

PROTOCOLS FOR TRANSPORTATION OF WILD ANIMALS



Central Zoo Authority

केन्द्रीय चिड़ियाघर प्राधिकरण

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PREFACE

The Central Zoo Authority is statutory body under the Ministry of the Environment & Forests, Govt of India, constituted in 1992 to oversee the functioning of zoos in India and provide technical and other assistance to zoos. Ex-situ conservation of captive wild animals is the highest priority of the Central Zoo Authority. Zoos in India and abroad exchange animals among themselves. Often they receive rescued and infirm animals as well as animals that have been orphaned in the wild. Thus transportation between various locations becomes necessary. Often wild animals experience high levels of stress during restraint, capture, confinement, loading, unloading and the transportation process as well as when they are adapting to the new environment they have been moved to. Mortality of animals is reported frequently in the zoos, and this is of concern to zoo personnel, veterinarians, NGOs working for animal welfare, animal welfare activists and the electronic media. A need for developing protocols that cover the major issues relating to the transportation of animals has been felt for long. Safe, humane, ethical and professional protocols for transportation of wild animals need to be developed.

To address this issue, the Central Zoo Authority organized a workshop for zoo veterinarians at Chennai, in collaboration with Madras Veterinary College and Arignar Anna Zoological Park from 24 to 28 January 2011. Seventeen resource persons, including two from abroad, delivered guest lectures at the workshop. The resource persons were from Chicago Zoological Society/Brookfield Zoo, USA, Zoo Taiping and Night Safari, Malaysia, Madras Veterinary College, Wildlife Trust of India, Wildlife SOS and various zoos in the country (Annexure II). Twenty-seven zoo veterinarians attended the workshop (Annexure III). After thorough deliberations, protocols for the transport of animals were developed.

I hope that these protocols for transportation of wild animals be useful to every zoo in India. It is by implementing the National Zoo Policy, 1998 and Recognition of Zoo Rules, 2009 that we can ensure that zoo operators, officers-in-charge of zoos, veterinary officers and other support staff at zoos are equipped for the battle to save our wild animals during transportation.



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Exchange of animals between zoos and acquisition of animals from the wild necessitate their transportation between various locations. Wild animals go through high levels of stress quite often during restraint, capture, confinement, loading, unloading and the transportation process as well as when adapting to the new environment they have been moved to. A need for developing protocols for transportation of animals that cover the major issues involved has been felt for long. Safe, humane, ethical and professional protocols for transportation of wild animals need to be developed.

To address this issue, the Central Zoo Authority (CZA) organised a workshop for zoo veterinarians at Chennai in collaboration with Madras Veterinary College and Arignar Anna Zoological Park from 24 to 28 January 2011. Twenty-seven zoo veterinarians attended this national-level workshop. After thorough deliberations, protocols for transport of animals were developed under the inter-related heads listed in the following sections.

GENERAL CONSIDERATIONS PRIOR TO TRANSPORT

1 Selection of individuals

- i. Selection of animals is critical in any planned operation involving transportation. The selected animal should be in good health and have a clean health record. Preferably it should not have any medical history that is suspect.
- ii. Only adults and sub-adults should be transported. Pregnant, geriatric, lactating, suckling, sick, weak, injured or deformed animals and stags (deer species) in velvet should be avoided in planned transport. As far as birds are concerned, juveniles which have recently fledged should be preferred for transporting. Transport of adults, if necessary, should be done after the breeding season is over.
- iii. If young ones unable to fend for themselves should be transported, they should be transported along with the mother. Young ones that are being hand reared should be accompanied by the keepers/handlers from the donor and recipient zoos.

2 Marking of selected individuals

Prior to transport, the animal identified for transport should be appropriately marked. The veterinarians of the recipient and donor zoos should ensure that proper identification and marking of the selected animal are done. These should be uniform for the species. Natural

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markings of animals can also be used for identification, and a photographic documents showing the natural identification of each animal should be maintained. Details of the site and type of marking should be recorded and made available to the recipient zoo.

- i. Microchips and/or ear tags and/or tattoo markings with permanent dye may be used for identification for ungulates/primates/large mammal species.
- ii. Carnivores should be marked with microchips (transponders). Ear tags may also be used for convenience if these are available.
- iii. Birds should be marked with colour bands. Birds larger than a myna or pigeon should also be microchipped. Microchips should be injected in their breast muscles. This is essential because the rings can come off or break during transportation.
- iv. Reptiles (turtles and crocodiles) may be notch marked, whereas snakes must have microchips. Underbelly scale notching can also be carried out on reptiles. The assistance of a person trained in microchipping reptiles should be obtained while doing this.



Photo 1: Marking individuals using ear tags (photo credit: Dr. Mir Mansoor)

3 Weather and climate considerations

- i. A complete record of the weather and climatic conditions should be maintained prior to initiating transport. Extreme climatic conditions, viz. the peak summer and monsoon, should be avoided while

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transporting animals. The cool season is the most preferred season for transportation.

- ii. In case transportation is planned during the summer, it should be carried out strictly during the cooler hours of the day, preferably the early morning or late evening, unless the vehicle transporting the mammals/birds/reptiles is air conditioned. Necessary provisions for effective cooling and ventilation should be in place when such journeys are undertaken. During winters it should be ensured that animals are not exposed to the chill and are maintained in a comfortable environment throughout the journey. During summers crates could be covered with wet hessian sacks/gunny bags that can be moistened, and similarly, winter-transport containers/crates could be lined with Styrofoam.
- iii. Abrupt changes in weather conditions should be anticipated and provided for. Transportation logistics should be carefully planned, with a backup and support vehicle always available on call.

