Distribution, Conservation Status and Priorities for Primates in Northeast India

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Abstract

The research team of the Indo-US primate project undertook extensive surveys using line transect method, covering 6,50,956 ha. forest areas in some parts of NE India between 1994 and 1999 to obtain information on the status and distribution, to record the fragmentation of primate habitat and to develop eco-ethological profiles of non-human primate species. Nine species of non-human primates namely the Hoolok gibbon (***Bunopithecus hoolock***), Golden langur (***Trachypithecus geei***), Capped langur (***T. pileatus***), Phayre's langur (***T. phayrei***), Stump-tailed macaque (***Macaca arctoides***), Assamese macaque (***M. assamensis***), Pig-tailed macaque (***M. nemestrina***), Rhesus macaque (***M. mulatta***), and Slow Loris (***Nycticebus coucang***) were encountered. As per the IUCN criteria 4 species qualify as critically endangered, 3 as endangered, and one each in the rare and data deficient category. Demographic trends, isolated distribution and shrinking habitats indicate a decline in primate populations in Northeast India. Based on the surveys the revision of 1996 IUCN Red Data list of Threatened Animals and the Wildlife (Protection) Act, 1992 is proposed besides other recommendations.

Introduction

Tropical rainforests, which cover about 6% of the land surface, harbour more than 50% of all living species of the world (Marsh & Mittermeier, 1987, McNeely ***et al.,*** 1990). Loss of species due to fragmentation in isolated remnant forests is a serious threat to the survival of taxa. Of the two biodiversity 'hotspots' in India, the Eastern Himalayas (i.e. Northeast India) is in greater danger than the Western Ghats (Anon., 1997). Northeast India is the biogeographical gateway to India's richest biodiversity zone and is unique for its genetic resources (Srivastava, 1999). In spite of the variety of primates found in this region, there has been virtually no effort to study primates in this belt until recently. Gee (1956) and Khajuria (1956), reported a new species of langur in Assam. Preliminary surveys were also carried out by the Zoological Survey of India, Forest Department, Wildlife Institute of India and different universities from time to time (Mukherjee & Saha, 1974; Mukherjee, 1982; Alferd & Sati, 1990; Gupta, 1994).

Northeast India comprises 7 states (Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, and Tripura) with a total geographical area of 255,083 km^2, of which 164,043km^2 is forested. These forests are composed of evergreen rainforest, semi-evergreen, and moist deciduous forests. Much of this stretch comprises (34%) protected reserved forests, (9.2%) protected

forests, Wildlife Sanctuaries, and National Parks, and (56.8%) unclassed areas. According to the National Remote Sensing Agency, the actual forest cover is now declining and is in the process of degradation (Anon., 1997) because of illegal felling, encroachment and resulting soil erosion. A combination of habitat destruction, hunting, and live capture of species have also driven several primate species to the brink of extinction in varying degrees.

In 1994, the authors developed an integrated, collaborative Indo-US Primate Project to conduct systematic status surveys, record fragmentation of primate habitats, and develop eco-ethological profiles of individual primate species to provide a basis for the conservation and management of primate habitats and species therein.

Between 1994 and 1999, our research team surveyed over 6,50,956 ha of protected, unprotected, and unclassified forests using line transect method which was modified to cover all representative areas randomly in a stratified manner (Burnham ***et al***., 1980, Anon., 1981, Kent & Coker, 1994). Many long-term species-specific research on the ecology and behaviour were also conducted to understand the plasticity in behaviour, responses to habitat change and long-term consequences of these changes on the future of primate populations. Detailed analyses of the results are beyond the scope of this article and are reported elsewhere. However, information on the status, distribution and conservation of the species confined to Northeast India is given below.

