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Short Communication

A REPORT ON POPULATION SURVEY OF HANUMAN LANGURS IN THE DISTRICT OF MIDNAPORE, WEST BENGAL, INDIA

INTRODUCTION

Field Studies on the non-human primates of West Bengal have been carried out earlier by Southwick *et el*, (1964); Oppenheimer (1973); Bhuinya *et al*, (1993); Mukherjee *et al*. (1986); Chaudhuri *et al*, (2004) and Murmu *et al*, (2007). The primate species recorded in West Bengal are Rhesus macaque (*Macaca mulatta*), Assamese macaque (*Macca assamensis*) and Hanuman langur (*Semnopithecus entellus*). The Assamese macaque is restricted in distribution only in Darjeeling district (Mukherjee *et al* 1995, Murmmu *et al* 2004). Rhesus is found in the northern districts of West Bengal and Ajodhya hill of Purulia district (Chaudhuri *et al* 2004, Chaudhuri *et al* 2006). The Hanuman langur occurs throughout India except in north eastern India. Survey of Hanuman langur (*Semnopithecus entellus*) population of Midnapore district was conducted in 2000-2001, covering almost the entire area surveyed during the year 1978 (Tiwari and Mukherjee, 1992). Mukherjee *et al* (1986) resurveyed the district selecting 20 langur groups from the population of 1978 survey by representing all the habitats of Midnapore district. The purpose of present survey was to collect information on distribution, abundance and social composition of hanuman langur and also to find out any changes that has occurred over a period of two decades in the district.

STUDY AREA

Midnapore, the largest district of West Bengal is situated 130 km west of Kolkata, and lies between 21°36′-22°57′ N and 86°33′-86°11′ E. This district is now divided into two separate districts but the field work was initiated before its bifurcations it was regarded as single district here. The total area of the district is about 14,000 km^2 .The district is densely populated with 596 people per sq. km (1991 census) and the population is predominantly rural. Kasai and Subarnarekha are the main rivers. Laterite soil is the predominant soil group at western part of the district whereas alluvial soil occupies in the eastern and southern parts. Forests occupy a large area of the west Midnapore and trees are mainly Sal (*Shorea robusta*) plantations, Eucalyptus (*Eucalyptus camaldulensis*) and Akashmoni (*Acacia auriculiformis*). Rice (*Oryza sativa*) is the main crop and other cash crops are Cashew nuts, Betel leaves, and Reeds for weaving mats.

METHODOLOGY

Observation reported here was carried out during August 2000 and repeated in July 2001 survey. Analysis of data based on July 2001 survey. The method of survey was similar to that of earlier census of 1978 (Tiwari and Mukherjee, 1992). The observation of langurs was done systematically by four experienced observers, two of them were the team members of the earlier surveys of 1978 and 1985. A slow moving vehicle was used and the areas were combed by using roads around villages, towns and open areas in prefixed localities. The areas included where the monkeys were recorded in 1978 census.

The road side transect 5 km^2 grids were adopted of the census in villages of agricultural and open areas. A total of 832 census hours were devoted of which 700 hours were spent in the areas of 1978 survey and another 132 hours in other areas for search of additional groups in adjacent areas. After locating the monkeys, their group size, social composition and interaction within the groups and man–monkey relation was recorded.

Individuals of a group were classified depending upon body size and age as adult male > 4 years: adult females > 3 years; juveniles 18-24 months old and infant less than 18 months old.

RESULT

A total of 7000 km^2 was surveyed which comprised of 50% of the total geographical area of Midnapore district. Forty nine (49) groups of Hanuman langur were recorded in 2001, whereas during 1978 census 58 groups were seen in the same area. There was an overall decline of 15.5 % in the number of groups and 10.9% decline in respect of langur population between 1978 and 2001 census. The group size varied from 4 to 45. The 49 groups consisted of 818 individuals of which 114 were adult males; 423 were adult females; 150 were juveniles and 131 infants (Table-1). The mean group size was 16.69± 1.21(sd 8.4, df 48). This provides population estimate of 0.007 group/km^2 and 0.11 langur/km^2. The percentage composition of the population was 13.94% adult males; 51.72% adult females; 18.33 % juveniles and 16.01% infants. The adult males to adult females ratio was 1:3.71 and adult females to juveniles and infants ratio were 1:0.35 and 1:0.31 respectively. About 31% females were carrying infants. In five villages where 5 groups consisting of 85 langurs were sighted during 1978 survey were not found in the present survey.Three (3) all male bands and 1 group consisting of 2 females could not be traced out in the latest survey during this period. The mean density is shown in Fig-1.