4 Animal transport considerations

The animal's health and well being should be the highest priority during transport. The corresponding measures depend on the species and should essentially be considered prior to movement. The mode of transport should be identified and a reconnaissance carried out well in advance. Preparations should be accordingly made. The driver/team undertaking the transportation should familiarise themselves with the route that will be taken. Stops en route should be pre-planned and identified well in advance to minimise the duration of transport. The cage should be kept in the vehicle in such a way that the animal always faces the direction in which the vehicle is moving. In the case of transportation of elephants by truck, it is best to cover just 250 km a day, halt and take out the elephants for medications (muscle relaxants, vitamins/glucose), water, walking, feeding and resting till the next morning.

5 Record-keeping considerations

- i. Copies of the studbook and breeding records of the animals being transported should accompany the animals to indicate the pedigree and to prevent inbreeding.
- ii. Copies of the animal report including all details of health, breeding and animal temperament and medical history sheets and medical records should be sent to the recipient zoo along with the animals.

FINANCIAL CONSIDERATIONS

The following need to be considered in terms of the financial outlay when

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planning the acquisition of new animals:

- I. The financial consideration involved in providing additional manpower for the care of the new animal/animals
- ii. Provision of adequate funds for transportation from the donor zoo
- iii. Provision of funds for the upkeep and veterinary care of the animal

The director of the recipient zoo should ensure the availability of funds for the above prior to the transport of the animals.

FACILITY AT RECIPIENT ZOO

- I. Once a decision to acquire new animals has been made, the recipient zoo should ensure the availability of adequate appropriate housing space as per CZA guidelines.
- ii. If an existing enclosure for the species is already present, it should not be overcrowded due to the addition of the new animals. A separate enclosure should be made available for the new animals.
- iii. If no enclosure exists, a new enclosure should be constructed well before the arrival of the animal.
- iv. If the animal being acquired is endangered or belongs to Schedule I or II of the Wildlife (Protection) Act, 1972, the zoo should get the design for the enclosure approved by the CZA prior to construction.

LIAISON WITH AGENCIES

The director of the recipient zoo should arrange for all requisite permissions and liaise with the following agencies/departments for transport of animals. The donor zoo should assist the recipient zoo by providing necessary documents such as the donor/recipient zoo agreement:

- I. Chief wildlife wardens and state forest departments of concerned states for permission to acquire and transport animals
- ii. CZA (for permission)
- iii. Quarantine officer of the region for necessary permits.
- iv. Zoos en route—information for assistance in case of emergencies
- v. State forest departments en route—information to ensure that the animal is not stopped on the way
- vi. Agencies for emergency-assistance (as may be required)
- vii. CITES (for permissions relating to international exchange of animals)

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- viii. DGFT (international exchange of animals)—import permissions
- ix. MoEF, Government of India (for permission in the case of international exchange of animals)—without NOC documents the DGFT will not issue a permission to import
- x. Customs Department (international exchange of animals)

ANIMAL CRATE/TRANSPORT CAGE CONSIDERATIONS

Animals have to be confined in crates/transport cages during transport for easy handling and to minimize the chances of injury to the animals. The transport cages/crates should be of dimensions that allow the animal to stand and to rest in sternal recumbency but do not provide space for turning. The basic considerations are as follows:

- i. A crate should be designed according to the requirement of the species and should be portable, light and easy to manoeuvre.
- ii. Crates should be constructed with an aluminium/light metal/wooden frame and plywood or laminated plywood. They should have hinged handles so that the container can be loaded and unloaded with ease.
- iii. The size of the crate should be such that the animal can only stand or sit in it or lie in sternal recumbency. It should not be able to turn or somersault.
- iv. The crate should be rectangular in shape.
- v. The crate should be well ventilated, and it should be ensured that the extremities of the animals do not project out.
- vi. Do not use lead paints for painting crates. As far as possible crates should not be painted inside, but the surface should be smooth.
- vii. Crates should be disinfected properly prior to transport. When birds are being transported, it should be ensured that the crates are free of any fungus. This could be achieved by putting the cage out in the sun for a couple of days before use. Fungus grows in crates that are not used for some time and can be very harmful to birds, especially birds of prey.
- viii. Temporary facilities should be created for providing feed and water.
- ix. In case of transport by air containers should be fabricated in conformation with the size and weight specified for the aircraft. Different aircraft have cargo holds with doorways of different sizes.
- x. Facilities should be provided for cleaning the excreta.
- xi. Bedding of paddy straw, sand, etc. should be provided, and the floor may be peg-bored to avoid slipping. In the case of birds, the floor

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- should be covered with sand, sticks or just AstroTurf. No perch should be provided in the cage.
- xii. Padding with gunny bags filled with paddy straw, coir or foam/cotton cushions should be provided in crates used for herbivores. Cages used for birds do not require any padding. Nails, wooden splinters, protrusions, sharp edges and sharp objects should be removed from the inner surfaces of the container.
 - xiii. Hinged (foldable) handholds or handles should be provided on the sides for easy handling. At the same time it should be ensured that the handles will fold away and be flush after loading so that the cage may be secured and prevented from shifting during transportation.
 - xiv. In the case of deer, antlers and antler tips may be taped with padding/cushioning to prevent injuries and breakage during transport.
 - xv. Only well trained/experienced handlers/attendants/keepers should be deputed for the task.



