# Captive Elephants in Bardia National Park, Nepal

## Investigations into Population, Management, Welfare and a Review of Elephant Training by Working Elephant Programme of Asia (WEPA), and WWF Finland at Bardia Hattisar

**Surendra Varma**
**and Suparna Ganguly**

Elephants in Captivity: CUPA/ ANCF –
Occasional Report No. 18

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## Contents

## Preface

Nepal, till recently labelled the Himalayan Kingdom with reference to its political system, is host to both wild and captive elephants. Although no comprehensive details of wild elephants are available, a total of 150 captive elephants are reported to be found in Suklaphanta Wildlife Reserve, Chitwan National Park, Parsa Wildlife Reserve, Koshi Tappu Wildlife Reserve and Bardia National Park. Bardia NP is believed to have 25 elephants, owned by the forest department, private individuals and National Trust for Nature Conservation (NTNC). The numbers presented are an approximate estimate.

Here we use the opportunity provided as observers of a captive elephant training programme, conducted by the Working Elephant Programme of Asia (WEPA), at Bardia NP to understand the welfare status of captive elephants kept under the forest department and also critically review the training programme. Assessing the welfare status of captive elephants in the park was based on observations of 25 parameters covering all aspects of captivity. Training of an elephant constitutes one of the important components of animal welfare. And humane training methods may enhance welfare standards. However if elephants get more time in the forest they may go through less interaction with people and associated training process, however humanely practiced. To achieve welfare for the animal, it is important to reduce the component of training or exposure to human beings. At least in the forest department run forests camps, which has uncontainable accesses to natural environment, if the animal is allowed more time for free ranging, it would constitute an important milestone towards achieving welfare conditions.

There is, however, a need for some amount of control or exposure to human environment. Training for the duration of associated activity with humans is needed. In North east India, mithun a free ranging domestic cattle, are trained to come to the owners' house by attracting or conditioning them with salt. They spend the greater part of their life in the forest. This is the sole and effective form of control of the cattle. If elephants are free ranging 24 hours in a day there should be some measures to make the animal come back to human environment. Food or associated rewards in the camp may be one of the attractions. The activities linked to bringing the elephant back to the camp for giving bath, feeding, collecting fodder, or giving some form of medical treatment and then going back to the forest needs training. In Arunachal Pradesh in Northeast India, elephants spend more time in the forest, banana stems filled with grain or grass with grain being the main incentive for the animals to return to camp.

Interestingly, even with good forest cover, number of wild elephants for the country is relatively very low; to increase population number and also make the number more viable, captive elephants, at least from forest camps, could integrated into forests as a long term process. There is an indication of the government having a proposal to integrate captive elephants into the wild. However, currently captive elephants in forest camps are used for work in forest patrols, tourism or as kunkies. However these two objectives, integrating elephants into forest and using them for forest related works, may not complement each other. Using the animal for work will not lend any scope for integrating elephants back into the forest. If they are integrated into the forest they cannot and should not be used for work. The integration of elephants into the forest is a long term process. One way to achieve this is to expose the elephant to more free ranging i.e. exposing the elephant to forest based life, interaction among themselves or with wild elephants. In this process females are mated by wild males or captive males get opportunity to mate with

females from the wild. This approach may help in maintaining genetic variability and may act as a real integration of captive elephant to the forest. But using elephants for work effectively breaks the processes associated with integrating elephants into the forest. The objectives of integrating elephant may reduce the training of elephants, but if they are used for work, humane training approaches need to be practiced.

We, through this document, try to present the current welfare status of elephants kept in Bardia NP and also utilize the opportunity to critically review the training programme conducted by the WEPA. The document has two sections - the first is on the welfare status of captive elephants kept by the forest department in Bardia NP using a welfare rating developed by experts; this section has executive summary, recommendation, introduction, objective, methodology, discussion and the literature cited. Efforts put into providing basic background on training elephants, captive conditions and the need for training, status of captive elephants and the training programme conducted by Working Elephant Programme of Asia (WEPA), training components and procedures, critical review of the WEPA programme, suggestions and discussions of the subject are reviewed through the second section.

We assume this report is the first ever document developed on the above mentioned subjects for the country and hope these findings may act as a motivation for vigorous data collection and observations of many aspects of captive elephant welfare including developing humane training methods.

**Acknowledgements**

The trip to Bardia National Park was based on a special invitation received from Helena Telkanranta, Director - Working Elephant Programme of Asia (WEPA). The document is based on the captive elephants of the Park and reviews the training programme conducted on the humane approach to training elephants in captivity by the Working Elephant Asia Programme (WEAP) The trip was funded by the World Society for Protection of Animals (WSPA) and by an individual donor

Andrew N. McLean from the Institute of Land and Food Resources, University Of Melbourne and the Australian Equine Behaviour Centre, and Laurie Pond, Programme Development Manager, Australia Zoo directed the elephant training sessions which was an educational and novel experience for us. Helena Telkanranta (WEPA), Dr. Ajit Kumar Karna, Nepal Veterinary Clinic and Research Centre, and Ranjana Pajiyar, WWF Nepal Program, Kathmandu, Nepal, meticulously arranged our programme, took care of the logistics, participated in active discussions, arranged an exclusive trip inside the Park, and generally made our stay exciting and eventful.

The Captive Elephant Team of the Park, particularly the phanits, pachuwas, Mahouts, Camp Manager and others, provided information and support during our visit to the Bardia Hattisar. S. R. Sujata and Nirupa Rao of CUPA provided critical inputs and editorial support. We thank Helena for critically reviewing the report and improving the quality of documentation by offering valuable insights.

# Section 1:
# Captive Elephants in Bardia NP, Nepal

## Executive Summary

Nepal has about 150 captive elephants under both government and private individuals distributed in three locations such us the Suklaphanta Wildlife Reserve, Chitwan National Park, Parsa Wildlife Reserve, Koshi Tappu Wildlife Reserve and Bardia National Park.

In addition to the presence of wild elephants, the National Park is home to several captive elephants. Captive elephants in Nepal are owned by the Government as well as private organizations/ individuals,

Captive elephants maintained by the department within the park use elephants for patrolling, prevention of human-elephant conflict, tourism, enumeration of a few wildlife species within the park, etc.

Through this investigation, a range of features covering the physical, physiological, psychological and social aspects of captivity have been considered and compared with conditions observed in the wild.

The Bardia National Park was home to seventeen elephants, of which 11 were adult females (age ranging from 35 – 55years) and 6 were juvenile/ sub-adult males (ranging in age from 2.5 – 7.5years). All the adult female elephants had been bought (some from the neighbouring region of Sonepur, Bihar) and the juveniles and sub-adults were born in captivity to the females.

The elephants were tied in long, open sheds with tin roof: the roof was placed in different directions, one of the two roofs had a north-to-south orientation, and the other had a west-to-east orientation to catch the full rays of both the rising and setting sun. Mean Rating (MR) was 4 indicating a deviation of 48% from Expert Rating (ER).

All the elephants were bathed once a day in a nearby river. While crossing the river to go for free ranging, elephants are observed drinking water as they are given bath M-R was 7 showing no deviation.

None of the elephants were allowed tactile interaction with the others, except for a juvenile male and his mother. The elephants were all chained in rows when in the camp; they could see/hear/smell each other and M-R was 0 showing 100% deviation.

The elephants were used for patrolling, as *koonkies*, for tourism (to provide joy-rides to tourists) or to carry out research work on wildlife species in the form of transporting personnel. M-R was 0.8 indicating a deviation of 90% from E-R.

Fodder was cut in the evenings and brought to camp: consisting of leaves of *Ficus* and bundles of grass. Each elephant was also given paddy (unmilled grains of *Oryza sativa*) and some salt and molasses rolled in grass (called *kuchi*) in the morning and evening, depending on age of the elephant. M-R was 5 indicating a deviation of 50% from E-R.

Elephants are allowed for free ranging from the *hattisar*. They cross the river and then move into the forest for free ranging. Elephants come back to the camp at 4 o clock when they are given

food, tied with 1-2 meter chain individually with the individual post on a mud floor with a wooden long post about 20 feet supporting the tin roof. They stay in this condition till the next day morning.

While in the shelter elephants show stereotypic behavior. The extent of the same was high for one adult female.

The elephants were treated by a veterinary livestock inspector when needed. Overgrown nails and nail cracks were observed among five elephants. Two adult females are infected with tuberculosis and have gone through medication. M-R was 6, implying a deviation of 29% from E-R.

The camp has three mahouts for each elephant (most of them from the Tharu community), one manager from the forest department and one veterinary assistant. The manager visits the camp regularly and monitors the mahouts.

Overall M-R, across all observed parameters, was 3.3 showing a deviation of 57% from E-R and 71% of the parameters showed deviations of 50% or more from E-R. A striking aspect of the elephants in the *hattisar* was the time spent by the handlers with their elephants: except at night and post-work, hands-on handler-elephant association was maintained. This would imply interaction between handler and elephant and control of elephant behaviour by handler, with restrictions likely to be imposed on species-typical behaviours.

## Recommendations

Nepal has a policy of integrating captive elephants into the wild, interestingly the policy is not popular and many do not have access to this information or not aware of such policy. However, this is one way to increase the elephant population. To achieve this, initially more and more elephants need to be introduced to forest camps and through the process of free grazing and foraging, the elephants get a chance to mate with wild elephants, get natural food and perform natural behaviours. However, unnatural work given to the animal will not be conducive for the elephant's integration with wild herds. .

