

COMPARISON OF HOME RANGES OF TOQUE MACAQUES INHABITING LANDSCAPES WITH DIFFERENT DEGREES OF HUMAN INTERVENTION

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ABSTRACT

Toque macaque *Macaca sinica* is the smallest species of the genus *Macaca* represented by three subspecies *M. s. sinica*, *M. s. opisthomelas* and *M. s. aurifrons*. It is an endemic species, however, often considered as a problem animal in many landscapes due to high population abundance and nuisance behavior. The current study was designed to determine the home ranges of two troops of *M. s. aurifrons* in a less human intervened landscape (LHIL) -Yagirala: 6°23'07.71" N and 80°9'50.45" E and a moderately high human intervened landscape (MHHIL) - Korathota: 6°54'51.12" N and 80°00'05.59" E in the Wet Zone. It was hypothesized that home ranges depict the adaptability of macaques to the changing environment and impact of resource overlap with humans. Study was carried out from March to December 2018 to cover both wet and dry seasons. Photo-catalogues of macaques were prepared using facial and other physical features to identify troops using focal individuals. The home range of macaque troops were determined by tracking the movement of troops using GPS records (Garmin Etrex-20) in the field. Minimum Convex Polygon method was used to determine home range. Edible tree species survey was conducted at each site using Point Centered Quarter sampling technique (PCQ).

It was revealed that the home range of the troop at LHIL - Yagirala (Mean \pm Standard Deviation: 6.88 \pm 1.95ha) was significantly higher than that of MHHIL - Korathota (3.39 \pm 0.71ha) Mann-Whitney U-test (P=0.004). The home range of troops during the wet season (LHIL 5.10 \pm 0.63ha MHHIL 2.81 \pm 0.36ha) was significantly smaller than that of the dry season (LHIL 8.66 \pm 0.24ha MHHIL 3.98 \pm 0.38 ha) Mann-Whitney U test (P=0.001). A positive correlation between home range size and troop size was evident (Spearman's rho = 0.849; P = 0.027). PCQ revealed that relative abundance of edible tree species in Korathota (70.5%) was remarkably higher than that at Yagirala (32.0%). Raiding home gardens and cultivations in Korathota by macaques was observed particularly during the dry season possibly due to scarcity of edible food resources among natural vegetation. A structured interview survey (35 households) revealed that all dwellers (100%) dislike the presence of macaques in their surroundings due to crop raiding, damage to home gardens and property, etc. Further studies on ecology of Toque macaque is necessary to manage the human-macaque conflict.

KEY WORDS: Toque macaques, *Macaca sinica aurifrons*, Home range, Human-intervened landscapes, Minimum Convex Polygon