Photos 2 & 3: Ungulate transport box.
(Photo credits: 2 & 3, Wildlife Trust of India)



Photo 4: Giraffe transport container
(Photo credit: Dr. Navin Kumar)]



Photo 5: Tiger transport container (photo credit: Dr. Parag Nigam)

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Photos 6, 7 & 8: Trapping-cum-transport cages for leopards (photo credits: 6, 7 & 8, Dr. Parag Nigam)

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Species-specific considerations

A. Deer species

- I. The maximum number of animals that may be transported at a time is four or five.
- ii. Only one male should be transported in any crate.
- iii. With smaller species, two females may be transported in a crate; with larger species, only one female may be transported in each crate. However, it is preferable to transport only one animal in a crate.
- iv. As per the need both the sexes can be transported in separate crates.

B. Carnivores

- I. Preferably only one animal should be transported in each crate/container. When more than one animal must be transported in a crate, it is preferable to have animals from the same enclosure or those that have lived together.
- ii. Males need to be transported separately in individual crates.

C. Primates

- I. Up to four animals may be transported together at a time.
- ii. With larger primates, only one animal may be transported in a crate.

D. Birds

- I. Storks, cranes, ratites and raptors should be transported individually.
- ii. Parakeets may be transported in pairs in boxes.
- iii. Ducks, teals, geese, pigeons, bulbuls, galliforms (females), corvids, sparrows and other finches may be transported in groups.



Photos 9 & 10: Boxes for transportation of small mammals and birds
(photo credits: Wildlife Trust of India)

E. Reptiles

- I. Crocodiles should always be transported singly.
- ii. Turtles and tortoises: Large animals should be transported singly; small ones may be transported in groups.
- iii. King cobras, cobras, pythons and other cannibalistic snakes must always be transported individually in crates/boxes with locks and signage marked DANGER/HANDLE WITH CARE – VENOMOUS SNAKE.
- iv. When reptiles such as crocodiles, chelonians, snakes and lizards are to be transported/released, check for evidence of any injury, metabolic bone disease, ectoparasites, stomatitis, scale-rot, dysecdysis, bloat, retained eye caps, swollen eyes or abnormal discharges from the eyes, nostrils, mouth, etc. In the case of crocodiles, the teeth should be clean and white, not brittle or translucent. Similarly, any accumulation of algae on teeth may often reflect lack of feeding in crocodiles. Fasting prior to physical capture appears to be desirable in reptiles. Transport boxes or container should be of adequate width and depth to prevent chelonians from climbing and damaging their shells. Snake bags need to be tied firmly to prevent escapes. Boxes should be locked. Reptiles are very susceptible to dehydration during transportation and require to be provided water.

Moist gunny bags have proven to be useful when transporting large numbers of young crocodiles (total body length less than 1.5 m) over short distances (200-250 km or 5-6 hours).



Photo 11: Transport container for crocodiles (photo credit: Dr Navin Kumar)

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For dimensions of the crates for different species, *Manual of Transport Cages and Nest Boxes*, published by CZA, may be referred to.

A. Deer species: Indicative dimensions of crates are provided below:

Species	Length (cm)	Width (cm)	Height (cm)	Remark
Sambar (<i>Rusa unicolor</i>)	180	68	150	For ventilation, provide 12 mm holes on the sides.
Swamp deer (<i>Cervus duvaucelli</i>)	165	60	150	
Spotted deer (<i>Cervus axis</i>)	150	55	120	Crates for other species of deer may be designed accordingly to the size of the animals.
Barking deer (<i>Muntiacus muntjac</i>)	90	45	75	

- i. Frame: All around solid wooden or metallic battens of 4 mm thickness
- ii. Sides: 12 mm thick waterproof plywood
- iii. Floor: 19 mm thick waterproof ply
- iv. Roof: 12 mm thick waterproof plywood
- v. Doors: sliding doors on both sides with bolts and chains; 12 mm thick waterproof ply

B. Carnivores: Indicative dimensions of crates are provided below:

Species	Length (cm)	Width (cm)	Height (cm)
Tiger/lion	195	75	105
Bear	180	75	100
Leopard/jaguar	120	60	90

- i. Frame: MS angle 40 mm × 40 mm × 6 mm
- ii. Sides: 12 mm thick waterproof plywood with cover of 3 mm thick iron sheet
- iii. Floor: 19 mm thick waterproof ply on MS flat 35 mm × 4 mm @] 350 c/c floor, and two sides also covered from inside with 2 mm thick iron sheet. Holes on floor 20 mm in diameter. Whole crate should rest on 50 mm × 50 mm iron pegs. Two removable trays of depth 25 mm to be provided below the floor to receive urine and excreta.

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- iv. Roof: 12 mm thick waterproof plywood
- v. Doors: 12 mm diameter MS bar @ 50 mm c/c should be welded with frame and covered with 5 mm thick plywood. Bolt and chain system for closing and opening the doors.

