

PRIMATE SURVEY IN DIBANG WILDLIFE SANCTUARY IN
ARUNACHAL PRADESH, INDIA AND ITS CONSERVATION
PERSPECTIVES.

Project Report



D I L I P C H E T R Y
R E K H A M E D H I

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A C K N O W L E D G E M E N T S

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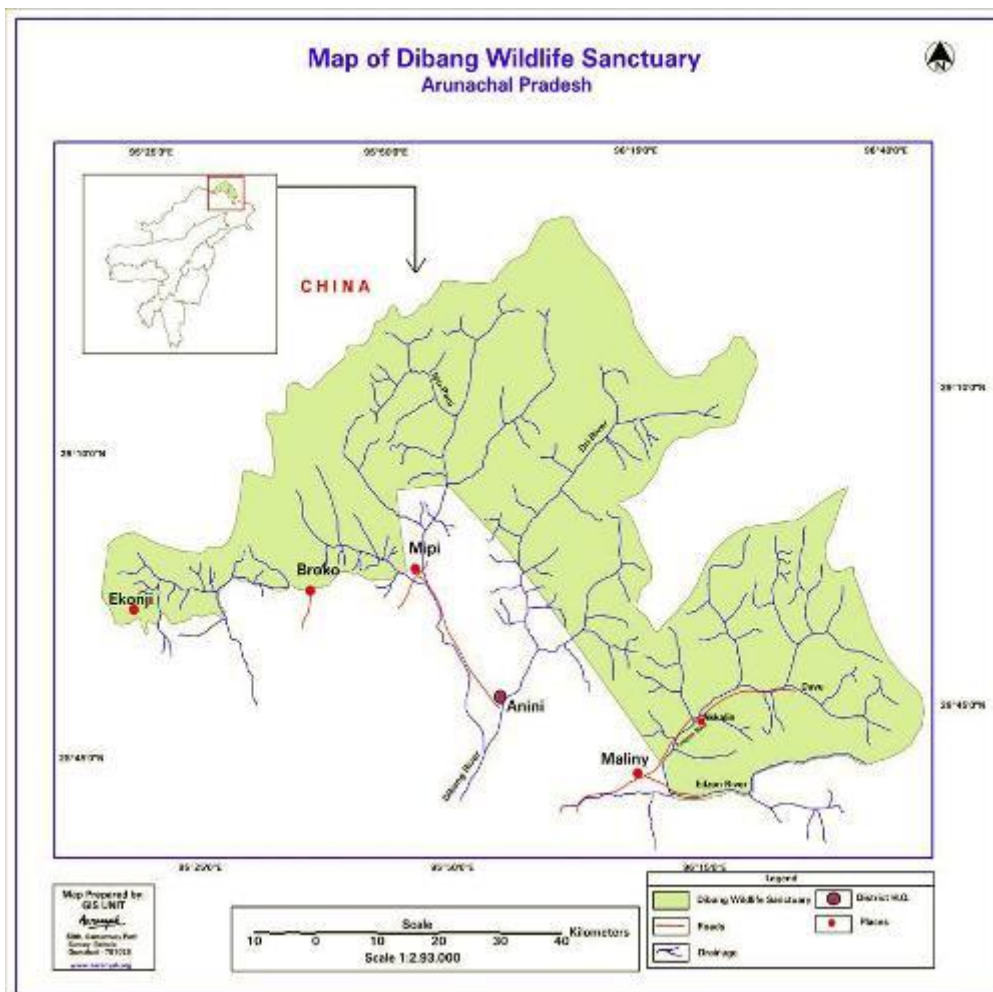
INTRODUCTION

