Abundance and diversity of rodents at the human–wildlife interface in Western Serengeti, Tanzania

Authors

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Abstract

Rodent species abundance and diversity in Western Serengeti are evaluated and discussed in relation to different levels of conservation status [Unprotected Area (UA), Game Reserve (GR) and National Park (NP)] and broad site differences in human livelihood activities. A total of 2170 individuals, spread over 16 rodent species, were caught in a capture-mark-recapture study which covered both the dry and wet seasons. The more humid site (Tabora B) in the northern part of Serengeti had the highest diversity of rodents followed by the Mihale site at the western extension. The driest site at Robanda had the lowest overall species diversity. Diversity also varied between the three levels of conservation status whereby the UA had the least diversity while the NP, which enjoyed the highest level of conservation status, had the highest diversity of rodents. Unprotected Area and NP plots at Tabora B showed a rodent species similarity index of 40%; all the other paired plots scored over 50% similarity indices, suggesting that, within a site, species composition did not vary significantly between the three levels of conservation status. The Robanda site had the highest (56%) overall abundance of rodents; Mihale and Tabora B sites had about the same level of rodent abundance (20 and 24% respectively). For the Mihale site, *Mastomys natalensis* ranked first followed by *Arvicanthis niloticus* and *Tatera robusta*, each of which contained 40, 38 and 16%, respectively, of all individuals caught at the site. For the Robanda site, the figures were 66% *A. niloticus*, 22% *M. natalensis* and 9% *T. robusta*; while for the Tabora B site the scores were 37% *M. natalensis*, 18% *T. robusta* and 11% *Lemniscomys barbarus*. The differences in diversity, species composition and population abundance appear to result largely from physiognomic vegetation types, and habitat perturbations caused by livelihood activities in Western Serengeti.