C. Primates: Indicative dimensions of crates are provided below:

Species	Length (cm)	Width (cm)	Height (cm)
All macaques	90	68	75

- i. Frame: Solid wooden battens 35 mm × 35 mm all around
- ii. Sides: 12 mm thick waterproof plywood
- iii. Floor: 12 mm thick waterproof plywood with sawdust on base
- iv. Roof: 12 mm thick waterproof plywood
- v. Doors: Only on one side with facility for sliding up; made of 9 mm thick waterproof ply
- vi. Ventilation: Holes of 20 mm diameter on two sides; welded mesh on top at the rear, 100 mm wide

D. Birds: Indicative dimensions of crates are provided below:

Species	Length (cm)	Width (cm)	Height (cm)	Remarks
Munia/ budgerigar	75	75	22.5	Sufficient for 2-25 munias; wire mesh size 150 mm x 600 mm
Kite/Shikra	60	45	45	For one bird; perch at 50 mm, should have enough space to turn around. Wire mesh size 150 mm x 600 mm
Pheasants	60	45	60	For one bird; if the tail is long, the length may be increased accordingly. Wire mesh size 100 mm x 600 mm
Emu and cassowary	75	60	150	
Small parakeets	75	75	25	Sufficient for 10 parrots; perch is not required in transport boxes

- i. Bird size measurements should be taken with the bird lying down/wings closed and legs stretched. The height of the crate should always be at least 4-6 inches more than the bird's height at

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the head.

- ii. Frame: Solid wooden battens 30 mm × 30 mm all around; in the case of emus, 75 mm × 50 mm.
- iii. Slides: 9 mm thick waterproof plywood; in the case of emus, the plywood should be 12 mm thick, with iron bars of length 25 cm fixed at equal distances from each other.
- iv. Floor: 9 mm thick waterproof plywood; in the case of emus 19 mm thick plywood, with saw dust. In the case of big birds, the flooring should be of astro-turf or of any non-slip material.
- v. Roof: 9 mm thick waterproof plywood; in the case of emus the plywood should be 19 mm thick.
- vi. Doors: Sliding on one side, back closed, Door made of 9 mm thick plywood. In the case of emus the thickness should be 19 mm. When transporting raptors or birds, the sliding door should not be installed sideways but instead top to down. This will allow the bird to be caught by its legs. In a vulture transport box the lid should be on the roof because it should be opened at the top.
- vii. Ventilation: Wire mesh at rear end at the top of the cage; in the case of emus, holes on both sides. In the case of raptors, there should be holes (of the size of drilling machine bits) at regular intervals on all the four sides. The holes should be small enough to ensure that even a human finger cannot pass through them as the introduction of a finger into a crate could be very dangerous, especially in the case of vulture transport.
- viii. For dimensions of the crates for different species, Manual of Transport Cages and Nest Boxes, published by CZA, may be referred to.

E. Reptiles: Indicative dimensions of crates are provided below:

Species	Length (cm)	Width (cm)	Height (cm)	Remarks
Crocodile/alligator/gharial	195	60	40	Small sizes are preferred.
Python	75	90	45	Handles on both sides to carry the crate
Cobra or other snakes	60	75	30	Handles on both sides to carry the crate

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- i. Frame: Solid wooden battens 35 mm × 35 mm all around; in the case of pythons, MS angles of 25 mm × 25 mm × 4 mm and with additional support of MS flats 25 mm × 4 mm as required. For other snakes, solid wooden battens of size 25 mm × 25 mm.
- ii. Sides: 12 mm thick waterproof plywood with 35 mm × 35 mm solid wooden battens as supports (4 nos.). In the case of pythons, 19 mm plywood and wire mesh on two sides. For other snakes, 9 mm waterproof ply with wire mesh on two sides.
- iii. Floor: For crocodile and other snakes 12 mm thick waterproof plywood with sawdust on base. In the case of pythons, 19 mm plywood with dry paddy at base.
- iv. Roof: For crocodiles and snakes 12 mm thick waterproof plywood. In the case of pythons, 19 mm thick waterproof ply with hinges and locking arrangement. The top will act as a door.
- v. Doors: Sliding on both sides with 12 mm thick waterproof plywood.
- vi. Ventilation: Small holes on sides and top as required. But it must be ensured that the holes are smaller than the size of the snake's tail/head as well as human fingers.
- vii. 5 cm thick plywood boxes (2' × 2' × 1'; 60 cm high × 60 cm long or deep × 30 cm wide) with up to four racks have been effectively used for transporting up to 10 hatchlings in each rack for transport of hatchling gharials by air.

VETERINARY CONSIDERATIONS

DONOR ZOO

I. Health screening of animals

- The identified animal(s) should be subjected to health screening so as to ensure their fitness for transportation and to avoid transmission of diseases to animals in the recipient zoo. The IUCN guidelines on quarantines and health screening prior to translocation of wild animals should form the basis of such interventions. Where required, animals may be vaccinated and dewormed well in advance to transportation, at least 3 weeks before the action.
- Body weight and morphometric features should be estimated by a biologist, who should also design the crate.
- Animals of different species should never be transported in the same container.

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- A health certificate should be issued by the veterinarian of the donor zoo to the recipient zoo in a standard format with all health-related details.

