

CAPTURE AND TRANSLOCATION OF UNGULATES WITH SPECIAL REFERENCE TO SPOTTED DEER OR CHITAL IN WEST BENGAL

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INTRODUCTION

Free ranging and captive ungulates are captured and relocated due to their over abundance. Wild ungulates are crop pests in several agricultural areas abutting small forest patches while over abundance of captive animals creates stress on the facilities housing them in terms of space, rising food, maintenance costs and increased susceptibility to disease due to over crowding. A humane and publicly approved form of managing this problem is the capture and translocation of these over abundant animals. A number of methods for capture of these animals are currently available ranging from trapping to netting etc. (ver Cauterer *et al.* 1999, Haulton *et al.* 2001) In this article I discuss a capture method standardised in West Bengal.

Wildlife managers are being increasingly challenged with controlling species regarded as over abundant. Increased deer-related vegetation and ecosystem, in several areas frequently exceed the tolerance limits of local communities (Decker and Connelly 1989, Diamond 1992, Mc Cullough *et al.* 1997). These often result in the communities resorting to illicit culling of animals or use of other equally damaging methods. Traditional non-lethal methods to scare away animals are becoming ineffective and the deer become increasingly habituated to measures such as fencing (Decker and Connelly 1989). Normally diurnal animals, ungulates have been increasingly documented raiding crop fields in the night.

Since 1990 capture and translocation of spotted deer (*Axis axis*) herds from smaller sanctuaries and deer parks was regularly done in West Bengal (Table 1). Based on the field experience, capture techniques have been modified from time to time. In the last five years, improved capture technique gave 0% casualty record. Most of the captured spotted deer were released in forested areas.





PRESENT CAPTURE METHOD USED

A drive corral usually has nylon netting supported by posts to delineate an enclosure and a funnel fence that directs animals into the corral. Mammals as small as Jack rabbits (*Lepus* spp) (Henke and Demarais 1990) and as large as ungulates have been restrained in drive corrals. A modification of the drive corral method is used in West Bengal where in a temporary enclosure is made at a suitable location (approachable by truck also if required, a stretch of road is laid) about 30 m x 20 m rectangular size with bamboo poles 3 m above ground level. Bamboo poles are embedded 1m underground 2.5 m apart. Nets made up of 4 mm/ 6 mm pure nylon ropes (not polypropylene) of 3 m x 10 m size with 10 cm x 10 cm mesh size, are then stretched on the poles. Two drop gates are fixed on the gap between two poles on opposite direction sides for trapping and loading facility. Loading drop gate is connected with a tunnel made of 4' x 8' x ¾" ply-board and ends at loading ramp. Loading ramp is made at such height that it levels with the truck floor. The floor and walls of the transportation truck are padded with straw and jute.

After erection of the enclosure, artificial provisioned feed is provided inside in the enclosure keeping the trapping gate open. Within a week or so deer become habituated to the enclosure and its food supply. Different types of fodder and foods are used to attract deer. Before trapping, a watcher monitors the habits of entry, and drops the gate when a desirable number of deer have entered the enclosure. Deer are allowed to settle down familiarise themselves to the enclosure, provisioned feed and water. Two persons carry jute cloths fitted with ropes, covering all sides of the nets with the cloth. The enclosure is covered on all sides with jute sheets. A truck is then placed at the loading ramp, secured at the tunnel entry and the loading gate is opened to allow deer to enter the truck. A person monitors the loading, injured or sick animals are taken out through a side gate if required. About twenty to twenty five deer are loaded in one truck. The top of the truck is covered with net and tarpaulin, leaving adequate ventilation gap. After a few hours of rest translocation journey begins.

Deer have been translocated in such way ranging from 200 km to 550 km without any problem using the above method. Enroute, some fodder is given and water sprayed during halts on road. The truck is taken to release site and deer are directly released, opening the backside of the truck either on ramp or fitted with slanted wooden planks. Though the

operation seems easy, staff involved in capture operations need to be experienced and highly skilled in handling deer. Professional help for study and planning has been rendered to other states like Manipur, Chattisgarh and Gujarat.

MATERIALS

1. Nylon nets

- (a) For spotted deer and black buck :- Nets made of 4 mm dia. Pure nylon cord. Mesh size 10 cm x 10 cm, with 8 mm dia border ropes. Tie ropes 1m long at 4-corners and 2.5 m apart on sides. Total size of nets 3 m x 10 m.
- (b) For sambar and nilgai :- Nets made of 6 mm dia. Pure nylon cord. Mesh size 10 cm x 10 cm, with 10mm dia border ropes. Tie ropes 1m long at 4-corners and 2.5 m apart on sides. Total size of nets 3 m x 10 m.

