THE SPECIES DIVERSITY, DISTRIBUTION, ACTIVITY PATTERN AND FEEDING ECOLOGY OF AVIFAUNA IN DIFFERENT HABITATS IN TWO DIFFERENT ALTITUDES IN THE NORTHERN FLANK OF THE KNUCKLES REGION

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ABSTRACT

The study was undertaken to identify some aspects of ecology of birds in the Northern flank of the Knuckles Range. The species diversity, distribution, activity pattern and the feeding ecology of birds in the different habitats at two different altitudes [Riverstan (1364 – 1061m) and Pitawalapatana (756m)] were studied during the study period April1998 to October 1998. A habitat analysis in terms of the vegetation was also undertaken to supplement the information collected on the birds. Four habitat locations from each altitude namely edge forest habitat, undisturbed forest habitat; disturbed forest habitat and streamside habitats were identified for observation.

Line transect method, opportunistic observations and Mist nets were used in the study to collect the information on the birds. The species recorded in the study area represent 22.3% of the Sri Lankan bird species. Of the 97 species of birds recorded in the study area, 73 were resident, which included 13 endemic species and 14 migrants. Of the 97 species recorded, 5 are globally threatened, and 8 are nationally threatened. Among the 73 resident species 28 species were very common, 26 species common and 19 were rare species. The species richness, abundance and composition of avifauna were significantly different between the two sites. A total of 16 and 53 species were confined to Riverstan and Pitawalapatana respectively, while 28 species was common to both sites. The diversity index value of avifauna was highly significant between the two sites ($p<0.001$). The Sri Lanka Yellow eared Bulbul, Sri Lanka Hill White-eye, Grey-headed Flycatcher and The Sri Lanka Yellow-fronted Barbet were common in Riverstan

while Red-vented Bulbul, White-browed Bulbul, Common Iora, Common Babbler, Tickle's Blue Flycatcher, Yellow-fronted Barbet, Pale-billed Flowerpecker and Brown-capped Babbler were the common birds in Pitawalapatana. The Sri Lanka Hill- white eye, Sri Lanka Bush Warbler and Grey-headed Canary flycatcher were confined to Riverstan while the Red-vented Bulbul, White-browed Bulbul and Common Babbler were confined to the Pitawalapatana.

The species richness, abundance as well as the composition vary within both Riverstan and Pitawalapatana sites. The rank order of the species diversity in the different forest habitats of Riverstan was edge < undisturbed <streamside <disturbed and in Pitawalapatana this order was undisturbed <scrub<edge<streamside. Habitat wise the bird species composition was not markedly different in Riverstan. At Pitawalapatana species composition was different in each habitat. The White-browed Bulbul, the Common Iora and the Red-vented Bulbul were common in the edge and the scrub forest habitats while the Tickle's Blue Flycatcher, the White-rumped Shama and the Brown-capped Babbler were common in the streamside habitat.

Seven feeding guilds - Insectivores, Frugivores, Nectivores, Graminivores, Carnivores, Piscivores and mixed feeders were identified in the two sites. In both sites more than 50% of the birds recorded were insectivores but no graminivores were recorded in Riverstan.

The diurnal activity patterns of the birds in the study area was also significantly different in the two sites ($p<0.05$). In both sites the abundance of birds was higher in the morning than in the evening. The avifaunal density varied with the seasonal changes. At Pitawalapatana the seasonal changes of bird density were significantly different ($p<0.05$) from Riverstan. During the windy season the abundance of birds was reduced at Pitawalapatana.

A total of 22 and 20 Mixed Species Flocks were encountered in Riverstan and Pitawalapatana respectively, during the study period. The compositions of Mixed Species Flocks were different at the two sites. The flocking tendency was high at Riverstan than at Pitawalapatana. The number of bird species that participated in flock formation at Riverstan and Pitawalapatana was 18 and 21 respectively. The flock size in Pitawalapatana was positively correlated with the number of species in the flocks while in Riverstan this relationship was negative. The nuclear species were different in the two sites. Three nuclear species from each site were identified. These were the Grey-headed canary flycatcher and Sri Lanka Hill White-eye from Riverstan and the Tickle's blue Flycatcher and Common Iora from Pitawalapatana. The Scimitar Babbler was common to both sites. The remaining species were further classified as follow: one "leader species" at Riverstan, four "regular species" in both sites, three and four "occasional species" at Riverstan and Pitawalapatana respectively.

Of the avifaunal species in the two sites the Yellow-eared Bulbul was the most common species (100% occurrence) and belongs to the frugivore-feeding guild. Five feeding

techniques were observed namely "standpick", "hangpick", " flypick", "swallowing" and "peckdrop". "Standpick"and "hangpick", were the preferred techniques of Yellow-eared Bulbul. The vertical dimension of habitat occupancy of Yellow-eared Bulbul varied with the species association, phenology of trees and the availability of food. The most preferred fruit plant was *Eleocarpus glandulifer*.