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An Updated Checklist of Exotic Fish Species Recorded from Nine Urban Wetlands of Colombo District, Sri Lanka

Dhamsara, M.[1*], Bandara, G.[2]

[1]Department of Animal Science, Faculty of Agriculture, University of Peradeniya, Peradeniya, Sri Lanka
[2]Plymouth Marine Laboratory, Prospect Pl, Plymouth, United Kingdom
**methindhamahesh9@gmail.com*

Abstract

Sri Lanka hosts a rich diversity of freshwater fish, with 139 species recorded, including 61 endemics. Colombo district, located in the southwestern ichthyological zone bears the highest number of endemic and threatened freshwater ichthyofauna. Furthermore, serving as the country's economic hub, the Colombo district encompasses an interconnected network of wetlands of significant ecological value. Given the rapid urban development in the region, this study evaluates the composition of exotic fish species in nine urban wetlands in Colombo from June 2018 to October 2024. The surveyed wetlands included Diyasaru Park (DP), Beddagana Wetland Park (BWP), Thalangama Lake (TL), Diyatha Uyana (DU), Nawala Weli Park (NWP), Heen Canal (HC), Kimbulawala Jogging Pathway (KJP), Bellanwila-Aththidiya Wetland (BAW), and Kotte Rampart Wetland Park (KRW). Some fish were identified by direct visual observation in the field and others were collected through hand netting, and all species were identified to the species level. Across the study period, 14 exotic fish species were recorded: *Betta splendens, Chitala ornata, Cyprinus carpio, Helostoma temminckii, Mayaheros urophthalmus, Oreochromis mossambicus, Oreochromis niloticus, Osphronemus gouramy, Pangasianodon hypophthalmus, Poecilia reticulata, Pterygoplichthys multiradiatus, Tilapia buttikoferi, Trichogaster trichopterus,* and *Trichopodus pectoralis.* The highest proportion of exotic species was found in DP (57.1%), followed by BAW (50%), HC and DU (35.7%), BWP (28.6%), and KRW (21.4%). TL, KJP, and NWP had the lowest proportion (14.3%). Of the 14 recorded exotics, the majority were represented by the family Cichlidae (28.6%), followed by Belontidae and Osphronemidae (14.3%). Notably, KJP, BAW, HC, BWP, DP, and DU respectively recorded the introduction of 100%, 57.1%, 40%, 25%, 25%, and 20% of exotic species, primarily due to the ornamental aquarium trade, either deliberately or unintentionally. TL, KRW, and NWP showed no such introductions. Visual observations indicate that DU serves as a site where the general public releases ornamental fish into the natural environment. In addition, the study recorded 16 native fish species from seven families: Anabantidae, Applocheilidae, Bagridae, Channidae, Cyprinidae, Heteropneustidae, and Osphronemidae. Given the growing threats of pollution and urbanisation, these findings underscore the urgency of updated monitoring efforts, awareness, and regulations towards Colombo's urban wetlands. Further research on the ichthyofaunal composition, breeding patterns, population density, and feeding behaviours in larger water bodies within these wetlands is crucial to assess their impact on native species.

Keywords: *Ornamental fish, Colombo, Exotic, Introduced, Invasive*