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Rhino Translocation to RRA 2, Dudhwa Tiger Reserve



April 2018

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Introduction

Dudhwa Tiger Reserve (DTR) is one of the oldest protected areas and tiger reserves in Uttar Pradesh. Given its connectivity to protected areas such as Chitwan National Park in Nepal, it provides suitable habitats for megafauna such as the Greater One Horned Rhinoceros. Due to threats such as habitat destruction, fragmentation as well as poaching, the rhino population in DTR vanished. In 1984, five rhinos (3 females and 2 males) were reintroduced in South Sonaripur Range – ‘Rhino Ranging Area’ (RRA) of DTR. Following this, a stock of 4 more female rhinos were translocated to the region in 1985. Since then, the population of Rhinos in Dudhwa National Park has been increasing, with 32 Rhinos being accounted for in March 2015.

With the intent of expanding the range of rhinos within DTR and at the same time reducing probable risks of inbreeding and disease outbreaks within a small population it was decided to translocate four Rhinos to a second RRA in Bhadi, Belraya Range, DTR. The Uttar Pradesh Forest Department (UPFD) in collaboration with Worldwide Fund for Nature (WWF-India) along with the support of the Assam Forest Department and Wildlife Trust of India (WTI), undertook the translocation of four rhinos between 9th to 13th April.



Figure 1: Rhinotranslocated to Bhadi, Belraya range, DTR

Preparedness for the programme

The population of over 30 Rhinos ranging in the Sonaripur fenced RRA of about 27sq km was being monitored by WWF and UPFD teams. Prior to the operation, 4 rhinos were selected on the basis of their age, sex and breeding status. It was decided that three females and one male rhino were to be selected as stock for the translocation programme to Bhadi (2nd RRA ranging 13.5sq km within a power fence). These selected rhinos were monitored by the

team as well as mahouts patrolling the area. Their location and movement in the area was noted daily.

Drugs for capture (Etorphine hydrochloride and acepromazine maleate along with the antidote for Etorphine - diprenorphine) were acquired by UPFD with assistance from WWF-India. Capture equipment such as syringe projectors (powder charge and gas pressured), metal/ plastic darts with accessories were also arranged with the help of veterinarians from College of Veterinary Science (Assam Agricultural University, Khanapara), Assam Forest Department, WWF-India and WTI. Apart from this, preparations included repairing of rhino transport crates, hiring cranes, excavators (JCB), etc.

The release site in Bhadi, Belraya range was prepared levelling out



Figure 2: Release site where ground is levelled to fit trolley with transport crate

the ground where the truck carrying the rhino in the transport crate would be placed. An additional smaller sized boma (secured with a power fence) was also prepared in case captured animals required monitoring prior to release.

On 9th April, one day prior to the capture operation, a mock drill was held for the entire team in order to understand the capture protocol and equipment being used. Each team was assigned a role during the operation and members were allotted to the team. Following this, a mock drill to practice the move of the transport crate using crane, the placement of sledge and the excavator (JCB) was conducted. Walkie talkies for communication were handed out and other logistics such as timings were decided.

Team members and roles

The operating team was divided into 3 main aspects in order to properly coordinate and divide the work load during the capture, health monitoring and consequent release of the four rhinos.

1. Locating team – Members of this team were acquainted with the area as well as the rhino



Figure 3: Veterinarian on elephant back, darting the rhino

population in Dudhwa National Park and were able to identify individuals that had been selected for the translocation process. The team consisted of wildlife biologists, forest officials and mahouts who went on elephant back to initially locate the selected animals. Upon confirmation of the animal's ID as well as the location, the same information was conveyed to the capture team.

2. Capture team – The team comprised of veterinarians, forest officials and mahouts who were on elephant back. On getting information about the animal, the capture team would move into the area in order to tranquilize the selected animal.
3. Logistics and supportive team – Consisting of several smaller teams, the logistics and supportive team included the following:

- JCB/road excavator - To clear paths within the grassland for an easy approach to the area where the rhino had been tranquilised as well as digging the area for sledge placement once the animal is down (tranquilized)
- Veterinarian with supportive medicines for the rhino along with equipment for ear notching, collecting data on morphometrics and monitoring vital parameters when the animal was under anaesthetic effect.
- Transport crate and sledge – Transport crate with sliding doors on both sides to move the animal to the release site. This was brought to the area once the animal was tranquilised. The sledge (fitting within the transport crate) was placed a few



inches away from the sedated rhino and was used to place and drag the rhino into the crate.

