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Case report: Transportation of elephants from Dubare elephant camp to Pench Tiger Reserve, Maharashtra

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Abstract

The translocation of captive elephants over long distances poses complex challenges involving legal, logistical, and welfare considerations. This case report outlines the successful transportation of elephants from Dubare and Matigodu Elephant Camps in Karnataka to the Borban Elephant Camp within Pench Tiger Reserve, Maharashtra. These elephants were relocated to support tiger monitoring and conflict mitigation in rugged terrains. The process followed the guidelines laid down by Project Elephant and the Wildlife (Protection) Act, 1972, ensuring full legal compliance. Each elephant underwent a pre-transport health check, and necessary permissions were obtained from state and central authorities. Transport vehicles were specially modified to ensure ventilation, stability, and safety. A dedicated team comprising veterinarians, mahouts, and support staff accompanied the convoy. Strategic route selection and scheduled halts at roadside *dhabas* ensured adequate rest, feeding, watering, and waste management. Challenges such as acute stress in one elephant and vehicle breakdown were handled effectively with contingency planning and familiar mahout interaction. Behavioural observations noted trunk-raising during motion, highlighting the need for species-specific risk management. Social grouping, continuity in feeding routines, and constant monitoring helped minimize stress and ensure welfare. The report provides a replicable model for similar translocations in conservation settings across India.

Keywords: Elephant translocation, Pench Tiger Reserve, animal welfare, captive elephant, wildlife transport, conflict mitigation, project elephant, mahout care

Introduction

Wildlife translocation has been undertaken for many reasons including wildlife conservation, rescue, conflict mitigation and reintroduction. Asian elephants have been existing in the Indian subcontinent since time immortal (Bist *et al.*, 2002; Choudhury *et al.*, 2008) ^[1, 2]. The species has been under tremendous pressure due to shrinking habitat and encroachment by development infrastructure. Currently, in many parts of south India and Eastern Ghats elephant conflict is a serious concern. Efforts to maintain trained *Kumki* elephants as a mitigation measure has gained some success in some states of south India. In tiger conflict prone areas, elephant has been used as a vehicle to approach tigers from close counters. Many states in south and central India have established elephant camps for tiger monitoring and rescue operations. The transportation of elephants, particularly over long distances by road, presents significant logistical and welfare challenges.

In India, welfare and translocation of the elephants is governed by the guidelines framed by Project Elephant under the Ministry of Environment, Forest and Climate Change (MoEFCC), which stresses on the ethical management and care of wild and captive elephants. The guidelines requires travel fitness certificate from a registered veterinary practitioner, transit permit from forest officials, ownership certificate must accompany the animal during the transit (MoEFCC, 2008) ^[3]. The transport vehicle must be designed in a way to suit the transportation requirement of the elephants, provide adequate ventilation, space and skid resistant floor. The internal surface should be padded to prevent injuries during the transportation. The caretakers (Mahout) must accompany the elephant and in cases of long journeys a veterinarian must accompany the elephant.

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To minimize the stress and fatigue, halts after every 3-4 hours is recommended to provide feed, water and rest. The speed of the vehicle must not exceed 40 km per hour and efforts to avoid sudden brakes and jolting must be considered to prevent discomfort to the elephants (MoEFCC, 2008) [3].

The transportation of elephants is often necessitated by various practical and conservation-driven needs. These include routine exchange programs between zoos to enhance genetic diversity, referrals to specialized veterinary institutions for advanced treatment, and translocation measures in response to escalating human-elephant conflict (Kumar & Singh, 2010) [4]. In states like Kerala and Tamil Nadu, temple elephants are frequently transported for participation in religious festivals and cultural ceremonies, underscoring the socio-cultural significance of the species (Kumar & Singh, 2010) [4]. Each of these situations demands strict legal compliance, including permissions under the Wildlife (Protection) Act, 1972, and adherence to Central Zoo Authority and Project Elephant guidelines (Kurt & Garai, 2007; Olson & Wade, 1998; CZA, 2014) [5-7]. Despite these frameworks, numerous challenges persist, such as prolonged journey times, limited availability of specialized transport infrastructure, risk of dehydration and physical trauma, and behavioural stress due to displacement from familiar environments (Kumar & Singh, 2010) [4]. Moreover, the scarcity of trained personnel and logistical barriers, especially in remote regions, often compromise the effectiveness of transport operations. While roadways remain the primary mode of transport, in rare and exceptional cases, elephants have been moved using railway wagons or military aircraft, though such options require meticulous planning and interdepartmental coordination (Schmid, 1998) [8]. Therefore, elephant transportation in India remains a multidimensional challenge, demanding a sensitive balance between ecological necessity, animal welfare, cultural traditions, and legal obligations.