During 1978 census a total of 58 groups with 919 langurs were sighted. Out of 58 groups 3 all male groups contained 25 individuals, one group contained only 2 females and one group of 20 unidentified sexes were recorded. So, the remaining 53 social groups contained 872 langurs of which 102 were adult males; 538 adult females; 159 juveniles and 73 infants (table-2). The ratio of adult males to adult females was 1:5.27 and adult females to juveniles and infants were 1:0.29 and 1:0.13 respectively. The adult males represented 11.7% in the population; adult females were 61.7%.; juveniles' were18.2% and infants were 8.4%. Only 13.5% females were recorded having infants in 1978 survey.

Surveys of 2001 and 1978 revealed that 39 groups of Hanuman langurs were observed common in both the occasions. Ninety five percent (95%) of the groups inhabiting in the villages and remaining 5% were observed in towns and forests. Six hundred and seventy (670) langurs recorded in 1978 survey while in 2001 this figure dropped to 653 (Table- 2). The mean group size of 653 langurs was 16.7± 1.3 and group size varied 6 to 45 individuals. The social compositions of these 653 langurs were 84 adult males; 341 adult females; 124 juveniles and 104 infants. The 670 langurs consist of 76 adult males; 414 adult females; 45 juveniles and 55 infants; with a mean group size 17.17 ± 1.45 langurs. The
group size varied from 2 to 40 individuals.

The district was resurveyed in 1985, when twenty hanuman langur groups were selected from the 1978 survey to study the population change over the period (Mukherjee *et al* 1986). The common 20 groups of 1978 and 1985 surveys revealed that village contained 97% and 91%. langurs respectively. Out of 20 groups village groups were 18, 1 forest and 1 town group. The total population dropped from 299 to 286 langurs from1978 to 1985. The mean group size of the two surveys calculated to be14.95 ± 1.44 and 14.5 ±1.78 respectively. No significant difference in the mean of the group size of these two census was noticed using Paired T-test (0.332) and Chi-Test (3.82, P>0.5). In 1985 census the decline was recorded in male, female and juvenile population whereas the infant population showed a marked increased of 92%. In 1978, 16% females were with infants whereas in 1985, 35% females were having infants; the juveniles composition remained almost the same. The data collected during the present survey revealed that the same 20 groups contained 299 langurs which were also equal to the number of

Table-1. Hanuman langur population of Midnapore district, 1978 & 2001 census.

Year	No.of groups	Total	Male	Female	Juvenile	Infant
1978	58	872+47	102	538	159	73
2001	49	818	114	423	150	131

Table-2. 39 common groups of Hanuman langur of 1978 & 2001 survey.

Year	Total	Male	Female	Juvenile	Infant
1978	670	71	414	125	55
2001	653	84	341	124	104

DISCUSSION

Hanuman langur of Midnapore district was observed mostly inhabiting in and around villages. These langurs were reported to invade the agricultural field, caused damage to the crop. They cause considerable damage to vegetables with the result that at many places the villagers stopped producing vegetables. Villages have good number of trees and majority of roads in this district have big trees which provide shelter the langurs. The demographic pressure and loss to agricultural production by langurs increased considerably in the last two decades, no incidences of killing of langurs were have reported by the villagers in the present survey.

A comparative study of hanuman langur population of Midnapore district revealed no significant decline in population over two and half decades. In 1978 survey 58 groups consisting of 919 monkeys were recorded whereas during present survey in 2001, 818 langurs in 49 groups were found,showing the loss of 9 groups and 101 langurs. While comparing the population of 39 bisexual groups of hanuman langur from the first survey of 1978 with that of present survey revealed that 95% of the groups inhabited in the villages and agricultural areas. There was no major difference in the total number of langurs of 1978 (670 langurs) and 2001 (653 langurs) surveys. The mean and standard error of the group size of two surveys of 1978 and 2001 were calculated 17.17±1.43 and 16.74±1.33 respectively. There was no significant difference in the mean of the groups size ,chi-test was recoded to be 8.024, ($P<t$ 0.5). A decreasing trend was imminent in male–female ratio in 2001 as compared to 1978 survey, whereas the female-infant ratio has increased considerably. The female population has dropped by to 18% while the infant population increased over 95% in 2001 from 1978. The juveniles showed no change in population in the two surveys. In the last survey it was found that 30% female had infants as against 13% in 1978 survey.

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A. MURMU, B. TALUKDER AND P.C. MAZUMDAR.
Zoological Survey of India, M-Block, New Alipore,
Kolkata-700 053.

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