Ecological correlations of nocturnal bird assemblages in Malaysian Borneo

Abstract

Malaysian Borneo supports a rich assemblage of five nightbird families, comprising 13 species of owl, six of frogmouth and four of nightjar. Many nightbirds are dependent on forest habitats, but their ecology remains poorly known. Our study examined the relationships between nocturnal bird species richness and environmental variables based on citizen science data—bird records collected in Malaysian Borneo from 2000–2012. The environmental variables were altitude, distance to waterbodies, distance to human settlements, and land cover type, generated from geographic information system (GIS) data. For 18 species found in three land cover types, the Shannon-Wiener H diversity value was highest in primary forest, followed by fallow agricultural land and secondary forest. Except for the distance to human settlements, our generalised linear model (GLM) showed significant positive relationships between species richness and distance to waterbodies, as well as altitude. However, the land cover type of each site did not significantly influence species richness. Our findings suggest that primary forests remain a relatively important habitat for nocturnal bird communities in Borneo, but it is likely that some species may be able to adapt to and exploit secondary habitats, although the extent of this warrants future study.