ii. Nature of capture

- The mode of capture must be based on the species to be captured. It is essential that the veterinarians decide on the mode of capture well in advance. The requisite instruments and drugs may be procured/stored accordingly.
- If chemical immobilization has to be carried out, the animal should be fasted for 24 hours and deprived of water for 12-16 hours. The animal may have to be covered with wet cloths in case it develops a high temperature, and the eye may need to be covered as a precaution when acepromazine, etropin and human antidotes are used.
- If chemical immobilization and restraint procedures are to be used, adequate stocks of immobilizing drugs, reversal agents and antidotes should be procured and stored appropriately. The drug dosage may be decided based on the size of the animal and other considerations such as the age, sex, weight, weather, physiological and temperamental needs and excitement level. Tranquilizers may be used before transportation as they reduce anxiety in the animal, thereby reducing chances of stress. A wide range of tranquilizers is available. The choice of drug depends on the species and the excitation level. It is advisable to use short- and long-acting tranquilizers for herbivores prior to crating, depending on the travel time and the species, as this will minimise the stress experienced by the animal during crating, transport and release at the new location.
- If physical methods of capture are to be used, it should be ensured that the animals are subjected to minimal stress and that there are skilled and experienced personnel in the team.
- The animal, especially if it is a herbivore, can be habituated to its crate well in advance by placing the crate in the enclosure and feeding the animal every day in it. This will slowly make the animal comfortable with the crate, thereby reducing the stress at the time of transportation because of the animal's familiarity with it.
- The staff involved in the capture and transportation procedure should be made aware of the various procedures that need to be carried out. It would be very helpful if a mock exercise were to be practiced so that the staff are prepared for eventualities.

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- The best available drugs should be used selected for tranquilizing a species. The drugs available in India are xylazine, ketamine and acepromazine. Butophanol, azaperone, detomidine, medetomidine, telazol, midazolam, haloperidol, etorphine and the reversal agents atipamazole, yohimbine, tolazoline, flumazenil and naltrexone are also available.
- The dose regime for chemical immobilization of animals may be according to the indicative values below, subject to the advice of the veterinary officer.

Deer

Species	Drugs	Dose regime (mg/kg)	Mode
Spotted deer (<i>Cervus axis</i>)	*Xylazine and ketamine	6 and 1.2	IM
	*Meditomidine and ketamine	0.05-1.0 and 0.8-3.2	IM
Hog deer (<i>Cervus porcinus</i>)	*Xylazine and ketamine	6 and 1.2	IM
	*Meditomidine and ketamine	0.05-1.0 and 0.8-3.2	IM
Swamp deer (<i>Cervus duvaucelli</i>)	*Etorpine and xylazine	0.003 and 5-8 mg/animal	IM
Blackbuck (<i>Antilope cervicapra</i>)	*Ketamine and medetomidine	2 and 0.25	IM
	*Xylazine	20 mg/ animal	IM
Nilgai (<i>Boselaphus tragocamelus</i>)	*Etorpine, acepromazine and xylazine	0.03, 0.12 and 0.16 – 0.23	IM
Barking deer (<i>Muntiacus muntjac</i>)	Xylazine and ketamine	3 and 2	IM

Carnivores

Species	Drugs	Dose regime (mg/kg)	Mode
Wolf (<i>Canis lupus</i>)	*Xylazine and ketamine	10 and 2	IM
Himalayan black bear (<i>Ursus thibetanus</i>)	*Tiletamine/ zolazepam and medetomidine	0.5 and 0.01	IM
Sloth bear (<i>Ursus ursinus</i>)	*Ketamine and xylazine	7.5 and 2	IM
	*Ketamine and medetomidine	3 and 0.05	IM

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Red panda (<i>Ailurus fulgens</i>)	*Ketamine and medetomidine	5 and 0.1	IM
Civet and binturong	*Ketamine and xylazine	10 and 1-2	IM
Lion (<i>Panthera leo</i> <i>persica</i>)	*Ketamine and xylazine	4.5 and 1	IM
Tiger (<i>Panthera</i> <i>tigris</i>)	*Ketamine and xylazine	5 and 1	IM
Snow leopard (<i>Panthera uncia</i>)	*Ketamine and medetomidine	2.5-3.0 and 0.06-0.08	IM
Leopard (<i>Panthera</i> <i>pardus</i>)	*Ketamine and medetomidine	3 and 0.07	IM
Small felids (cats)	*Ketamine	5-10	IM
	*Ketamine and xylazine	3-5 and 0.06-0.08	IM

Primates

Species	Drug	Dose regime (mg/kg)	Mode
Macaques and langurs/Leaf monkeys	*Ketamine and medetomidine Note : The combination of Xylazine and ketamine may also be used.	5-10 and 0.05	IM

*Kindly refer to the report titled Standards, Guidelines and Protocol prepared by the IVRI for CZA.

CONSIDERATIONS RELATED TO TRANSPORT

- i. The veterinarian and keeper of the recipient zoo should accompany the animals during transportation. In special cases, the veterinarians of both the donor and recipient zoo may accompany the animals during transportation.
- ii. During transportation, disturbance of the animal should be minimised.
- iii. Human contact with the animals should be minimised to avoid cross-infection.
- iv. The animals should be monitored throughout the transportation, and if need be, appropriate treatment/management should be administered.
- v. Emergency veterinary drugs and equipment should be carried

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during transportation to meet any eventuality. Quick and prompt veterinary consultations and treatment should be extended to animals that get injured or diseased in transit.

- vi. An official with the requisite financial powers to cover any exigencies en route should accompany the animal. The official may be assisted by an animal supervisor and keepers/handlers as required.
- vii. Sufficient quantities of food and water should be available in the vehicle during transportation.
- viii. There should always be two drivers for the vehicle so that there need not be an excessive number of stops during the journey. One driver can rest while the other drives. But there should be no rush to cover the distance.
- ix. Staff undertaking transportation of animals should not consume alcohol as this will blur and affect their judgement, which is critical in case of emergencies.
- x. In the case of vehicles going through Maoist-/insurgency-affected areas, the RTOs/border checkpoints involved should be consulted to identify the best time of the day in which to pass through these areas, and police escort must be requested from the SP/DM of the area to prevent any risk to the vehicles, people and animals.



