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A POPULATION SURVEY OF HANUMAN LANGURS IN THE DISTRICT OF BIRBHUM, WEST BENGAL, INDIA

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INTRODUCTION

Birbhum is the 10th and last district that has been taken up for population survey of non-human primates in West Bengal. The states of West Bengal comprised of 19 districts of which three districts (Kolkata, North and South Dinajpur) are devoid of monkeys. Selecting some districts, surveys were done in the north, south, east, west and central part based on different ecological niches except swamps of Sunderbans (Fig. 1). The other districts so far surveyed were Darjeeling, Jalpaiguri, Coochbehar in the north; East and West Midnapore in the south; North 24 parganas in the east; Purulia and Birbhum in the west, Howrah and Hugli are more or less situated in the central part of the West Bengal. Southwick *et al.* (1964), Mukherjee *et al.* (1986), Mandal (1964), Bhiunya *et al.* (1993) carried out field studies on non-human primates of West Bengal. The Hanuman langurs occur through out India except in northeastern states. The primates species found in the West Bengal are Rhesus macaque *(Macaca mulatta)*, Assamese macaque *(Macaca assamensis)* and Hanuman langur *(Semnopithecus entellus).* The northern districts *viz.* Darjeeling, Jalpaiguri and Coochbehar are devoid of Hanuman langurs. The Assamese macaque is restricted only in Darjeeling district (Mukherjee *et al.* 1995, Murmu *et al.* 2004), the rhesus is found in the northern district of West Bengal and Ajodhya hill of Purulia district (Chaudhuri *et al.* 2004). This report deals with the distribution, abundance, and social composition of Hanuman langur in Birbhum district.

STUDY AREA

Birbhum district is located in the western part of West Bengal between 23°32'–24°3' N latitude and 87°05'–88°0' E longitude. It covers an area of 4545 sq. km. The configuration of general slope is from west to east. Ajoy and Mayurakshi are the main rivers. There is a hot sulphur spring on the bank of river Bakreswar. Laterite soil is the predominant soil group. Alluvial soil occupies considerable area in the southeastern part.

Fig. 1. : Map of West Bengal showing surveyed districts.

The district with its head quarters at Suri has five municipal towns namely Suri, Rampurhat, Bolpur and Nalhati and Dubrajpur. The district is fairly densely populated with 560 people per sq.km, and the population is predominantly rural, 80% land is under agricultural. Above 50% of irrigated land is served by canals and Mayurakshi is the major irrigation project. Rice is the main crop followed by wheat, pulses and oil seeds. Forest occupies small areas of 15.82 thousand-hectare and it composed of only 3.5% of the total geographical area of the district. The trees are mainly eucalyptus, akashmoni and few Sal plantations in the protected areas. Lac and Tasar are the main forest products.

METHODS

The survey methods adopted in this district was by using a slow moving vehicle at an average speed of 20 km per hour with 4 observers for locating langurs. The entire district is well connected by motorable roads. So, it was possible to approach all the villages. Survey was carried out at phases from 0700–1130 hours and again from 1500–1800 hours. The data represented in this report is based on survey during April 2005, when the district was resurveyed. A total of 2000 km^2 area was surveyed which was about 44% of the total geographical area of the district covering villages, towns, temples, canal banks, markets, agricultural fields and roadside trees. Total count and sweep sampling methods were used to estimate the population of langurs. A total of 200 hours was spent for census work. On locating the groups their social composition and habitats were recorded. The langurs were classified into four broad categories as adult males > 4 years old; adult females > 3 years; juveniles > 18–24 months and individuals upto 18 months old were classified as infants.

RESULTS

In this district nearly 2000^2 km was surveyed and 87 groups of Hanuman Langur were sighted. Out of this 79 groups were bisexual and 8 were all male bands. These 87 groups contained 1256 langurs, of which 186 were adults males, 598 were adult females, 244 were juveniles and 228 infants. The distribution of Hanuman Langurs in Birbhum district is shown in Fig. 2. This provides a population estimate of 0.04 groups/km^2 comprising of 0.60 langur/km^2. The group size varied from 4 to 56.

