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Translocation of a Wild Elephant from Southern West Bengal to Northern West Bengal - An Approach to Reduce Elephant-Human Conflict

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Introduction

Elephant-human conflict is of great concern today. There is commotion in the area when elephants kill people and the law-and-order situation gets out of hand. An elephant caused havoc in West Midnapore forest division of southern West Bengal killing five people in three months and the Forest Department of the Government of West Bengal declared it a rogue elephant. Instead of straightaway killing it, a different approach was adopted this time of relocating it to northern West Bengal. Its movement was monitored by fitting it with a VHF radio-collar.

Elephant habitat in southern West Bengal (Fig. 1) is part of the central Indian elephant range. The habitat exhibits a high degree of fragmentation leading to elephant-human conflict with loss of agricultural crops, house damage and loss of human lives every year. On an average 26 people are killed, 1760 houses demolished and 2150-hectare area of crop losses occur every year due to 80-100 elephants (Forest Department, Govt. of West Bengal). In southern West Bengal elephants are mainly found in West Midnapore, Bankura and Purulia district areas.

Elephant habitat in northern West Bengal (Fig. 1) is part of the Eastern Himalaya biodiversity hotspot and is the western-most extension of the north-eastern elephant population (Barua & Bist 1996). The habitat is characterized by a high degree of fragmentation and intense elephant-human conflict, resulting not only in loss of agricultural crops and property but also of human lives, ~50 annually (Lahiri-Choudhury 1975; Choudhury *et al*. 1997; Sukumar *et al*. 2003). The total geographic range of elephants in northern West Bengal is 3051 km^2 and covers about 24% of the total area of northern Bengal (Barua & Bist 1996). The gross forest area forming the elephant zone is about 1954 km^2 (Lahiri-Choudhury 1980; Barua & Bist 1996).

At the time of the incident a herd of 62–65 elephants were roaming in southern West Bengal in the Bengal Nayagram area of Midnapore Forest Division raiding crops. The forest there is of mixed plantation type and is dominated by Sal. The food availability for elephants in the forest areas is very low.

Methods

Darting of the animal and radio-collaring

Local forest staff and villagers were engaged by forest officials to locate the animal. It was found in a sugarcane field of Jadavpur village in Nayagram Range of Midnapore West Forest Division. On receipt of information, the darting team rushed to the spot. To restrict its movement, it was darted with Xylazine 7.5 ml at 14:13 h (25.1.2006) by disinject gun. With the help of "kunki" elephants, the animal was then darted with Immobilon (5 ml) at 15:09 h. After the animal was fully sedated, a VHF radio-transmitter was fitted around its neck and necessary measurements (Table 1) were made prior to translocation. A sharp shooter was ready to deal with any untoward incident.