Photos 12 & 13: Rhino transport crate (photo credits: Dr. Parag Nigam & Wildlife Trust of India)

CONSIDERATIONS AT RECIPIENT ZOO

- i. Before getting the approval of the Central Zoo Authority, the veterinarian of the recipient zoo may visit the donor zoo, and a mutual agreement must be arrived at regarding the animals to be exchanged.
- ii. The behaviour, feeding pattern and health of the chosen animals should be closely monitored.
- iii. Animals should be housed in stress-free environments.

HUMAN RESOURCE CONSIDERATIONS AT RECIPIENT ZOO

- I. The recipient zoo should arrange well in advance at least one full-time keeper for the animal to be received. If the recipient zoo has no prior experience in managing the animal, the designated keepers should be sent well in advance to the donor zoo to familiarise themselves with the husbandry, care, feeding, treatment and daily routines related to the care of the animal involved.
- iv. The recipient zoo should arrange training for the keeper engaged to look after the newly arrived animal at the donor zoo three months in advance. A quarantine and health check-up should be carried out according to veterinary protocols and the relevant guidelines.
- v. One Forest Range Officer (in case of Forest Department zoos), one supervisor, two or three animal attendants and the animal keeper of the receiving zoo should accompany the animal when it is being transported. But in the case of species which can be easily handled and transported, the director of the recipient zoo may decide the number of people to be sent to receive animals without compromising the safety and care of the animals.

TRANSPORT VEHICLE CONSIDERATIONS

- I. Reputed and experienced companies/firms/NGOs that are experienced in transporting animals should be selected and engaged. No compromise should be made in this regard.
- ii. An agreement should be signed between the carrier company and the consignor so that an alternate vehicle will be arranged as early as possible by the carrier company in case of any breakdown or other emergencies that may arise en route.
- iii. A detailed discussion should be held between the donor, recipient, transport company and the identified escort team, and responsibilities and tasks should be allotted.
- iv. Ensure that the vehicle is fit for the journey. The vehicle should be serviced, and a thorough check-up should be carried out prior to the transport. Additionally, information on the fuel level, tyre pressure and the tool kit and essential spares carried should be obtained. An animal transport vehicle on a long journey should have two drivers.
- v. The mobile numbers and contact details of the drivers, owners, cleaners, etc. should be given to the coordinators of both the donor and recipient zoos.

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- vi. The transport vehicle should be insured. All the vehicle-related documents should be valid (R.C., insurance papers, driver's licence, etc.) and should be checked.
- vii. The vehicle should be disinfected properly prior to transport.
- viii. Identification of the animals to be transported should be done prior to loading.
- ix. The shortest route among the usable ones should be selected.
- x. Before transportation, factors such as the weather forecast and possible disturbances (blockades, processions, festivals, public functions etc.) during the proposed transportation period should be taken into account and the planning carried out accordingly.
- xi. Information on zoos and other facilities available en route should be provided to the personnel of the vehicle so that assistance (food, health care, etc.) can be obtained as and when needed.
- xii. The contact information of directors/veterinarians of zoos en route should be available with the transporting team. The travel plan should be communicated to the directors/veterinarians so that they can provide assistance if required.
- xiii. The pilot vehicle should have a representative of the competent authority and a veterinarian. It should have drugs, equipment for physical immobilization and communication facilities.
- xiv. The personnel should be wearing in uniform with proper dress code. The vehicle should have the necessary papers/certificates.
- xv. The team in the pilot vehicle should inform toll gates/checkposts in advance so that unnecessary delays are avoided.
- xvi. The transport vehicle and pilot vehicle should carry emergency lights, torches with sufficient batteries, drinking water, IV fluids, medical kits, etc.
- xvii. For help with safe and secure transportation, the forest department personnel and agencies such as the police of the districts or states involved may be contacted.
- xviii. The guidelines of IATA, CITES, etc. should be followed wherever applicable.

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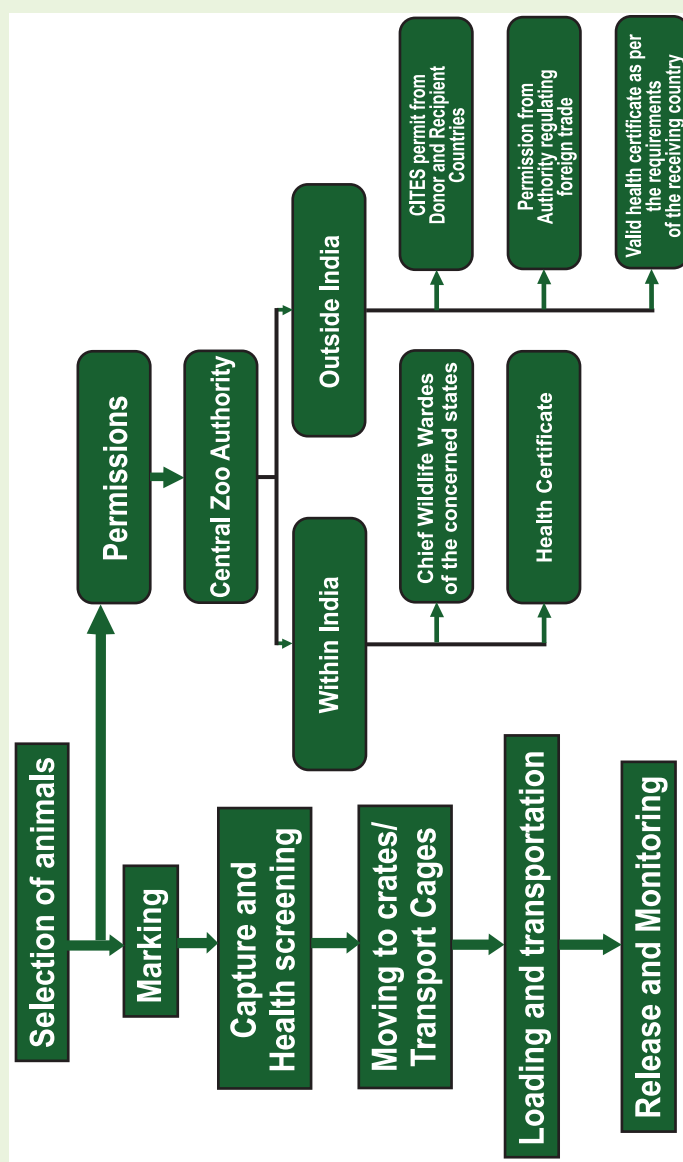