The 8 all male band contained 28 langurs, 2 were town groups and 6 were village groups. The all-male village groups inhabited close to the social groups. Thus the remaining 79 groups were social groups of which mostly habouring in the villages. These 79 bisexual group contained 1228 langurs consisting of 158 adult males, 598 adult females, 244 juveniles and 228 infants; with a mean group size of 15.54 ± 0.10 individuals (Table 1). The adult male to adult female ratio was 1 : 3.7 and adult female to sub-adult ratio was 1 : 0.75. About 38.1% females were having infants.

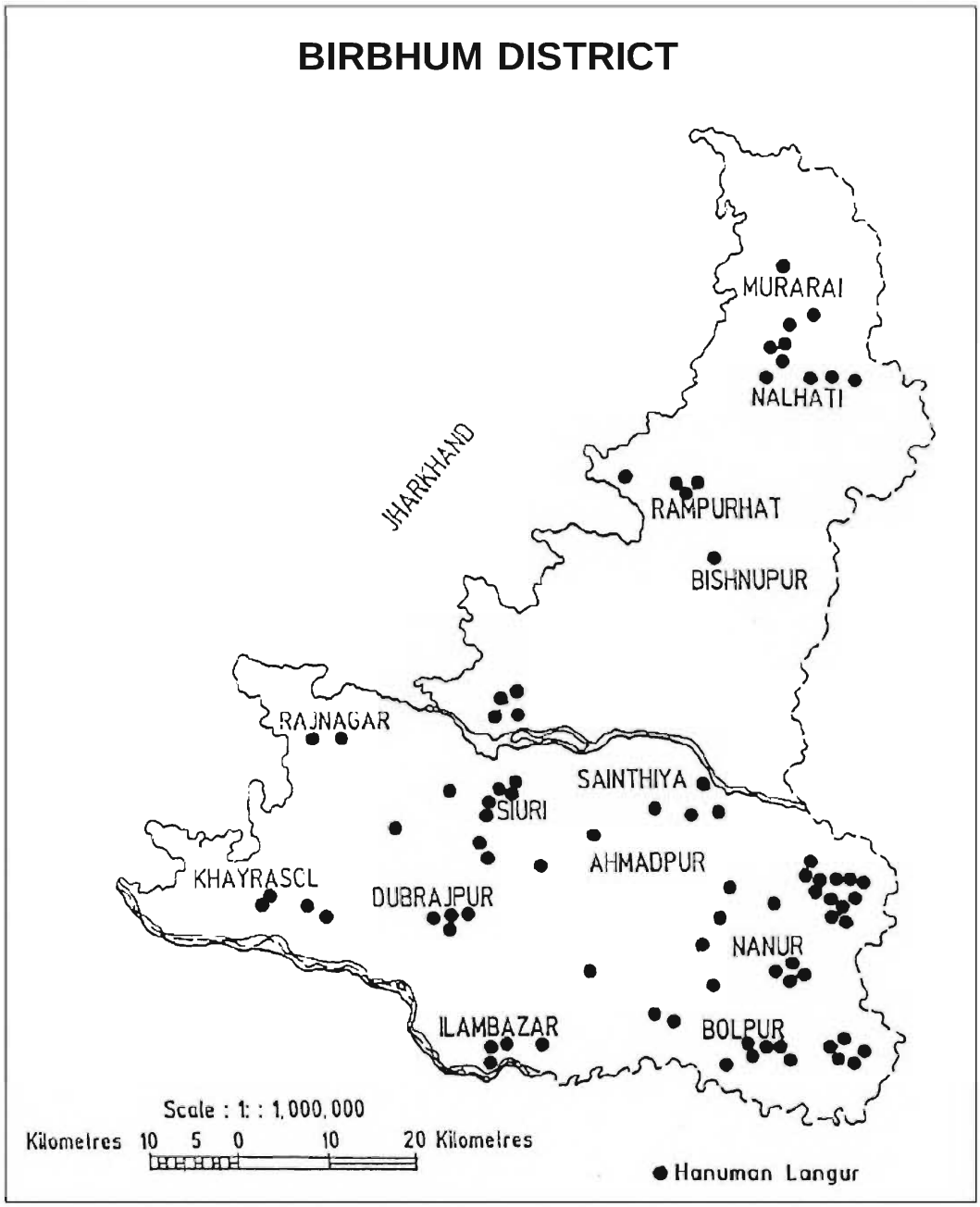

Fig. 2. : Distribution of Hanuman Langur Groups.

