present study of the selected lakes revealed that the observed values for most of the parameters (physicochemical) seemed to be much higher than the recommended level. This may be due to the accumulation of heavy metals, climate change in the recent years, discharge of wastes in folds due to the population growth in and around the Coimbatore city.

Based on the results of this study the levels of metals bioaccumulated in tissues of *Oreochromismossambicus* did not exceeds the permissible limits set for heavy metals by FAO, FEPA and WHO. Therefore fishes in this area of study did not pose any threat to human upon their consumption.

 Hence, it is recommended to strengthen the area development program to restore the water from pollution. Planned Schemes to be strengthened for the development of the areas. Open defecation of animals and vehicles/animal washing, sewage should not be disposed in this lake should be prohibited. Enhancing community participation and strengthening of public awareness programs will help in restoration, conservation of inland waters and its biodiversity.