The elephants in Bardia do not get much exposure to free ranging. They are used for forests patrolling, for tourism and for radiocollaring tigers. If elephants are allowed to free range, it takes care of most of the aspects of welfare including training. Mahouts, too, get more leisure. . However, in the absence of a monitoring agency or a committed presence of NGOs or organizations, this may not be wholly successful.

When animals are exposed to free ranging, investment on shelters and housing and increased staff expenses can be avoided. If elephant shelters are constructed, it invariably leads to the elephants standing or tied to one place that leads to stereotypic behavior, health and other welfare related problems. Shade of trees or thatched sun shades eliminates the need for tin sheds artificial roofs etc. Expenses associated with mahout housing, elephant fodder and feed and other management can be avoided. Animal going for free ranging gives ample scope for interaction amongst them. This would automatically improve the quality of welfare. However, elephants may still need to be brought to the camp for limited amount of human control. Free ranging 24 hours may preclude any further use or control.

If elephants are used for patrolling, sensitive locations need to be identified and forest patrols reviewed. If elephants are moved to remote areas for patrolling that affects the mahouts' family life then the plan should be oriented towards motivating the mahout to work in remote areas for patrolling the forests. As elephants in Bardia are used for patrolling of forests it is also important to know the number of elephants needed, locations to be covered, and whether army or forest staff can be used alternatively. However, for carrying luggage and other materials in remote areas elephants are needed.

As practiced now, the elephants more systematically could be used across the landscape with a combination of army and forest staff and trained, motivated mahout teams. Human elephant conflict appears to be a problem. In addition to wild elephants found within the national park, elephants from India numbering 20-30 visit villages and cause damages. The details of Conflict hotspots identified under TAL Programme (Terai Arc Landscape Programme), a joint effort of DNPWC and WWF Nepal, to be used efectivly and specific conflictt alert stations need to be developed, and camp elephants need to be stationed after ascertaining proper welfare measures for both the mahout and the elephant.

Given the need or the interest of tourism, elephants may be used for all possible activity including playing polo. This would further reduce the number of elephants for patrolling the forest, used as a kunki or elephant safari. Games like polo need more elephants together thereby increasing the intensity of training for that activity. This would effectively curtail the animals's

time for free-ranging and species specific behaviours, and would compromise even basic welfare needs.

Using elephants for patrolling also compromises the welfare of the animal. The same is applicable for activities such as conflict mitigation measures and wildlife safari. There are 17 elephants in Bardia. Two elephants are infected with tuberculosis and only nine elephants are available for all the three activities. All available elephants could be used for all the three activities depending on the situation. This may justify the need for keeping elephants in Bardia. Otherwise, there could be the possibility of adverse opinion that the elephants are consuming resources without being utilized. .

Elephants in Nepal are heavily exploited for tourism related activities like football, polo, saluting VIPs or being used for joy-rides and safaris. This exploitation of the animal is also due to poor knowledge about elephants and their welfare needs..

The mahouts appear to have a heavy workload since they are expected to be with the animal while they are grazing, cutting fodder and preparing food for the elephant and for themselves, cleaning and removal of food waste from the individual sites where the elephants are kept. Full time free ranging for the elephant without his mahout may reduce the mahout workload and allow free ranging, for the elephant. This system could be introduced, and has been observed elsewhere. This process helps the elephant to access the natural environment, gives leisure time for the mahouts and allows the animals to indulge and exhibit natural behaviours. Investment on shelters and controls could be brought down. Free ranging and non cooked food at the camps could be a good combination. If food is not given at the camp, elephant may not show any interest to come to the camp.

17 elephants have 41 handlers in the Bardia National Park. If elephants are allowed to free-range, they may collectively need only 20 handlers. For 4 elephants only 2 mahouts are needed. If all the mahouts work together, then the elephants get habituated to all the mahouts and changes of mahouts can easily be adjusted. . Free ranging and non cooked food improves health condition and is a preferable combination than cooked foods. The more natural the environment is, the more welfare is simulated.

## Introduction

Nepal has about 150 captive elephants under both government and private individuals, distributed in three locations-Shukla Phanta Wildlife Reserve, Chitwan National Park and Bardia National Park. Bardia National Park, encompassing landscape between the Himalayan foothills and the Indo-Gangetic alluvial plains is situated in the western Terai region of Nepal, with the Karnali and Geruwa rivers forming its borders on the western side, cultivation and settlements on other sides. The park covers 968$m^2$, home to a number of diverse and unique species of wildlife e.g. the tiger (*Panthera tigris*), Gangetic dolphin (*Platanista gangetica*), Gharial (*Gavialis gangeticus*), mugger crocodile (*Crocodylus palustris*), Greater one-horned Rhinoceros (*Rhinoceros unicornis*), Bengal Florican (*Houbaropsis bengalensis*), sarus crane (*Grus antigone*), to name a few.

In addition to the presence of wild elephants, the National Park is home to several captive elephants. Captive elephants in Nepal are owned by the Government as well as private organizations/ individuals, using the elephants for various human oriented activities. Activities related to the national park involve patrolling, prevention of human-elephant conflict, tourism, enumeration of a few wildlife species within the park, etc. For all these tasks, the national park uses the services of a number of captive elephants maintained by the department within the park.

## Objective

In captivity, elephants are subjected to varying degrees of human control; this report aims to:

- Assess the welfare status of captive elephants in Bardia National Park by considering the physical and biological features, in addition to the availability of veterinary care for the elephants

## Method

Captive elephants cannot be considered to be domesticated as they have not undergone selective breeding (Lair, 1997) and there is always influx of wild gene pool into a captive scenario with the introduction of wild caught/rescued elephants/ mating by captive females with wild males. Thus, their behavioural and ecological requirements are comparable with those of their wild counterparts. Providing a "natural" environment as a condition to maintain positive welfare of captive animals is advocated by several authors (Fraser, et al., 1997).

The ability to engage in contextual species-specific behaviours, as seen among wild elephants, will be curtailed to varying degrees and kind among captive elephants resulting in psychological/physical stress. Hence, deviation from the wild, for the observed parameters in captivity has been used to assess welfare status.

A range of features covering the physical, physiological, psychological and social aspects of captivity have been considered (Figures 1a, b, c and d) and compared with conditions observed in the wild. In addition, the availability of veterinary care has been included as one of the parameters for assessment. Each of the parameters has been compared with those observed in the wild and a rating has been assigned based on the degree of deviation from the wild— greater the deviation, lesser is the rating.

a

b

c

d

Figures 1a, b, c and d: Data collection in the field, direct observations of elephants (a and b) and interactions with mahouts and camp manager (c and d)

**The rating method**

A rating scale from zero (unsuitable conditions) to ten (suitable conditions) was used to assess the welfare status of captive elephants. Experts (both wild and captive elephant specialists, wildlife veterinary experts, managers from protected areas, those having both wild and captive elephants and other wildlife, members of welfare organisations and elephant handlers) were invited to assess the welfare based on welfare parameters and their significance through an exclusive workshop conducted on the subject (Varma, 2008; Varma, et al., 2008; Varma and Prasad, 2008). Experts rated a total of 114 welfare parameters covering major aspects of captivity

- The experts, based on their concept of the importance of a particular parameter to an elephant, developed rating for each parameter. For example mean expert rating of 8.0 (SE= 0.5, n=29; n= number of responses) for a parameter 'floor' and 9.0 (SE=0.4, n=31) was arrived for 'source of water' from the ratings suggested by each expert.

- A mean rating for each parameter, across all the participating experts, has been used as the Experts' Rating (E-R) which represents the importance attached to a parameter.
- Elephants were visited on the ground; data for each parameter was collected by direct observations or with the interviews of people associated the animal. Ratings were assigned to each parameter for each elephant and Mean Rating (M-R) was calculated for a given parameter by averaging across the observed elephants. Thus the Mean Rating (M-R) denotes welfare status of existing conditions on the ground for the particular parameter.
- For example, if an elephant is exposed only to natural flooring, the animal receives a M-R of 8 and for entirely unnatural flooring the value is 0; if an animal is exposed to both natural and unnatural flooring, the value is 4 (as 8+0/2= 8/2= 4). If an elephant is exposed to a natural water source, such as a river, it receives a value of 9; if the source of water is large lakes or reservoirs, it gets 4.5. A value of 3.5 is assigned for small water bodies like tanks and ponds. Tap water (running) gets 2.5 and if only buckets, pots, and tankers are in use, then the allocated value is 0.5.
- In this investigation, variables which represent a common feature of the captive condition have been grouped to form a parameter. For example, the variables shelter type, shelter size, floor type in the shelter; all represent different aspects of the physical space provided to the elephant. Hence, they are grouped together to form the parameter "Shelter" and each constituent variable is a sub-parameter. In this investigation, the E-R for a parameter (say, shelter) represents the mean of E-Rs across all related sub-parameters. M-R is also based on similar lines.
- E-R and M-R for each of the regimes represent the average across related parameters observed for the regime. For instance, E-R / M-R for a parameter "shelter" represents the average of related parameters (termed sub-parameters) such as type, flooring, size, and shade availability.
- Results have been presented comparing E-R and M-R as a means of comparing the extent of deviation present in the parameters observed. The difference between E-R and M-R (expressed as percentage) indicates deviations from the prescribed norm.
- N represents number of individuals; N* represents number of sub-parameters.

**Results**

**Population status**

The National park was home to seventeen elephants, of which 11 were adult females (age ranging from 35 – 55years) and 6 were juvenile/ sub-adult males (ranging in age from 2.5 – 7.5years). Each elephant was handled by 1- 3 handlers called *Phanit*, *Pachuwa* and *Mahut*. Most elephants (N=13) were managed using two handlers. The camp (*hattisar*) had a total of thirty-seven people— four officers and thirty-three handlers— to manage the elephants and the camp.