Table 1 : Group size and distribution of bisexual Hanuman Langurs in Birbhum.

Sl. No.	Locality	Habitat	Total	Ad. Male	Ad. Female	Juvenile	Infant
1	Kharidhya	BDV	11	1	5	3	2
2	Laujhar	BDV	17	2	9	3	3
3	Padampur	BDV		1	5	2	2
4	Padampur	BDV	6	1	3	1	1
5	Padampur	BDV	9	1	4	2	2
6	Rajnagar	BDV	12	1	7	2	2
7	Mohammad Bazar	BDV	14	2	8	2	2
8	Lambodharpur	BDV	7	1	3	1	2
9	Ayash	BDV	24	4	12	3	5
10	Chatra	BDV	15	2	8	2	3
11	Paikar	BDV	13	2	6	2	3
12	Sheharakuri	BDV	10	2	4	1	3
13	Patel Nagar	BDV	11	2	6	3	0
14	Sekharda-Hatkhola	BDV	20	2	8	4	6
15	Indus, Prantik-Lavour Rd.	BDV	4	1	2	0	1
16	Mahutar	BDV	26	3	14	4	5
17	Bakul	BDV	16	2	7	3	4
18	Lavour, Hatkhola	BDV	17	2	8	3	4
19	Lavpur, Sripally	BDV	15	2	7	3	3
20	Dhaldanga	BDV	7	1	4	0	2
21	Lohanda	BDV	7	1	4	2	0
22	Sierbandh	BDV	12	2	6	1	3
23	Lohanda, Makaipur	BDV	22	2	9	5	6
24	Motipur	BDV	7	1	3	3	0
25	Kirnahargram	BDV	19	1	8	5	5
26	Kirnahar.Babugram	BDV	14	1	9	4	0
27	Nannur	BDV	12	1	5	2	4
28	Baliguni	BDV	13	1	6	3	3
29	Maithinis	BDV	25	2	12	5	6
30	Uskaran	BDV	31	3	14	8	6
31	Saota	BDV	18	2	8	4	4
32	Patsimulia	BDV	25	4	16	3	2
33	Baram	BDV	35	4	16	8	7

Table 1 : *(Cont'd.)*.

Sl.No.	Locality	Habitat	Total	Ad. Male	Ad. Female	Juvenile	Infant
34	Hatinagar	BDV	4	1	3	0	0
35	Mayurakshi Canal Office	BDV	56	8	29	8	11
36	Kakas	BDV	4	1	2	0	2
37	Kachuighata	BDV	9	1	5	2	1
38	Bikrampur	BDV	17	2	9	3	3
39	Lattu	BDV	17	2	9	3	3
40	Pasui	BDV	7	1	4	2	0
41	Fatehpur	BDV	9	1	5	1	2
42	Bishnupur	BDV	4	1	20	1	
43	Paharpur	BDV	11	1	7	1	2
44	Nawpara	BDV	17	2	9	4	2
45	Batikar	BDV	35	4	15	8	8
46	Muluk	BDV	10	1	5	2	2
47	Bangachatra	BDV	35	4	16	10	5
48	Naoda	BDV	9	1	4	2	2
49	Sarisha	BDV	16	2	8	5	1
50	Singhi	BDV	22	4	11	3	4
51	Kurumbha	BDV	16	3	7	4	2
52	Nachamshah	BDV	11	1	6	1	3
53	Supur	BDV	17	2	8	5	2
54	Payeer	BDV	7	1	4	2	0
55	Mana	BDV	31	5	11	7	8
56	Dumbu	BDV	14	2	7	5	0
57	Gokarul	BDV	11	1	5	5	0
58	Chandipur	BDV	17	2	8	3	4
59	Khayrasol	BDV	18	3	10	2	3
60	Kartikdanga	BDV	5	1	4	0	0
61	Suri	BDT	8	1	3	2	2
62	Suri, PHE Bunglow	BDT	8	1	3	2	2
63	Suri, Lambodharpour	BDT	13	2	6	2	3
64	Rampurhat	BDT	5	3	0	2	0
65	Rampurhat	BDT	18	2	9	3	3
66	Nalhati	BDT	8	1	4	2	1

Table 1 : *(Cont'd.)*.

