Captive Elephants in Bihar







An investigation into the Population Status, Management and Welfare Significance

Surendra Varma, NVK Ashraf and S. R. Sujata

Elephants in Captivity: CUPA/ANCF-Technical Report No. 14

Compassion Unlimited Plus Action

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Preface

As far as captive elephant welfare is concerned, the natural settings of the north-east and the farmlands of Bihar are connected. The elephants in the richly endowed natural landscape of North-east India are translocated to the unnatural settings of Bihar for economic reasons. In Bihar, two types of elephants are seen. One is those who have been keeping elephants as part of the tradition of displaying wealth. The second type, who may not have any tradition, but obtained elephants from others (including from their family or other traditional owners). The traditional owners, who have landholding up to 10 to 20 acres, have 2 to 3 elephants. Food for the elephant comes from the land, mahout and his families are looked after by the owner. Except for the occasional temple festival or marriage, elephants, do not have much work to do. Other expenses related to elephant keeping come from owner's agricultural income. The second type of owner keeps single elephants and the keeping is more oriented towards commercial interests. For both the owners, the knowledge of elephant welfare comes from their mahout or what they observe from those elephants kept in human-environment.

Both owners in Bihar display their elephants in Sonepur Mela as a sign of wealth or look for potential buyers. Along with these two types of owners, the other owners, particularly from U.P, Madhya Pradesh and Assam, who wish to sell elephants, bring elephants all the way to Sonepur, Bihar. From Bihar, elephants go to owners who are not wealthy but use elephants for commercially oriented interests. They keep elephants in an unnatural environment, make elephants do unnatural activities and there the welfare is relatively worse and elephants' suffering intensifies.

The document is developed to impart some knowledge on elephants and try to trace overall welfare status of elephants has two distinct sections: one describes the world's largest elephant fair—Sonepur— which has a history of displaying elephants in large numbers for ages. The second talks about the welfare status of elephants kept with owners. The welfare status of elephants is based on significance of welfare parameters involving the physical, social, reproductive and health aspects of the captive animals.

Sonepur mela has a clear religious and historical connection with elephants. The Mela is held at a place associated with the legend/ myth of Gajendra Moksha (Deliverance of elephant) which is related to the Harishchandra North temple at the confluence of Ganga and Gandak in Sonepur. History reveals that Chandragupta Maurya used to buy elephants and horses across the river Ganga.

The first section of this report focuses on the Mela, tracing the religious and historical significance of elephants, reasons for displaying them, their number, population demography, ownership types, changes in number, population demography, patterns of specific age, sex and class displayed in 2005 and 2010. The dedicated health service provided by the WTI team across the years (2001 to 2010) also provides scope for tracing numerical and structural changes in elephants displayed in the Mela. The investigation from the Mela also focuses on the daily routine, body and health condition of elephants displayed in the mela, elephant trade and the profile of the owners participating in this Mela.

If one tries to trace the number of elephants displayed across the years, one can see the decline in their numbers. Reliable sources suggest that about 600 elephants were displayed in the Mela in 1986. In 1992, the number of elephants displayed was 250 and in 1996 the number was only 61, showing a decline of 90%within 10 years. The details available with us from 2001- 2009 also indicate a short decline of elephants displayed.

The 10-15 days of display of elephants in Sonepur Mela reveals many things including the population status. There is, however, no information available on the status of elephants kept by individual owners in Bihar, when the animals are not kept at the Mela. Owners from 15 districts of Bihar and U.P display elephants and more than 90% fall within the districts of Bihar. However our experience suggests it is very difficult to trace this location on the ground. The actual distances of such locations of elephants being kept within the district are very far from each other. The elephant owners do not show much interest in providing information. Although we were in a position to trace the status of 100 elephants in the Mela, we were able to study the welfare status of only 10 elephants from individual owners outside the Mela which is covered in the second section of this report.

Elephant keeping in Bihar has a long history; however there is no specific data or details on the elephant status, management; welfare and associated aspects available. This investigation and the resultant publication may provide some knowledge about some of the aspects. We hope the same may motivate other individuals and institutions to initiate detailed investigation of the elephants in captivity in Bihar.

Acknowledgements

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Our trip to Sonepur in 2005, stay there and investigation of elephants displayed there was possible through the support provided by Mr. Usmani, Mr. Manoj, Mr. Tinu. Mr. Vinod, and Mr. Santosh of Patna.

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In 2010 investigation, the elephant owners particularly Mohd. Akhtar Imam, Harinandan Prasad, Santosh Singh and Manoj Kr Singh have been very cooperative and have extended their support and treated us with utmost respect and hospitality. We are very grateful to WTI team particularly Mr. Arjun Anavangote and Dr Anil Deka for their support in the field. Without this team, much needed logistic support and intellectual discussions would not have been possible.

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Executive Summary

The region of present day Bihar may have been host to elephant trade many centuries ago, an economic practice that continues to this day during the annual Sonepur Mela. The custom of owning elephants by landlords in Bihar is considered to be representative of social status. This investigation is aimed at providing some insight into the elephant population/ their owners in Sonepur Mela as well as assessing the welfare status of captive elephants and the socio-economic status of their handlers in the state of Bihar.

This investigation was conducted by two approaches; firstly, observing elephants in Sonepur Mela, and secondly by selecting few elephants across the state and assessing their ground welfare status by considering different features of their captive conditions.

The observations at the Mela included the population status, daily activity at the Mela, types of owners, status of mahouts and other associated features. Two time periods of investigation/observations at the Mela was considered, one carried out in November 2005, and the second one carried out in November 2010. In addition to this, published and unpublished reports of Wildlife Trust of India (WTI) became a source of knowledge on the trends in population status and age structure for 2001 to 2009.

Welfare status of captive elephants, apart from those observed in the Mela, was assessed by comparing captive living conditions with those observed in the wild. This was done by a system of rating the existing conditions in terms of its suitability to the elephants. The rating scale ranged, developed by experts, ranged from suitable to unsuitable conditions for the elephants/ handlers.

The experts, based on their concept of importance of a particular parameter to an elephant, developed a rating for each parameter, defined as Experts' Rating (E-R). Mean Rating (M-R) representing the actual situation existing for the elephant/s was obtained through the ground survey. The difference between E-R and M-R (expressed as percentage) indicates deviations from the prescribed norm

Elephants begin to arrive at the Mela three to four days before Karthik Poornima and elephants travel considerable distance from 30 to 200 km, covering one to five days to reach the Mela ground. There could be a variety of reasons for elephants are brought and displayed, that include display of wealth or looking for potential individuals for exchange or sale of elephants.

In 2005, elephants were from Siwan, Hajipur, Vaishali and Gopalganj of districts of Bihar and Dewaria and Deoria district of Utter Pradesh (UP). In 2009, elephants came to the Mela from 15 districts of Bihar and UP. In 2010, it was found that elephants come from 14 locations of Bihar and UP and 9 from Bihar and 5 from UP were present.

In 2005, 67 elephants were classified according to their age and sex. 67% were males (adult, sub adult and juveniles) and only 33% were females (adult, sub adult and juveniles, and adult females were 14%). In 2010, 61% were females (42% of them were adult females) and males

contributed only 29%. A decline in the total number of elephants displayed from 2001 to 2003 was observed at the annual Sonepur Mela, followed by an increase the following years (2004 and 2005). This increase in 2004 and 2005 was characterized by greater proportion of male elephants being displayed, and drop in the number of elephants was observed for 2009 and 2010 and the decrease was 50% from 2001 to 2010.

Elephants were bought by temples, circus owners, ashrams and by individual owners. Females were bought by private owners and some ashrams. The elephants mostly originated from Assam and had gone through basic training process.

At the Mela, the elephants were kept tied by their front and back legs for 20 hours during the 7 to 10 days of Mela. Elephants were bathed twice a day at the river, constituting the only exercise they had otherwise.

Main food given to elephants displayed in the Mela consists of green grass, paddy straw, sugarcane leaves and hay and leaves of ficus (*Ficus spp*.) such as *peepal* and *pakar* and *plam.* Cooked food such as rice, horse gram, wheat and maize (corn) is also given and mahout wrap cooked rice or wheat or horse gram in grass leaves for the elephants.

Stereotypic behavior "head bobbing" was recorded in some of the elephants. Overall, no exercise or a single activity like eating continuously, losing interest in eating, standing for a long period without any work/ opportunity to move, all may lead to a lot of boredom.