**Source**

Shifting of elephants, as a form of management, from one region to another can be stressful (Millspaugh et al., 2007; Pinter-Wollman et al., 2009). This situation of change in locations and altered daily schedules will be experienced by elephants which are sold across owners.

- All the adult female elephants had been bought (some from the neighbouring region of Sonepur, Bihar)
- The juveniles and sub-adults were born in captivity to the females

M-R was 3.1 (SE= 0.6, N= 17) showing a deviation of 48.5% from E-R.

**Shelter**

Wild elephants traverse vast areas across varied landscape as part of their home range (several hundred to thousand square kilometres— Sukumar, 2006), subject to food and water availability.

- The elephants were tied in long, open sheds with tin roof: the roof was placed in different directions, one of the two roofs had a south-north orientation, and the other had an east-west orientation a south westerly manner, to catch the full rays of both the rising and setting sun
- Roof in some places had been damaged due to thunderstorm about 6 months back and not yet repaired
- Their shed had sloping mud floors facilitating drainage.
- They were hobbled on both front feet for all hours for which they remained in camp and tethered to one spot (Figures 2a, b, c and d).

a b c d

Figures 2a, b, c and d: Status of shelter provided to captive elephants in Bardia National park

Shelter is cleaned regularly, and dung piles that accumulated around the elephant and shelter are regularly burnt (Figures 3a and b).

a b

Figures 3a and b: Hygiene around the shelter; regular cleaning of food waste and dung piles (a) and periodical burning of dung piles disposed off

The shelter may be an important factor during the winter when the temperature drops severely. Bardia's winter appear to be severe. When captive elephants are brought back to the camp from forest and chained in open shelter or shelter has only the roof and elephants may not be able to tolerate the cold hence a proper shelter is needed. This calls for a close shelter but during the summer months it has to be kept in open tied in different places under the tree. It was reported that the temperature can drop to about freezing point. The original reason why the roofs were built was that during winter rains, the rainwater is cold, and elephants standing in the rain were shivering; for this reason, a proposal was made to the roofs to be built, and the money was acquired from some foreign NGO's. It seems that during planning, it was not anticipated that the tin roofs would get so hot during summer.

M-R was 4.2 (SE= 0.0, N*= 4) indicating a deviation of 48% from E-R. Figures 4a and 4b give comparative ratings and percent deviation, respectively, for each of the sub-parameters.

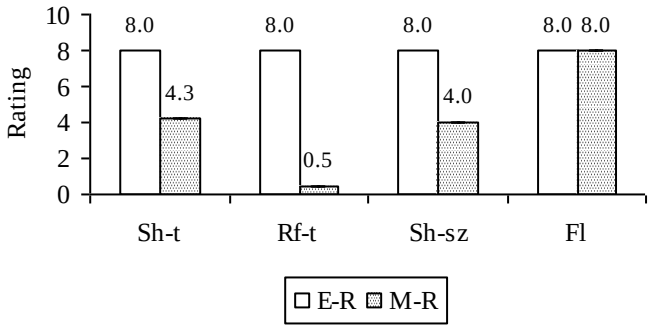
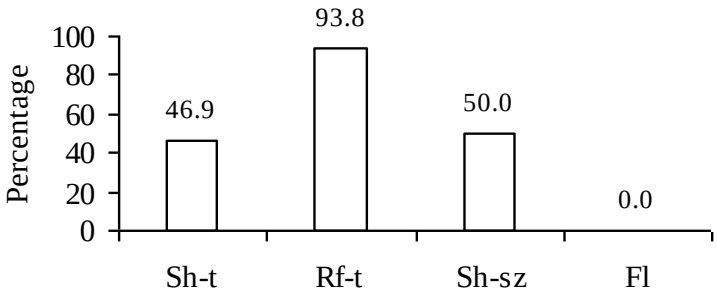



Figure 4a: Comparison of E-R and M-R for shelter sub-parameters



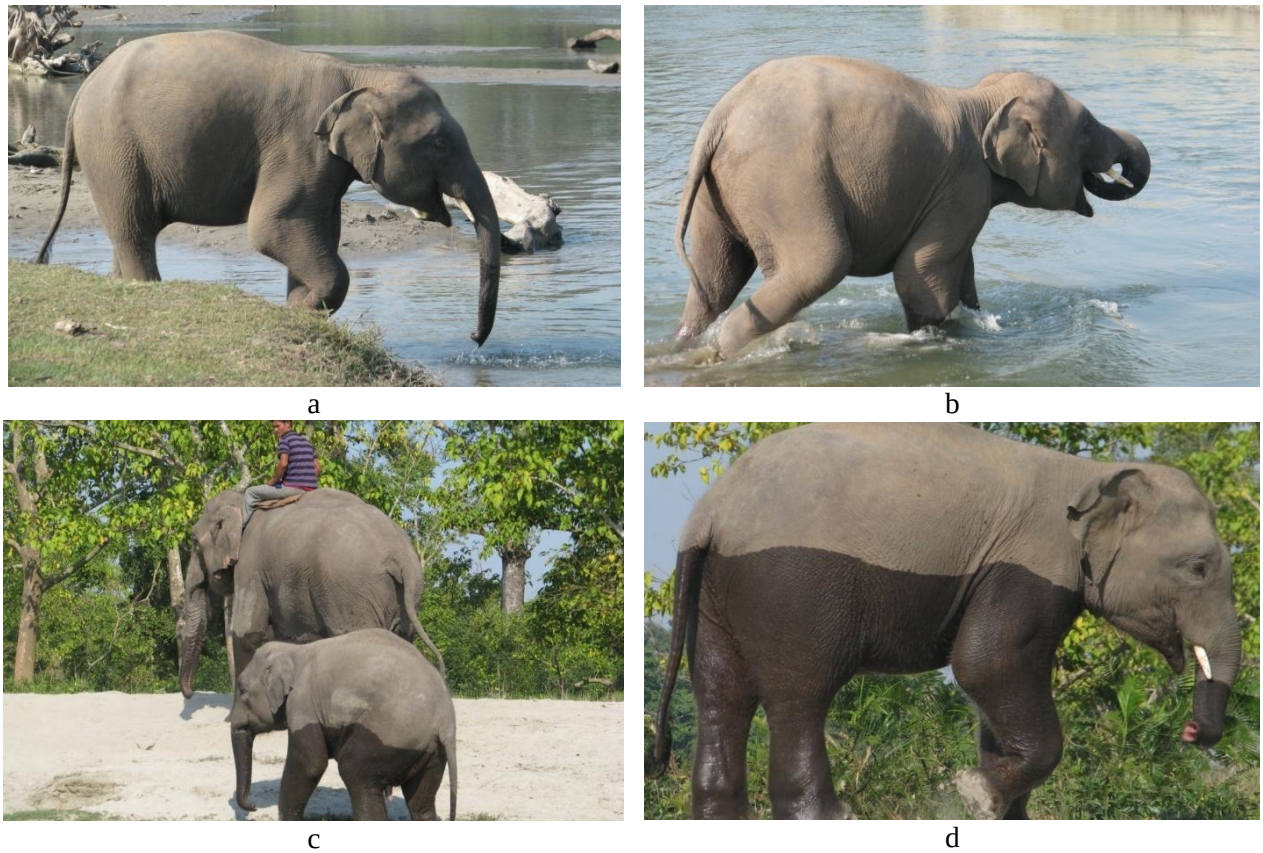

Sh-t: Shelter type Rf-t: Roof type Sh-sz: Shelter size Fl: Floor

Figure 4b: Percent deviation from E-R for shelter sub-parameters

**Water**

Water appears to have a thermo-regulatory role for elephants (Weissenbock, 2006), through the act of bathing/ spraying water on itself. Elephants are also known to include a water-source in their home-ranges.

- All the elephants were bathed once a day in a nearby river.
- While crossing the river to go for free ranging, elephants are observed to be drinking water, they are given bath or get dipped into the water (Figures 5a, b, c and d).



a b

c d

Figures 5a, b, c and d: Status of water provided to captive elephants in Bardia NP; elephant drinking water and getting partial dip in the water as they are released for free ranging (a, b, and d)

M-R was 7.0 (SE= 0.0, N= 17) showing no deviation for this single sub-parameter.

**Sleep area**
Poor sleeping conditions such as absence of sufficient space/ improper substrates/ restricted movement can have negative impact on the elephants' physical health.

- All the elephants were hobbled by their fore-feet and chained to a pole within the shed (Figures 6a and b).

a b

Figures 6a and b: Shelter acting as sleep area, note elephants are chained to a pole during night hours

M-R was 0.0 (SE= 0.0, N= 17) indicating 100% deviation from E-R for this single sub-parameter.

**Opportunity to walk**
Walking forms an important activity for elephants as absence of the same has been associated with foot problems (Olson, et al., 1994).

- The elephants were given opportunity to walk either through work related activities or when allowed to graze/browse in the forest

M-R was 9.0 (SE= 0.0, N= 17) implying no deviation from E-R for this single sub-parameter.

**Social interaction**
Female elephants live in groups of related individuals lasting across generations while males leave their natal herds gradually when they are 10-15years old on reaching puberty (Vidya and Sukumar, 2005). Learning occurs among group members in different contexts— a feature which could be absent in captivity due to restricted opportunity to interact.