Sl.No.	Locality	Habitat	Total	Ad. Male	Ad. Female	Juvenile	Infant
67	Murarai	BDT	11	2	6	0	3
68	Bolpur	BDT	19	2	8	5	4
69	Santinekatan	BDT	14	2	8	2	2
70	Bolpur Rly. Stn.	BDT	20	2	8	6	4
71	Abanpally, Santiniketan	BDT	26	2	14	3	6
72	Dubrajpur	BDT	23	2	12	5	3
73	Dubrajpur	BDT	17	2	7	4	4
74	Dubrajpur	BDT	23	2	9	7	5
75	Santiniketan, Goyalpara	BDT	20	3	10	3	4
76	Illambazar	BDT	10	1	5	3	1
77	Bakreswar	BDM	11	2	6	2	1
78	Tarapith	BDM	26	3	13	4	6
79	Fullara, Lavpur	BDM	15	2	8	2	3
	Total	**V+T+M**	**1228**	**158**	**598**	**244**	**228**
	Mean		**15.54 ± 0.1**	**2.0 ± 0.13**	**7.56 ± 0.48**	**3.08 ± 0.23**	**2.88 ± 0.24**

V = Village, T = Town, M = Temple, BD = Birbhum district

The entire langur population of Birbhum district is distributed in three main category habitats-village, town and temple. The mean density of social groups of Hanuman langurs is shown in Fig. 3. The habitat wise distribution of langurs is given in Table 2.

Village : The 60 bisexual village groups contained 933 langurs with a mean group size of 15.55 ± 1.22 individuals. The social composition consisted of 118 adult males, 459 adult females, 185 juveniles and 171 infants (Fig. 3). The percentage composition in the population consisted of 12.65% adult males, 49.2% adult females, 19.82% juveniles and 18.33% infants, (Fig. 4). 37.25% females were having infants. The adult male to adult female ratio was 1 : 0.37.

Table 2 : Habitat wise distribution of Hanuman Langur in Birbhum.

Habitat	Total	Adult Male	Adult Female	Juvenile	Infant
Town	243	33	112	51	47
Village	933	118	459	185	171
Temple	52	7	27	8	10
Total	1228	158	598	244	228

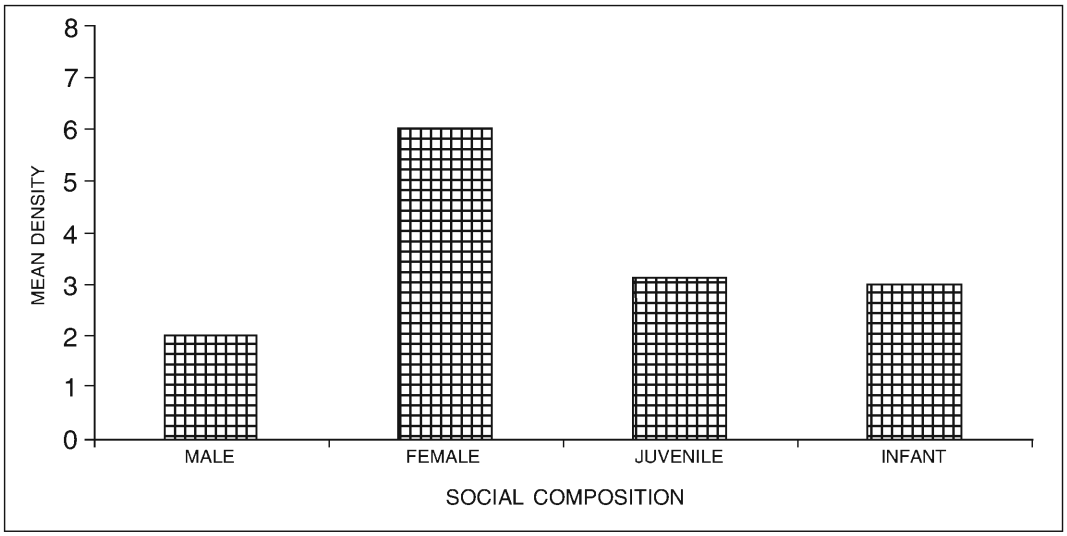

Fig. 3. : Hanuman langur population of Birbhum district.