There may be opportunity for the elephants to interact among themselves in the Mela However, interaction among elephants occurs at a very fragmented level as elephants are tied in one place and they may not be in a position to engage in tactile communication; when they get the opportunity at the river, procedures of giving bath do not allow them to interact with other animals that are in the river.

Elephants do have health problems, ten elephants were reported to be blind and 21 had cataract, with seven having cataract in both eyes. Four had wounds, 40 had fissures on the footpads, and 28 had toenail cracks. Spike caused injuries were common in some of these elephants.

In the investigation conducted in 2009, WTI veterinary team reported that almost all the elephants lacked proper foot care which includes regular exercise and regular toe nail trimming. Most of the elephants had overgrown cuticle and toenails tracks, pododermatitis and worn out footpads.

Presence of traders was observed in 2010 and it was found one trader was from Jaipur and two different traders from Nepal. It was also noticed that some owners had blank gift deeds which is used to transfer possession of elephants.

Some owners trimmed tusks annually, which were sold at Rs. 10,000 per kilo, thereby offsetting the animals' maintenance costs. The mahouts were usually labourers from the landlords' feudal village setup, who got compensation of about Rs. 12,000 annually.

For the second approach, data was collected through observation and interview of relevant personnel on ten elephants (9 males, 1female), each belonging to different owners. Conditions in captivity for elephants with these owners were studied. Mean age of males was 23 years and the single female was 30 year old.

Information available for such elephants suggests that all were purchased. Sonepur Mela was cited as the source of purchase for two males. Age at purchase/ transfer/gifting ranged from 2-30 years for males; for the female it was 8 years. M-R was 2 showing a deviation of 75% from E-R.

All elephants were kept as a symbol of social status; natural conditions such as appropriate physical features (land, vegetation)/ability to perform species-typical activities were absent. M-R was 1 with a deviation of 87.5% from E-R.

All the elephants were provided "covered-type" of shelters. Shelter size varied from 20' X 20' to a maximum of 50' X 50'. The elephants were kept in this place for 16-24 hrs. The shelter was cleaned daily for nine of the elephants and once in 2-3days for another; disinfectants, broom/ water was used. M-R was 3 with a deviation of 62.9% from E-R.

Only one elephant had access to river as the sole source of water; the remaining elephants had access to river/ ponds/ tap water. Tap water was available within the shelter; distance to river ranged from 0.5-2kms from the shelter. Bathing place was river/pond/ shelter, bath duration was 1-2h; bathing materials used were brush, medicated soap; no scrub was used for one elephant. M-R was 4 with a deviation of 55.8% from E-R.

None of the elephants investigated were given any opportunity for social interaction. M-R was 0.0 with complete (100%) deviation from E-R.

All the elephants were chained with a plain type chain; two male elephants (one 35y old and another 26y old) were chained using spiked chains. All the elephants were reported to be chained all the time. Hobbles were used for two, a 3 and a 35 years old, elephants. M-R was 0.9 with a deviation of 88% from E-R.

Except for two adult males, all elephants were described as calm/quiet. The two adult males (26 year and 35 year) were reported to be "rough" with one of the males having injured its mahout. None of the elephants exhibited stereotypy. M-R was 7 indicating a deviation of 9.5% from E-R.

Except for a 35 year old male, none of the elephants was used for work. The lone working elephant was used in functions such as marriages or other social occasions; time of work was in the evening for duration of 4-5 hrs; the elephant was initiated into work when it was aged 7 years. M-R was 7 indicating a deviation of 10% from E-R.
Except for a male, all elephants were given only stall feed; the elephant allowed to browse/graze did so within a farmland. Stall feed included leaves, rice (milled grains of *Oryza sativa*), paddy (unmilled grains of *Oryza sativa*), wheat (milled grains of *Triticum*

aestivum), Sugarcane (*Sacharum* sp.), Jaggery (unrefined, concentrated product of sugarcane juice). M-R was 3 showing a deviation of 61.7% from E-R.

The single adult female elephant was reproductively inactive. None of the adult males were reproductively active. Musth was reported for a single adult male. M-R for reproductive activity of elephants was 0.0 showing complete (100%) deviation from E-R. M-R

There was no information on the diseases or injuries sustained by the elephants. Oil (Mustard/ coconut oil) was applied in the head region after bathing the elephants. M-R for health status was 5 with a deviation of 37.5% from E-R.

Sixty six percent of the elephants did not have access to veterinary doctors. Two of the three, doctors available had no experience in treating elephants. Frequency of visits was dependent on calls by owners, only one doctor was said to visit weekly. Maintenance of medical records was not observed. M-R was 2 showing a deviation of 75.4% from E-R.

Mean age of handlers was 38 years, ranging from 22-50 years. None of the handlers came from a background associated with elephant handling. Mean annual salary was Rs9800/-, ranging from Rs.8400 to Rs.12000/-. Insurance cover was not provided for any of the handlers. All handlers used tools: metal ankush, wooden ankush, stick. Handlers consumed alcohol after work hours. M-R was 2 indicating a deviation of 74% from E-R.

Overall M-R, across all observed parameters, was 3.0 showing a deviation of 62.5% from E-R.

Recommendation

Sonepur Mela seems to be a hub for exchanging or selling elephants. Most elephants are bought as investment, from agents particularly from Assam, to be sold later depending on the price commanded in the open market. Monitoring of welfare conditions of these elephants is not done by agency; rules/regulations of the Wildlife (Protection) Act, 1972 are also not followed.

It is strongly recommended that the trade in elephants (in whatever form, say as gifts/ exchange) between owners across individuals or state should be stopped in the Sonepur Mela, along with strict policing of cross-border travel of captive elephants across states.

In addition to this, elephant tusks are periodically trimmed and the same eventually ends up in national and international markets as contraband. No ivory sold is disclosed, monitored or recorded. Tusk trimming would violate ban on elephant ivory products or trade in wild elephants. The Government should get involved in:

1) Monitoring trimming of tusks by private owners
2) Giving certificates for keeping of elephants
3) Periodically checking trimmed ivory stock

Till the banning of elephant trade in Sonepur Mela is enforced, some modifications in the way elephants are displayed in the Mela are necessary:

- Irrespective of the cost involved in hiring places for displaying the elephants in the Mela, elephant owners may be required to hire a bigger place for displaying elephants.
- Elephants should be tied using only long chains, permitting scope for body movement and comfortable sleeping positions and a complete ban of using spike chain to be imposed. Change of location for tethering elephants needs to be introduced, and elephants should be allowed to be tied in one location only for two or three hours. The owner should be required to hire a location that gives scope for 3-4 different sites with natural shade (under tree and natural floor).
- All the elephants should be made to go for a walk early morning and late evening, this can be done with all the elephants walking together with simple decoration or name boards carrying elephant's name and ownership details
- Specific boundary between elephant and people while on display and while giving bath, by construction of boundary around them at the Mela and a platform that divides people and elephant at the river. The platform at the river could also be used for the tourists to watch all elephants bathing
- Expose elephants to a regular pattern or protocol for bath, provide information to the mahout and owner on such aspects as not scrubbing the animal using the stone but soft material, providing information on skin care and bathing materials to be used for bath
- Increase in knowledge and upgrading skills of mahouts and elephant owners are very important. Though they are in touch with the animals for long periods , there are still

certain gaps that need to be addressed by proper mechanism; use of fear and punishment to control their elephants needs to reduced

- Variety of food to be introduced, this should include foliage, green grass and branches. Provide variety of food in different places at different heights. Allow scope for work or exercise to different parts of the body while providing food. This should also take care of the nutritional needs of the elephants and prevent contamination of food and water given to the animal.
- Equally important is the way elephants are brought to the Mela: transport should be in accordance with the rules laid down by the Ministry of Environment and Forests. There should be specific protocols of mode of travel, distance covered, food and water provided. Very importantly, the practice of bringing elephants into the Mela by foot across hundreds of kilometers within a short span of time has to be banned.
- There should be a specific ban and strict regulation of elephant coming from outside Bihar
- Monitoring of population structure of the elephants kept in the Mela to be initiated and tracking of the number of elephants, the owners who regularly came to the Mela to be started.
- The identification of elephants displayed in the Mela through their physical features, photographs, microchipping to be done and comparison of the investigation of the data collected by various institutions across different years to be made.
- Obtain information from news paper cutting of the Mela every year to develop a data base of elephant and their age and sex classes displayed across the years.
- Identification of the reasons for maintaining elephants of specific sex/ age needs to be done, and the actual source of elephant with each owner has to be collected. If only males are maintained, investigation of the male fathering any calves to be known.
- Monitoring the proportion of elephants sold in the Mela has to be done and the details of price expected per sale to be investigated.
- The details of amount spent on keeping elephants in the Mela per year has to be collected.

