

# Translocation of Chital (*Axis axis*) in Chhattisgarh: A Case Study

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## ABSTRACT

Distribution of Chital (*Axis axis*) in Indian landscape is common. The species is also well represented in both zoos (Kanan Pendari & Nandan Van) of the Chhattisgarh State. Due to prolific breeding majority of zoos have huge population of Chital in their collection. Many a times to get rid of surplus Chital, they are released in reserve forests or protected areas in order to increase prey population. The study is a comparison of different methods of capturing chital in zoo as well as in forests for translocation purpose. It also illustrates how Boma Method is good for translocation of herbivores.

**Keywords:** Protected area, Zoo, Boma, Translocation, Capture.

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## INTRODUCTION

The Chital (*Axis axis*) also known as Indian Spotted Deer. They are commonly found in dense deciduous or semi evergreen forests and open grassland of Chhattisgarh. Indian Spotted Deer most commonly occur in herds of ten to fifty individuals. Herd comprises of some stags, a number of females and young. They do not occur at higher elevations; there they are usually replaced by other species such as Sambar (*Cervus unicolor*). Chital are mainly grazers but they also browse tree/shrub leaves during dry season. The chital has a protracted breeding season in different parts of India due to different climatic conditions and births can occur throughout the year. Chitals are prolific breeders. The species is well represented in both zoos (Kanan Pendari & Nandan Van) of the Chhattisgarh State. Due to prolific breeding majority of zoos have huge population of Chital in their collection. Many a times to get rid of the surplus Chitals, they are released into reserve forests or in protected areas in planned manner in order to increase prey population.

## STUDY AREA:

Kanan Pendari is one of the important zoo of Chhattisgarh and located in Bilaspur district on Bilaspur - Takhatpur Road ( N 22o11' 10.49" and E 82 o 06' 52.45"). It was formed in the year 1975 having an area of 54 hectares area. The major wild animals in Kanan Pendari are lion, tiger, leopard, hyena, jackal, fox, and almost all deer species found in Central India. Most of the injured, orphan and rescued animals are in the zoo.

Mangatta is another study area where large population of Chital are found in a small patch of forest area of 387 hectares in mangatta forest beat, under Rajnandgaon Forest Division( N 21o 12.21' 57" and E 81 o 9.23' 22"). This small patch of forest is located at a distance of 10 km from Raipur – Nagpur National Highway and is surrounded by villages and agricultural fields. Chitals were translocated from here to another forest area ie Achanakmar Tiger Reserve, Bilaspur.

## Need for translocation

There were only eight chital in Kanan Pendari Zoo in the year of 1975 when zoo was started but the number increased and reached more than 250 Chital in the year 2006. Similarly chital population also increased in Mangatta. This was the main reasons for translocation of Chital from Kanan Pendari and Mangatta to another forest area and Achanakmar Tiger Reserve.

1. Due to huge population of Chital in a small enclosure therefore it was necessary to shift animals to another forest area.
2. As number of adult male increased there was infighting between them which caused severe injury to them.
3. Inbreeding was another problem due to which shifting the animals was necessary.
4. Economically it was difficult to manage such huge population of chitals in zoo (lack of funds / limited space / lack of trained staff / lack of medical facilities etc.).
5. Poor prey population in natural forest therefore it was decided to restock the area by Chital translocation.

## METHODOLOGY

The first translocation was done during the year of 2007 and another was 2009-10 while third time was done in the year of 2018.

### Criteria for Selection of relocation Area

1. Area with minimum anthropogenic pressure.
2. Habitat suitable in terms of food, water.
3. Translocation site in close vicinity of capture site.
4. Translocation site be well connected by road, easily accessible.
5. Site where already chital be presents.

Based on above criteria Achanakmar Tiger Reserve was found to be best suited place for translocation of the chitals. The Tiger Reserve was situated about 32 kms from the Kanan Pendari Zoo on Bilaspur Amarkantak State Highway.

There are following three methods were used to translocation of Chital.

#### 1. First capture: Manually

Expert team of Kolkata Zoo captured and translocated Chital from Kanan Pendari Zoo to Achanakmar Tiger Reserve during the year of 2004. Following capture process was undertaken:-

- A. By driving chital from bigger enclosure to small enclosure made up of rope net (like goalkeepers net in football ground).
- B. Capture chitals in the net manually and transfer them to Achanakmar Tiger Reserve by trucks.