The state of Arunachal Pradesh in Northeast India occupies a unique place in the eastern Himalayan biodiversity hot spot because of its rich bio-diversity. However, the state's biodiversity is yet to be explored and documented scientifically to a great extent. The taxon primate is one of the least documented groups, although the different species of the taxon are major components of this diversity. Out of 15 primate species found in India 9 species occur in Tropical and Sub-tropical forest of the northeast region. Out of these 9 species, 7 species viz. Slow loris, Rhesus macaque, Assamese macaque, Stump-tailed macaque, Pigtail macaque, Capped langur and Hoolock gibbon are found in Arunachal Pradesh (Chetry, 2002). Earlier Borang and Thapliyal, 1993 also reported seven species of primate from Arunachal Pradesh. However, Chetry (2002), Chetry et al., (2003a) and Choudhury (2002) encountered one macaque group in Arunachal Pradesh which is yet to be properly identified. Again, Choudhury (1998), reported tentative occurrence of Pere David's macaque from this region. There is report of another group of macaque from Pakhui National Park which is yet to be identified properly (Chetry et al., 2003b). These doubtful groups of macaque have given new dimension to the primate diversity in Arunachal Pradesh. Due to the bio-geographical continuity of the area with China, there remains the possibility of occurrence of other species or subspecies of primate in the area, besides the known species. Therefore, in any case the possibility of the unidentified macaque of becoming another species or subspecies of any of the existing macaque species cannot be totally overruled. Mishra et al. 2004 and Sinha et al., 2005 reported a species of macaque from Tawang district of Arunachal Pradesh and have named it as Tawang macaque / Arunachal Macaque (*Macaca manjula*) which is new to science. With this *Macaca manjula*, the number of primates' species in Arunachal Pradesh rise up to 8.

The primate diversity of the Debang is still unknown, as no scientific studies on Primate have so far been conducted in this area, which is biogeographically linked with China and Myanmar. Therefore, it has been felt that an immediate survey of primate is needed to know the diversity and status of the primate in this area. In this background a survey of primate had been conducted in Debang wildlife Sanctuary in Arunachal Pradesh during 2005-2006. This report contains the findings of the present study.

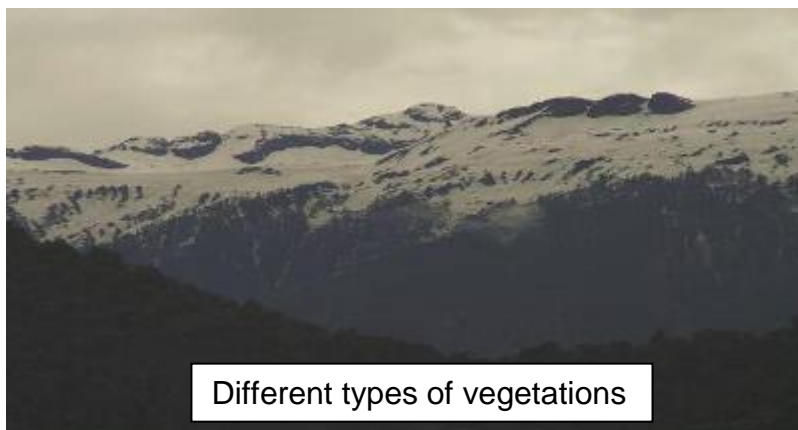
OBJECTIVES

- i. To know the diversity of primate in the area.
- ii. To know about the status of different primate species in the area.
- iii. To identify both area specific and species specific threat.
- iv. To formulate long term conservation and management plan for the primates



STUDY SITE

The Debang wildlife sanctuary (4149 sq.km) is located in the Upper Debang Valley District of Arunachal Pradesh, in Northeast India. The sanctuary lies between 95°25'18"° to 96°36'12"°E longitude and 28°35'35"° to 29°29'07"°N latitude. The area is located in the range of the Himalayas, at the junction of the eastern end of Arunachal Pradesh. The vegetation in the area is a mosaic of sub tropical broadleaf hill forest, Himalayan moist temperate Forest, sub alpine Forest and alpine moist scrub.