The source of new elephants brought into the Mela could be from other states with a relatively high level of breeding captive population or illegal wild-caught population. There could be substantial number of calves and juveniles found in Assam, which becomes a source of elephants for other states. Status of captive elephants, more specifically calves and juveniles in Assam needs to be investigated. Population details of captive elephants in Assam are very important. It is important to know the percentage of males, females, calves found in Assam.

- For the elephants currently held with the owners:
    - An approach that is closer to an elephant's natural lifestyle: first and foremost, removal of fetters and opportunity to free range in vegetated areas; gradual exposure to individuals of opposite sex; not to isolate dependent young (less than 10y old elephants) from their mothers/ siblings
    - Outside the Mela, depending on the number of elephants maintained by each owner, elephants may have scope for interaction among themselves. However, natural conditions are not prevalent for these elephants. Hence, i) they have to

be taken for regular walks (not for begging) during late evenings and early mornings, ii) to be provided with more foliage based food items, iii) good water resources to be created, iv) tethering them with long chains that provide scope for free movement and desired position of sleep in a natural floor.

- Only in cold, rainy and hot seasons one needs to have shelter management, otherwise elephants can be provided open shade based natural flooring and shelter.
- Regular maintenance of records— health/ service/ clinical/ registration or ownership of elephants
- Greater supervision in the form of surprise checks on the captive conditions existing for such elephants
- In its present form, keeping of elephants by private owners has to be improved, or some cases even to be stopped.
- The elephant owners have absolutely no knowledge of the elephants' needs - social and group requirements - or training. Though animals are not made to work, they suffer from lack of exercise and a poorly balanced diet. It is clear that untrained mahouts or labourers are used to control the animals.
- Given the prestige value of maintaining elephants, it would be that much more effective if such owners were to sponsor upkeep of elephants in natural conditions, say, the sponsorship of elephants maintained by the forest department in its camps. Their invaluable contribution could be provided with sufficient publicity.

Introduction

Prior to 2000, the state of Bihar harbored wild elephants in its protected areas. Post-2000, another state was formed from parts of Bihar and present day Bihar does not account for wild elephants in its sanctuaries (Anon., 2007). In Bihar, however, there is an active culture of keeping elephants as pets and status symbols. They are generally kept by landlords, it is looked upon as an expensive hobby but it has strong commercial overtones. This region is historically known for its trade in elephants- the trade in elephants at Sonepur Mela may have been conducted many centuries ago (Ashraf and Mainkar, 2004). Bist, et al., (2002) write about the absence of adherence to regulations of the Wildlife Protection Act (1972) during sale and purchase of elephants in this Mela. The same authors also mention the practice of owning elephants, in Bihar, by landlords as a form of social status. This investigation deals with information collected on the captive conditions of elephants, both at Sonepur Mela and those owned by private individuals in three districts of Bihar.

Objective

Observation of elephants at Sonepur mela

- To look at population structure (age class), ownership (number of individual owners), type of food given and scope for walking or other forms of exercise available to elephants during the Mela period

In addition to this, the investigation at the Mela was also aimed at looking at number of elephants displayed across the years to understand the increase and decrease of individual elephants during the Mela (it is assumed that for example, the details on decrease of elephants would indicate sale of elephants or other reasons, and an increase may suggest new arrival of elephants to the Mela).

Observation of elephants housed with private owners (exclusive of those seen in the Mela). Living conditions in captivity may vary across owners— some of these maybe suitable, others maybe adverse for captive elephants. The elephant displayed at the mela, may or not provide actual welfare status of the elephants owned by private individuals and a specific investigation aimed

- To assess the welfare status of captive elephants by considering the existing physical, social, psychological, physiological and health aspects of the elephants
- To assess the socio-economic status of handlers of elephants as they are essential to an elephant-keeping system

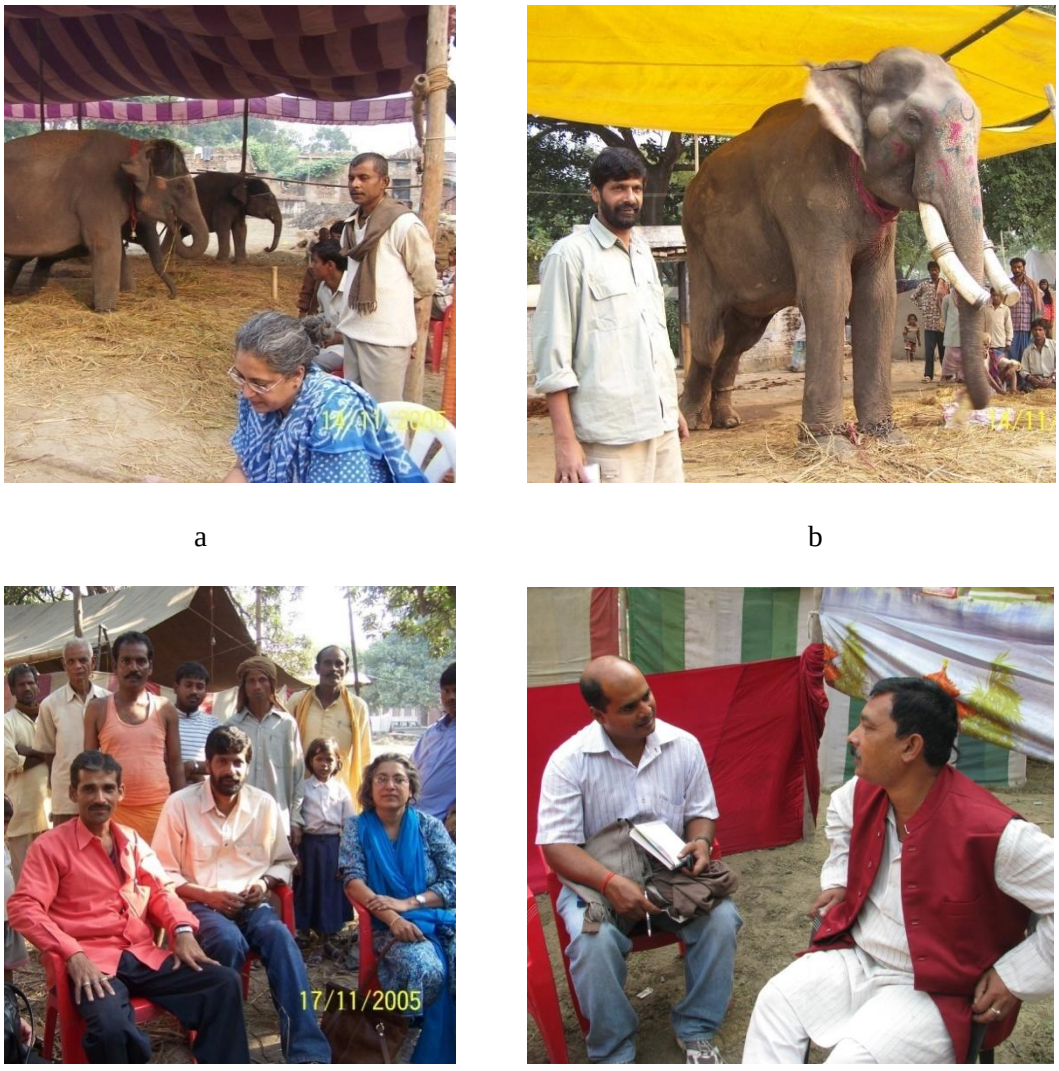
Method

Observations at Sonepur mela

Subjecting elephants to a human controlled environment is the quintessence of most captive situations. The observations in the Mela (Figures 1a, b, c and d) included the background (culture and history), types of animals displayed, arrival of elephants, mode of transportation, reason for display, number of elephant displayed, age and sex classification, ownership, preference of different age and sex class, pattern of number of elephant and age and sex class

across the years and duration of the stay at the Mela, elephant trade, potential buyers, cost of purchase, expenses and profit, locations of arrival, profiles of owners.