Distribution and Conservation Status

Slow loris *(Nycticebus coucang)*

Slow loris inhabits all the northeast states, with the northwestern limit of its range being the southward bend of the river Brahmaputra at about 26˚N, 90˚E (Srivastava, 1999). Their preferred habitats are tropical and subtropical evergreen and semi-evergreen rainforests with continuous dense canopies. They also prefer forest edges, which have a higher density of insect prey (Rowe, 1996). Slow loris populations have been declining and its status throughout its distribution range is not known (Wolfheim, 1983; Srivastava, 1999). The numbers are very small and the limited survey conducted by the Indo-US Primate Project between 1994 and 1999 indicated their presence in few isolated pockets only. The Slow loris is listed under Schedule I of the Wildlife (Protection) Act, 1972. IUCN SSC Red Data Book listed this species as '***Data Deficient'***.

Stump-tailed macaque *(Macaca arctoides)*

The Stump-tailed macaque inhabits all the 7 states of northeast India from the sea level to an altitude of 2,400 m. The northwest limit of its range is the south of the river Brahmaputra inhabiting lowland semi-evergreen forests to monsoon and montane forests. Most of its natural habitat is affected by shifting or slash-and-burn cultivation (***Jhum***). It is indiscriminately hunted to the brink of extinction almost in its entire distribution range in India. Listed under Schedule II of the Wildlife (Protection) Act, 1972, the IUCN SSC-Red Data Book lists this species in the vulnerable category. Our survey suggests that a suitable habitat of ca. 18,500 km^2 is available in the northeast and it should assigned the ***'critically endangered'*** category in India.

Assamese macaque *(M. assamensis)*

Assamese macaque inhabits all the 7 states of northeast India from the sea level to altitudes of 4,000 m. However, no confirmed

sightings have been reported from Tripura (Dr A.K. Gupta, WII ***pers. comm.***). This species occupies tropical, subtropical semi-evergreen forests, dry deciduous and montane forests. Habitat destruction rather than hunting is the greatest risk to its populations in the Northeast India. However, it have been hunted in the Himalayan regions of North Bengal, Sikkim, and Arunachal Pradesh where it invades crop fields frequently. The Assamese macaque is listed under Schedule II of the Wildlife (Protection) Act, 1972. IUCN SSC–Red Data Book places this species in the vulnerable category. Our survey suggests that a suitable habitat of ca. 88,000 km^2 is available in the northeast and this species should be placed in the ***'endangered'*** category in India.

Rhesus macaque *(M. mulatta)*

This species inhabits all the 7 states of Northeast India from sea level to an altitude of 4,000 m. It inhabits dry deciduous, mixed deciduous, bamboo, and temperate cedar–oak forests to tropical woodlands and swamps. Many Rhesus were seen in areas adjacent to forests rather than in the forest itself. Habitat destruction rather than hunting is the greatest risk to the populations of Rhesus macaques in North and Northeast India. However, they have been protected by Hindu sentiments throughout India since time immemorial. They are listed under Schedule II of the Wildlife (Protection) Act, 1972. CITES places this species in the '***lower risk***' category. Our surveys suggest that a suitable forested habitat of ca. 84,000 km^2 is available and this species should be considered as ***'rare'*** in the forest of Northeast India.

Pig-tailed macaque *(M. nemestrina)*

This species inhabits all the 7 states of Northeast India from sea level to an altitude of 1,200 m. The northwest limit of its range is south of the river Brahmaputra. It inhabits lowland primary to secondary forests to coastal, swamps, dry land and montane forests. Forest habitats have been disturbed and destroyed by recent human activity in its entire distribution range. To add to this is the fact that these macaques live in low densities and require a larger home range to extract food resources. In the present situation there is hardly any place left that is big enough for Pig-tailed macaques and yet not altered by humans. Consequently most of its natural habitat is affected by '***Jhum***' cultivation. It is listed under Schedule II of the Wildlife (Protection) Act, 1972. IUCN SSC–Red Data Book has placed this species in the vulnerable category. Our survey suggests that a suitable habitat of ca. 18,600 km^2 is available in the northeast and this species should be placed in the ***'critically endangered'*** category in India.