Photo 14: Transportation of carnivore (photo credit: Wildlife Trust of India)



Photo 15: Specially designed vehicle for transportation of gaur, at Kanha Tiger Reserve (photo credit: Dr. Parag Nigam)

SUMMARY OF PROTOCOLS FOR TRANSPORT OF WILD ANIMALS



Annexure I

Permissions required for international transport of animals

India is a signatory to the Convention on International Trade in Endangered Species (CITES), and any international transport of wild animals is governed by this convention. The Director—Wildlife Preservation, Government of India, is the nodal officer for CITES permits, and the country is divided into four regions: The Northern Region consists of the states of Uttar Pradesh, Punjab, Haryana, Himachal Pradesh, Jammu & Kashmir and Rajasthan and the union territory of Delhi and Chandigarh; the Eastern Region consists of the states of Bengal, Bihar, Assam, Arunachal Pradesh, Sikkim, Mizoram, Nagaland, Orissa, Tripura, Meghalaya and Manipur; the Southern Region consists of the states of Tamil Nadu, Andhra Pradesh, Kerala and Karnataka and the union territories of the Andaman & Nicobar Islands, the Lakshadweep Islands and Pondicherry; and the Western Region consists of the states of Gujarat, Madhya Pradesh, Chattisgarh and Goa and the union territories of Daman & Diu and Dadra & Nagar Haveli.

The Regional Deputy Director (Wildlife Preservation) can be contacted for obtaining the mandatory CITES permits for international transport of wild animals. Once a CITES permit has been obtained, permission may be obtained from the Director General of Foreign Trade for international transport of wild animals.

CITES Management Authorities

Director (Wildlife Preservation)

Management Authority CITES - India

Ministry of Environment & Forests, Government of India
Paryavaran Bhawan, 4th Floor, CGO Complex, Lodi Road
New Delhi - 110003

Telephone: +91-11-24362285

Fax: +91-11-24363918

Telex: w66185 doe in

Cable: PARYAVARAN NEW DELHI

Email: moef@gov.nic.in

PROTOCOLS FOR TRANSPORTATION OF WILD ANIMALS

<p>Regional Deputy Director (WCCB) & CITES Asst. Management Authority Western Region Ministry of Environment & Forests Wildlife Regional Office 11, Air Cargo Complex Sahar, Mumbai - 400099 (India) Telefax: +91-22-26828184 Email: rddwr@vsnl.com</p>	<p>Regional Deputy Director (WLP) Eastern Region Ministry of Environment & Forests Wildlife Regional Office Nizam Palace, 2nd MSO Bldg. 234/4, AJC Bose Road, Kolkata - 700020 (India) Telefax: +91-33-2247869</p>
<p>Regional Deputy Director (WCCB) Southern Region Ministry of Environment & Forests Wildlife Regional Office, C-2A, Rajaji Bhawan, Besant Nagar CGO Complex, Chennai 600090 Tel.No.: +91-44-24916747 Email: rddwl@md4.vsnl.net.in</p>	<p>Regional Deputy Director (WCCB) Northern Region Ministry of Environment & Forests Wildlife Regional Office Barracks No.5, Bikaner Office, Shahjahan Road, New Delhi - 110011 Tel.No.: +91-11-23384556 Fax: +91-11-23386012 Email: rddnr@vsnl.net.in</p>

PROTOCOLS FOR TRANSPORTATION OF WILD ANIMALS

(TO BE PUBLISHED IN THE GAZETTE OF INDIA EXTRAORDINARY PART II SECTION 3, SUB-SECTION (ii))

GOVERNMENT OF INDIA, MINISTRY OF COMMERCE
NOTIFICATION NO. 27 (RE-98)/97-02 NEW DELHI, DATED THE
29TH OCTOBER 1998

S.O. - In exercise of the powers conferred by section 5 of the Foreign Trade (Development and Regulation) Act, 1992 (No. 22 of 1992) read with paragraph 4.1 of Export and Import Policy 1997-2002, the Central Government hereby makes the following amendments in the Export and Import Policy, 1997-2002 and ITC(HS) Classification of Export and Import items 1997-2002 published on 31st March 1997 and amended from time to time.