Details such as daily routine, prevalence of stereotypic or other behaviours, body conditions, mahout status and overall elephant keeping in Bihar were also collected during the Mela. The data collection was done by direct observation of elephants and associated activities in the Mela, interview with the mahouts and elephant owners



a b

c d

Figure 1a, b and c: a and b) observation of elephants and recording of data, c) Interaction with owner and his team

Welfare assessment of elephants housed with private owner

The second investigation on welfare status of captive elephants was by comparing captive living conditions with those observed in the wild: living conditions included the physical environment, the social and reproductive features as well as health of the elephants.

Availability of veterinary care and infrastructure has been considered as they are essential to any captive management system. The biological and ecological needs of captive elephants have not been changed as they cannot be considered to be domesticated, i.e., they have not been selectively bred in captivity.

Thus, their ecological/biological needs do not differ from those of their wild counterparts. Veasey (2006) states the need for captive situations to focus on the behavioural and biological needs of elephants that are essential for the survival and reproduction of the species in the wild. Welfare status has been assessed by rating the existing conditions in terms of its suitability to the elephants. This was done by visiting elephants in three different districts, and observing elephants directly, interacting with elephant owners, mahouts and people associated with elephant keeping.

The rating method

A rating scale from zero (unsuitable conditions) to ten (suitable conditions) was used to assess the welfare status of captive elephants and their handlers. Experts (both wild and captive elephant specialists, wildlife veterinary experts, managers from protected areas, managers responsible for both wild and captive elephants and other wildlife, personnel from welfare organisations and elephant handlers) were invited to assess the welfare based on different 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 importance of a particular parameter to an elephant, developed a rating for each parameter. For example mean expert rating of 8.0 (SE= 0.5, N=29) for a parameter 'floor' and 9.0 (SE=0.4, N=31) for 'source of water' was arrived at from the ratings suggested by each expert by averaging across all the experts' values.
- 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 i.e., for a parameter with 8.0 as the maximum value, only 2.0 (25%) deviation and parameter with maximum value 9.0, only 1.0 or 10% from the prescribed norm is considered acceptable.
- For example, if an elephant is exposed only to natural flooring, the animal receives a rating of 8 and for entirely unnatural flooring the value is 0; if 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 2.25 is assigned for small water bodies like tanks and ponds. Tap water (running) gets 1.125 and if only buckets, pots, and tankers are in use, then the allocated value is 0.5. This rating is then averaged across all individuals in that institution to get a Mean Rating (M-R) for that feature. Thus M-R represents the actual situation existing for the elephant/s.
- Therefore, using the maxima given by experts as a base, a rating scale starting from zero to the particular maximum value for that parameter has been used and the data for each animal was collected, in a given regime (for example, forest camp or temple).

- In this investigation, variables which represent a common feature of the captive condition have been grouped to form a parameter. The variables have been termed sub-parameters. 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. The Mean Rating (M-R) for a parameter is the mean of M-Rs across related sub-parameters and denotes welfare status of existing conditions on the ground for the particular parameter.
- The number of such related parameters (sub-parameters) varies for each regime.
- 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.
- For handlers, the difference between the maxima provided by experts (E-R) and existing status (M-R) have been used to indicate the professional/ socio-economic status of value to the handler and his elephant.
- N* refers to number of sub-parameters observed. N refers to number of individuals.

Results

Status of elephants in Sonepur mela

Religious, historical and cultural significance of the Mela

The Sonepur Cattle Fair or Mela or 'Hariharnath Kshetra Mela,' touted to be the biggest cattle fair of Asia, takes place for a period of 15 days to one month at the confluence of Ganga and Gandak Rivers. On the Karthik Purnima day, several thousand of devotees including 'sadhus-(Hindu holy men) come here for a holy dip (Figures 2a, b, c and d). Sonepur has two distinct features. It has the second largest railway platform to the length of 2415 feet. The second feature being the cattle fair, second in volume to the Pushkar Mela, but with the distinction of boasting of world's largest elephant fair.

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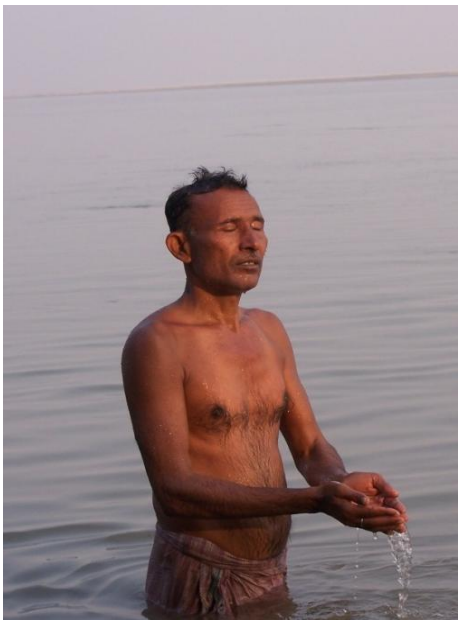

c d

Figure 2a, b, c and d: Presence of Sadhus in the Mela (a and b),
Dip in the Ganga (c and d):

The dip is considered very auspicious, and after the bath devotees visit the Hariharnath temple located here. According to local tradition, the Sonepur Cattle Fair revives the Gajendra moksha legend— associated with elephants— which are related to the Hariharanatha Temple. After offering puja in Hariharanath temple, visitors go to see various attractions presented in and around the Mela ground. They are attracted to diversity of shops (Figure 3a to d) selling varieties of products like garments, weapons, furniture, toys, utensils, agricultural implements, jewelry and handicrafts. Folk shows, games and jugglers further add to the attraction of the Mela. Handicrafts, paintings and pottery from all over India can be seen here; varieties of food items from different parts of the country can be also seen (Figures 3a, b, c and d).

a b

c

d

Figures 3a, b, c and d: a small shop selling different items (a), food preparation and items (b and c), arrival of people from various part of the state (d)

People from India and abroad –U.K., USA, France, Canada and Japan visit (Figure 4d) the Mela: foreigners as tourists and Indians as buyers of displayed goods/ animals. There is a relationship between the Pushkar cattle fair in Rajasthan which happens in Karthik Poornima and Sonepur mela which happens around the same time. It is also said that during the initial period when Rajputs settled in Sonepur in 1753 the animals displayed in the Mela were not for sale but a sign of wealth of the Rajputs.

Animals displayed

Including elephants, the Sonepur Mela is significant for displaying a diversity of animals. (Figures 4a to i). Birds (parakeet, love-birds, hill mynahs, munia, geese), mammals such as rabbits, dogs, mongoose, horses, ponies, camels, goat, sheep, buffalo, cattle, monkeys, elephants, reptiles such as rat-snakes and cobra are displayed. Buffaloes were tied, many calves tied together in one place. Around 500 horses maybe brought to the Mela: only a few on display, most are ridden by horsemen displaying the strength and quality of their animals. One location is dedicated for birds, dogs, rats and rabbits and another location exclusively for cows and bulls. Buffaloes and cattle are displayed for customers from Orissa and Bangladesh, horses for U.P and Bihar, camels for Rajasthan.

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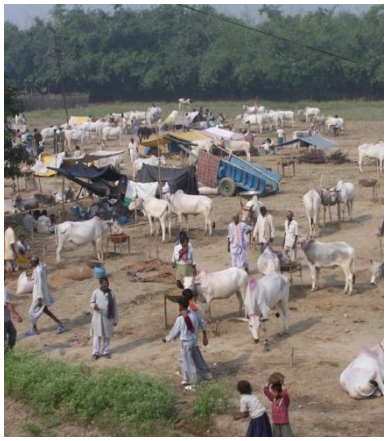

g

h

i

Figure 4a, b, c, d, e, f, g h and i: display of parakeets bunched together in cage (a), hill Mynahs enclosed in cage (b) geese (c), chained dogs on their cages/puppies for sale (d and e), buffaloes tethered in the open ground (f), cattle on display (g), horses tethered in rows (h) and a spectacled cobra kept in a wooden box, i)

Elephants in the mela

History

The Sonepur Fair is the only one where such a large number of elephants are assembled (Figures 5a, b, c and d). The Mela said to have its origins during ancient times. History reveals that the king, Chandragupta Maurya, used to buy elephants and horses across the river Ganga. During this period, it attracted traders from several places as distant as Central Asia.

a

b

c

d

Figures 5a, b, c, d: Display of elephant with decorations, note different owners using different types of decorations on their elephant

Arrival and display

Elephants begin to arrive at the Mela (Figures 6a, b, c, d, e and f) three days before Karthik Purnima. Elephants are brought here by truck/foot. Owners with one or two elephants, make them walk to the Mela. Owners with more numbers, 5 to 7 transport them by truck Elephants travel several km to reach the mela and in 2010, it was found that two adult male elephants had walked 200 km (Motihari) for 5 days: they covered 40 km by day and the crew halted every evening at different locations.