#### 2. Second : Capture by providing oral medicine (Diazepam)

As the population of chital was increasing, the CWLW decided to translocate more chital from Kanan Pendari Zoo to Achanakmar Tiger Reserve in the year 2007. After this whole translocation process was reviewed, it was decided to use Sedation Method for shifting chitals, as this method was successfully used by State Forest Research Institute, Jabalpur, Madhya Pradesh.

1. Captive animals can easily be sedated by manual feeding as they are acquainted with zoo keepers.
2. Previously chital were successfully translocated by using this method.
3. Sedation reduces anxiety and shock which is generated during capture of animals.
4. Sedated animals can easily be captured and transported.

### Planning before capture:

- a) Selection of site for capture, rest and release.
- b) Preparation of specific enclosure at capture site and release site depending on the number of animals.
- c) Selection of place for preparation of medicated feed.
- d) Selection of utensils to give medicated feed to the animals.
- e) Selection of feed for mixing sedative medicine in it.
- f) Deciding time for providing medicated feed to the animals.
- g) Deciding time for capture operation.
- h) Pre requisite for capture operation like stretcher, weight measuring equipment, animal mask, ropes, rope net, torch etc.
- i) Pre requisites for medical aid like Doctor, Medicines (Diazepam, Antiseptic Cream /Spray, Neosporin Ointment, Pain killers, Anti sprain Ointment / spray, Water, Saline, Drip, Syringe, Needles, Thermometer, etc.)
- j) Pre requisite for transport of animals like Truck, Drivers, Padding of inner surface of truck body by Hay / Hessian bags.
- k) Deciding Number of animals to be transported in each Truck /Vehicle.
- l) Constitution of different teams for:-
  - i) Administering Medicine
  - ii) Preparation of medicated feed and providing feed to the animals.
  - iii) Monitoring preparation of medicated feed, providing feed to the animals.
  - iv) Monitoring Sedation.
  - v) Capture.

- vi) Transport of animals from capture place to trucks, from zoo to enclosure at release site, from trucks to enclosure at release site.
- vii) Providing water, food and medical aid at enclosure at release site and at release site.

**Table : Details of drugs doses for capture and feeding pattern of cheetals.**

S.No.	DATE	Dose of Diazepam	Feed				Time of Feeding	Time of Capture
			500 gm Cheetal feed	200 gm Gram	200 gm Mahua	Banana		
1	25/02/2007	3 gm	√	√	√	√	7 p.m	3 a.m.
2	28/02/2007	2.5 gm	√	-	-	-	7 p.m	3 a.m.
3	12/03/2007	2.5 gm	√	-	-	-	7 p.m	3 a.m.
4	15/03/2007	2.5 gm	√	-	-	-	7 p.m	3 a.m.
5	18/03/2007	2.5 gm	√	-	-	-	7 p.m	3 a.m.
6	20/03/2007	2.5 gm	√	-	-	-	5 p.m	11.30a.m.
7	22/03/2007	2.5 gm	√	-	-	-	4 p.m	11.00 a.m.

### Third: Translocation through Boma Method :

This is one of the scientific & safest method for translocation of chital. This method has been successfully used for translocation of wild animals (Gaur, Chital, Swamp deer etc.) in different part of country.

1. Captive animals can easily be driven /lured in Boma.
2. Previously Swamp deer were successfully captures and translocated by this method in Kanha Tiger Reserve and Kaziranga Tiger Reserve.
3. There is less anxiety and shock during capture of animals by this method.
4. Captured animals can easily be loaded in transporting vehicles and transported.

Points were taken care before capture:

- a) Selection of site for making/fixing of Boma.
- b) Preparation of ramp from boma to transportation vehicle for loading animals.
- c) Making provision of water and food for luring animals to bring them in boma.
- c) Customization of transportation vehicle.

