

Habitat characteristics or territory size: which is more important to composition and diversity of mammals in non-protect area?

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Abstract

The main strategy for animal diversity conservation is to increase the territory size but little consideration is given to habitat characteristics requirement, which lead to a decrease in effectiveness for protected areas. Marginal of protected areas are considered to have higher species richness due to the edge effect. Strategy in these sites are still adopts to increase territory size or pay no attention to needs of specific habitat characteristics that is an important topic for the planner and manager. In this study, camera traps was used to estimate composition, diversity and habitat characteristics of mammals in a non-protected area near Huangshan Mountains in Anhui Province, China. We ran 49 liner models with the relative abundance index and 13 habitat characteristic factors of 11 mammals. To answer the question of habitat characteristics or territory size: which is more important to composition and diversity of mammals in non-protect area? We hypothesized that: (1) Non-protected areas have more mammal species than protected areas with the edge effect. (2) Non-protected areas have more species associated with habitat characteristics. We predicted that the habitat characteristics should be firstly considered, territory size secondly in non-protected areas, would provide a last refuge for mammals. Cameras were operated from June 2017 to October 2019, for a total of 29 months, 2,212 independent photos, 9,485 trap-days, recorded 18 species of mammals more than any other protected areas confirmed first hypothesis 1. The model analysis results showed that, habitat characteristics of mammals were different and showed a significant correlation, supported hypothesis 2. In addition, most species are related to vegetation characteristics except to primates (*Macaca thibetana*) and rodent (*Leopoldamys edwardsi*) confirmed our prediction. We suggested conservation policies in non-protected areas: Habitat characteristics should be concerned at first and then increasing protected areas to provide the last refuge for species conservation.

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