- None of the elephants was allowed tactile interaction with the others, except for a juvenile male and his mother

- The elephants were all chained in rows when in the camp; they could see/hear/smell each other (Figures 7a, b, c, and d).

a

b

c

d

Figures 7a, b, c and d:Scope for interactions among captive elephants in Bardia NP, mother calf interaction at shelter (a and b), while moving towards forest for free ranging (c) interaction among calves while free ranging (d)

M-R was 0.0 (SE= 0.0, N= 16) showing 100% deviation from E-R for this single sub-parameter.

**Chaining**

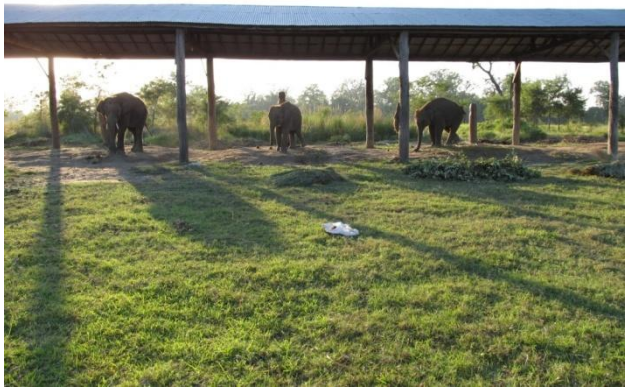
Restriction on movement in captivity is imposed by the use of chains, either by the use of tethering to one place or by hobbling the animals' legs.

- The elephants were hobbled by their fore-feet
- All the elephants were tied to separate poles within a shed so that the elephants stood/ slept in rows
- Opportunity to graze/ browse was allowed

a

b

c



d

Figures 8a, b, c and d: Types of chains used for captive elephants in Bardia NP; elephants are hobbled and tied with a long chain (a and b), tied to separate poles within the shelter (c and d)

M-R was 2.0 (SE= 0.0, N*= 4) indicating a deviation of 75% from E-R. Figures 9a and 9b give comparative ratings and percent deviation, respectively, for each of the sub-parameters.

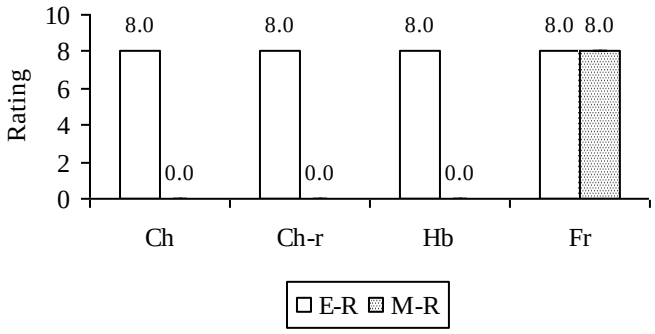
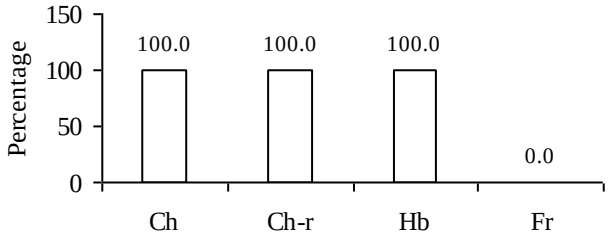



Figure 9a: Comparison of E-R and M-R for chaining sub-parameters




Ch: Chaining status Ch-r: Chaining region Hb: Use of hobbles
Fr: Opportunity to free-range

Figure 9b: Percent deviation from E-R for chaining sub-parameters

**Work**

In addition to chaining, the work performed by captive elephants determines the opportunities provided to express species typical behaviours.

- The elephants were used for patrolling, as *koonkies*, for tourism (to provide joy-rides to tourists) or to carry out research work on wildlife species in the form of transporting personnel
- To carry tourists, a wooden howdah was used placed on a *gaddi/gaddela* on the elephant's back and secured by ropes running down the animal's chest. Each trip included the handler and 3-4 people

Elephants are used for forest patrolling (Figures 10a and b) and are used by the Department to monitor rhinos. Rhinos in Bardia are relocated from other regions. Three elephants are regularly used for three days in a week to protect a female rhino and her calf. Patrolling a forest is important, since annually, 10-20 animals are killed like tigers, deer and rhinos. Local people motivated by outsiders, have been known to poach rhinos for Rs. 10,000-15,000/-.. Bardia is also known to support high density of tigers in the world.

Elephant safari is very popular and Rs 250 Nepali Rupees-NPR- (1 USD = 81.9 NPR) is charged per person for a safari. Elephants spend 2-2.5 hours in the forest for safari use with a wooden howdah (Figures 10c, d and e). An adult female was observed with her unweaned calf following her while she was used for safari (Figure 10f).

a

b

c

d

e

f

Figures 10a, b, c, d, e and f: Work types given to captive elephants in Bardia NP, used for forest patrolling (a and b), elephant safari (c, d and e), note wooden howdah, calf following mother (f)

This kind of practice is very common. Some of the elephants are used for playing polo. This is justified with the assumption that there is no work for elephants and hence some revenue opportunity is realized by their use for tourism. M-R was 0.8 (SE= 0.6, N*= 4) indicating a deviation of 90% from E-R. Figures 11a and 11b give comparative ratings and percent deviation, respectively, for each of the sub-parameters.

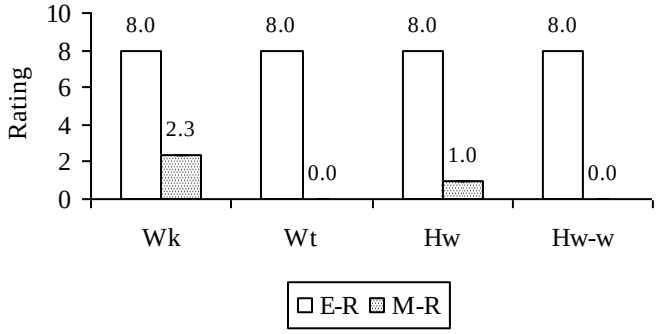
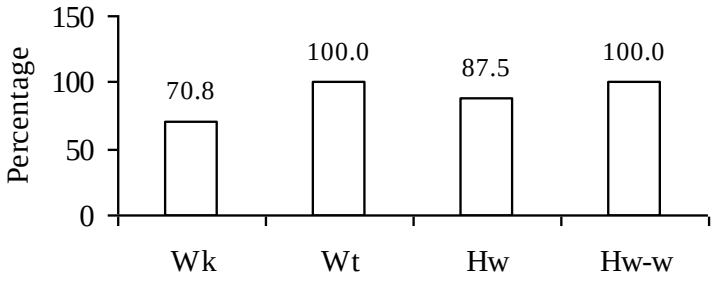



Figure 11a: Comparison of E-R and M-R for work sub-parameters




Wk: Work type Wt: Weight carried per trip Hw: Howdah type
Hw-w: Howdah weight

Figure 11b: Percent deviation from E-R for work sub-parameters

**Food provisioning**

McKay (1973) reported the consumption of several plant species across genera by wild elephants in Sri Lanka. Not only are elephants known to feed on wide variety of plants, they are also known for their ability to manipulate plant parts to enable consumption (Kurt and Garai, 2007). In captivity, it is essential that free-ranging opportunity to graze/ browse be provided to enable expression of species-specific behaviours.

- All elephants were allowed limited duration of grazing/browsing opportunity: grazing from 5 - 7.30a.m. and then from 9.30 to 4.00p.m (Figures 12a and b).
- Fodder was cut in the evenings and brought to camp: consisting of leaves of *Ficus* and bundles of grass (Figures 12c and d); Each elephant was also given paddy (unmilled grains of *Oryza sativa*) and some salt and molasses rolled in grass (called *kucchi*) in the morning and evening (Figures 12e and f), depending on age of the elephant

In the morning all the mahouts work together prepare food for the animal. Grain and molasses and salt are mixed and wrapped with grass (locally called *kucchi)* and put in container or plastic bag and carried to the elephant. When grass is given elephant take it to the mouth unties the knot and eats. In addition to this, elephants are also given cut fodder which consists of leaves and grasses, which are generally placed in front of the animal.

a

b

c

d

e

f

Figures 12a, b, c, d, e and f: Food types provided to captive elephants in Bardia NP, free ranging opportunity (a and b), cut fodders-leaves (c) and grass (d), paddy and some salt and molasses rolled in grass (e and f)

M-R was 4.5 (SE= 2.8, N*= 3) indicating a deviation of 50% from E-R. Figures 13a and 13b give comparative ratings and percent deviation, respectively, for each of the sub-parameters.

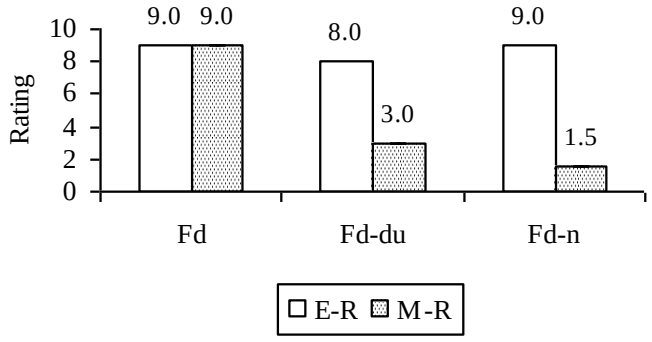
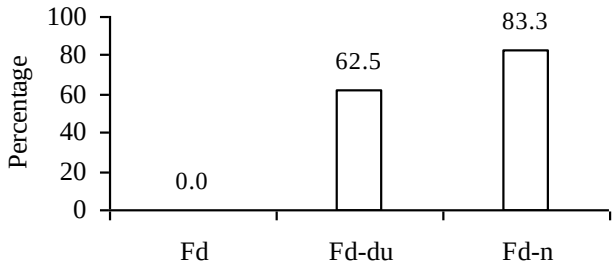



Figure 13a: Comparison of E-R and M-R for food sub-parameters




Fd: Food provisioning type Fd-du: Foraging duration
Fd-n: Number of food items during stall feed

Figure 13b: Percent deviation from E-R for food sub-parameters

**Free ranging**

Elephants are allowed for free ranging from the Hattisar. They cross the river move into the forest for free ranging. According to one mahout elephant go for free ranging in the morning 5.30 and come back at 9.30 and again at 9.30 till 3.30 p.m. Mahouts sit on top, using an umbrella (Figures 14a and b) they are also known to go to sleep while elephants are grazing. Elephants appeared to be trained to keep the mahout without dropping them down while they are sleeping on the top of the elephant. The elephants appear to have lot of tolerance or they are able to handle yet achieve their interest of feeding.