Golden langur *(Trachypithecus geei)*

This species was recorded north of the Brahmaptura river between the rivers Manas and Sankosh up to the Bhutan border. The species inhabits sub-tropical moist deciduous forests and moist evergreen forests up to 2,400 m. Ethnic violence that broke out in 1989 in and around the forests inhabited by Golden langurs resulted in loss of these forests. Since these forests became the 'tragedy of commons' the Golden langur habitat was reduced by 1/3 in the last 10 years. Though listed under Schedule I of the Wildlife (Protection) Act, 1972, not much protection to the species and its habitat is ensured. IUCN SSC–Red Data Book places this species in the '***Data deficient***' category. Our survey suggests that a suitable habitat of 500 km^2 is available in the northeast and this species should be placed in the ***'critically endangered'*** category in India.

Capped langur *(T. pileatus)*

This species inhabits all the 7 states of Northeast India from sea level to 2,000 m, and occurs east of the Brahmaputra river, south of the Manas river and eastward through the hills of Northeast India as far as the Upper Chindwin river in north Myanmar. It inhabits sub-tropical evergreen, broadleaf, deciduous, and bamboo forests. Habitat destruction is a major concern for its survival. A proposal has been made to upgrade certain areas to increase protection, and people's participation in any form is a must to save this species. Mostly the species has been hunted for food, as well as for other purposes such as ornamentation, taboo, religious ceremonies, and traditional medicine, without any restriction despite being listed under Schedule I of the Wildlife (Protection) Act, 1972. IUCN SSC–Red Data Book places this species in the ***Data Deficient***' category. Our survey suggests that a suitable habitat of ca. 84,000 km^2 is available in the northeast and this species should be placed in the ***'endangered'*** category in India.

Phayre's langur *(T. phayrei)*

This species inhabits the state of Assam, Mizoram and Tripura from the sea level to 800 m. It inhabits sub-tropical evergreen, broadleaf, deciduous, and bamboo forests. Its numbers are small due to deforestation, which is affecting all the primates of the northeastern states. In addition, it is specifically hunted in areas around salt springs where the species seems to produce large gallstones from the limestone. These gallstones called ***'bezoar'*** stones are highly prized for their medicinal value by the Chinese, they are also hunted for food by some tribes like ***Mizo***s or ***Lushai***s. IUCN SSC–Red Data Book records this species in the '***Data Deficient***' category, and as '***lower risk***' in CITES-II list. Our survey suggests that a suitable habitat of ca. 5,500 km^2 is available in the northeast and the species should be placed in the ***'critically endangered'*** category in India.

Hoolock gibbon *(Bunopithecus hoolock)*

It inhabit all the 7 states of northeast India from 100 to 1,370 m, and the northern, northeast and northwest limit of its range is the river Brahmaputra (Dibang in Arunachal Pradesh) which acts as a physical barrier for its distribution. It inhabits primary evergreen and less seasonal parts of semi-evergreen rainforests and rarely semi-deciduous forests. Habitat loss jeopardizes its survival and it is hunted in its entire range. Hence people's participation in any form is a must to save this species. Mostly hunted for food, it are also hunted for other purposes such as ornamentation, taboo, religious ceremonies, traditional medicine without any restriction, despite being listed under Schedule I of the Wildlife (Protection) Act, 1972. IUCN SSC–Red Data Book record this species in the '***Data deficient***' category. Our surveys suggest that a suitable habitat of ca. 18,500 km^2 is available in the northeast and if can be placed in the ***'endangered'*** category in India.

