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Group size and age-sex composition of *Semnopithecus vetulus nestor* (western purple-faced langurs) in relation to land use patterns

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A majority of the population of the endemic primate, *Semnopithecusvetulus nestor* (western purple-faced langur) of Sri Lanka survive in an area with high human density and therefore its habitat is subjected to constant change due to anthropogenic activities. It is listed as a Critically Endangered species and is one of the 25 most endangered primates in the world. The aim of this study was to analyse the group size and age-sex composition of *Semnopithecusvetulus nestor* in relation to different land use patterns; classified as Forest and Non-forest. Data collection was carried out from May to August 2012. A total of 31 harem groups were censused based on direct encounters in the non-forest habitats (22 groups) and line transect surveys conducted in forest habitats (9 groups).

The analysis of group size using the t test revealed that there is no significant difference in group size ($p = 0.235$) and composition of a group (only one adult male observed in all groups censused and no significant difference shown in the number of females ($p = 0.5089$) and non-adults ($p = 0.5362$) per group) between forest and non-forest groups. This shows that different land use patterns have not affected the social structure within groups. However, there is greater variability in group sizes of non-forest dwelling langurs (range 3 – 26, mean 10 ± 5.0) compared to forest dwelling langurs (range 4 – 11, mean 8 ± 2). The Two proportions test carried out to compare population composition revealed that proportion of infants is significantly greater in the non-forest population than in the forest population ($p = 0.032$) thus showing that the birth rate in non-forest populations could be greater than the forest population. However, infant survival seems to be less as the proportion of juveniles surviving in both forest and non-forest populations showed no significant difference ($p = 0.530$). There could be a delay in males leaving their parental groups in the non-forest areas as sub-adult males were observed in 4 non-forest groups and none in forest groups. The largest group size of 26, was recorded in the non-forest category which is also the highest group size recorded for *S. vetulus* to date. Behavioural and Ecological study of such large groups could be important to see how they survive in human modified landscapes.

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