Elephant come back to the camp at 4 o clock they are given food tied with 1-2 meter chain individually with the individual post on a mud floor with a wooden long post about 20 feet supporting the tin roof and are tied till next day morning. When elephant are free ranging, the front legs are tied closely together (in other words, hobbled), which may make natural walking impossible while chained and which also may make the standing position a bit different from the natural standing position.

a b

Figures 14a and b: Elephants free ranging in the forest, note mahouts sit on top using umbrella (a and b)

**Stereotypic behaviour**
While in the shelter elephants show stereotypic behaviour the extent of the same was high for one adult female.

**Veterinary care**
In captivity, elephants are prone to a number of diseases/ disorders/ injuries as they exposed to situations which they would not normally encounter in the wild. Hence, availability of veterinary care has been rated.

- A veterinary doctor was available, but visits to the camp were rare
- The elephants were treated by livestock inspectors when needed (Figures 15a and b)
- Overgrown nails and nail cracks were observed among five elephants
- Two adult females are infected with tuberculosis and have gone through medication.

a b

Figures 15a and b: Livestock inspectors associated to the camp, who are also trained in treating elephants

M-R was 5.7 (SE= 1.5, N*= 5) implying a deviation of 29% from E-R. Figures 16a and 16b give comparative ratings and percent deviation, respectively, for each of the sub-parameters.

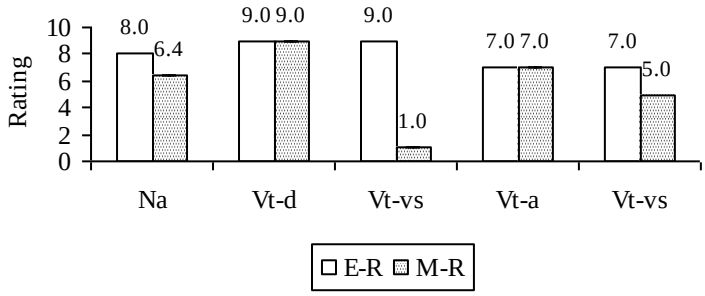
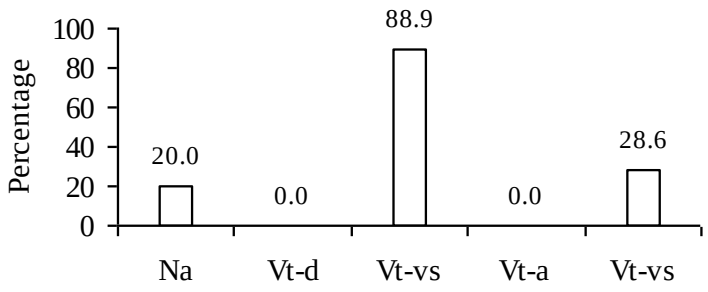



Figure 16a: Comparison of E-R and M-R for veterinary care sub-parameters




Na: Nature of disease/ injury Vt-d: Veterinary doctor availability
Vt-vs: Frequency of visits by veterinary doctor
Vt-a: Veterinary assistant availability Vt-vs: Frequency of visits by veterinary assistant

Figure 16b: Percent deviation from E-R for veterinary care sub-parameters

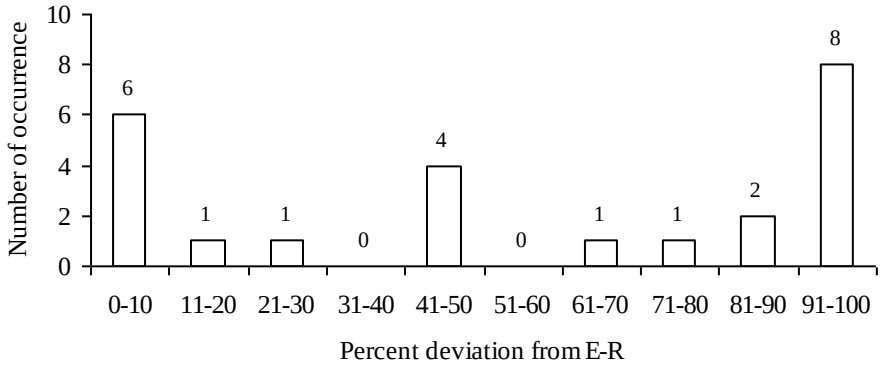



Figure 17: Distribution of percent deviation from E-R across all observed parameters

**Handlers**

Mean age of *Phanit* was 38y (ranging from 24 to 45y), that of *Pachuwa* was 29y (ranging from 24 to 34y) and *mahut* was 29y (ranging from 19 to 42y). *Phanit* : Official driver of the elephant and senior-most in terms of age and experience; monthly salary was Rs.9,900/- *Pachuwa*: takes elephants for grazing, chopping fodder, bathing; monthly salary was Rs.7,500/- *Mahut*: cleaning camp, cleaning elephant gear, making *kuchi*s as food for elephants; monthly salary was Rs. 7,000/-.

In actuality, all the roles are interchangeable (Figures18a, b, c, d, e and f). Only those handlers employed permanently by the department were covered by a pension scheme, while daily wage workers did not have this cover. None of the handlers was insured. No health check-ups were conducted.

a

b

c

d

e

f

Figures 18a, b, c, d, e and f: Various role played by elephant handlers in Bardia NP, cleaning the camp (a), taking animal for grazing (b), preparing or making kucchi (c and d), arranging elephant gear (e and f)

The camp has three mahouts for each elephant (most of them for Tharu community), one manager from the forest department and one veterinary assistant. The government policy indeed is to have three mahouts, but due to financial constrains and other factors, most elephants have

two, and the two youngest ones (2, 5 years and 3, 5 years) only have one. The manager visits the camp regularly and monitors the mahouts. Mahouts' quarters are located in the Hattisar. Two types of houses were noticed; bachelor and married quarters. There is a common kitchen, where cooking and eating takes place (Figures 19a, b, c, d, e and f).

a

b

c

d

e

f

Figures 18a, b, c, d, e and f: Examples reflecting the socio-economic status of elephant handlers in Bardia NP, house types (a, b and c), common kitchen (d and e), dining table outside the kitchen (f)

**Overall welfare status of elephants**

Overall M-R, across all observed parameters, was 3.3 = 25) showing a deviation of 57% from E-R. Figure 11 shows the distribution of deviation (from E-R) for all the parameters. 71% (N*= 15) of the parameters showed deviations of 50% or more from E-R. This implies more than half of the observed parameters deviated from acceptable norms prescribed by experts. The number of observed parameters represents 28% of the parameters rated by experts, comprising major features of captivity, viz., shelter, water, food, social interaction and use of restraints.

**Discussion**

Elephants in captivity experience living conditions which may/may not differ from those observed in the wild; the captive situation is decided by people with varied objectives and interests. It is this situation that has been assessed in this report: how much deviation from natural conditions is used to rate the actual situation existing for the elephant and the greater the deviation, the poorer the welfare status.

Features in this camp unsuitable for captive elephants:

- One feature with universal impact on all aspects of an elephant's life in captivity is that of chaining— when an elephant is chained, irrespective of occurrence of the most suitable physical or social or reproductive features, opportunity to express species-typical behaviours is restricted leading to poor welfare status of the animal.
- The elephants were hobbled by their forefeet and tethered to a place by a chain, effectively ensuring limited movement. Hence, the availability and use of suitable physical landscape was limited to only those periods when the elephants were allowed to graze/browse
- Wild elephants have been observed to be on the move for most parts of a day (Poole and Granli, 2009), traversing varied landscape as they performed species-typical behaviour. Restriction on movement or inadequate locomotion can lead to foot problems (Olson, et al., 1994).
- Chaining imposes limitations on expression of context specific natural behaviours of elephants: in the event of an aggressive interaction, an elephant will not be able to move away. Gruber et al., (2000) reported increased frequency of stereotypy in chained elephants as opposed to those that were penned. In this camp, stereotypy was observed for an adult female. Kurt and Garai (2001) reported the occurrence of stereotypes in orphaned neonates, which were tethered, in a captive center
- Social interaction was not allowed within the camp for the elephants. Interaction is an integral part of female elephant society (Barber, 2009) and restrictions/ absence of opportunity to express normal contextual social behaviours could be deleterious to elephant health.

A striking aspect of the elephants in the *hattisar* was the time spent by the handlers with their elephants: except at night and post-work, hands-on handler-elephant association was maintained. This would imply interaction between handler and elephant and control of elephant behaviour by handler, with restrictions likely to be imposed on species-typical behaviours.

Efforts initiated by NGOs.

