

A SURVEY OF UNDERSTORY BIRDS AT A RICE FIELD AND A MIXED DIPTEROCARP FOREST IN KUCHING, SARAWAK

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ABSTRACT

Habitat modification can lead to reduction of biodiversity. This survey aimed to determine the diversity of understory birds and their feeding guilds at rice field plantation and mixed dipterocarp forest. The understory birds were mist-netted from March to May 2017 and resulted in 110 individual birds of 32 species from 19 families. Among them, five species are legally protected and three species are considered Near Threatened under the IUCN Red List (2017). Preliminary analysis suggests most birds are habitat specialist. Only two omnivore species [i.e. Yellow-vented Bulbul (*Pycnonotus goiavier*) and Pied Fantail (*Rhipidura javanica*)] were caught at both habitats. Cream-vented Bulbul (*Pycnonotus simplex*) and Brown-throated Sunbird (*Anthreptes malacensis*) were the most predominant bird species captured in Santubong National Park (SNP), whereas Chestnut Munia (*Lonchura atricapilla*) was the dominant species at rice field in Stunggang Melayu Village, Lundu. Although omnivores and insectivores dominated both habitats, three species of nectarivores were caught at SNP. SNP showed higher bird species diversity and mean richness ($H^{\prime}=3.045; 0.935$) compared to rice field ($H^{\prime}=2.565; 0.7257$) (t-test; $p = 1.1432 \times 10^{-6}$). This preliminary study provides baseline information on bird species diversity and habitat preference at two different habitats in Western Sarawak.

Key words: Bird diversity, feeding guild, species richness, paddy plantation, Santubong National Park

INTRODUCTION

Borneo comprises of 673 species of birds, including 61 endemic species (Phillipps & Phillipps, 2014). Birds are essentials in maintaining the ecosystem as they have several significant roles in plant distribution, agriculture and biological conservation (Tabur & Yusuf, 2010). Rapid changes in an environment can cause the population of birds to decline. For instance, land-conversions such as urbanization, deforestation, industrial and agricultural activities have altered massive amount of Earth's land surface and brought negative impacts on biodiversity (Vitousek *et al.*, 1997; Sala *et al.*, 2000; Jóhannesdóttir, 2013). The decrease in the number of bird species and alteration in the bird community structure was due to resource utilization and niche partitioning (Voon *et al.*, 2014). Agricultural practices such as drainage, harvesting, monoculture plantation and intense use of chemical

fertilizers on the crops are the extreme stimulation of the reduction of the biodiversity quality (Amano, 2009). On the second half of 20th century, the population of birds has declined because of increasing agricultural activities during the period (Fuller *et al.*, 1995; Donald *et al.*, 2001; Jóhannesdóttir, 2013).

Most of the birds can live in several areas that have ecologically different environments whereas some birds are extremely sensitive to habitat degradation (Willson *et al.*, 1994). Bird species such as the Great Tit (*Parus major*) is able to adapt to the surroundings of ecologically different landscapes by having a change in behaviour and physiological adaptation in order to survive (Shochat *et al.*, 2010; Strasser, 2013). On the other hand, distribution of invertebrate eaters [e.g. Yellow-bellied Prinia (*Prinia flaviventris*), etc.] is easily affected by habitat loss that may remove some invertebrate species preferred by them (Ford *et al.*, 2001; Laurence *et al.*, 2004; Mansor & Mohd-Sah, 2012). Feeding guild, one of the bird traits, is very

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