One makhna, from Phulwarishariff, Patna, which is 35 km from Sonepur, came walking, having started at 3a.m. and reaching the Mela at 5p.m. This animal took 14 hours, walking on tar roads to reach Sonepur. Overall, on arrival, ropes tied to howdah are untied; materials kept in it are unloaded. The front legs of the elephants are hobbled, and a rope or chain is tied to a pole; hind legs are normally tied with a short chain and most of the time with spiked chains.

a

b

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d

e f

Figures 6a,b,c,d,e and f:Patternsof arrival of captive elephants from different locations and the allotment of specific locations in which they are to be tied in the Mela ground

Elephants are kept in a place, along with a small tent for the owner and mahout (Figures 7a, b, c, d, e and f) as well. The size of the tent depends on the number of elephants displayed. The elephants may be on display as a sign of the wealth of the owner or maybe brought for sale to prospective buyers. Landlords, (*thekedars*) in Bihar, buy the elephants to keep in their farms. The Mahout and his family stay with the owner; they are important to the owner to as they do household work as well as look after the elephant. They are given monthly /annual salaries along with other benefits.

A small percentage (about 10%) of the owners said they brought their animals every year to the fair, only for the purpose of displaying their wealth. These were wealthy owners who had bought the elephant as a status symbol, kept them in their farms and did not always hire them out to temples or for any occasions. Their elephants, pedigree dogs and vehicles were also displayed in their stalls.

According to the owners the Mela was also their annual vacation. One owner from Chappra region, has been keeping one male for 20 years since the elephant was 5 years old. He keeps this only for display and as a pet. One 10.2 feet tall (40-50 years old) tusker has been kept with an owner for the last five years and the owner is not willing to sell Other owners display elephants as their wealth, or try to use the animals as potential investment for profit-making through later sale.

Population number and structure

The last 10 years (2001-2010) of monitoring at Sonpur Mela has shown that about 40-100 elephants assemble every year. In 2005, elephants were kept in two locations, about 32 on one side and another 35 across the railway line. These sixty seven elephants were classified according to age and sex. Of these 49 % adult adults, 16.5 % were sub-adults, 33% were juveniles and 1.5% were calves. Number of elephants kept by a single owner varied from 1 to 6, mean was 3 (SE= 0.3, N=24). Most (38%) owners had two elephants, followed by three (25%) and four (24%). Adult males constituted a sizable proportion that year since 58% of

the elephant owners (14 out of 24) had adult males (above 15 years) in their collection. This was followed by juvenile males (46%) and juvenile females and adult females (38%).

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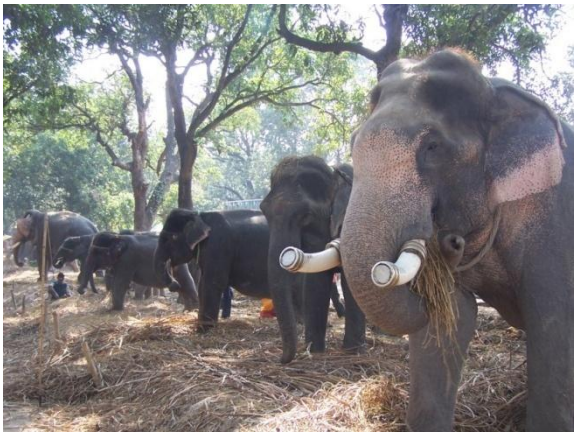


f

Figure 7a, b, c and d: tent of owner (a), display of young ones (b) and different age and sex classes of elephants (c, d, e and f)

In 2010, however, the attendance of adult females dominated (42%) followed by sub adult females (20%), sub-adult males (17.1%) and adult males (12%). Both juvenile males and calves contributed 4.9 % each. Sixty one percent of elephants displayed in the Mela were females (both adult and sub-adult females); males contributed 29% (Table 2).

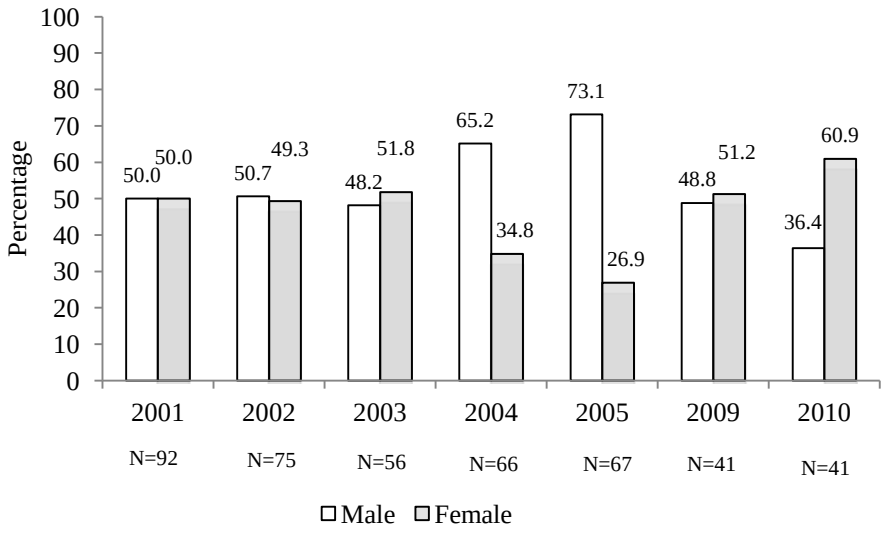
Most of the males seen were tuskers, with tusks trimmed and rings fixed on them and there were two makhana (tuskless males). One male of 8-10 years had relatively long tusks for its age, with rings fixed on the tusks. The tusks were not trimmed. The details of 39 elephants observed in 2010 show that they belonged to 22 owners. Maximum elephants displayed by a single owner were 2 (32 % owners kept 2 elephants).

Table 1: Age and sex class of animals displayed at the Mela in 2005 and 2010

		Number of individuals		**Percentage of different age & sex class**	
Sl.no	**Sex and age class**	**2005**	**2010**	**2005**	**2010**
1	Adult female	10	17	14.9	41.5
2	Adult male	23	5	34.3	12.2
3	Sub-adult female	5	8	7.5	19.5
4	Sub-adult male	6	7	9.0	17.1
5	Juvenile female	6	0	9.0	0
6	Juvenile male	16	2	23.9	4.9
7	Calf	1	2	1.5	4.9
		67	41		

However, when we look at the data collected by WTI over the years (2001-10), the proportion of males and females brought to the Mela changed over the years (irrespective of age-class). A reduction in the total number of elephants on display was noticed from 2001 to 2003 followed by an increase for the following two years and a subsequent drop in the total numbers in 2009 (Figure 8).

As the total number of elephants on display decreased, the difference between the number of males and females in the Mela became negligible. In other words, whenever the total number of elephants was high (as in 2004 and 2005), the proportion of males on display were greater than females.



N refers to total number of elephants on display for that particular year

Figure 8: Number of elephants and proportion of males and females (all age-class) displayed in the Mela across the years

If we consider only males displayed across the years, except for 2003 and 2009; for all the years, the percentage of adult males displayed was more. In 2004 and 2005, more juvenile males were displayed and percentage of juvenile males displayed was very low for 2009. Coincidentally, in 2004 and 2005 the total number of elephants displayed increased as compared to previous years and the total number reduced in 2009 (Figure 9a).