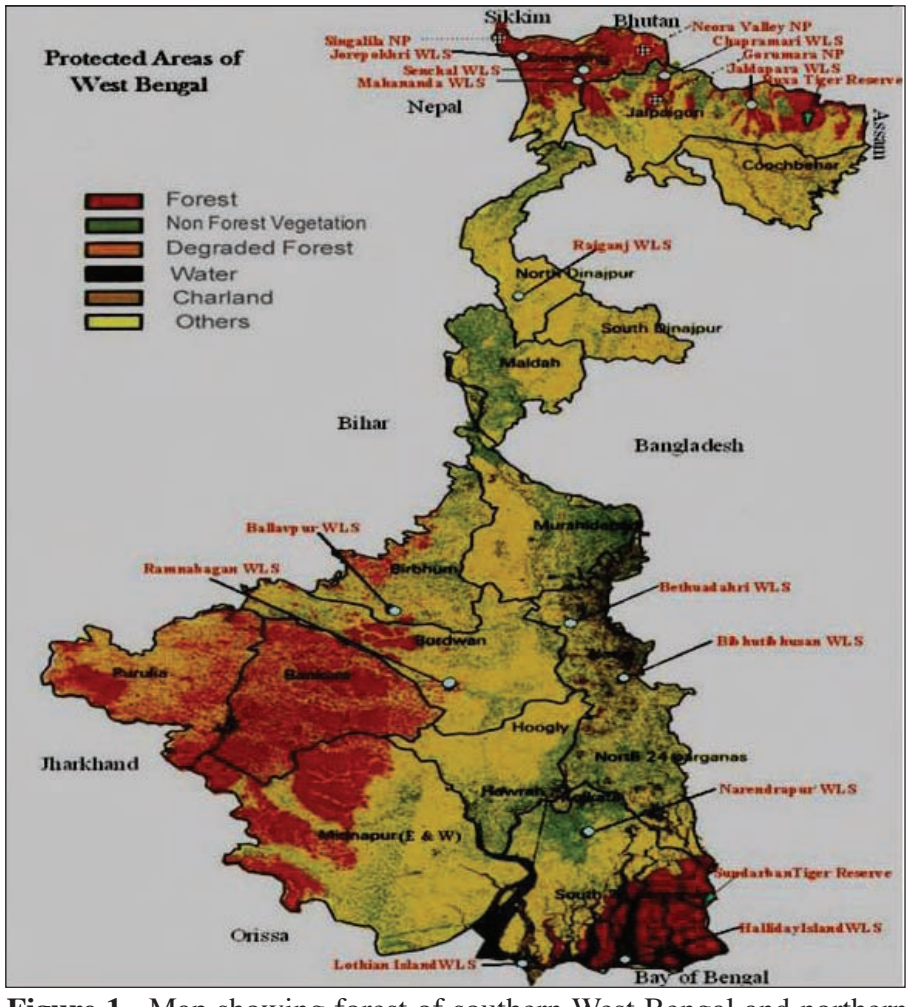

Figure 1. Map showing forest of southern West Bengal and northern West Bengal (source: West Bengal Forest Department).

After recovery, the animal could not stand up due to chaining on both legs. The chain was loosened and the animal regained its senses fully around 17:20 h. Kunki elephants were tied with rope to the four legs of the animal. Since the animal was healthy and big, the kunki elephants could not control it and it started running away. It was immediately darted with Xylazine (7.5 ml) to restrict its movement. The animal slowly sank to the ground and at night it was decided to keep it in an open place. Its four legs were secured to a sal pole (grounded deep into the earth) and to kunki elephants. Veterinary doctors and other experts, researchers and forest staff maintained vigil in the night and kept an eye on the animal.

When the condition of the animal worsened, saline was given through a vein in the ear to maintain its health. On the second day (26.1.2006), the animal revived fully and it stood up around 18:30 h. Immediately arrangements were made to load it on to a truck to transport it to northern Bengal.

Loading and Transportation

After complete recovery, the animal was walked by kunki elephants and a tractor with a rope binding it and was taken to the loading place. The truck was placed at normal ground level cutting and deepening the mud so that the animal could be hauled into the vehicle easily (Fig. 2). The loading place was 600 m away from the darting place. The elephant's four legs were chained to the chassis of the loaded vehicle after the animal had got into the truck.

Table 1. Measurements of the animal.

#	Measurement details	cm
1	Left front foot circumference	147
2	Shoulder height	285
3	Body length	432
4	Left hind leg	125
5	Right hind leg	128
6	Tusk length	83
7	Tusk circumference	32.5

Figure 2. Loading of elephant.

After loading the animal it was transported under the care of the veterinary doctor, a tranquilizing expert, and a sharp shooter travelling with it in the convoy in another vehicle. The journey started from southern West Bengal to northern West Bengal on 27.1.2006 (00:00 h) and the animal reached its destination on the evening (18:15 h) of 28.1.2006. The total duration of the journey was 42 h. It was given food, water, and doses of xylazine at regular intervals to sedate it on the way (Table 2). The animal was standing for the full journey period of 42 h (Fig. 3).

The animal was brought deep inside the sanctuary in Mahananda (northern West Bengal) and after loosening the chain and removing other restrictions, to recover fully after long and tiresome journey and to allow him get off the truck. The animal came out on its own from the truck and went to nearby forest.

The movements of the animal in the new area after release were monitored through VHF telemetry (Fig. 4). Four locations per month (once a week) were targeted. 14 locations were obtained by direct sighting from 29.1.2006 to 15.4.2006. Two extra locations were obtained during paddy season October 2006 after the animal pulled off the collar. These locations were also included in animal's home range.

Figure 3. Elephant ready to be transported.

Table 2. Details of drugs administered.

