COMMUNITY ECOLOGY OF UNDERSTOREY TROPICAL FOREST BIRD IN WESTERN SARAWAK

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Community ecology is concerned with explaining the patterns of distribution, abundance, interaction of species, and for the coexistence of similar species within ecological communities (Chave, 2004). Previous studies suggested that bird species diversity and richness is related to the size and extant of vegetation such as patchiness (Best and Stauffer, 1980). Therefore, bird assemblages based in species composition, abundance, richness and diversity along with other attributed as rarity and endemism are used to evaluate conservation values to sites (Fuller, 1980; Daniels et al., 1991). Many studies have demonstrated that avian diversity increase with increased levels of vertical and horizontal habitat structure (Zimmerman, 1971), and also responsive to changes in the land use patterns (Daniels et al., 1990). In this study, eight study sites located at western part of Sarawak were selected which were Bako National Park, Gunung Gading National Park, Kubah National Park, Santubong National Park, Semenggoh Nature Reserve, Samajaya Nature Reserve, Gunung Penrissen, and Telaga Air. Birds were sampled using a total of 20 mist-nets with three shelves (2.5 m x 9 m, 36 mm mesh) at every occasions. Vegetation and insects were sampled within 20 x 20 m plots. Regurgitation samples were obtained by orally administering tartar emetic to the birds following the methods of Tomback (1975) and Poulin et al. (1994). Based on the regurgitated samples examination, it shows that the order Coleopteran are highly consumed by insectivorous birds and followed by Hymenoptera. The findings suggested that there are differences in terms of species distribution and assemblages between mangrove forests, mixed dipterocarp forest and tropical heath forest where each of these forest has their own specialist. In addition to that, understorey bird species diversity differed substantially from forest edge. The distance which is less than 200 m from the forest edge showed highest species richness. Furthermore, differences in seasonality are also observed in terms of species richness and diversity. These patterns are probably due to the resource partitioning and diet of understorey birds which are related to their moulting and breeding patterns. Most Insectivores showed full brood patch from April to October which is suggesting that this period could be the breeding season. This was supported by the moulting data which is suggesting that January to April is the pre-breeding season and lasted from May to October.

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Scarlet-rumped Trogon (*Harpactes duvaucelii)* and Green Broadbill (*Calyptomena viridis*) are listed as Near Threatened species by IUCN Red list (2019).