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Avifaunal Diversity and Distribution in Protected and Non-Protected Areas at Central Low Country Dry Zone, Sri Lanka

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Abstract

Sri Lanka is a tropical island with major development in the recent past. Rapidly developing the tourism industry and the recently started Moragahakanda Hydro-electricity and multipurpose project affects the fauna and flora in the Habarana area, where typical dry zone semi-evergreen vegetation is present. The objective of this study was to evaluate the impacts on avifauna due to such changes in the natural environment. Three sites by the side of Habarana (Kaudulla National Park (KNP), Minneriya National Park (MNP) and Non-Protected Forest Patch (NPFP)) were selected as the study area. Avifauna was recorded usingcircular plots (number of plots for each site was decided after drawing the species discovery curve for each site) representing different habitat types at each site in the morning (6.00 am to 10.00 am) and evening (2.00 pm to 6.00 pm) during a period of 6 months from March 2018 to August 2018. According to the results, 73 species, was observed at MNP belonging to 35 families and 15 orders and at KNP had 67 species, belonging to 32 families and 12 orders were observed. At the NPFP 43 species were observed belonging to 18 families and 9 orders. At KNP and MNP the most abundant species were aquatic birds (Black-headed Ibis, Black-winged Stilt, Painted Stork and Grey Heron) due to the presence of large reservoirs. Most abundant species at the NPFP were garden birds (Rose-ringed Parakeet, Red-vented Bulbul, White-browed Bulbul, and Yellow-billed Babbler) indicating the human invasion to the area. In total, four endemics (Sri Lanka Jungle fowl, Sri Lanka Swallow, Sri Lanka Grey Hornbill, and Sri Lanka Green Pigeon) were observed in the study area. Simpsons and Shannon diversity indexes were highest at KNP (0.928 and 3.03) and lowest at NPFP (0.935 and 3.17), while at MNP, the above indexes were 0.9571 and 3.54, respectively. Species evenness at the three sites were 0.481, 0.472 and 0.356 at KNP, MNP, and NPFP, respectively. Hence, species diversity and species evenness at all three sites depict high diversity in the study area indicating the importance of all habitats for species conservation. Therefore, not only less disturbed National Parks but also, non-protected disturbed forest patches are also important as habitats for avifauna. This is an important assumption to prove the vital necessity of protecting diverse habitats and integration of overall land-use management to conserve avifauna as well as other native species.

Keywords: Avifauna, Distribution, Diversity, Kaudulla, Minneriya