- As chaining forms a central part of management of elephants in the camp two NGOs, WWF and WEPA, have attempted to provide better alternatives to prevent abrasion induced injuries on the elephant's skin. Chains placed in plastic pipes (see photo) are being tried to soften the impact of continuous chaining.
- WEPA is attempting to replace the practice of hobbling the front feet with a practice of chaining one leg only, to allow for natural body posture and natural movements

We also wish to include that observations of 25 parameters, however, represent only 28% of all the parameters considered by experts. Data collection can be influenced by lack of cooperation by concerned personnel or insufficient efforts by the researcher/s to gather relevant data or poor recording of available data. Theoretically, the number of parameters that can be observed and then rated can be more than those considered by experts. If, however, these parameters are less than the ones considered by experts, the overall rating may not reflect the ground situation for the elephants. The overall rating may change with availability of more parameters for rating.

For instance, even when an elephant is taken to a suitable water source (river) for bathing/ drinking, unless the animal is given sufficient time it will not be able to do the actions it wants to perform. Hence, duration for bathing or number of times the elephant consumes water becomes an important factor for rating. Rating for water related parameters was restricted to only one sub-parameter.

The parameter "Social interaction" was rated only for the period when the elephants were in the camp, when, interaction among elephants was not allowed. This behavior was possible only when the elephants were left to range-free after work or for foraging. This was ineffective as the elephants were always accompanied by their handlers. Presence of handler always reduces the the elephant's chance of interaction or expressing species-typical activity in the forest. The handler sat on the elephant as it walked in the forest, thus, reducing the elephant's choice in deciding what-to-do. Interaction was restricted as behavior of the elephants was controlled by the handlers. Social interaction was possible only when the elephants chanced upon an opportunity to do so— while walking together to and fro from the camp. Since interaction was fragmented, no effort was made to rate this parameter during the period when the elephants were in the forest

# Section 2:
# Training Captive Elephants in Bardia National Park, Nepal

**Background**

In addition to the presence of wild elephants, the National Park is home to several captive elephants. Captive elephants in Nepal are owned by the Government as well as private organizations/ individuals, using the elephants for various human oriented activities. When elephants are maintained under human supervision and control, performance of behaviours by the animal in accordance with human needs is expected. A completely wild elephant will not be amenable to any form of control by people. This is where training comes in: it is a process by which captive elephants are made to perform human-desired tasks; it involves repetition of a desired task and its association with a verbal/auditory command/ tactile cue and could be achieved through punishment/ deprivation/reward.

According to the experts from Working Elephant Programme of Asia (WEPA) , there is also a fourth method, pressure-release, which WEPA--- also uses, in addition to rewards, but which was unknown in the traditional training system. In pressure-release, first one causes a very mildly irritating feeling, such as lightly tickling the elephant with fingertips, slowly increasing the intensity, and as soon as the elephant moves to the direction the trainer want to, the trainer remove the tickling finger. The crucial thing is starting very light and getting trainer timing exactly right. This is a very effective way of replacing practically all of the parts of training that previously were caused on inflicting pain to make the elephant move. At the same time, it helps the trainer avoid the problem that if he/she uses food rewards only, the animal will not work without food rewards. If one start switches a combination of pressure-release and food rewards, so that the food rewards increase the animal's motivation to learn, then the trainer can later phase out the food rewards and continue with pressure-release only. With enough repetition, the animal will become very obedient even though trainer not using food rewards and also not using pain.

The issue of training has the concept of welfare and well-being integrated into it: the use of dominance tactics and physical punishment to achieve performance of necessary behaviours among elephants is well-known. This method of instilling fear/ a sense of dominance over the elephants (Clubb and Mason, 2002) can have negative consequences in the form of increased aggression among the elephants either towards other animals or towards the handler/s, increased occurrence of stress (Kane, et al., 2009). Positive reinforcement through rewards or caresses will greatly reduce this negative aspect of training (*op.cit*.). The concept of welfare is also inextricably linked with conditions of captivity provided for the elephants. Irrespective of the training methods used, when welfare itself is compromised through poor living conditions (biological and ecological), the negative consequences of such a situation will remain even when humane training methods are employed.

Thus, providing for better welfare through improved living conditions will ensure that the well-being of elephants is not compromised at the basic level itself. Welfare of captive elephants (from the point of psychological, social, reproductive or health aspects) can be improved by providing natural conditions: such conditions already exist in range-states like Nepal. The concept of training involves communication between the trainer and recipient: the elephant needs to understand/associate the needs of his/her trainer with suitable actions which maybe completely at variance with elephant's own behavioural expression. This communication can be through a combination of verbal commands, by touch or through food rewards. When verbal commands are used, the association of a command with an action will have three parts: start of the action,

continuation and stopping the action. Each of these needs to be learnt by the elephant: employing methods that do not rely on physical punishment, instead, using of tidbits, gestures such as gentle touches, reinforcing the command wherever natural landscape features provide an opportunity, will be less stressful for the elephant/s.

Expectation of rewards will develop a "trust" between the elephant and trainer, the sense of fear of being beaten by the trainer will not occur. According to WEPA experts, an even more important source of trust is frequent friendly tactile contact between elephant and handler, such as gentle caresses on forehead and trunk. This is not a part of Nepali training culture, but if it is done, based on a good understanding of elephants' social signals and natural tactile communication, it facilitates trust effectively. Once this trust is formed, it will be easier for both elephant and trainer to communicate better with each other. There are some disadvantages, if method uses reward for every activity as the elephant will expect reward (food) for every activity/ command; This has been frequenrly observed in some of the zoos, for instance, an elephant in Canadian zoo is rewarded with food for such activities as play, making the elephant to expect food for each activity performed, which could lead to obesity (Varma, 2009). This may also indicate that the trainer has misunderstood how food rewards should be used. However, with pressure-release, it is easy to limit the use of food rewards to the early stages of training, and later to phase the food rewards out and continue with pressure-release only.

Another relatively less stressful method is learning from other group members— calves raise their legs when they see their mothers doing the same in response to a command (Varma, pers.obs.). Training of calves, thus, involves two aspects: one is not to separate the calf from its mother/ preferred partner and secondly, allowing the calf to observe performance of a task by its preferred partner. According to WEPA experts, traditionally in Nepal, calves were separated from the mother, but it is not necessary to achieve learning. When WEPA train elephants under 3 years old, it is always done with the mother standing by the side.

If training is a balancing act, if or primarily focuses towards controlling the animal, it should follow humane approach. Here the humane approach could be used as a combination of reward and control. Introduction of an element of fear will induce the elephant to perform but will be unproductive in the long term. According to WEPA experts, there are two important reasons why training of elephants should not involve any fear. Firstly, it is bad for welfare, and secondly, animals trained with fear become less reliable in difficult work, such as anti-poaching, as they are more likely to panic in a dangerous situation. When an elephant has been trained in a consistent, painless and fear-less way, it is easier for the elephant to remain calm and trust the mahout even in frightening situations.

The trainer has to combine both reward and a degree of control while training his/her elephant. In addition, the trainer has to be able to remove fear of certain activities from the elephant's mind: for instance, elephants may be reluctant to walk on bridges/ climb into vehicles (lorries/trucks) or walk back without turning around, unknown people climbing onto an elephant's back (for tourism rides) maybe undesirable to the elephant. Habituating animal to given condition is important component of training, for example if someone has to climb on elephant, the animal should feel comfort and not get into stress developing a fear of someone is harming it. This could be achieved by many ways; keep interacting with animal or giving body contact (massaging) developing confident and slowly trying to climb on the animal. According to

WEPA, the most important aspect of successful habituation is to do it slowly enough. For example, when habituating an elephant to traffic, it should first be shown a moving car from a long distance in a comfortable situation, and then another day seeing the same a bit closer, again in a comfortable situation, and so on. The important thing is to monitor the body language of the elephant to make sure you are not proceeding to fast. This is what makes proper habituation different from flooding, which is a technique commonly used in many Asian countries: the animal is suddenly introduced to the new situation and physically restrained until it stops reacting visibly. Superficially, it may seem that these elephants also are used to traffic, but it is likely they keep inwardly experiencing some degree of stress in these situations later on too, whereas proper slow habituation makes animals genuinely relaxed in these situations. This way the animal will get confident and will not throw the person down.

Approaches such as staring training the animal at early, continuous interaction with it, giving pressures and rewarding the animal when given training done properly, may help in achieving the training process effectively. It was observed in southern India, that young animals may be difficult to train. However, WEPA's experience is that, the younger the elephant, the easier it is to train. If one starts with doing some basic things now and then with a half-year-old, the training process becomes very easy and smooth, but one can also start at a later age. The adult elephant which are captured are frightened by the method of capture, known to maintain the fear hence easy to train them. An important feature of training is the involvement of handlers in the program. Unless, handlers understand the need for a different approach to training, it will not be successfully implemented.

**Captive conditions and the need for training**

Maintaining elephants in captivity (consequently, their ability to interact with people) is closely integrated with the objectives for which the elephants are maintained. Captive elephants can be maintained without undue human interference in the form of providing unrestricted opportunity to free-range in forest conditions. Such elephants may not need to be trained as their interaction with people would be minimal. This practice may prove to be counterproductive if the objective is not to release them into the wild as these elephants may not return to their camps or they could be a source of conflict with local communities in surrounding areas.

Allowing for free ranging opportunity in forests can be implemented, without losing the elephants, by inducing the elephants to return to the camp: for instance, in Arunachal Pradesh, free-ranging elephants return to their camps as they are given plantain leaves with greens as an incentive. Thus, through a process of rewards, the "almost-feral" elephants are provided supplementary food, bathing opportunity and veterinary care.

