The clouded leopard in Assam

The elusive and nocturnal clouded leopard is seldom seen but information collected in the course of a 6-year primate survey revealed that it still occurs in the forests of the state of Assam in India. The species has not been recorded in any of the state's protected areas, however, and it is threatened by deforestation.

The clouded leopard *Neofelis nebulosa* has disappeared from part of its wide range in southern Asia due to habitat destruction and hunting and is classified by IUCN as Vulnerable (IUCN, 1990). Its nocturnal, elusive habits make it difficult to investigate its status and distribution; records and survey results have been reported in recent years from Borneo, Taiwan, Sumatra and Nepal (Rabinowitz *et al.*, 1987; Rabinowitz, 1988; Santiapillai and Ashby, 1988; Dinerstein and Mehta, 1989).

In Assam detailed distributional information about the clouded leopard is scarce. During a field survey of primates in that state from 1986 to 1991 I collected information on the species summarized in Table 1. In addition to the information presented, it appears that most of the clouded leopards supplied to local zoos are collected illegally from the Garo Hills area of Meghalaya state. Sometime in 1983 two cubs were caught close to the border with Assam's Goalpara district and sent to the Guwahati zoo (M. Moosa, pers. comm.).

While surveys of such a secretive animal

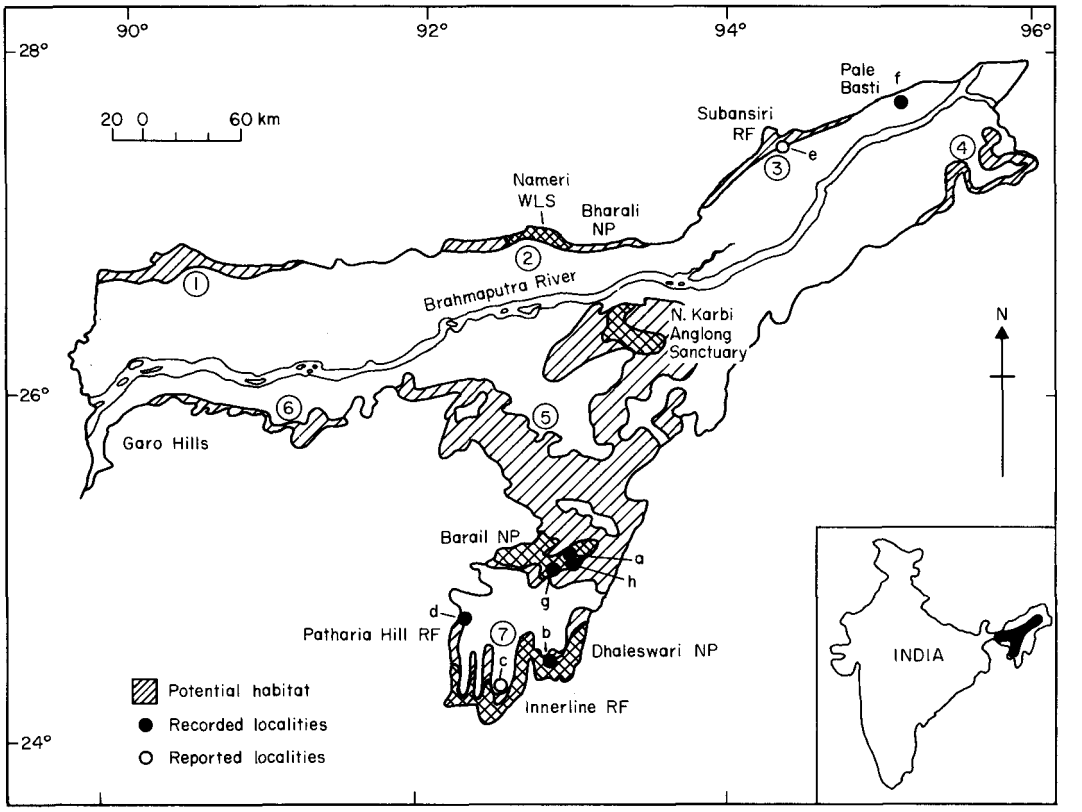

Figure 1. Map of Assam showing the general distribution and locality records of the clouded leopard. 1. Manas Tiger Reserve area. 2. Foothills forest of northern Darrang and Sonitpur. 3. Foothills forest of Lakhimpur and Dhemaji. 4. Rain forests of Upper Assam. 5. Forests of Central Assam including Karbi Plateau and the Barail Range. 6. Marginal forests of Goalpara and southern Kamrup. 7. Forests of southern Cachar, Karimganj and Hailakandi. The letters (a) to (h) refer to sites listed in Table 1.