An elephant camp has been established at Borban in Pench Tiger Reserve, Maharashtra, India to support tiger monitoring and capture operations, particularly in areas with difficult terrain. Elephants are essential for conducting darting procedures during tiger immobilization, providing a stable and elevated platform for veterinarians and forest staff. Such camps are vital in responding to human-wildlife conflict situations, especially when tigers stray into human-dominated landscapes. The presence of trained elephants enables quick and controlled interventions, reducing risks to both humans and wildlife. The camp also facilitates regular patrolling and enhances protection efforts within the reserve. The elephants were obtained from Dubare and Matigodu Elephant camps of the neighbouring state Karnataka. The article focuses on the good practices, preparation and execution of the transportation of elephants from Karnataka to Borban in Pench Tiger Reserve, Maharashtra.

Legislation and Permissions

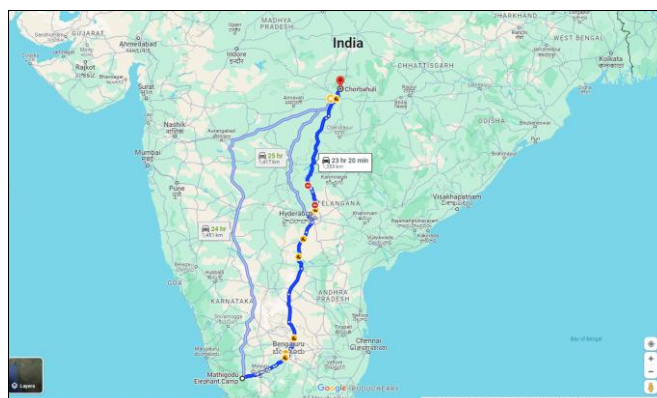
Elephants are listed under Schedule I of the Wildlife (Protection) Act, 1972, affording them the highest level of legal protection in India. In line with this, all efforts toward their management and movement are governed by stringent legislative protocols (MoEFCC, 2008) [3]. The inter-state transfer of elephants necessitates prior approval from the Central Government, followed by clearance from the Principal Chief Conservator of Forests (Wildlife) and the Chief Wildlife Warden of the concerned state. In the present case, all necessary permissions were duly secured from both

central and state authorities. The transportation was meticulously planned only after obtaining the required documentation and clearances, ensuring full compliance with wildlife legislation and ethical transport protocols (MoEFCC, 2008) [3].

Route of Transportation

The transportation route was selected with careful attention to terrain, road quality, and proximity to support facilities. The primary route was along National Highway 144 (NH-144), chosen for its low density of sharp turns and accessibility to necessary rest points. Heavy traffic areas and urban regions were avoided where possible by using bypasses and ring roads around larger cities, which significantly reduced the potential for delays and minimized noise exposure (Choudhury *et al.*, 2008) [2]. Rest stops were planned at every 300 km or as needed based on road conditions and elephant behaviour. At each stop, elephants were provided with shade, fed, watered, and given time to stretch their legs. Rest stops were carefully planned to balance proximity to support facilities with accessibility for large transport vehicles. Roadside *dhabas* (small highway restaurants), which are typically located on highways and away from urban congestion, were used as primary rest points for the elephants. This decision was made because most veterinary hospitals, zoos, and rescue centers are located in the heart of cities where access for large vehicles is limited, and navigating through heavy traffic would increase transit time and stress for the elephants. The *dhaba* rest points provided sufficient space for trucks to park and for the team to attend to the elephants with minimal disturbance. These locations were suitable for watering, feeding, and brief health checks. The team ensured that the elephants received ample shade, food, and hydration at these stops, while veterinary personnel monitored each elephant for signs of stress or fatigue. Utilizing *dhabas* as rest points proved to be a practical solution, allowing the transport convoy to maintain progress along the route without entering crowded urban areas, thereby reducing overall transit time and stress on the elephants (Choudhury *et al.*, 2008; Schmid, 1998) [2, 8]. This planned approach facilitated a balance between maintaining transit efficiency and prioritizing the animals' well-being (Fernando *et al.*, 2012) [9].