The following scenario can be envisaged vis-à-vis training:

1. captive elephants provided complete natural conditions and released into the wild; no training required
2. captive elephants allowed near-natural conditions of free-ranging opportunity in forest, return to forest camps, minimal human interference, basic training needed
3. captive elephants allowed a degree of natural conditions (physical and biological) by their use in activities such as patrolling/ as *koonkies*; training essential

4. captive elephants kept in natural conditions (without access or with severely limited access to its use), use for un-natural activities such as providing tourist rides— make the elephant to withstand weight of a howdah and accessories, unknown people climbing onto the howdah, adopt suitable posture to enable fixing howdah, move only on command and only along designated routes with little or no variation— or use in games such as polo; intense training required

**Status of captive elephants and training programme in Bardia National Park**

Bardia NP maintains a total of seventeen elephants: two adults are being treated for tuberculosis and six are juvenile. Thus, only 9 elephants are available for any of the activities proposed by the camp authorities. The policy document of 2003 of the Nepal forest department provides for training and domestication of elephants, among other activities— in the elephant camps/ stables-*hattisars*- owned by the government. Established methods of training have been in use in the *hattisars* to bring elephants into the ambit of human influence.

Traditional training methods involve means that are severe not only in terms of a change in living conditions but also ways in which the elephant is made to learn. Dependent young, 3-4 years old, are separated from their mothers, severely restrained by tying the animals' forefeet and neck, deprived of sufficient food and water and exposed to unfamiliar sounds; the elephant is forced to respond to commands due to the pain inflicted by the *ankush* and by being unable to move freely due to adult elephants restraining its movements (Telkänranta, 2006). Such methods are causes of stress and can even be traumatic. Bradshaw (2007) states that captive elephants which have undergone stress/ trauma exhibit abnormal behaviours such as infanticide and stereotypy, along with other behavioural expressions.

In 2006, a project conducted by Working Elephant Programme of Asia (WEPA), and WWF Finland (World Society for the Protection of Animals (WSPA) co-funded the first period, 2006 to 2008) was initiated in Nepal to provide training for handlers (Figures 1a and b) to incorporate alternative, reward-based training programs for some of the elephants.

a


b

Figures 1a and b: Training programme conducted by Working Elephant Programme of Asia (WEPA), and WWF Finland, interactive session (a),WEPA interacting among themselves (b)

In 2009, this program of using humane training methods began in the Bardia *hattisar*, conducted by WEPA and Worldwide Fund for Nature (WWF) - Finland. The training program employed methods that were not stressful to the elephants (Telkänranta, 2006); it involved a gradual exposure to people, new equipments and commands. The elephant was not exposed to any drastic change in its daily routine. The "students" for this program were elephant calves (a year old). In Chitwan during 2006 and 2007, WEPA gave some training to six calves ranging from one to five years, as a way of demonstrating the training technique to local trainers, and many of these trainers started implementing what they saw and teaching the methods to their colleagues. In Bardia, where WEPA started the more systematic supervising of the five youngest elephants there, their ages ranged from one to three years. Elephant calves were trained using a combination of food-rewards, gentle caresses and vocal cues, without separating them from their mothers. Use of punishment was not resorted to as a way of controlling the elephant and importantly, the calves were not forced to perform a task. The calves were allowed opportunity to choose an activity.

**WEPA training components and procedures**

WEPA, for activities that create fear or uncertainty, uses pressure tactics rewards. According to them, the tactics (pressure-release, rewards, gradual habituation, and shaping) prevent fear and uncertainty, because if they are used the right way, painful forcing is not needed. For actions such as making animal to go backward such pressure tactics or reward is used. Here initially combination of pressure and commands are introduced (Figures 2a, b, c, d, e and f). Later if needed reward is given. According to WEPA, actually, rewards are mainly used at the initial stage, in combination with pressure-release and commands, to make the training a pleasant experience for the elephant, which increases its willingness to participate and results in faster learning. Later, once the elephant has learned the command word in question, food rewards are not given for every successful performance but only occasionally, gradually reducing the frequency of rewarding. For example, to make the animal move backward the trainer puts his/her hand on the elephant body/leg region and keep giving command or keep maintaining the pressure and leaving the pressure but continue the oral command. Here animal has chance to know when to start and when to stop the given action and there is coordination between pressure and command. Here, according to WEPA, the pressure is initially very light, and it is slowly increased until the elephant starts moving to the right direction.

a

b

Figures 2a and b: Training experts of WEPA teaching handlers about various stages and components of training

After the work is completed the pressure and some form of reward is given like patting or massaging the animal. This act as a reward and also the animal has to understand the assignment has been completed successfully and the trainer is pleased about it. This has been achieved by some form of massage say, "well done" or pat or give massage or reward. For every successful completion of assignment, the reward may be introduced and if failure, the animal has to understand what was not done by it. However, according to WEPA, what is needed is that the animal is not punished, and the same assignment is tried again. If it seems the elephant does not understand what was required, then the previous stages of training the elephant to understand that command are repeated. The massage or touching has a value of appreciating the work done and it also increases the interaction between mahout and elephant. It was observed that, the achievement of this process is directly linked to the smartness of the mahout. The other aspect related to the state of fear or uncertainty the animal had to go through. Good mahout and good elephant would be a good combination to start the training but the frequent changes of mahout create other combinations. The combination could be good mahout –bad elephant, bad mahout-good elephant, good elephant –good mahout, bad elephant-bad mahout. Here good elephant could be defined as an elephant that has no or only very little previous traumatic experiences or easy to work with.

c

d

e

f

Figures 2c, d, e and f: Elephant handlers repeating what has been suggested at training (c, d, e and f), note training expert presence while handlers participate in the session

The process in which training conducted by WEPA is that developing the basic contact between trainers and animal or establishing interaction between the mahout and the elephant. Here the important factor is to remove the fear associated with certain activities such as, mahout climbing on the animal, making the animal to go backward- Figures 3a, b, c, d, e and f- (or making animal to cross bridges or animal to get into vehicles). These goals should be achieved based on human training approaches. Here the training or breaking of the fear is the priority and that appeared to be achieved by creating comfort, habituating elephant and mahouts by positive reinforcement. Overall, the training needs to be initiated with creating comfortable environment. The comfort has to be established for both elephant and the person who train or handle elephants.

a b c d e f

Figures 3a, b, c, d, e and f: Training to remove the fear associated with certain activities, mahout climbing on the animal (a, b, c and d), making the animal to go forward or backward (e and f).

**Critical review of the training program**

- Longer duration of stay is needed by the experts as this would enable them to teach calves/handlers at a slower pace: the calves are not given any opportunity to take a break while performing a complex task such as walking within a T-shaped route/ going backwards and forwards
- Communication between handlers and experts is a hurdle; co-coordinators have to understand the importance and need for an alternative approach to training for the same to be communicated to the handlers
- Handlers seem to consider their elephants as a means to an end— the psychology of the animal is ignored, performing a task takes precedence; using a reward based method maybe considered time-consuming and results (actions by the elephants) are not quick
- Appreciation for the task done is not always shown by the handlers towards the elephants; even with the expert present, the handler does not reward the elephant (food/ tactile); All the handlers rely on use of a stick at least
- When a rope is being tied around the elephant's neck, handler is busy concentrating on the task of tying, without any interaction with the elephant, even as elephant is raising trunk towards one of the experts; implies elephant is receptive to interaction, handler is not expressing any form of interaction other than tying the rope
- In initial orientations or trainings for mahouts, the process associated with the training appeared to be done when the mahout is with the animal and it is also expect the mahout to repeat the processes of training. This process makes the training become tough. The shy nature of mahout or play behaviour of young animal (if selected for training process) makes this training process difficult and mahout is not able to listen to the commands related to the training.
- While involving in the process of getting basic components of training, mahouts who primarily handle elephants, appeared to be get frightened of making mistakes and that lead to the response or outcome related to the training being lost or also reaching a stage of mahouts being polite. The calves seem to be separated from their mothers; would it help if mothers performed along with the calves?
- Is there any limit to the tasks that can be performed by the elephant? Shouldn't the negative aspects of non-natural behaviours or intensively repeated performance of the same behavior be considered? In other words, is there any kind of work that is not considered suitable for elephants and hence, training for that work is not done?
- Experts' show of appreciation towards handler is a commendable step when handler rewards his elephant

**Suggestions**

- Training elephants is a long and continuous process; hence, both elephant and handler need to be habituated to this process. It is not possible for experts from outside the country to stay for the duration of time till local people have learned to use the new method of training
- Coordinators should be involved in hands-on training as they can act as source persons in Nepal for dissemination of knowledge to locals; hence, efforts should be made to train coordinators and evaluate them

- While it is not possible for non-resident experts to supervise hands-on, it would be ideal if their expertise were available for duration lasting a few months at least. This would help in ironing out any problems that are likely to crop up
- Coordinators need to know about the local situation: past history of elephants/ handlers in that camp, schedule of shifting elephants to other locations, work schedule of elephants/ handlers— this would help in planning a suitable training schedule for elephants/ handlers
- The relevance of welfare, management and administration to the training program needs to be understood by the coordinators as well as handlers
- Training of handlers need not be done directly in the presence of elephants— they can be familiarized with this method through dummies/ props. This is suggested because in the initial phase of training behvaiour of the elephant may not permit the handler to use the new skill at the appropriate time leading to confusion in the mind of the elephant
- Once the handler is familiar in the usage of the new skill, the handler can be allowed to practice the new skill with his elephant
- Existence of constraints such as non-availability of an elephant/ handler in the camp due to achange of location or work schedule, should not be used as an excuse for not practicing this new skill
- Critical review of this training process in the form of external observers, feedback from the trainers and local personnel is integral to the success of the program
- It is important to think about initiating a mahout training school, instead mahouts attending courses focused for a short duration and the training school is to be established in each forest camp.
- It is also suggested to local/national/international NGO's to come forward to adopt the camps in teaching many aspects. Subjects such as hygiene, education (including mahout children's education) women empowerment should be taught. The support should improve the quality of life and should not disturb the existing life style. For eg: The mahout family depends on river for washing clothes approach should not be to distribute washing machines. The distribution of washing machines will require a lot of resources, if there is a malfunction, the equipment cannot be repaired or there will not be any continuous support to maintain this. Instead of washing machines the support should come in the form of using clean water and maintaining hygiene.

