**(52)**

# Freshwater Fish Diversity in Urban Wetlands at Ramsar Wetland City-Colombo, Sri Lanka

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## Abstract

Urban wetlands are highly fragile and dynamic ecosystem in Sri Lanka. Especially, the wetlands in Colombo are particularly diverse with assemblage of faunal species with notable endemism. Amongst, fish fauna are unique and highly vulnerable to decline of their population due to various natural and human induced activities such as habitat alteration, introduction of alien species, unregulated aquarium trade, water pollution, landfilling and climate change. Therefore, this study was carried out to determine the freshwater fish diversity at urban wetlands in Ramsar wetland city-Colombo. Samplings were carried out in three different urban wetlands; Diyasaru wetland park, Thalangama Tank and Bellanwila-Aththidiya sanctuary. Data were collected once a month at each site from February 2019 to June 2019. Cast net, two-gill nets, bank count and random observations were used to collect data. According to the results, a total number of 253 individuals belonging to 14 species, 8 families and 5 orders were recorded from the three wetlands. The most abundant species recorded at Diyasaru and Thalangama was Horadandiya (*Horadandia atukorali*) with a relative abundance of 24% and 52.6% respectively. Whereas at Aththidiya the most abundant species was the Sucker Mouth Catfish (*Pterygoplicththys pardalis*) with a relative abundance of 47.9%. Additionally, comparing the number of endemic species with other two wetlands Diyasaru contains a highest number of endemic species with a relative abundance of 49.7%. Endemic species such as Filamented barb (*Dawkinisia singhala*), Olive barb (*Systomus sarana*) and Horadandiya (*Horadandia atukorali*) were recorded at Diyasaru wetland. The Shannon and Simpson diversity index values at the three wetlands Diyasaru, Thalangama and Aththidiya were 1.847/0.824, 1.295/0.653 and 1.386/0.691 respectively. In addition, the Shannon and Simpson diversity index values for native and exotic species in three wetlands are 1.834/0.816 and 1.177/0.668. The highest number of exotic species was recorded at Bellanwila-Aththidiya Sanctuary with a value of 78.08%. More importantly, a data-deficiency exotic species belonging to the Family Cichlidae was recorded in the study sites. Moreover, further studies including assessment of anthropogenic activities must be conducted to determine the threats for freshwater fish faunal diversity in urban wetlands. In conclusion, overall native fish species diversity is high in the wetlands compared to exotic species in the wetlands. Furthermore, Diyasaru wetland has a high fish faunal diversity compared to other two wetlands. As well as, proper conservation methods, control of invasive species and integrated water resource management practices are a mandatory requirement to protect freshwater fish diversity at urban wetlands.

***Keywords:*** Conservation, Diversity, Freshwater fish, Ramsar wetland city, Urban wetlands