The detailed route followed is illustrated in the accompanying figure



Selection of Vehicles and Supplies

A 12-wheeled heavy-duty truck, with a load-carrying capacity of approximately 31,000 kilograms, was employed for transporting each elephant. The vehicle measured 30.25 feet

in length and was fitted with a wooden-panel side enclosure, commonly referred to as a *Punjab body*, offering both lateral support and additional safety during movement. The total height of the truck was 12 feet, and the roof was designed to be removable. For the purpose of elephant transport, the roof was dismantled to allow adequate head clearance, improved ventilation, and to minimize the risk of cranial injury due to contact with overhead structures. To ensure safety during transit, each elephant was gently restrained using thick cotton ropes, tied in a non-restrictive manner that allowed limited, stable movement while preventing falls or injury in case of sudden vehicle deceleration or turning. Special care was taken to avoid pressure points, and the ropes were padded where necessary to prevent chafing or circulation issues.

All essential supplies including green fodder, dry grass, grains, jaggery, sugarcane, cotton and nylon ropes, hobbles, water containers, and first aid kits were carefully packed and transported separately in a dedicated support vehicle (Table 1). This approach prevented overcrowding of the main transport truck and allowed easy access to materials during scheduled halts. Clean drinking water was carried in 500 litre plastic cans, which were accessed at regular intervals for watering the animals and maintaining hydration. These measures were taken in accordance with best practices in captive elephant management and transportation, ensuring a safe, stress-minimized, and legally compliant journey.

Table 1: Detailed Supplies Required for Transportation of Elephants (Per Elephant, for 1-2 days long-distance journey by road)

Sr. No.	Item	Description/Purpose	Recommended Quantity (Per Elephant)
I. General Inventory Items			
1	Drinking Water Tank/Storage	For drinking and washing during halts	500-1000 litres
2	Buckets (plastic/steel)	For offering water and bathing	3-5
3	Feeding Troughs or Basins	Clean containers for feeding grass, concentrate, and fruits	2-3
4	Gunny Bags (Jute Sacks)	Multipurpose: storing feed, padding, soaking and cooling animal	10-15
5	Tarpaulin Sheets (Large)	Shade, protection from sun/rain, covering feed/floor	2-3
6	Chains (padded, stainless steel)	For gentle restraint during travel (front and hind legs)	2 sets
7	Ropes (cotton/hemp, soft)	For handling, backup restraints, or tethering at rest points	3-4 (10-15 ft each)
8	Rubber Mats/Foam Sheets/Cushions	Flooring of vehicle to prevent slippage and joint strain	As per vehicle size
9	Mahout Kit	Mahout's personal essentials: clothes, bedding, water bottle, flashlight, ankush	1 kit
10	Documentation Folder	Health certificate, transit permit, ownership papers, ID, movement register	1 folder
11	Sleeping Mat/Bedding for Mahout	For halts and overnight stops	1 set
12	Torch/Flashlight (with batteries)	For night-time observation or emergencies	1-2
13	Shovel, Broom & Disinfectant	Cleaning and sanitizing the vehicle during journey	1 set
14	Towels/Clean Cloth Pieces	For wiping eyes, cleaning trunk tip, handling medicated applications	4-6 cloths
15	Ice Box/Cooler Box	For storing medicines, fruits, and perishable supplies	1 (optional but useful)
16	Portable Fans/Sprayer (manual)	To cool the animal during halts in warm weather	1 fan or spray pump
17	Nasal Spray/Water Sprayer	For cooling trunk and ears	1 sprayer
18	Gloves/Aprons for Attendants	For hygiene during medical management or feeding	2-3 sets
19	Water Hose	For washing/bathing the elephant during the journey (100 feet)	1 nos.
2. Food Items			
20	Green Grass/Napier/Maize Fodder	Staple food during transit	80-100 kg/day
21	Dry Fodder (Hay/Paddy Straw)	Alternate roughage and fiber source	25-30 kg/day
22	Banana Stems/Sugarcane	Moisture-rich, palatable food to encourage feeding and hydration	10-15 kg/day
23	Fruits (Banana, Apple, Watermelon)	Easily digestible energy source; also improves acceptance of oral meds if required	8-10 kg/day
24	Jaggery (Gur)	Energy supplement, calming effect, prevents dehydration	1-2 kg/day
25	Boiled Rice/Wheat Bran/Pellet Feed	Concentrate mix (if used routinely in diet)	4-6 kg/day
26	Mineral Licks/Salt Blocks	Essential to replenish electrolytes and prevent mineral deficiency	1 block
3. Veterinary Supplies			
27	Veterinary First Aid Kit	Essential medicines: antiseptics, anti-inflammatory, oral rehydration, sedatives if needed	1 kit (pre-stocked)
28	Medications & Sedatives	Only under veterinary prescription, e.g. xylazine, meloxicam, oral electrolytes	As advised by vet
29	Fly Repellent (Spray/Oil)	Coconut oil, neem oil, or commercial fly repellents	500 mL-1 L

