Species Richness and Distribution of Primates in Disturbed and Converted Forest Landscapes in Northern Borneo

Abstract

Knowledge of fundamental aspects of ecology such as species richness and distribution, and the factors affecting them, is increasingly used to identify priority areas for conservation and to effectively manage threatened species.We investigated the species richness and distribution pattern of nonhuman primate communities inhabiting 10 sampling sites in four different habitat classes corresponding to increasing habitat disturbance level, that is, old growth forest, twice logged forest, repeatedly logged forest, and oil palm plantation, in and around Kalabakan Forest Reserve, in central Sabah, Malaysian Borneo. By using direct and indirect survey methods, we confirmed the existence of 9 out of the total 10 primate species, found in Sabah, within the surveyed areas. Based on the monthly number of primate species detected, our results indicated a general trend of decreasing primate species richness with increasing habitat disturbance level. However, the response within the disturbed forest sites showed some variations with some sites in repeatedly logged forest displaying comparable primate species number to that of the undisturbed forest sites.We also found that within the forest habitats, tree density is a good predictor of the richness of the primate community with a positive effect. Hence, tree density may be a key indicator for evaluating primate communities in forest habitats. Overall, the results of our study suggest that although not equivalent to areas of undisturbed forest, degraded forests—including those that have been repeatedly logged—are still valuable for primate conservation. In contrast, oil palm plantations have mainly negative effects on the primate community