The elephant conservation action plan for Nepal (2009-2018) mentions the maintenance of the practice of allowing captive females to mate with wild males as a way ensuring a viable captive population.

Such a policy would imply:

- Allowing elephants to free-range in forests, at least for a limited duration of time
- Continued use of elephants for human-oriented activities and hence, necessity for training the elephants

Such a combination would preclude maintenance of satisfactory welfare as the elephants would have to undergo the twin schedules of training as well as work. If welfare has to be maintained, a decision has to be made on the continued use of elephants for work in un-natural conditions. Maximum possible opportunity to express species-typical behaviours combined with minimal

training would ensure a positive and acceptable welfare status for the elephants. However, the successful integration of captive elephants into wild need to be defined specifically, according to WEPA experts, the existing practice, in which it frequently happens that a wild males come to an elephant camp during night when a female is in oestrus, and copulates with this female regardless of whether the female is willing or not. This has its welfare problems, but the government authorities appeared to assume, this as a successful method, and almost all of the juvenile elephants in government-owned Hattisars have been conceived this way.

**Discussion**

In captivity, it is rare or generally conspicuous by its absence, for elephants to be provided with the spectrum of opportunities as observed in the wild. Their welfare status is, thus, compromised. Opportunities to express appropriate species-specific behaviours are closely interwoven with the extent of interaction between people and elephants. The greater the association/handling between elephants and people, the fewer will be the opportunities available and consequently, welfare will be poorer. Added to this, is the dimension of training of captive elephants. The association of people and elephants entails a period of training for the elephants in order for communication to take place. A closely dependent association between people and captive elephants would entail a greater and more intense period training as it would involve learning and repeated performance of several commands/tasks. Thus, these two factors, viz., greater deviation from natural conditions and intensity (degree/kind) of training are linked.

Use of humane training methods may provide succour to the elephants in cases where captive conditions do not provide welfare conditions necessary for the elephants' well-being, but may temporary phenomena. For instance, an elephant maintained on concrete floor may be exposed to the most humane training method/s; the core issue is exposure to unsuitable floors leading to poor health and welfare. Physical conditions of forested areas and sufficient space can be found in forest based camps. When elephants in forest camps are provided opportunities to express their natural behavioural repertoire, their welfare status will improve and the need for training will be minimized. When the association between people and elephant/s is reduced, not just good welfare is attained, but also, the animal is exposed to lesser training periods. That is, the need for training is itself reduced and better overall welfare is attained by exposing the elephants to natural living conditions.

However, in captive situations advocating continued maintenance of elephants in captivity, the twin factors of financial constraints of running such a camp and the seeming absence of work for captive elephants in the camp may lead to implementation of random management plans, negatively influencing the elephants' welfare. Keeping elephant welfare as the foundation, management practices can be introduced. Captive elephants in forest areas have the advantage of a natural physical environment— to this, a work schedule that approximates their natural behaviour can be introduced— to enable maintenance of elephants without drastically reducing their welfare.

- Elephants and patrolling of forest areas: the advantage of using elephants for patrolling is that it takes into account not only exposure and opportunity to express certain natural behaviours for elephants, it also helps in protecting landscape and species diversity. Currently, elephants in the Bardia National park start their patrolling from one point and

return to the same location. It is important to know the status of the locations to be patrolled, locations to be covered and the number of elephants to be used.

- Use as *koonkies*: The occurrence of human-elephant conflict creates a negative conservation interest in that region. Conflict mitigation in the form of *koonkies* is being used in areas where crop raiding by wild elephants exists. The use of elephants not only helps in mitigating such situations, but also increases the confidence of the local people in the efforts by the department in protecting their assets. In order to use elephants in such activities, location of hot-spots of conflict has to be known, distance between hot-spots, period of elephant visits and extent of damage incurred in each of these areas has to be known.

  Shrestha (2007) mentions a crop loss of NRs.10,108/- per year per household in the Bardia region. It appears that the conflict months are from January to September, wherein crops such as rice (*Oryza sativa*), Wheat (*Triticum aestivum*), Maize (*Zea mays*), pulses and vegetables have been damaged. One person was killed last year. A solar powered electric fence covering 5kms (4-5 villages) is in use. Opinion about its effectiveness is divided. It appears that a small group of elephants visit neighboring villages from the Bardia side— 3-4 (upto 7) elephants have been reported to raid crops in November. During the month of September, 30 elephants from the Indian side appear to have damaged crops (Khata village, 4-5kms bordering India). These elephants were chased by elephants from *Hattisars*.
- Tourist rides: Elephant safari may also give scope for captive elephants to be part of the forest in a natural physical environment with access to free-ranging food, rivers/ streams. When these elephants are not used for safari, opportunity to range free in natural conditions will enhance their behavioral repertoire and reduce cost of maintenance. The negative impact of overuse of vegetation can be reduced to an extent by shifting their grazing/browsing areas to different locations.
- Another option for use of captive elephants in *hattisars* is elephant polo. While this may be a source of considerable income generation through tourism, it reduces welfare of the elephants. Activities such as polo can be a source of stress as the entire physically demanding and intense activity is under the control of humans. The elephant will be made to move in any direction and at different speeds within a short span of time at the hands of the trainer. Continuous exposure to such intense and rapidly changing physical activity can be damaging to the physical health of the elephant. The skeletal structure of the elephant is such that the weight is borne by the nearly vertical nature of the bones of limbs, making it impossible for the animals to leap/ jump or to trot/canter (Mikota, et al., 1994). Also, the training required for the elephants to be used in such activities may involve stress if punishment is restored to as a method. Thirdly, it gives a wrong impression to the general public on the natural behavioural repertoire or the natural history of elephants.

**Conclusion**

Training is one of the important components of welfare. Time taken even through human approach of training should not sacrifice the concept of welfare. If animal reaches the state of less exposure to human environment or control, more welfare could be achieved and only basic training through human approach could be planned. When animal is exposed to more human environment welfare is lost more and more training approaches are needed to control the animal.

Elephants in captivity will have to be considered for one of two options: whether to continue in captivity and make use for human-oriented work or to release them into the wild after subjecting to due processes of health checks. Both options cannot be exercised together. When elephants are considered for release into the wild— the policy document of the forest department recommends support for instances of mating between captive females and wild males— all efforts should be towards this objective. However, this may have problem , as mentioned elsewhere, this need to be defined specifically, the existing practice of wild males frequently visiting camp when a female is in oestrus, may have welfare problems. The elephants should be allowed opportunity to free-range in forests, unhindered by human control, maintained in socially cohesive groups and provided exposure to natural conditions to prepare them for a life in the wild. Such elephants may not need any kind of training. Interestingly, including WEPA, some experts feel, Nepal may not any policy document on integrating captive elephants into wild, as their interactions with several authorities do not reveal the existence of such policies. However, Nepal habitats may a good potential of supporting reasonable elephant population, and one way of achieving this to integration of captive elephants into wild fully. Most of elephants belong to forest camps are allowed for free ranging, if time spent on such activities are increased, elephants are expose to more forest based life, and this would reduce people spending time with them and the need for training such elephants.

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**Compassion Unlimited Plus Action (CUPA**) is a non profit public charitable trust registered in 1991 that works for the welfare of all animals. Since 1994, CUPA has worked in close collaboration with government departments and agencies on various projects. CUPA's mission is to protect animals from abuse and violence and do what may be required to alleviate their suffering at the hands of humans. CUPA does not differentiate between pet, stray or wild animals, since both often require assistance and relief from cruelty, neglect and harm. The organization's objective has been to design services and facilities which are employed fully in the realization of these goals.

**Asian Nature Conservation Foundation (ANCF)** is a non-profit public charitable trust set up to meet the need for an informed decision-making framework to stem the rapidly declining natural landscape and biological diversity of India and other countries of tropical Asia. The foundation undertakes activities independently and in co-ordination with Government agencies, research institutions, conservation NGOs and individuals from India and abroad, in all matters relating to conservation of natural resources and biodiversity, endangered flora and fauna, wildlife habitats and environment including forests and wetlands. It participates and disseminates the procured information, knowledge and inferences in professional, academic and public forums.

**World Society for Protection of Animals (WSPA)** With consultative status at the United Nations and the Council of Europe, WSPA is the world's largest alliance of animal welfare societies, forming a network with 910 member organizations in 153 countries. WSPA brings together people and organizations throughout the world to challenge global animal welfare issues. It has 13 offices and thousands of supporters worldwide.

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Bardia National Park in Nepal has 25 Captive Elephants, owned by the Forest Department (FD), Private individuals and National Trust for Nature Conservation (NTNC). The welfare status of elephants belonging FD from this park presented in this document is based on observations of 25 parameters covering all aspects of captivity. The document also reviews the process of training elephants in captivity; the opportunity of being observers for the WEPA training was the main motivation and source of knowledge

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