Feeding and Watering

Ensuring that elephants are adequately hydrated and nourished during transportation is critical for their health. In transit, elephants face risks of dehydration and digestive issues if their feeding and watering schedules are disrupted. Accordingly, a dedicated supply truck accompanied the convoy, carrying dietary essentials like dry grass, grains, and browse material commonly fed at Dubare Elephant Camp (Sukumar, 2003) ^[10]. These supplies were stored in easy-to-access compartments to facilitate prompt feeding at stops, reducing the elephants' stress and ensuring continuity in their

diet. Water was stored in 500-liter containers, ensuring a sufficient supply for the entire journey. Elephants were watered at each rest stop, with mahouts observing their hydration needs, particularly during warmer daytime hours. In instances where elephants showed signs of stress, such as increased water intake or reluctance to eat, additional time was allotted to allow them to acclimatize before resuming the journey (Kurt & Garai, 2007) ^[5]. Feeding times followed standard routines from Dubare Elephant Camp, helping the elephants feel more secure and reducing travel-related anxiety (Schmid, 1998) ^[8].



Fig 1: Supplies essential for the transportation



Fig 2: Temporary ramp prepared for the loading of the elephant

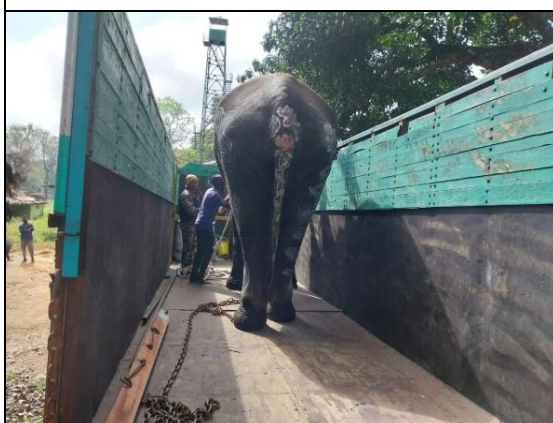


Fig 3: Elephant walks into the truck with the mahout



Fig 4: Offering green grasses during the transport during the halts at *Dhaba*



Fig 5: Bathing the elephant with water supplied by hose from a *dhaba*



Fig 6: Cleaning the dung during the rest to ensure a comfortable journey



Fig 7: Securing the elephant with strong rope to prevent fall due to sudden brake



Fig 8: Rituals performed at the elephant camp prior to the loading of the elephant