Field Conditions



METHODS

i. Direct methods

Modified line transects method (Burnham et al., 1980; NRC 1981, Struhsaker 1997, Indo-US Primate Project, 1995, Chetry et al., 2003a) was followed depending upon the habitat and the forest condition, covering 30% of the total area. The transect was laid in a stratified random manner to cover all representative areas of the park (Mueller-Dombois et al., 1974, Kent et al., 1994). Three observers walked randomly through existing forest trails and occasionally without forest tracts covering on an average of 10-15 kms per day. The walk transect was initiated in the morning and terminated in the evening. The observers walked slowly through the transect pausing at regular intervals of 500m. On sighting primates, the group structure and individual detail like age, sex and number of individuals were recorded.

The sighting and sign of other wild animals were also recorded.

At 500m intervals and at each location where primates were encountered, the observers estimated the tree height and canopy cover within an area of 10m radius and also took a note on the evidences and degree of grazing and logging in the study area.

ii. Indirect Methods

Primates presence was also recorded by indirect sources like grunts, branch shaking, sounds associated with locomotion and feeding etc. All such indications were used to trace the animals and stopped for ± 10 min. to collect the details of the group or the animal. Secondary information was gathered through interacting with the local people from the fringe areas.

FINDINGS

The survey was carried out mainly in the Dri river valley and its adjacent areas. The finding of the study conducted

in Debang wildlife sanctuary during 2005 – 2006 is presented below:-

Diversity of primates: The current study confirms the occurrence of 4 species in the surveyed part of the sanctuary. Rhesus macaque (*Macaca mulatta*), Assamese macaque (*Macaca assamensis*), another macaque (could not properly identified) were sighted directly while presence of slow loris (*Nycticebus bengalensis*) was confirmed on the basis of indirect information. The sighting rate is very low and animals were found to be very shy. Moreover, they escaped at the slightest pretext of human presence even at a distance. Not a single call of gibbon was heard during the survey period. Indirect information to do not show the presence of Gibbon. Similarly for capped langur also there was neither direct sighting nor indirect clue.

Table I Primates of Debang wildlife Sanctuary

Common name	Species	Sighting	Remarks
Assamese macaque	<i>Macaca assamensis</i>	Direct	Very Shy & Rare
??	<i>Macaca?</i>	Direct	Very Shy & Rare
Rhesus macaque	<i>Macaca mulatta</i>	Direct	Very Shy & Rare
Slow loris	<i>Nycticebus bengalensis</i>	Indirect	Yet to be find out
Capped langur	<i>Trachypithecus pileatus</i>	No sighting	?
Hoolock gibbon	<i>Hoolock hoolock</i>	No sighting / No call	No distribution

Range of Altitudinal distribution: Altitudinal records were maintained during the survey for every direct sighting. The study records distribution of primates from 1700 msl to 1814 msl.

Table 2 Primates in Altitudinal gradients

Species	Altitude (m)
Assamese macaque (1 group)	1781 msł
Rhesus macaque (1 group)	1700 msł
Macaca? (2 groups)	1772-1814 msł

OTHER FAUNA

Besides Non-human primates this area harbours different kinds of wild animal. The following is list of the mammalian species which we have recorded directly and indirectly during the survey.

S.No	Common name	Scientific name
1	Tiger	<i>Panthera tigris</i>
2	Leopard	<i>Panthera pardus</i>
3	Clouded leopard	<i>Neofelis nebulosa</i>
4	Snow leopard	<i>Panthera uncia</i>
5	Leopard cat	<i>Felis bengalensis</i>
6	Jungle cat	<i>Felis chaus</i>
7	wild dog	<i>Cuon alpinus</i>
8	Jackal	<i>Canis aureus</i>
9	Red panda	<i>Ailurus fulgens</i>
10	Asiatic black bear	<i>Ursus thibetanus</i>
11	Sun Bear	<i>Helartos malayanus</i>
12	Binturong	<i>Arctctis binturong</i>
13	Gaur	<i>Bos gaurus</i>
14	Musk deer	<i>Moschus moschiferus</i>
15	Barking deer	<i>Muntiacus muntjak</i>
16	Sambar	<i>Cervus unicolor</i>
17	Goral	<i>Nemorhaedus goral</i>
18	Serow	<i>Capricorniss umatraensis</i>
19	Mainland serow	<i>Naemorhedus sumatraensis</i>
20	Blue sheep	<i>Pseudois nayaur</i>
21	Takin	<i>Budorcas taxicolor</i>
22	Himalaya Tahr	<i>Hemitragus jemlahicus</i>
23	wild boar	<i>Sus scrofa</i>
24	Large Indian Civet	<i>Viverra zibetha</i>
25	Small Indian civet	<i>Viverra indica</i>
26	Indian porcupine	<i>Hystrix indica</i>
27	Pangolin	<i>Manis crassicaudata</i>

