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Bird Diversity in Different Landuse Types in Belihuloya, Intermediate Zone of Sri Lanka

Hidelle-Arachchi P.M.[1*], Perera S.J.[1], Kudavidanage E.P.[1], Dayananda S.K.[2]

[1]Departmentof Natural Resource, Faculty of Applied Sciences, Sabaragamuwa University, Belihuloya, Sri Lanka
[2]Behavioral and Community Ecology, Conservation Biology Office, College of Forestry, Guangxi University, People's Republic of China
**madubhanihap15@gmail.com*

Abstract

Land clearance and land use changes are known to affect bird communities greatly. Birds are ecologically important as they contribute to ecosystem services, sensitive to habitat change and act as an indicator taxon. Different land use types support different avifaunal communities primarily determined by the resource availability. An avifaunal survey was hence conducted in home gardens, paddy fields, secondary forest patches and *Pinus* plantations in Belihuloya, Rathnapura District, within the intermediate zone of Sri Lanka from February to June 2019 to document the bird communities and their diversity in each land use type and to record threats faced by them. Birds were sampled along 64 line transects (200 m each) in four different land use types where four transects were established in each land use. Each transect was replicated four times and sampled in the morning from 07:00 to 09:00 h and in the evening from 16:00 to 18:00 hrs. A total of 2,142 observations were recorded from the study area representing 106 different bird species in 44 families, including eleven species (10.4%) endemic to Sri Lanka and eight threatened species (7.5%) and eleven winter visitors (10.4%). Red-vented Bulbul was recorded as the most abundant species in the study area. Among the habitats, highest species richness (61) was recorded in paddy fields, where the Simpson diversity index is lowest (0.048). Secondary forest patches had the greatest Shannon diversity index (3.45) as well as the highest species richness estimators such as Chao 1 (60.53), Chao 2 (81), and the incidence-based coverage estimator (ICE; 84.67). According to the non-metric multidimensional scaling analysis, species composition of birds are similar in forests and home gardens. Paddy fields had a moderate similarity while the *Pinus* plantation showed the highest dissimilarity to other habitat types. Habitat fragmentation, land clearance, environmental pollution, overuse of fertilisers in paddy fields and man-made intentional forest fires were identified as major threats to the avifauna in the study area. Enhanced public awareness on birds and conservation, conducting further researches on birds in least explored areas in Belihuloya, minimising fragmentation and other threats through better collaborative landscape management are proposed to facilitate bird conservation.

Keywords: Avifauna, Belihuloya, Intermediate zone, Land use types, *Pinus* plantation