Table 1. Clouded leopards recorded in Assam, 1986–1991

Date and reference to Figure 1	Locality	Specimen	Remarks
February 1986 (a)	Boro Mulkoi village, Barail Range, North Cachar Hills district	One skin	Killed at elevation above 500 m by local tribesman (Hmar) in 1985 and collected later by the Forest Department*
2 February 1987 (b)	Khulichara Mizo Punji, Innerline Reserve Forest, Cachar district	One skull	Killed by a local tribesman (Mizo) at dusk 'recently'
3 March 1987 (c)	Gharmura area, Innerline Reserve Forest, Hailakandi district	–	Seen high in trees by local people on several occasions
4 July 1989 (d)	Naloi Khasia Punji, Patharia Hill Reserve Forest, Karimganj district	One skin	Killed in a tree at night by a local tribesman (Khasi) sometime in 1985–86
5 November 1990 (e)	Dirpai, Subansiri Reserve Forest, Dhemaji district	One live animal	Seen by local tribal (Adi or Abor) hunter near Geruka nullah at dawn
6 December 1990 (f)	Pale Basti near Assam–Arunachal Pradesh border, Dhemaji district	One skin	Killed in a tree at dawn by a local tribal (Adi or Abor) hunter sometime in June–July 1987
22 July 1991 (g)	Maroachara, Barail Reserve Forest, Cachar district	One skin	Killed by local residents. Carcass collected by the Forest Department (M. K. Sinha, pers, comm.)

* The same hunter had sighted one clouded leopard stalking a sounder of wild pigs *Sus scrofa* near a hill stream in the Barails in 1988 (h)

Note. Except for the Barial Range, the elevation of all other collecting localities is around 100 m above mean sea level.

can never give completely accurate information on the status of the species, the records show that the clouded leopard is still widely distributed in the forested areas of Assam. Because the animal is seldom seen and, being mainly arboreal, leaves few pug marks, poaching/hunting incidents are the main sources of information.

The total potential habitat available for the clouded leopard in Assam is about 17,000 sq km, of which about 300 sq km are in the protected areas of Manas National Park and Nameri Wildlife Sanctuary (Figure 1). However, clouded leopards have not been recorded in either of these protected areas.

The main threat to the clouded leopard is deforestation, through slash-and-burn shifting cultivation and indiscriminate felling. Hill tribes (Nagas, Mizos and Kukis [Hmar etc.]) also eat its flesh when available. Of the potential wildlife reserves recommended after my primate survey (Choudhury, 1989), the following four would definitely help in the conservation of the clouded leopard: Dhaleswari

National Park (1670 sq km) in the extreme south; Barail National Park (790 sq km) and North Karbi Anglong Sanctuary (700 sq km) in central Assam; and Bharali National Park (720 sq km) in northern Sonitpur. The latter areas also includes Nameri Sanctuary.

Habitats in all these areas are mostly tropical evergreen and semi-evergreen forests. In the higher areas of the Barails the forest is subtropical evergreen. All the proposed reserves have good tiger *Panthera tigris* and leopard *P. pardus* populations, which are sympatric with the clouded leopard throughout north-eastern India.

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Problems of wild elephant translocation

When wild animals cause problems for people living nearby, moving the animals to a safe place elsewhere may appear to be an attractive solution. However, experience in India has shown that it is far from ideal when Asian elephants are involved and the usefuleness of translocation as a management tool for this species has to be questioned.

Introduction

Reducing man–elephant conflicts is a major concern of wildlife managers in elephant-holding areas. Translocating wild elephants by motor transport under sedation, after initial chemical immobilization, is one preventive measure used to contain man–elephant conflict and has been attempted with Asian elephants in Sri Lanka, Malaysia, and India (Karnataka and West Bengal).

In 1979 the Sri Lanka Department of Wildlife Conservation translocated 10 elephants from Deduru Oya to Wilpattu National Park situated to the north of Colombo, about 120 km from the point of capture (Hofmeyr, 1979). Since 1974 the Department of Wildlife Conservation and National Parks, Peninsular Malaysia, has been translocating elephants from areas opened up for oil-palm plantations to safer areas of undisturbed forest and by January 1988 had thus removed 132 elephants (Kahn, 1987; Lahiri-Choudhury, 1990). In 1987 Karnataka Forest Department, India, translocated seven elephants, including a killer rogue tusker, from Madikere Forest Division to Nagarhole National Park, 105 km from the point of capture. It also moved one elephant from the same vicinity to Dubara, 60 km away (Appayya, undated). Later Karnataka Forest Department reportedly translocated 12 more elephants in the same manner.

A case of homing

In July 1988 West Bengal Forest Directorate translocated a rogue tusker (height 2.45 m) from the westernmost fringe of northern Bengal to the core area of recently created Buxa Tiger Reserve on the easternmost fringe of the same forest belt, a distance of 180 km