28	Common mongoose	<i>Herpestes edwardsi</i>
29	Indian fox	<i>Vulpes bengalensis</i>
30	Common yellow bat	<i>Scotophilus heathi</i>
31	Common otter	<i>Lutra lutra</i>
32	Himalayan rat	<i>Rattus nitidus</i>
33	Field rat	<i>Millardia melitada</i>

Avifaunal diversity of the sanctuary is also very high. A number of birds were sighted during the survey. The sighted list of birds includes important birds species like . Red breasted Hill Partridge (*Arborophila mandellii*), Blyth's Tragopan (*Tragopan blythii*), Sclater's Monal (*Lophophorus sclateri*), Beautiful Nuthatch (*Sitta formosa*), Ward's Tragon (*Harpactus wardi*) and Khalij pheasant (*Lophura leucomelana*).

For the bird's community also hunting is the major threat in the sanctuary.

Educational Programme on Primates:

Apart from survey, the current study also emphasized on education and awareness of the local community. The school students were selected as the target groups for the education program. The main objectives of the education scheme are to introduce Primates as a species to school going children and to grow interest for primate's species in their formative mind. Altogether 4 slides shows on Primates of Northeast India were arranged in the two schools namely Govt. Middle School, Alinge (ALG) and Govt. Higher Secondary School, Anini. Students were quite enthusiastic.

Educational Programme





THREATS

The threat to the habitat and the wildlife in Debang Wildlife Sanctuary is different from other protected areas in the plain and hill areas of Arunachal Pradesh. The problems are intricately associated with the tribes and cultural prospectus and their understanding about the wildlife and its habitat.

1. Hunting

Hunting is one of the major threats to wildlife in Arunachal Pradesh, the present study sites, is not an exception. The hunting is associated with culture of the majority of the tribal's in the state. Animals are hunted mainly for meat, skin, teeth, feather and beaks, which are used as a part of traditional dresses. This study identifies hunting as the primary threat for primates and other wildlife in Debang valley wildlife Sanctuary.

Particularly in the Dri river area, people from all walks of life -- teenagers, local youth, middle aged man and even

women use to go for hunting. Large mammals are hunted mainly with fire arms, e.g. gun. All the households usually have guns. A section of people also uses various traps (Locally called phasi) for capturing large mammals, middle sized and small mammals and even small birds. The traps are mainly used in the winter season. Recently the hunting and poaching of this remote corner has established link with the international network of illegal trade in wildlife products. The problem of hunting has aggravated due to increase in human population in the fringe area of sanctuary. At the same time issuing of more number of gun licenses has emerged as a great threat to the wildlife population. If this trends goes on then the larger mammals will be in more danger in coming years.

Bears (*Ursus thibetanus*, *Helartos malayanus*) are hunted mainly for gall bladder, teeth and skin. Another major shot after species is Musk deer (*Moschos moschiferus*) which is killed for musk pods. It has the highest demand in the illegal wildlife market. During the summer (from June to October), the villagers usually go for musk deer hunting. Usually 2 to 6 groups (1-6 individuals in one group) from each village . Only in Dambin area, around 90 hunters go for hunting of musk deer.

A local man of 62 years of age had hunted:-

	Species	Number
1	Mush deer	400
2	Barking dear	200
3	Bear	70
4	Goral	30
5	Serow	30
6	wild boar	3
7	Tharh	7
8	Monkey	400



Bear skin



Use of skin as cloth



Clouded leopard skin



Red panda skin



Use of skin in House hold goods



Roasted small Mammals and Birds



survey team inspecting skin of Takin



House hold Trophies



Trap "Phasi.