Date	Time	Drug	ml	Remarks
25.1.	14:13	Xylazine	7.5	
25.1.	15:09	Immobilion	5.0	
25.1.	17:08	Xylazine	7.5	Sedation
25.1.	17:13	Revivon	5.0	
25.1.	17:17	Head and trunk movement		
25.1.	17:20	Complete recovery		
26.1.	16:15	Xylazine	4.0	
26.1.	17:03	Xylazine	3.0	
26.1.	18:50	Xylazine	4.0	Walking
27.1.	00:05	Xylazine	4.0	Loaded
27.1.	03:50	Xylazine	4.0	On truck
27.1.	06:50	Xylazine	5.0	On truck
27.1.	10:20	Xylazine	5.0	On truck
27.1.	14:05	Xylazine	3.0	On truck
27.1.	16:00	Xylazine	3.0	On truck
28.1.	00:36	Xylazine	5.0	On truck
28.1.	06:22	Xylazine	5.0	On truck
28.1.	09:30	Xylazine	4.0	On truck
28.1.	16:15	Xylazine	4.5	On truck
28.1.	17:16	Xylazine	3.0	On truck
28.1.	18:15	Xylazine	2.0	Unchaining
28.1.	20:03			Released

Results

The animal was translocated from its native area and conflict was presumably reduced in its original habitation. However, the animal started causing damages in the translocated area after settling in its new home range. The animal broke houses and raided crops in villages and army areas in northern West Bengal. A total of 17 houses were demolished, 46 farmer's crop fields were raided during five months (February 2006-June 2006). However, no humans were killed by this animal during that period.

The animal's home range (Fig. 5) was restricted in Mahananda Wildlife Sanctuary (Ponchnoi, Chamta, and Koklong forest areas), Baikunthapur Forest Division (Adabari, Sarwasatipur, Sarugarah, Apalchand forest areas) and Kurseong Forest Division (Lamagumpha forest areas). The

Figure 4. Collared elephant.

home range of the animal was calculated by minimum convex polygon method (MCP) 95.75 km^2. However, one-year home range (January 2006 to November 2006) was not established due to the collar being pulled off by the animal.

Discussion

Translocation by capture transport is very expensive and needs a large work force. This method can only be employed for translocation of solitary animals as it is not an easy task to translocate big herds this way. It also does not seem to be a good option to reduce conflict as in this case, it only shifted the area of conflict. On the positive side it is better than killing elephants as a management strategy. A better option would be to capture and transform it to a "kunki" after proper training.

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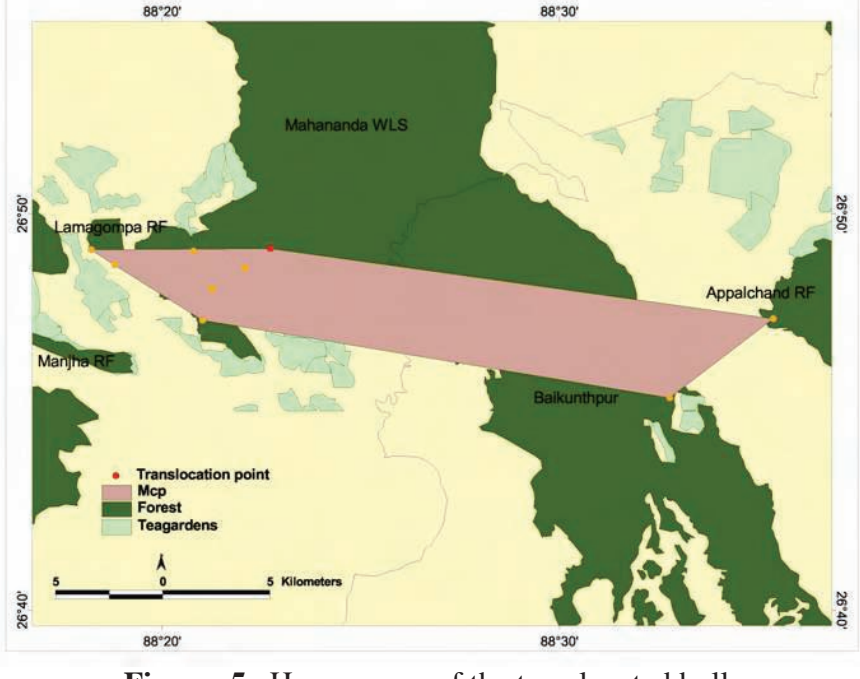

Figure 5. Home range of the translocated bull.