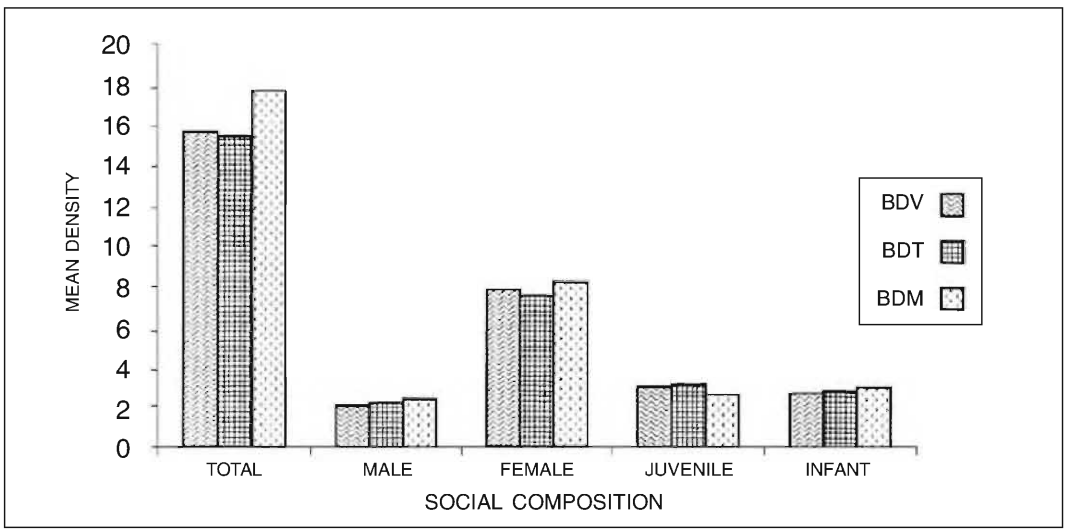

Fig. 4. : Mean density of Hnuman langur in Birbhum district.

Town : The 16 town groups contained 243 langurs with a mean group size of 15.18 ± 1.6. These 243 langurs composed of 33 adult males, 112 adult females, 57 juveniles and 47 infants. The group size varied from 5 to 26 individuals. The adult male to adult female ratio was 1 : 3.4 and adult female to juvenile and infant ratios were 1 : 0.5 and 1 : 0.4 respectively. Out of 243 town langurs the percentage composition were 13.58% adult males; 46.1% adult females; 20.95% juveniles and 19.34% infants. 42% females having infants. (Fig. 4).

Temple : The 3 temple groups composed of 52 langurs of which 7 were adult males, 27 were adult females, 8 were juveniles and 10 infants. The adult male to adult female ratio was 1 : 3.14 and adult female to juvenile and infant ratios were 1 : 0.3 and 1 : 0.37 respectively. The temple groups were well represented by sub-adult population of 34.6%. The mean density of temple groups is shown in Fig. 4.

DISCUSSION

Purulia, the other western district of West Bengal, was surveyed where 56 groups with 839 langurs sighted in 1200 sq.km. area. The estimated langur distribution was 0. 046 groups/sq.km., with 0.70 individuals/sq.km. which were almost same as that of Birbhum. In Purulia, a sizeable population of langurs was seen in the roadside trees, but in this district the langurs were observed in the villages. The recruitment was more in Purulia, 42% females having infants whereas in Birbhum it was 37% (Chauduri *et al.* 2004).

The present survey revealed that Hanuman langurs are more or less widely distributed in Birbhum. Almost all towns are having langurs beside temples and villages. As the district is predominantly rural in nature the langurs are concentrated more in the villages. The village provides the food and shelter of those langurs. The district has only 3.5% forest cover that unsuitable for langur habitat. In the study areas it was noticed that the villagers no longer tolerate the langurs due to extensive crop depredations. These langurs also damaged the household properly, mainly while jumping from tree to tree or from one house to another breaking the earthen roof tiles. These had become serious concern of the inhabitants of the villages and they often chased and harassed the langurs. So, these were constant man-monkey interactions in the villages. The majority of the villages, where the survey was undertaken, it was found that the villagers want the removal of langurs from their villages. Though killing of langurs were not recorded at Birbhum district, but the sacred image of the langurs which was enjoyed by this animal in the past, was eroded. The town and temple langurs were not faced this type of attitude from the people. The town groups wander in a large area, the local people, shopkeepers were seen to offer foodstuff to them. The temples groups were almost provisioned monkeys, and largely depend on pilgrims.

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