Responses of Avian Communities to a Submontane Elevational Gradient

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Abstract

Biogeography comprises the study of patterns of the geographic distribution of organisms and the factors which govern those patterns. The study was implemented from the Samanalawewa river basin (480 m Mean Sea Level (MSL)) to Haagala peak (1420 m MSL), at Issengard Biosphere Reserve, Belihuloya, in the Sabaragamuwa province in Sri Lanka. Along the 10 horizontal line transects at 100 m intervals, bird identification, as well as measuring of vegetation and habitat parameters were conducted over nine months at one month intervals in the complete elevation gradient. A total number of 97 bird species were recorded including 86 resident, 21 endemic, 19 threatened, 7 montane, and 11 migratory. Adding evidence to the mid-domain effect, species richness, abundance, and diversity of birds indicated the hump-shaped variation along the elevation gradient. Both species richness and Shannon Wiener diversity have shown the highest values at 700 m MSL and the highest value in abundance at 580 m MSL. Above 0.8 higher, Shannon Wiener evenness value shows ecosystem stability at each elevation. Habitat complexity, tree height, and canopy cover, with several avian community parameters showed similar patterns of variation along the elevation gradient. Hence, the responses of avian communities along the elevation gradient are supported by vegetation and habitat topography. The leeward side of the forest patch at the highest elevation contributed to enhancing the faunal and floral community assemblages resulting in increment in species richness, habitat complexity, tree height, and canopy cover at the highest elevation.

Keywords: *Belihuloya, Habitat topography, Sri Lanka*