Trap "Phasi for small mammal & birds



Birds killed by trap
"Phasi.

2. Administrative loop hole:

Administrative loop hole is another major threat. Department of Environment and Forest, Govt. of Arunachal Pradesh has not given necessary emphasis to Conservation of Debang Wildlife Sanctuary although in paper it has been declared as wildlife sanctuary. The inadequacies can be felt in different levels.-

i. A distinct boundary demarcation for the sanctuary is still lacking. There is not even a sign board for displaying the name and area of the sanctuary.

ii. Communication gap between administration and local communities is also creating problem. 100% Fringe area people still feel the sanctuary as a land they have inherited from their ancestors. 96% of the people at Anini even do not know that the area has been declared as Sanctuary.

iii. The sanctuaries do not have any staff to carry out regular patrolling duty. Vast boundary of the sanctuary is yet to be brought under patrolling network.

iv. There is no checkpoint of police or Forest battalion camp in metal road that goes to district headquarters at Anini or Roing. Taking advantage of this situation lots of illegal activities on forest products are going on through this route.

3. Jhum cultivation:

Jhum cultivation is another additional problem. In future course it may cause more damage to the sanctuary. Jhum cultivation (Slash and burn shifting cultivation) in the

fringe may be one of the major threats for wildlife of the sanctuary in long run.

4. Trans-boundary hunting:

Trans-boundary hunting is another major threat. Chinese hunters regularly come to the Indian territory. Every year at least 20-25 hunters trespasses to Indian side for musk deer hunting as reported by local hunter. This situation is really alarming and need timely intervention.

OUR CONSTRAINS and LIMITATION:

Most of the areas of the Debang wildlife Sanctuary are inaccessible, mountainous and scarcely inhabited. Due to limitation of fund we could only cover the Dambin area of the sanctuary and larger part of the area is left out. Another survey is needed for assessing the present status of primates in other parts which is accessible.

CONSERVATION

a. Hunting is major conservation problems. Police and Forest Department should take care in strict implementation of Wildlife Protection Act 1972.

b. Anti-poaching and monitoring camp should be set up at strategic sites in each of the fringe areas.

c. Administrative set up under the Divisional Forest office at Anini, Range office, and Beat office should geared up with more staff. Field staffs should be posted in different camps to carry out regular patrolling.

d. Better infrastructural facilities such as vehicles, Motor Bike and modern fire arms should be provided to the field staff.

e. Conservation education and public awareness programme should be conducted in all the educational institutions as well as community level in the district where the protected area exists.

f. Further Survey for Primate and other mammal should be carried out to collect the detail data on the species as well as on the habitat covering all the area of the

sanctuary before formulation of conservation action plan of the sanctuary.

WHAT NEXT?

We would like to continue the survey in other parts of the sanctuary which accessible. It is quite essential to develop a better understanding on diverse aspects of the sanctuary apart from the status and diversity of primates in particular and biodiversity as whole.

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FINANCIAL STATEMENT OF THE PROJECT

Name of the Project:

Primate Survey in Dibang wildlife Sanctuary in Arunachal Pradesh, India and its conservation perspective.

Duration of the project: (May 2005 to May 2006)

Amount	Received Expenditures in detail	Amount in £
1. Rufford Small grants = £ 4995.00 =Rs 402575.00	1 TRANSPORT 2. SUBSISTENCE i. Food ii. Lodging iii. Honorarium iv. Field Assistant & Porter 3. FIELD WORK Equipments: a.GPS b. Field supplies c. Data sheet	1283 834 834 837 124 114 50

	d. Film/Dev/Printing	101
	4. OTHER	
	i. Communication	216
	ii. Computer accessories	212
	iii. Education Programme	204
	iv. Contingency	186
Total =£4995.00	= Total Expenditure	£ 4995.00
CASH IN HAND = NIL		

Certified that the money received £4995 = Rs =Rs 402575.00 from Rufford Small grants have been used for the above said project in the above statement .