

## Avian richness and habitat characteristics in primary and logged hill dipterocarp tropical rainforest of Peninsular Malaysia

### ABSTRACT

Hill dipterocarp tropical rainforest provides a variety of habitats for understory bird species. These habitats are under severe pressure due to deforestation and logging activities which adversely affect the understory bird species directly or indirectly through habitat fragmentation, reduced food resources and increase risk of predation. This study examined the effects of habitat disturbance on understory bird species due to logging in hill dipterocarp tropical rain forest in Peninsular Malaysia. Understorey bird species richness and habitat characteristics between primary and logged forest were determined using mist-netting and plot quadrant method respectively. A total of 431 individuals of 60 bird species representing 23 families was captured in both logged and primary forests (212 individuals of 34 species from primary forest and 219 individuals of 42 species from logged forest). Spectacled Bulbul and Creamóvented Bulbul (each 3.48%) were the two most dominant understory bird species captured in logged forest. In contrast, RufousóCollared Kingfisher (4.64%) and GreyóHeaded Babbler (3.71%) were the most abundant bird species of primary forest. The results indicated that understory bird species of primary forest was significantly different from the logged forest ( $F_{1, 120} = 1.95, P < 0.05$ ). In addition, a total of 66 tree species representing 22 families was recorded from primary and logged forest. Out of the total, 53 tree species belong to 22 families were sampled from primary forest and 14 species belong to 10 families from logged forest. Primary forest was dominated with White Skin and Great Woolly Nutmeg (3.57%) while logged forest with Pigeon Wood/Indian Nettle Tree (17.86%) and Ant Plant (12.50%). Comparison analysis indicated that the mean vegetation relative abundance of primary forest was significantly different from the logged forest ( $F_{1, 134} = 10.5, P < 0.005$ ). Selective logging has also altered the microclimate characteristics. The findings of this study revealed that primary forest may harbour a higher understory bird species diversity and richness than logged forest. This study indicated that forest logging affects the understory birds and the effects may vary from species to species.

**Keyword:** Hill dipterocarp; Primary forest; Logged forest; Understorey birds; Habitat