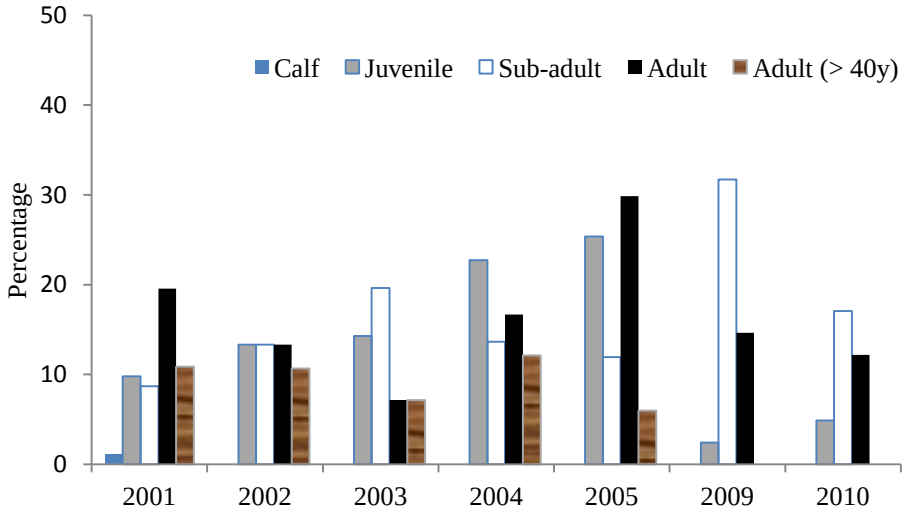


Figure 9a: Percentage of males of different age class displayed in the mela for different years

Among females, for all the years, percentage of adult females displayed was more, followed by sub adult females; both young (juvenile/ sub-adult) and adult females accounted for similar proportions of individuals on display (except for the years 2002— more adult females and 2003— more juveniles and sub-adults) implying availability of elephants across different ages (Figure 9b).

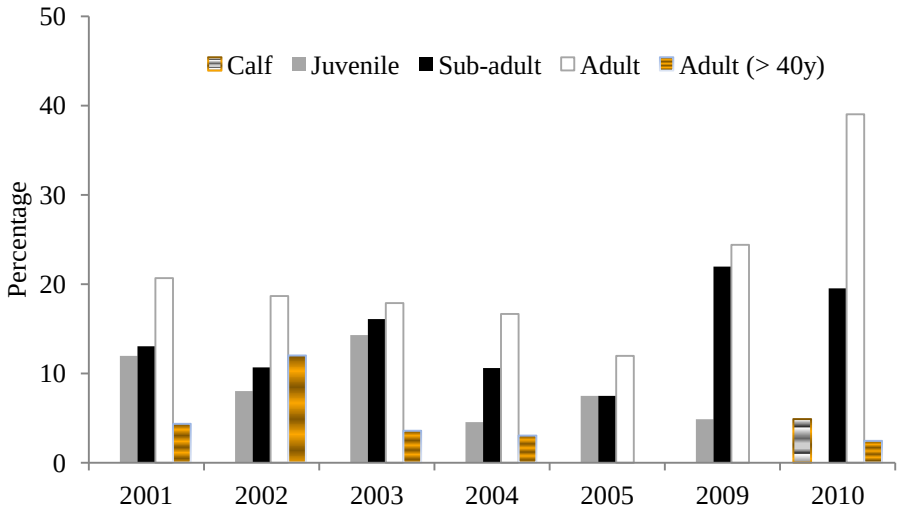
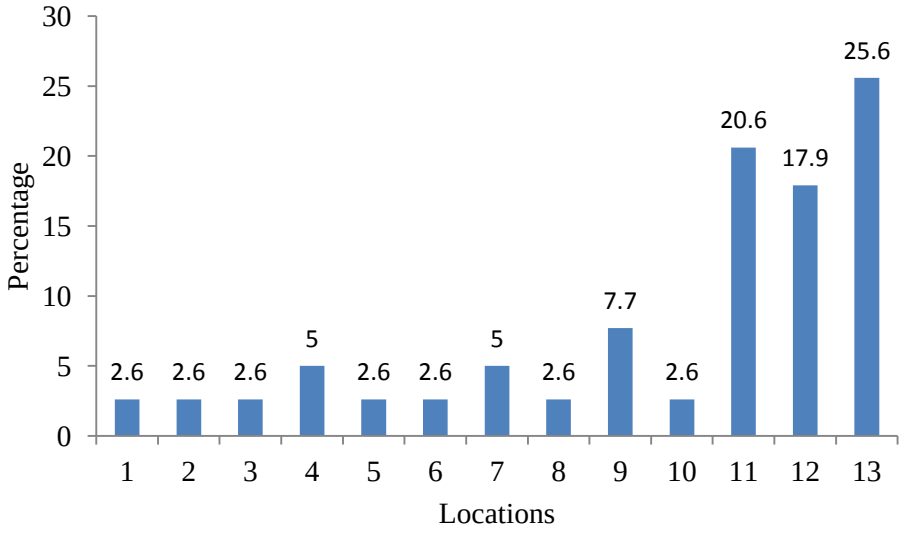


Figure 9b: Percentage of females of different age class displayed in the Mela for different years

Most elephants remain at the Mela for not more than a week due to the costs involved in feeding animals at the fairgrounds. The origin of most elephants was NE-India; primarily from Assam and Arunachal Pradesh. Most of the elephants were brought from places as distant as 200-400 km from Sonepur. The data available for 2009, suggests that 88% of the elephants displayed belonged to Bihar and UP contributed rest of 12%. Origin (source of acquiring) of 90% elephants was from Assam and Bihar contributed only 10%.

Most were from Bihar's districts of Siwan, Hajipur, and Vaishali, and the Uttar Pradesh districts of Dewaria, Deoria, Gopalganj, and Gorakhpur. In 2009, elephants came to the Mela from 15 different districts of Bihar and UP: 24 % belonge to Patna, 20% from Chhapra, and 10 % from Motihari districts of Bihar; Figure 10 gives the details of districts and the percentage elephants from each district. In 2010, it was found that elephants from 13 locations of Bihar and UP - 9 from Bihar and 4 from UP were present.

Among all the locations, Patna dominated (23 %), followed by Mothihari (15%), Saran (15%), Chapra (7%) and Vaishali (7%). Locations such as Ballia, Deoria, Kasya, Buxar, Gopalganj, and Siwan contributed only 3 % (Figure 10). Elephants displayed at Sonepur may signify the distance of their location to Sonepur as well as the financial status of their owners.



1: Siwan, 2: Gopalganj, 3: Kasya, 4: Kushinagar, 5: Deoria, 6: Ballia, 7: J.P. Nagar, 8: Arwal, 9: Vaishali, 10: Buxar, 11: Patna, 12: Motihari, 13: Saran (Chapra)

Figure 10: Details of locations from where elephants reach Sonepur Mela and percentage of elephants from each location

According to WTI (2010), there has been a gradual decline in the number of participating elephants in Sonepur in the last 8 years and the number had reduced to less than 50 in 2010, from 92 elephants in 2001 (Figure 11). The decline of number displayed in the Mela appeared to start from 1992; according to an official who was part of a team that visited Sonepur in 1986 to purchase elephants an estimated number of 600 elephants were displayed there.

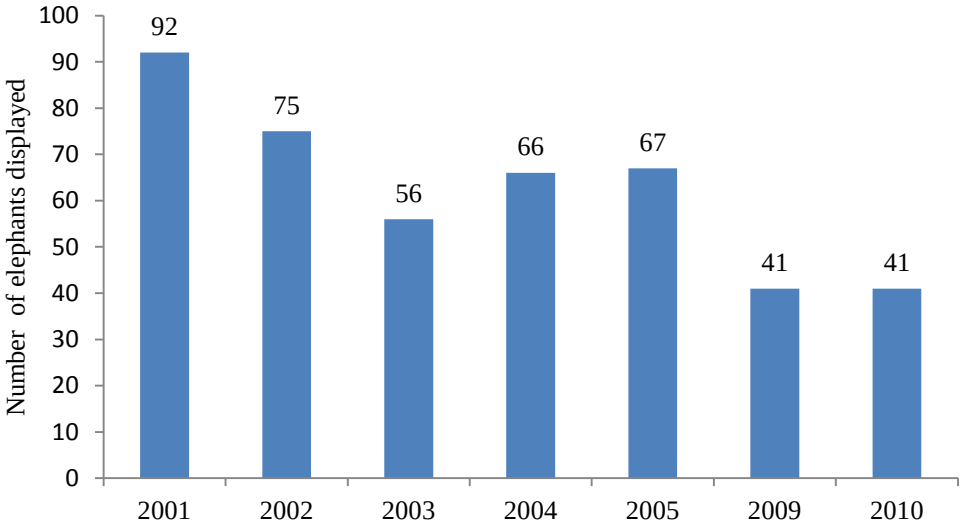


Figure 11: Number of elephants displayed at Sonepur Mela across the years

In 1996, number of elephant reported by one of the team members was only 60 elephants. This indicates a decline of 90% of elephants within a period of 10 years (Verghese, per.comm). There is a report of 250 elephants being displayed in the Mela in 1992. Several factors are speculated to have contributed to this situation, the main one being the increasingly firm execution of Wildlife (Protection) Act 1972, with regulations concerning ownership and transfer of elephants.