2. Drop gates

Made of 37mm dia GI pipe frame. Gate frame 1.5 m x1.5 m fitted with nylon nets and pulley attachments for dropping mounted on suitable iron channel frame for the drop gate, are fabricated locally.

GUIDELINES FOR SMALLER UNGULATE CAPTURE

Capturing ungulates becomes necessary for a radio-collaring, treatment of sick and injured animals and as a management option to translocate locally abundant populations. A number of methods ranging from tranquilization to net trapping to corralling are used. The choice of method is dependent on the official and the need for capture.

Objectives

Capture methods depends upon

- (a) Capture of animals for radio-collaring and treatment - Large operations with nets are expensive and lengthy process, suitable for large nos. of animal capture.
- (b) Chemical immobilisation is suitable for a few animals for capture for treatment, sample collection or translocation of animals





(transport crate required). Chemical immobilization is also useful for cage transfer in zoos, tranquilization.

(c) Capture of animals for radio-collaring, treatment and translocation of small groups - net trapping.

(d) Capture of large groups of animals for translocation - corralling.

Location

Trapping devices should be placed in areas that receive high use by animals. Trails between bedding and feeding areas are ideal sites if they are far enough from roads so that neither traps nor animals are visible to the public (VerCauteren et al. 1999). Capture methods also differ depending upon locations. In zoos, enclosures with water wet moats are suitable for net capture and animals can be taken by hands for manually loading into crates. Undulating terrain, sharp slopes or cliffs in forest areas are not suitable for any capture. Enclosures with sharp protruding tree stumps can injure animals during capture. Temporary enclosures can be made surrounding feeding stalls in captive condition. Animals can be difficult to find after darting inside dense undergrowth in forest areas.

Planning

Planning of any capture operation is very crucial. Failures are often seen in the field due to improper planning even after huge expenditure and wasting manpower. Such examples are seen in Karera WLS in Madhya Pradesh and Mahesana in Gujarat after making a large corral with iron angle and chain link iron nets for capturing black bucks. In Karera, black bucks never entered the corral and in Mahesana several animals died and others were badly injured trying to escape through the wire nets.

It is advisable to visit the location several times for observing the habits of the animals and then prepare operation plan. People participating in capture operation should have predefined duties to perform for better co-ordination during the operation.

Animal behaviour

Deer and antelopes are susceptible to shock after capture. They develop sudden symptoms of bradycardia, anoxaemia, hypoglycemia and capture-myopathy due to stress and fatigue during capture, leading to collapse and death. Acute death syndrome is also observed in some cases within

minutes of capture in case of spotted deer when excited. Self inflicted injuries including fracture of limbs are also observed in cases when the darted or netted animals try to escape and jump against iron nets of the enclosures. Problems with the temporary enclosures is that animals suspiciously avoid suddenly erected structure for some periods. But ultimately surrender to regular supply of fresh food (bait) without any disturbance.

Darting of free ranging animal is also difficult. They usually maintain safe flight-distance, which is more than the shooting range. Even shooting at long range of smaller animals often result in darting at improper site; penetration of darts into abdomen or coring of needles with bones. It was also seen that darted stags were chased and injured by other males of the herd during induction period taking advantage of their weakness. Small solitary animals like barking deer are very difficult to find after darting inside dense forest cover and animals may die if not attended to after chemical immobilisation.

Handling

Handling of captured animals requires special skill. The person handling the animal should be alert enough to avoid sudden kick from the animal, as hooves are razor sharp in these animals. Antlers and horns are to be held properly away from the body. Black buck males were seen trying to horn down the capturing person on few occasions. Tushes of barking deer, musk deer, and mouse deer should be avoided. It can inflict deep wounds if handled carelessly. Darted animals should be taken special care for their recumbent gait. All the time sternal recumbence position should be maintained to avoid accumulation of gas in (tympani) the abdomen, which may exert pressure on the heart and lead to cardiac failure.

