# Resource Partitioning among Kingfishers in the Beddagana Wetland

**H. D. A. Seneviratne [1*]** and **M. R. Wijesinghe [1]**

[1] Department of Zoology and Environment Sciences, University of Colombo

* hseneviratne2014@gmail.com

Resource partitioning is the division of limited resources by species to help avoid competition in an ecological niche by facilitating coexistence. This study investigates resource partitioning among three kingfisher species inhabiting the Beddagana wetland in Colombo. The wetland complex in Colombo has been collectively ascribed a Ramsar City in 2018, making this study of particular conservation importance. The kingfishers were enumerated along six transects bi-weekly, twice a day (0600 – 0900 h and 1530 – 1830 h) over six months from February to July 2020 (n= 16 days). Foraging microhabitats, perch height and prey type were recorded through focal animal observations. The three kingfishers recorded were – Common kingfisher [CK] (*Alcedo atthis*), White throated kingfisher [WTK] (*Halcyon smyrnensis*) and Stork billed kingfisher [SBK] (*Pelargopis capensis*). A total of 116 observations of kingfishers were recorded which included *A.atthis* (n=60), *H. smyrnensis* (n=31) and *P. capensis* (n=25). The pied kingfisher (*Ceryle rudis*) was not observed during the study. Observations were greater in the morning (2.19 $\pm$ 0.83) than in the evening (1.56 $\pm$ 0.73). There were significant differences between the use of foraging microhabitats with greater usage of channels by *H. smyrnensis* (44 %), open water bodies by *A. atthis* (25%) and pools by *P. capensis* (38%). Perching heights also differed significantly with *P. capensis* using the highest perches (4.80 m $\pm$ 0.97) and *H. smyrnensis* using the lowest (0.63$\pm$0.54). All three species fed on a diversity of prey taxa, although predominantly on small fish. Overall, there was a significant difference in the frequency of the prey types consumed by each species ($\chi^2_{16}$ = 27.97, p<0.05). The study showed that, although there is some overlap, food resource partitioning in terms of prey type, foraging microhabitat and perch height, are evident between the three kingfisher species – the squared distance between each pair being CK-WTK (14.57) < SBK-WTK (42.46) < CK-SBK (91.99). The patterns of differentiation in foraging niches most likely reflect the disparity in the bill and body sizes of the three kingfisher species. Resource partitioning thus appears to serve as a mechanism of co-existence among the three considered kingfisher species within this urban wetland.

This abstract is extracted from the proceedings of International Conference on Multidisciplinary Approaches in Science (ICMAS) - 2021

371