Management and transport protocols

Management protocols included assigning each elephant a team comprising a mahout familiar with the animal, a veterinarian, and trained support staff. This ensured that each elephant's specific needs were met throughout the journey. The trucks featured wooden panelling, providing a secure enclosure while minimizing external stimuli that could cause stress (Kumar & Singh, 2010) ^[4]. The truck heights, initially at 12 feet, were adapted with removable roofs to allow adequate headspace for the elephants. Soft cotton ropes were used to gently stabilize the elephants within their enclosures, restricting excessive movement while allowing some freedom for natural adjustments during transit. Hobbles and nylon ropes were applied strategically to prevent sudden movements that could lead to injury in case of braking (Olson & Wade, 1998) ^[6].

Waste management

Managing waste during transportation was essential for maintaining hygiene and preventing discomfort for the elephants. At each rest stop, particularly the roadside *dhaba* locations, waste removal was systematically carried out. Bedding material and any waste from the transport trucks were carefully removed, ensuring that the elephants travelled in clean, odour-free conditions. This practice not only reduced the risk of infection or irritation but also helped maintain a more comfortable environment for the elephants during the long journey. Designated waste disposal areas at these *dhabas* facilitated proper disposal, as many urban facilities and hospitals within city limits were inaccessible to large trucks. Additionally, new bedding materials were provided as needed at these stops to keep the transport enclosures dry and comfortable. Regular waste removal was a crucial aspect of hygiene management, helping minimize stress and improve the welfare of the elephants over the course of the journey (Sukumar, 2003; Kurt & Garai, 2007) ^[10, 5].

Medical and Behavioral Monitoring

Veterinary personnel monitored the elephants' vital signs, including respiratory rate, temperature, and behaviour, throughout the journey. Behavioural cues, such as restlessness or vocalizations, were closely observed as they might indicate stress or discomfort. Any significant deviations from baseline behaviour prompted immediate action, either through on-the-spot calming techniques or veterinary intervention when necessary (Varma & Belagere, 2010) ^[11]. Elephants also received pre-transport health assessments to ensure fitness for travel, and prophylactic measures were administered to prevent issues like dehydration or infections. Any necessary medications and emergency medical supplies were kept on hand throughout the journey, as advised by protocols for long-distance elephant transport (Sukumar, 2003) ^[10].

Problems encountered

During the loading of the elephant Subramaniam, he appeared very nervous and hesitant to walk into the truck. To assist with the process, two *kumki* elephants were used to gently guide and encourage him into the vehicle. The confidence and skill of Subramaniam's mahout in calming him played a crucial role, along with the well-coordinated efforts of the mahouts handling the *kumki* elephants. During the initial phase of transportation, Subramaniam exhibited signs of acute stress and anxiety, likely due to the unfamiliar experience of being transported in a truck for the first time. This manifested as restlessness and violent shaking of the vehicle body, posing

a risk to both the animal and the transport personnel. The situation was promptly addressed by ensuring continuous visual and tactile contact with the mahout, whose familiar presence helped calm the elephant. Additionally, the animal was offered small quantities of jaggery, which served both as a calming agent and a palatable distraction. These efforts proved effective, and the elephant gradually settled without the need for sedatives, which were intentionally avoided in adherence to welfare protocols. No further behavioural issues were observed thereafter.

A second challenge arose when one of the transport vehicles experienced a mechanical breakdown en route, necessitating the intervention of a local mechanic. The repair process took approximately 4.5 hours. During this downtime, the elephants were allowed to rest in a shaded area, provided with fresh fodder and water, and monitored closely for signs of fatigue or stress. The situation was managed without incident, and the journey resumed smoothly once the vehicle was repaired.

An unusual yet notable behaviour observed during the transportation was the elephants' tendency to raise and wave their trunks outside the open-top truck, particularly when the vehicle was in motion. This exploratory behaviour, likely driven by curiosity and environmental stimulation, occasionally resulted in the elephants attempting to reach for overhead signages and structures along the national highway. While no damage or injury occurred, this posed a potential safety risk both to the animals and the infrastructure. The behaviour was especially evident during stretches with high vehicular movement or when passing under overhead gantries. To mitigate this, the mahouts maintained constant verbal communication and used gentle tactile cues to keep the elephants calm and focused. In addition, feeding small quantities of jaggery and fresh fodder during halts helped reduce excitement and kept the animals engaged. This incident highlights the importance of anticipating such species-specific behaviours and implementing precautionary measures during long-distance transport.

