

Insectivorous bird community changes along an edge-interior gradient in an isolated tropical rainforest in Peninsular Malaysia.

ABSTRACT

Edge effects are suggested to have great impact on the persistence of species in isolated forests. We tested insectivorous bird abundance, diversity, and density along with edge-interior gradient in an isolated lowland tropical rain forest in Peninsular Malaysia. Results indicated that there was a significant difference in overall insectivore species abundance among different distances from edge to the interior. Among the 48 insectivorous bird species, the Striped Tit Babbler (*Macronous gularis*) and Fluffy-backed Tit-babbler (*Macronous ptilosus*) showed a significant decrease in the number observed from the edge to the interior; while the Short-tailed Babbler (*Malacocincla malaccensis*) showed a significant increase to the interior. At the guild level, the arboreal foliage gleaning insectivores showed a significant decrease in the number of observations from the edge to the interior. Moreover, the terrestrial insectivorous birds were significantly more abundant at the interior than edge. The insectivorous birds and sub-guilds also showed different diversity index values in relation to distances from the edge. Density estimates showed that the density of insectivorous birds was highest at 400 m from the edge. Among the insectivore foraging sub-guilds, the density of arboreal foliage gleaning insectivores was highest, followed by sallying insectivores and bark gleaning insectivores; while terrestrial insectivores was considerably less common. Striped Tit Babbler had the highest density among the insectivorous bird species. Changes in habitat structure at the edge of the isolated lowland rainforest may be a key indicator of mechanisms involved in insectivorous avian species response to the edge-interior gradient. From a conservation perspective, it would be argued that the terrestrial insectivorous species should receive the most attention.

Keyword: Ayer Hitam Forest Reserve; Abundance; Density; Diversity; Distance from edge.