Figure 4: Use of crane to move the rhino on the sledge into the transport crate

- Crane – to drag the animal placed on the sledge as well as to lift the transport crate into and out of the truck/tractor-trolley.
- Water tank – to sprinkle water on the tranquilised animal avoiding the risk of hyperthermia.

- Rubber tube in case of emergency – 4-5 persons equipped with two large rubber tubes were made available in case the rhino being capture would stray towards a swamp/water body. This was done to avoid the risk of the animal drowning while under the effect of anaesthesia.
- Captive elephants with mahouts to cordon off a rhino or to comb the location to move a rhino to/away from the area.



Figure 5: Elephants cordoning off the area prior to capture of a rhino

Capture and release of rhinos

Four Rhinos were captured and released between 10th to 13th April. Drugs used to tranquilise the rhinos were Etorphine @ 1mg per 500kg body weight and Acepromazine @1mg per 200kg body weight. Drug used for reversing the effect of Etorphine was Diprenorphine @ 24mg/ animal. The three teams on elephant back in charge of darting the animal were equipped with powder charge syringe projectors (Distinject) which uses metal darts (2-3cc) for drug delivery as well as gas pressured syringe projectors (Daninject, Teledart), in which plastic darts (5cc) for drug delivery.

Details of Rhinos captured are mentioned below:

Rhino ID	Sex	Approx. age	Date of Capture	GPS of capture site
Kalpana	F	9 -11 yr	10.04.18	N 28°27'40.57" E80° 40' 16.14".
Napoleon	M	6-10 yr	11.04.18	N 28°27'52.00" E °80 40' 09.00"
Hemangini	F	12-15yr	11.04.18	N 28°27'45.56" E 80°40' 14.04"
Rohini	F	8-10yr	13.04.18	N 28° 27' 52.00" E 80° 40' 37.96"

Details of number of darts used, times of darting and induction and animal drop time for each animal is mentioned in Table 1. Once captured (sedated) the animal was given supportive medicines (steroid, vitamin complex, tetanus toxoid and ivermectin) and monitored for vital parameters (mentioned in Table 2). Morphometrics were collected (Table 3) and ear was notched for identification. Clinical samples like blood, serum and dung were also collected for analysis. After this they were shifted into the transport crate and moved to the release site. Prior to release, rhinos with minor injuries incurred during transport were sprayed with a topical antiseptic.

Data Recorded

Table 1: Details of number of darts used, times of darting and induction and animal drop time.

Rhino ID	Darting time	Animal drop time	Number of darts used	Induction Time	Time of Reversal admin	Time of standing
1. Kalpana	8.48 AM	9.05 AM	6	17 minutes	9.46 AM	9.54 AM
2. Napoleon	11.51 AM	12.00 PM	5	8 minutes	1.21 PM	1.29 AM
3. Hemangini	5.42 PM	5.52 PM	2	11 minutes	6:20 PM	6.30 AM
4. Rohini	7.02 AM	7.20 AM	2	8 minutes	8.24 AM	8.26 AM

Table 2: Vital Parameters of rhinos

Rhino ID	Respiratory rate		Heart Rate		Pulse		Temperature
Kalpana	7 b/s	7 b/s	64beat/s	76beat/s	64/s	-	100.4°F
Napoleon	12b/s	14b/s	56beat/s	-	60/s	-	100.6°F
Hemangini	12b/s	12b/s	52beat/s	52beat/s	56/s	-	100.7°F
Rohini	4 b/s	12 b/s	72 beat/s	80 beat/s	60/s	68/s	97.8°F

Table 3: Morphometrics of Rhinos – measurements taken in inches

Rhino ID	Height	Neck Girth	Tail Length	Horn size & Circ.	Tail to upper liplength	Front foot circ.	Back foot circ.
Kalpana	54	61	27	8	-	30	24
Napoleon	59	52	22	5.5/14.5	134	27.9	-
Hemangini	62.5	54	34	6/16.5	157	28	-
Rohini	61.5	57	21.5	3/8.5	139.5	27.8	25.5

Post Release Monitoring

Post release, the animals' movement and ranging area is being monitored daily and will be continued to be monitored. This includes noting down parameters such as rhino activity, land cover where the rhino was found, etc. The four rhinos will also be monitored weekly for check on health status (in case of any injuries, etc.) for parameters such as dung / urine quality, movement / gait, skin lesions, etc.



Figure 6: Team after release of fourth rhino