Additional considerations in transportation

Risk Assessment and Contingency Planning: Pre-transport planning also involved a thorough risk assessment. This included analysing potential traffic congestion, the availability of shade at rest stops, and the feasibility of maintaining hydration and cooling during extreme weather conditions (Fernando *et al.*, 2008) ^[12]. Contingency plans were prepared for potential scenarios such as vehicle breakdowns, delays, or adverse weather. Backup vehicles and additional veterinary support were on standby along key points of the route, ensuring that any disruptions could be managed efficiently and without compromising elephant welfare.

Social and Psychological Considerations: As elephants are highly social animals with strong bonds, social considerations played a significant role in the planning. Elephants familiar with each other were transported in pairs whenever possible, helping them feel more secure and reducing stress. Mahouts communicated consistently with the elephants, using familiar cues and vocal commands to offer reassurance and maintain a calm environment. This approach drew on established practices that recognize the role of social structure and interaction in reducing anxiety among transported elephants (Kurt & Garai, 2007) ^[5].

Pilot Vehicle: A bolero camper and a Mahindra bolero

Power + were used as pilot vehicles to guide and plan the route and stops during the transportation. These vehicles played a crucial role in identifying suitable rest points, transporting aid in case of vehicle breakdowns or other issues, and navigating through heavy traffic by scouting for alternate paths or creating space during congestion.

Conclusion

Long distance elephant transportation is a challenging task that can be commenced by meticulous planning and strategizing. Understanding the requirements and behaviour of the species is critical to ensure a stress free transportation. Animal welfare, safety and comfort forms the basic guiding principals of the transportation.

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Conflict of Interest

Not available

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Reference

1. Bist SS, Cheeran JV, Choudhury S, Barua P, Misra MK. The domesticated Asian elephant in India. Routledge, 2002.
2. Choudhury S, Choudhury LDK, Desai A, Duckworth JW, Easa PS, Johnsingh AJT, *et al.* *Elephas maximus*. IUCN Red List Threatened Species. 2008;e.T7140A12828813.
3. Ministry of Environment, Forest and Climate Change (MoEFCC), Government of India. Guidelines for the care and management of captive elephants. New Delhi: Project Elephant Division, 2008.
4. Kumar A, Singh R. Transportation of elephants: Best practices. Wildlife Conservation Society, 2010.
5. Kurt F, Garai ME. The Asian elephant in captivity: A field study. Foundation Books, 2007.
6. Olson D, Wade CM. Guidelines for the in situ transportation of large mammals. International Zoo Yearbook. 1998;36(1):157-164.
7. Central Zoo Authority. Norms and Guidelines for exchange of animals between Zoos in India. New Delhi: CZA, 2014.
8. Schmid J. Transport and acclimatization of elephants:

Methods and requirements. Zoo Biology. 1998;17(6):449-454.

9. Fernando P, Leimgruber P, Prasad T, Pastorini J. Problem-elephant translocation: Translocating the problem and the elephant? Biol Conserv. 2012;143(11):2501-2509.
10. Sukumar R. The Living Elephants: Evolutionary Ecology, Behavior, and Conservation. Oxford University Press, 2003.
11. Varma S, Belagere R. Welfare status of temple elephant Mariappan: An investigation into the welfare and management status of elephant Mariappan of Samayapuram Mariamman Temple, Thiruchirapalli, Tamil Nadu, southern India. Elephants in captivity: CUPA/ANCF-Occasional Report No. 11. Compassion Unlimited Plus Action (CUPA) and Asian Nature Conservation Foundation (ANCF), 2010.
12. Fernando P, Kumar MA, Williams AC, Wikramanayake E, Aziz T, Singh SM. Review of human-elephant conflict mitigation measures practiced in South Asia. Gland, Switzerland: WWF, 2008.

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