The Golden langurs were not sighted outside their known distribution range, being recorded only from north of the Brahmaputra river between the Manas and Sankosh rivers up to the Bhutan border. Translocated troops occur in the state of Tripura (Gupta & Mukherjee, 1994) and elsewhere but the natural distribution is otherwise restricted to this small region. We could not confirm sighting reports of this langur from the Garo Hills and other sites in the southern part of the Brahmaputra river. Nor could we not locate primate species like

Rhinopithecus roxellanae, T. cristatus, and ***M. thibetana,*** reported earlier from the study area (Roonwal & Mohnot, 1977; Choudhury 1991, 1998). However it is quite likely that these reports were published on the basis of unconfirmed sightings or misidentification. Moreover, several forms are represented by distinct subspecies, such as the Assamese macaque, where the western and eastern subspecies are as genetically distinct as different species of macaque (Wolfheim, 1983). Many species of primates were restricted northwards by a physical barrier like the Brahmaputra river. For example, Stump-tailed and Pig-tailed macaques, Hoolock gibbons and Phayre's langur were not recorded north of this river. Rhesus macaques were encountered more often in areas adjacent to the forest rather than in the actual forest. Capped langurs are the most widely distributed species of all primates, with 5 distinct subspecies encountered frequently, but they occur in very low densities. Phayre's langur was observed thriving well in degraded habitats and bamboo forests. Hoolock gibbons were encountered in low densities in secondary or regenerating forests. These results indicate that all primate species in northern India occur in low densities with low proportions of immatures in their population. Their encounter rate is also low. All these findings are suggestive of population decline. However, census or demographic data prior to our work between 1994 and 1999 are not available for comparison. The loss of primate habitats, hunting and human population pressures are causes for concern.

Conclusions

- Revision of 1996 IUCN–Red Data List of Threatened Animals is urgently required.
- The Wildlife (Protection) Act, 1972 also needs revision. Several species included in Schedule II, needs to be placed under Schedule I.
- In Arunachal Pradesh, Mizoram and Nagaland, large tracts of primary forests still exist and they retain primate populations.
- Hunting of primates as agriculture pests is a major problem. This is especially true for the Rhesus macaque, which can in fact be quite a significant crop raider and is therefore persecuted. Pig-tailed macaques in Meghalaya, Stump-tailed macaques in Nagaland and Assamese macaques in Arunachal Pradesh are also hunted as pests.
- It is important to note that the primate species in Northeast India have been forced into crop raiding because of loss of natural habitat to agriculture. In some cases, they have clearly learned to coexist with humans by using crops as a significant part of their diet. Conflicts of this kind are likely to increase in the future as the human population continues to grow exponentially in Northeast India.
- Habitat destruction is the most significant threat to the survival of primates in Northeast India. However, it is evident that certain species can survive in disturbed habitats, but the long-term consequences on their reproduction and survival are not known.
- In the last decade or two not much attention has been paid to the plight of primates in India especially in comparison with tigers, rhinos and elephants, and some species are therefore on the brink of extinction.
- Since, habitat loss is the principal threat to primates, habitat protection should be given top conservation priority. Hence, the most valuable direct means of assessing

species conservation is the establishment and management of Protected Areas or the creation of more and more community-based conservation areas.

Recommendations

- Research on population genetics and phylogenetics should be given priority.
- A concerted effort should be launched to protect the prime habitats of endemic and endangered primate species.
- Efforts should be made to raise the awareness of primates, among communities living in the fringe areas.
- To make primate protection more effective and durable in Protected Areas such as National Parks and Wildlife Sanctuaries, we recommend staff incentives and welfare funds. A major portion of the revenue generated by the Park or Sanctuary should be spent on its development and staff welfare.
- Rigorous and regular training programmes and refresher courses for forest staff are necessary to keep them informed, updated, trained and suitably equipped.
- More trained staff is needed to protect the rich wildlife and its habitat in Northeast India.
- Emphasis should be given to eco-tourism in the area. Publicity through newspapers, TV coverage, and media reporting should be encouraged to generate awareness in the local people and to generate good revenue for the sanctuary. The revenue so generated should be used for the upkeep of the Sanctuaries.
- Conservation education and conservation action plans should also involve NGOs, and the local communities that live in and around forested areas.

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