In Export and Import Policy, Sl. No.1 of Section D, Seeds, Plants and Animals of Part II of Chapter 15 of Negative List of Imports shall be amended to read as under:

Sl. No.	Description of items	Nature of restriction
1.	Animals, birds and reptiles (including their parts and products)	Import permitted against a license to zoos and zoological parks, circus companies, private individuals, on the recommendation of the Chief Wild Life Warden of a State Government subject to the provisions of the Convention on international Trade in Endangered Species of Wild Fauna and Flora (CITES). For recognized scientific research institutions, in addition to the above requirement, the recommendation of the Committee for the Purpose of Control and Supervision of Experiments on animals (CPCSEA) under the Prevention of Cruelty to Animals Act, 1960 shall also be required for issuance of an Import License.

PROTOCOLS FOR TRANSPORTATION OF WILD ANIMALS

In ITC(HS), Classification of Export and Import in respect of the following Exim Code nos., conditions relating to the policy indicated in column 4 shall be amended to read as under:

Exim Code	Description of item	Policy	Conditions relating to the policy	Import under SIL/Public Notice
010119 00.90	Other	Restricted	Import permitted against a 00.90 license to zoos and zoological parks, circus companies, private individuals, on the recommendation of the Chief Wild Life Warden of a state government subject to the provisions of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). For recognised scientific/ research institutions, in addition to the above requirement, the recommendation of the Committee for the Purpose of Control and Supervision of Experiments on Animals (CPCSEA) under the Prevention of Cruelty to Animals Act, 1960 shall also be required for issuance of an import license.	
010120 00.90	Other asses, mules and hinnies	Restricted	Import permitted against a license to zoos and zoological parks, circus companies, private individuals, on the recommendation of the Chief Wild Life Warden of a state government subject to the provisions of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). For recognised scientific/ research institutions, in addition to the above requirement, the recommendation of the Committee for the Purpose of Control and Supervision of Experiments on Animals (CPCSEA) under the Prevention of Cruelty to Animals Act, 1960 shall also be required for issuance of an import license.	
010600 01.90	Other	Restricted	Import permitted against a license to zoos and zoological parks, circus companies, private individuals, on the recommendation of the Chief Wild Life Warden of a State Government subject to the provisions of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). For recognised scientific/ research Institutions, in addition to the above requirement, the recommendation of Committee for the Purpose of Control and Supervision of Experiments on Animals (CPCSEA) under the Prevention of Cruelty to Animals Act, 1960 shall also be required for issuance of an import license.	
010600 02.90	Other	Restricted	Import permitted against a license to zoos and zoological parks, circus companies, private individuals, on the recommendation of the Chief Wild Life Warden of a State Government subject to the provisions of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). For recognised scientific/ research Institutions, in addition to the	

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			above requirement, the recommendation of Committee for the Purpose of Control and Supervision of Experiments on Animals (CPCSEA) under the Prevention of Cruelty to Animals Act, 1960 shall also be required for issuance of an import license.	
010600 03,90	Other	Restricted	Import permitted against a license to zoos and zoological parks, circus companies, private individuals, on the recommendation of the Chief Wild Life Warden of a State Government subject to the provisions of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). For recognised scientific/ research Institutions, in addition to the above requirement, the recommendation of Committee for the Purpose of Control and Supervision of Experiments on Animals (CPCSEA) under the Prevention of Cruelty to Animals Act, 1960 shall also be required for issuance of an import license.	
010600 09,90	Other	Restricted	Import permitted against a license to zoos and zoological parks, circus companies, private individuals, on the recommendation of the Chief Wild Life Warden of a State Government subject to the provisions of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). For recognised scientific/ research Institutions, in addition to the above requirement, the recommendation of Committee for the Purpose of Control and Supervision of Experiments on Animals (CPCSEA) under the Prevention of Cruelty to Animals Act, 1960 shall also be required for issuance of an import license.	

This issues in public interest.

(N.L. LAKHANPAL)
**DIRECTOR GENERAL OF FOREIGN TRADE AND
EX-OFFICIO ADDITIONAL SECRETARY OF THE GOVERNMENT OF INDIA**

PROTOCOLS FOR TRANSPORTATION OF WILD ANIMALS

Annexure –II

WORKSHOP FOR ZOO VETERINARIANS, ON "PROTOCOL FOR THE VETERINARY CARE AND SAFETY OF WILD ANIMALS DURING TRANSPORTATION WITH SPECIAL REFERENCE TO DEER SPECIES" AT CHENNAI FROM 24-28 JANUARY, 2011

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PROTOCOLS FOR TRANSPORTATION OF WILD ANIMALS

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PROTOCOLS FOR TRANSPORTATION OF WILD ANIMALS

Annexure –III

WORKSHOP FOR ZOO VETERINARIANS, ON "PROTOCOL FOR THE VETERINARY CARE AND SAFETY OF WILD ANIMALS DURING TRANSPORTATION WITH SPECIAL REFERENCE TO DEER SPECIES" AT CHENNAI FROM 24-28 JANUARY, 2011

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22	Dr. Dinesh Kumar Pradip Zoo Veterinarian, Bhagwan Birsa Biological Park, Ranchi	09470590732 09431107787 08002505722	-

PROTOCOLS FOR TRANSPORTATION OF WILD ANIMALS

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Partners: Wildlife Institute of India, Dehradun, Uttarakhand
Madras Veterinary College, Chennai, Tamilnadu
Arignar Anna Zoological Park, Vandalur, Chennai, Tamilnadu



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वहाँ है खुशहाली।।
Ministry of Environment & Forests
Govt. of India

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Central Zoo Authority
केन्द्रीय चिड़ियाघर प्राधिकरण
(A Statutory Body Under the Ministry of Environment and Forests, Govt. of India)

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