Reduce external stimuli

Sharp noise, loud conversation, frequent appearance to observe animals, long chasing, unnecessary caressing or patting captured animals are some sources of external stimulation which should be avoided during capture operation. It was mentioned earlier that wild ungulates are very prone to shock. Use of hide for darting is advisable. Animals should be allowed to settle down to their normal behaviour before darting. In the excited state drug requirement may become higher than normal and drugs like Xylazine Hcl may not work properly when the animal is highly excited. All planning and verifying should be done before starting the operation; sign language should be used for communication during operation. Human





touch excites the wild animals. It is always better to blind fold the animal during handling; it reduces a large amount of external stimuli and reduces stress levels.

THE KEYS TO SUCCESS

- a) Take professional help of veterinary doctors in capture operation. Wild animals are best treated by a doctor.
- b) Emergency medicines like cardiac stimulant, respiratory stimulant, antibiotics, antiseptic sprays, DNS and drip sets, proper needles and syringes for injections should be procured and kept ready at hand during the operation. Human 'First-Aid' kit should also be kept ready.
- c) Capturing and handling animals require lots of patience. Do not expect animals to behave as desired. Wait, observe and modify your plan according to field situation. Only patience will give a good result.

Table 1. Record of spotted deer translocation in West Bengal

Division	Captured from	Year	No. of Animals
24-Parganas (South)	Narendrapur Ramkrishna Mission	2003	4
Bankura (N) Division	Ramkrishna Mission, Narendrapur Deer Park	2001	13
Bankura North	Banpukuria	2000	8
Bankura South	Bethua Dahri WLS	1995	8
		1996	16
	Bonpukuria Deer Park	1997	30
	Saltlake, DRC	1995	17
Birbhum Division	Ballavpur WLS under Birbhum Division	2001	6
			7
			9
BTR	Saltlake DRC	1990	24
	Subhas Sarobar	1990	36
Coochbehar	Adina Deer Park, Maldah	1997	3
	Bethua Dahri	1992	28
	Saltlake DRC	1990	7
	Zoological Garden	1997	8

Capture and translocation of ungulates

Deer Research Centre, Salt Lake	Jadavpur Stadium	2002	4
Divisional Forest Officer, Wildlife Research Division	Deer Research Centre	2002	1
East Midnapur Division	Ballavpur WLS	2003	15
Kangsabati Soil Cons., Division-II	Ballavpur WLS	2002	15
Kangsabati Soil Cons. Division-I	Ballavpur Deer Park	2002	13
Kangsabati Soil Conservation Division-II	Ramnabagan WLS	2001	10
Kansabati Soil Conservation Division-I	Ballavpur WLS under Birbhum Division	2001	12
Maldah Division	Adina Deer Park.	2002	6
Nadia-Murshidabad Division	Ballavpur WLS	2003	13
Panchet Soil Conservation Division, Bishnupur Bankura PSC Div.	Ramnabagan WLS	2001	5
Purulia	Bethudahri WLS	2000	18
Purulia Division	Bonpukuria Deer Park	1998	10
	Adina Deer Park.	2002	15
	Ballavpur Deer Park	2002	16
	Ballavpur WLS	2002	13
	Ballavpur WLS under Birbhum Division	2001	16
Rupnarayan Div.	Banpukuria	2000	7
	Garchumuk	1999	6
Rupnarayan Planning & Survey Division	Ballavpur WLS	2002	18
Rupnarayan Planning & Survey Division, Midnapore	Ramnabagan WLS	2001	8
Sundarban Tiger Reserve	Bidisha Complex, Narayangarh	2003	10
	Deer Research Centre, Mission Salt Lake	2003	8
	Rahara Ram Krishna Mission	2003	6
		2003	14





Urban & Recreational	Bidisha Complex, Narayangarh	2003	7
W. Midnapore	Bethudahri WLS	2000	20
	Bibhuti Bhusan WLS	1999	16
			21
West Midnapore	DM/ Midnapore, Res. Complex	1998	10
	Jhargram Deer Park	1998	9
	Bibhuti Bhusan WLS	2000	17
West Midnapore Division	Garchumuk Deer Park	2001	11
	Bethuadahri WLS	2002	16
West Midnapur Division	Bidisha Complex, Narayangarh	2003	12
	Garhchumuk	2002	19
WL Div-I	Adina Deer Park	1999	51
WL-I	Adina Deer Park, Maldah	1996	22
		1997	10
	Bethua Dahri	1992	20
	Jheelmeel Park, Calcutta	1990	20
	Mahananda (Hog Deer)	1993	7
	Parmadan WLS	1998	10
WL-II	Adina Deer Park, Maldah	1997	7
	Bethuadahri WLS	1998	26
	Saltlake DRC	1999	4
Grand Total			811

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