

DIVERSITY, ABUNDANCE AND POPULATION STRUCTURE OF MONGOOSE SPECIES (FAMILY HERPESTIDAE) IN NECH SAR NATIONAL PARK, ETHIOPIA.

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Abstract

Study of the carnivore guild is the key to understand quantitative relationship between members of the carnivore community. The aim of the study was to investigate diversity, abundance and population structure of the mongoose in Nech Sar National Park. Ecological data collection on mongoose species has been carried out from September 2017 to August 2018 in Nech Sar National Park (NSNP). Based on the habitat type and topography of NSNP, 10 transects, each of 4-5 km long were sampled to traverse the major habitat types in the park. Line transect distance sampling methodology was used to determine abundance and population status. DISTANCE (Version 6.0, Release 2) Software was used for density and abundance estimation of mongoose populations. The key to distance sampling analyses is to fit a detection function to the observed distances, and hence, the key functions hazard rate + hermite polynomial, uniform + cosine polynomial and half normal + hermite polynomial models were chosen over the others on the basis of best fit. Three species of mongoose namely- Egyptian mongoose (*Herpestes ichneumon*), Slender mongoose (*Herpestessanguineus*) and White tailed mongoose (*Ichneumiaalbicauda*) were identified in the study. The overall density of mongoose in the study area was 2.3048 ± 0.16070 individuals/km² with population estimate of 943 ± 85.593 individuals. Based on season and habitat type, density and abundance estimates showed variation ($P < 0.05$). However, species composition between seasons and habitats was the same. The highest species diversity ($H = 1.197$) was recorded in bushland habitat. The population was female-biased with 1:1.171 and 1:1.59, male to female ratio during wet and dry seasons, respectively. Adult to young (subadult and juvenile) ratio was 1.05:1 and 0.94: 1 during wet and dry seasons, respectively. Further researches on other ecological parameters viz. behavior, feeding habit and activity pattern are important to acquire a complete picture about mongoose ecology in the park.

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