Decrease in the total number of elephants displayed in the Mela may be attributed to many reasons. One of the major reasons for decrease in attendance may be due to the stringent enforcement. It is also possible before the ban on sales came, many males would have been displayed perhaps to attract the Kerala buyers. Following the ban and the reduction in demand from Kerala, the number of males being brought to mela may be decreased. Apart from enforcement and restrictions enforced for transit from Assam and other states would have played a role in the reduction of number.

Daily routine

Display and tethering

Each owner or group of owners displayed elephants within the area allotted to them in the Mela. Elephants were tied (Figure 12a, b, c, and d) with shackles that had sharp, inward pointing projections. Spiked hobbles (Figure 12b and d) were used for most of the animals. Elephants were made to stand continuously for 15 to 20 hours/day

a

b

Figure 12a, b, c and d: Methods of displaying elephants a) keep elephant standing, b) spiked chain

c d

Figures: 12c) all four legs chained, d) chain with inward spikes

Stereotypic behavior

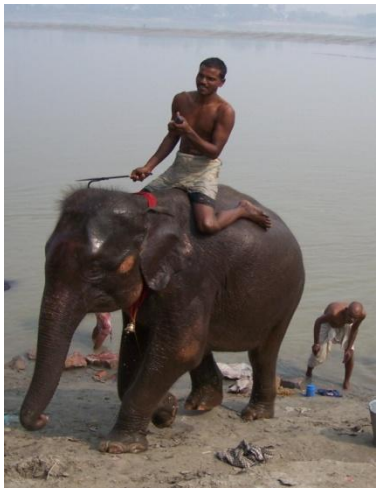
Stereotypic behavior (Figures 13a,b and c) "head bobbing" was recorded in some of the elephants. The stereotypic behavior appeared to be taking place in different forms. It is also possible that the same could be very distinct during evening hours when not many people or mahouts or owners were around. Overall, no exercise or a single activity like eating continuously, losing interest in eating, standing for a long period without any work or opportunity to move, all may lead to a lot of boredom.

a b c

Figure 13a, b and c: Example of sterotypic behaviour reported in the Mela; note the movement of head and the trunk

Source of water, bathing and drinking

Elephants were watered twice a day at the river (14a and b), constituting the only exercise they had, otherwise they were tied by their fore and hind legs for 7 to 10 days of this Mela or till they were bought (if the purpose was to sell the animal).



a b

Figure 14a and b: Source of water and bathing a) handlers bathing elephant in river, b) juvenile elephant back from its bath, note ankush with mahout

In 2010 it was observed that the elephants were taken to the river at different times, and it appeared to start from 8.30 a. m. to 2 p.m. For two adult females, the bathing was for 50 minutes. During mid-day, the duration of bath for one adult and one sub adult was 25 minutes. Elephant baths may take 45 minutes to 1 hour for adult females and 30 minutes for sub adult animals. The notable feature of the bath is the use of hard stone; mahouts keep scrubbing the animals very hard (Figures 15a and b). The adult male that could not be taken to the river yet had its head and tusk washed. Bathing appeared to be dependent on the age or size of elephants or time of bathing. The exposure of the mahout to the mid-day sun could also decide the duration of the bath. It appeared that, along with people or devotees, owners wanted their elephants to take a holy dip (Figures 15c and d) on the poornima day, based on the belief of Gajendra Moksha which states that giving elephants a holy dip on that day is auspicious for the owner.

a b

c d

Figures 15a,b,c and d: Patterns of bathing observed for elephants displayed in the Mela

In 2010, it was observed that while the elephant stood at its tethering site, water for drinking was given in plastic containers (Figures 16a and b). Once it was observed that a female elephant took two mouths full from the container, but soon lost interest in drinking water. The mahout forced the animal to drink, however, the animal did not accept. Elephants were also seen drinking water as they reached the river and also when they went deep into the river for bathing. However, when the river water was disturbed and became muddy, the elephants were not observed to be drinking. While they were made to stand still in the river for washing their bodies, the elephants were observed to be drinking water.

a b

Figures 16a and b:Sources of drinking water for the elephants displayed in Mela

Interaction

There may be opportunity for the elephants to interact among themselves in the mela (Figures 17a, b, c and d). Interaction among elephants occurs in the mela, but at a very fragmented level as elephants are tied in one place and they may not be in a position to engage in tactile communication; when they get the opportunity at the river, procedures of giving bath do not allow them to interact with other animals that are in the river.

a

b

c

d

Figures 17a,b,c and d: Source of interactions while in river (a and b) and at the Mela ground (c and d)

Food

The animals were often observed to be feeding on only grasses or sugarcane (Figures 18a, b, c and d), occasionally coconut. Without any other variety, it is important to ascertain how other required nutrients are supplied.

If the elephants are not seen in good health condition for the display of wealth or for sale, both cannot be achieved. For 10 days at the Mela only rice and wheat are given. To compensate the nutrient need, owners are reported to give boiled rice three months before the Mela.

In 2010, main food given to elephant displayed in the mela consisted of green grass, paddy straw, sugarcane leaves and hay and leaves of ficus (*Ficus spp*.) such as *peepal* and *pakar* and *plam.* Cooked food such as rice, horse gram, wheat and maize (corn) was also given and mahout wrapped cooked rice or wheat or horse gram in grass leaves fot the elephants.

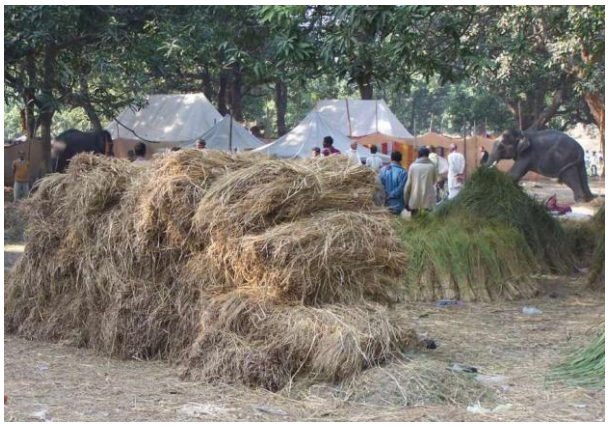


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Figure 18a, b, c and d: Food and feeding available at the Mela, food stored behind owners' tents (a), mahout attempts to feed his elephant (b), an elephant feeding on dry grass (c), concentrates given to elephants at the Mela (d)

Sleep and other activities

In 2010, it was observed that, during night hours, from 10.30 p.m. to 6.30 a.m. except for a makhna and a female, all adult animals were observed to be standing and active sleep may occur during 3 to 4 a.m. If adult elephants were observed to be sleeping; they appeared to be maintaining left lateral position (Figures 19a and b) and young ones, including sub-adults (irrespective of sex) appeared to follow right lateral position of lying.

a

b

Figures 19a and b: Sleeping position observed for an adult makhana in the mela

Reproduction

Two females (Figure 20a) with very young calves in the mela, gave interesting insights on the status of reproduction. However, the contribution of males (Figure 20b) to reproduction, in Bihar, is not known. The males appeared to be chained all the time and they may not get a chance to mate, however mating with females (due to the availability) cannot be ruled out.

a

b

Figures 20a and b: Females with their calves (a) and a male potential reproductive individual (b) observed in the Mela

Body and health conditions

Since 2001, Wildlife Trust of India (WTI) as part of its Captive Elephant Welfare Project (CEWP) has been conducting special health camps for elephants in Sonepur, Bihar. Of the 77 elephants examined by WTI veterinary team in 2002, only two were in poor body condition. Almost 80% of elephants examined for body condition were good, no ribs or scapula was visible.

