

AVIFAUNAL DIVERSITY AND ABUNDANCE IN RELATION TO ELEVATION AND LAND USE PATTERN OF RAWAN OYA, KANDY, SRI LANKA

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Riparian ecosystems are complex ecological landscapes that sustain diverse avifaunal communities by providing a range of resources. However, only limited studies are available in Sri Lanka on avifaunal diversity in relation to elevation gradients and land use patterns. This study investigated the avifaunal diversity and abundance within the Rawan Oya riparian zone, Kandy, Sri Lanka from June 2024 to January 2025. The riparian zone varies in elevation from 450 m (Polgolla Urban Town) to 1500 m (Hunasgiriya Mountains). Surveys were conducted at three sites, namely, Angammana (788 m elevation), Rahas Ella (565 m elevation) and Polgolla (457 m elevation), representing diverse land-use types, including natural forest patches, home gardens, paddy fields, and a dam area (near Polgolla). Direct observations were made using line transect (200 m long and 50 m wide) and point count methods. A total of 2530 birds representing 112 species and 51 families were recorded, including 85 resident (76%), 9 migrant (8%) and 18 endemic (16%) species. Conservation status assessments revealed 2 vulnerable species (2%), 8 near threatened species (7%) and 102 least concern species (91%). Thirty-two species were common to all three sites, while 24 species were unique to Angammana, 10 to Rahas Ella and 14 to Polgolla. Bray-Curtis similarity analysis revealed greater similarity between Angammana and Polgolla (0.6310) than between Angammana and Rahas Ella (0.4314), suggesting a marginal effect of elevation on avifaunal composition. A chi-square test of independence revealed that the distribution of feeding guilds varied across sites, indicating that land use patterns strongly influenced the availability of resources and hence the bird community structure. Additionally, mixed-species flocking was also observed. These findings highlight that the land use patterns, rather than elevation, shape avifaunal diversity and abundance in Rawan Oya riparian zone.

Keywords: Avifauna, Elevation gradient, Land use pattern, Rawan Oya, Riparian zone