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The Comparison of Bird's Population between Naturally Regenerated Acacia Forest with Adjacent Secondary Indigenous Forest in Universiti Malaysia Sabah

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Abstract : Naturally regenerated acacia forest and secondary indigenous forest forms some of the urban forests in Sabah. Naturally regenerated acacia trees are usually seen along the road that exists as forest islands. Acacia tree is not an indigenous tree species in Sabah that was introduced in the 1960's as fire breakers that eventually became one of the preferred trees for forest plantation for paper and pulp production. Due to its adaptability to survive even in impoverished soils and poor-irrigated land, this species has rapidly spread throughout Sabah through natural regeneration. Currently, there is a lack of study to investigate the bird population in the naturally regenerated acacia forest. This study is important because it shed some light on the role of naturally regenerated acacia forest on bird's population, as bird is known to be a good bioindicator forest health. The aim of this study was to document the bird's population in naturally regenerated acacia forest with that adjacent secondary indigenous forest. The study site for this study was at Universiti Malaysia Sabah (UMS) Campus. Two forest types in the campus were chosen as a study site, of which were naturally regenerated Acacia Forest and adjacent secondary indigenous forest, located at the UMS Hill. A total of 21 sampling days were conducted in each of the forest types. The method used during this study was solely mist nets with three pockets. Whenever a bird is caught, it is extracted from the net to be identified and measurements were recorded in a standard data sheet. Mist netting was conducted from 6 morning until 5 evening. This study was conducted between February to August 2014. Birds that were caught were ring banded to initiate a long-term study on the understory bird's population in the Campus The data was analyzed using descriptive analysis, diversity indices, and t-test. The bird population diversity at naturally regenerated Acacia forest with those at the secondary indigenous forest was calculated using two common indices, of which were Shannon-Wiener and Simpson diversity index. There were 18 families with 33 species that were recorded from both sites. The number of species recorded at the naturally regenerated acacia forest was 26 species while at the secondary indigenous forest were 19 species. The Shannon diversity index for Naturally Regenerated Acacia Forest and secondary indigenous forests were 2.87 and 2.46. The results show that there was very significantly higher species diversity at the Naturally Regenerated Acacia Forest as opposed to the secondary indigenous forest ($p<0.001$). This suggests that Naturally Regenerated Acacia forest plays an important role in urban bird conservation. It is recommended that Naturally Regenerated Acacia Forests should be considered as an established urban forest conservation area as they do play a role in biodiversity conservation. More future studies in Naturally Regenerated Acacia Forest should be encouraged to determine the status and value of biodiversity conservation of this ecosystem.

Keywords : naturally regenerated acacia forest, bird population diversity, Universiti Malaysia Sabah, biodiversity conservation
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