## RESULT & DISCUSSION

### Result of first method (Manually captured):

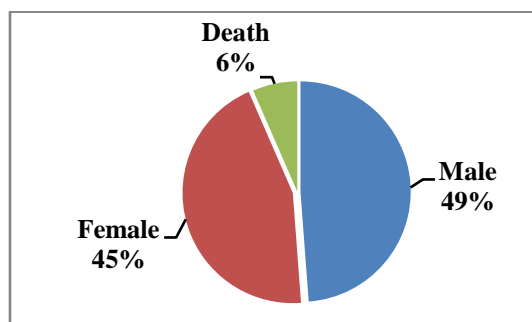
This is not appropriate method for translocation of chital as more causality of animal was found. The animals were driven into the small rope net enclosure and were captured manually in the small enclosure with the help of rope nets. 14 chitals were captured by this process, out of which 7 died after the capture and rest 7 were transported to Achanakmar Tiger Reserve by trucks. There they were released in the wild. Due to large no of death of animals occurred during the capture, so whole operation was abandoned. A lot of injuries also happened to the animals in this method of capture. Animals had enormous sock causing their deaths.

### Result of second method (Sedation through oral feed) :

This was the better than the first method. 157 (82 male & 75 female) chital were successfully translocated by this method from Kanan Pendari Zoo to Achanakmar Tiger Reserve. There were only 6% (11) casualty of chital in this method. It was noticed that all died chital were old aged. One male fawn died on the truck during translocation.

**Table : Number of Chital translocated from Kanan Pendari Zoo to Achanakmar Tiger Reserve by Manual (Capture/ Sedation (Drug) Technique)**

Released site	Date	No. of Chital			Death of Chital
		Male	Female	Total	
Achanakmar WLS (RF 189)	25/02/2007	9	10	19	1 (Female)
	27/02/2007	16	11	27	2 (both female)
	11/03/2007	4	0	4	--
	15/03/2007	14	12	26	2 (1 M & 1 F)
	18/03/2007	14	16	30	2 (both female)
Achanakmar WLS (RF 237)	20/03/2007	11	8	19	1 (M Fawn)
	22/03/2007	14	18	32	3 (1 M & 1 F)
Grand Total		82	75	157	11



### Result of third method (Boma Technique)

This was very good scientific and effective method for translocation of Chital from one place to another. Total 120 Chital were successfully translocated from Mangatta to Kanger Valley National Park, Taimor Pingla WLS and Achanakmar Tiger Reserve. The details are depicted in following table. There was no causality during the capture and translocation. Few animals were injured during the translocation but were treated by veterinarian before the release for free ranging.

**Table: Details of Chitals translocated (Boma Technology) from Mangatta to different areas**

S.No.	DATE	Translocated from	Translocated to	Compt. No.	No. of Chital
1	03/04/2018	Rajnandgaon Forests.Compt No 549	Kanger Valley National Park N 18-52'-41.4" E 81-56'-25.4"	RF-85	27
2	07/05/2018	Rajnandgaon Forests.Compt No 549	Kanger Valley National Park N 18-52'-41.4" E 81-56'-25.4"	RF-85	48
3	12/04/2018	Rajnandgaon Forests.Compt No 549	TamorPingla Sanctuary N 23-68'-37.28" E 82-97'-45.82"	P-244	28
4	20/05/2018	Rajnandgaon Forests. Compt No 549	Achanakmar (Bahaud) N 22-26'-05.4" E 81-49'-16.9"	RF-208	17
Total					120

## CONCLUSION

Given the comparative analysis of the three kinds of translocation methods used in this paper, it is safe to assume that the survival rate of third method (Boma technique) to trans locate chitals has been more successful in this case. Chitals being highly sensitive animals have been known to go into shock when in human proximity and capture myopathy. In manual handling fear was induced, movement restriction led to severe stress, resulting 50% immediate fatality in the first case, while 6% causality was recorded during second methods through oral feed and sedation. While the translocation itself wasn't for a long distance, it is the capture method that needs to be standardized. Using manual methods and sedation though feeding in chital makes for a good way ahead. The third captured method (Boma technique) was more scientific and proper where no causality occurred during the translocation. However, as this paper also highlight, it is equally important that the translocated animals are observed for strict protection after their release. Consequently, pre planning is vital to the process, regardless of the distance of relocation.

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### Capture of chital with the help of rope-net

### Capture of chital by oral sedation, translocation & release







*Boma used for capture of chital*