However, WTI investigations show, elephants do have other health problems, ten elephants were reported to be blind and 21 had cataract, with seven having cataract in both eyes. Four had wounds, 40 had fissures on the footpads, and 28 had toenail cracks. The skin condition of

most elephants was normal except for 13, which had skin infections such as warts and hyperkeratosis. There was one case of cutaneous meiosis. Spike caused injuries were common in some of these elephants.

In the investigation conducted in 2009, WTI veterinary team reported that almost all the elephants lacked proper foot care which includes regular exercise and regular toe nail trimming. Most of the elephants had overgrown cuticle and toenails tracks, pododermatitis and worn out footpads. These conditions are due to the elephants being tied for an average of 20-22 hours every day and barely walked, excluding when taken for their baths.

In 2010, most of the elephants had foot problems, dry skin and some animals had bed sores (Figures 21a, b, c and d).

a b c d

Figures 21a,b,c and d: Types of health issues reported for the elephant displayed in the mela

They also suggest that, the owners give little importance to foot care and general exercise while the mahouts lack motivation for care of the elephants as evident from the condition of the foot of the elephants. According to the WTI veterinarian team, the state of health of the elephants is reflection of the owner's interest in the animal. "Those who buy these animals

only for commercial purposes, particularly lack interest in the welfare of elephants. But those who own them as a sign of their status look after them much better".

Elephant trade

Contribution of different age and sex classes in trade

Percent of adult males (above 16yrs) in the Mela was always more than 10% for all the observed years, reaching a maximum of 36% in 2005. It was understood that, males were brought there in the hope that they would be bought by Private owners or Temples in Kerala, which preferred males, especially those with long tusks. This would indicate the interest of landlord in Bihar trying to project their wealth and when opportunity arises the elephants are sold and Figures 22 a, b, c, and d show tuskers on display.

a

b

c

Figures 22a,b and c: Adult males displayed in Mela in 2005, is a reflection of landlord in Bihar displaying adult bulls

This practice of keeping male elephants by Keralites and Biharis suggest the similar mindset of owners displaying big males as symbol of power and wealth. The number of males (irrespective of age) displayed was always more than 45 across all the observed years while the female numbers fluctuated between 27 and 52. In 2005, of the 67 elephants observed and classified by age/sex, a total of 45 males (including juveniles and calves) males were kept with individual owners and looking for buyers. Males were kept for more years (or for longer period) by individual owners who looked for potential buyers.

There is also a clear pattern of more juveniles being kept in the Mela: the percent of calves/ juveniles/sub-adults on display (male and female considered together) was never less than 45% of the total number for that year, reaching a maximum of 64% in 2003 and 61% in 2009. In 2010, juveniles contributed only 5%, and it was 32% in 2005.

In 2005, interaction with owners in the Mela revealed that they originate from Assam; where regularly calves are born to captive females fathered by free ranging, wild elephants, and these calves may regularly be brought to Sonepur mela. The young animals may be kept as a temporary pet in Bihar and when the opportunity arises they may be sold: for example, Sankar (2-3 years) a male was sold (Figures 23a and b) to Chaitrghat mutt in U.P-M.P border. In 2010, the details available for 39 elephants suggest that they belong to 22 owners

and maximum elephants displayed by a single owner were 2 and 7 (32 %) owners kept 2 elephants.


Figure 23a and b: Sadhus arrived at the Mela for negotiating sale of elephant, eventually purchased

Percentage of adult females (more than 16y) on display was also always more than 10%, reaching a maximum of 31% in 2002; percent of adult females was the highest among the different age-class of females on display for all the observed years. Females were mainly sold for temples and for tourism but have fewer takers as they are not accepted as a symbol of displaying the wealth.

Young males are usually not sold to temples/circus as such potential buyers preferred female elephants; if they were males they become source of displaying of wealth or are sold to owners who like to display wealth. All young ones appeared to be trained and they were observed to be obedient. If there are more calves in the Mela that could indicate two aspects –one is that there is a clear demand for young animals or only the adults are sold, the calves remain with the owners.

One owner with an adult male 40 to 50 years old, was willing to sell it for rupees 7 lakh. Another owner bought 1 female elephant for rupees 5 lakh 6 months ago and if he got a good price for it, he was willing to sell it. One owner from Chapra, had a 6 year old female elephant, he had been keeping it for last 3 years, to be sold if a good price (of rupees 6 lakhs) could be got. One juvenile 3 years (makhna) and mother was observed to be sold to Apollo circus in U.P. This animal was purchased from Assam. One juvenile male about 2-3 years old was sold to Chaitrghat district for rupees seven lakhs.

Animals purchased for rupees 3 lakh could be sold after 2 years for rupees 7 lakh and a profit of 1.6 lakh was possible (if rupees 10,000 is spent per month for maintaining elephants, about 2-4 lakhs is spent for 2 years, this 2-4 lakhs and purchase cost of 3 lakhs leads to 5-6 lakhs). In 2004, 3 elephants were sold but the buyers are not conspicous. In the previous year, about 4-5 elephants were sold. The trade is done under the pretext of gifting the animals to relatives using Rs.50 stamp duty paper, giving details of owner, name, address, father's name. The document states difficulty in keeping, therefore they are donating the elephant to a relative or a friend.

In 2008, Mann., pers.comm, found that that the price of an elephant sold varied based on the age and sex class of elephants displayed, it was found that elephants in the age group 4 to 8 years are priced 9 to 13 lakh, 10 to 15 years 15 lakh and above 15 years are priced 15 to 18 lakhs.

Presence of traders was observed by WTI team in 2010 (Arjun, pers.comm).It was found one trader was from Jaipur and two different traders from Nepal. WTI team also noticed that some owners had blank gift deeds which were used to transfer possession of elephants. One trader mentioned to them that a deformed tusker displayed in the mela could be purchased cheap and fed well till his tusks grew substantially. Once it died, another tusker could be purchased and held under the old ownership certificate while the ivory was sold in the black market.

Trimming of tusk

Most adult males (80-90%) observed in the Mela had the tusks trimmed (Figures 23 a and b). According to an elephant owner, tusks are regularly trimmed and Rs 10, 000 per year is made from it. If from each elephant about a kg of ivory is trimmed and sold, about 17-18 kg of ivory (of the 90% of the 20 elephant males observed per year) is harvested every year.

a b

Figures 23a and b: examples of male elephants with their tusk trimmed

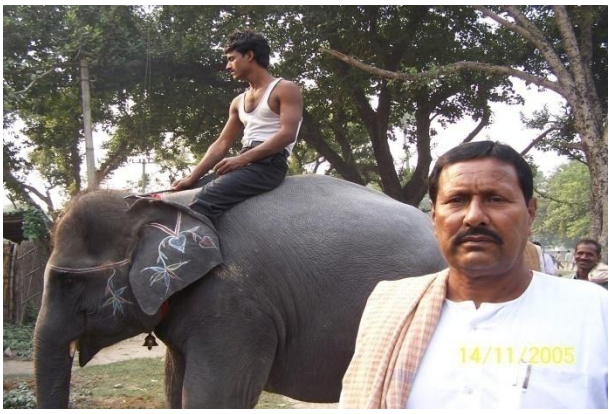
Profiles of elephant owners

Land holding, number of elephants kept and other associated features

One owner had 4 elephants (an adult male, an adult female, one juvenile, one calf), owned 50 acres agricultural land. Feed for the elephant is grown on his farm land. Rice, wheat, *peepal* (Ficus) and palm leaves are given. Three months before the Mela 50 kg of cooked rice/day is also given. If he brings elephant to Mela for 10 days he spends about a lakh for 10 days (about Rs.1000 is spent on each elephant per day at the Mela). Owners (Figures 24a and b) say that they have been bringing elephants to the Mela for generations. It is a kind of vacation for him. Elephants are brought by truck. The owner had 2 children; both had no interest in keeping elephants.

a

Figure 24a: Owner displaying his young female elephant



b

Figure 24b: Another owner with a young elephant

According to him, five years ago, the adult tusker was purchased from Assam for rupees 5 lakh. No trimming of tusk had been done. Otherwise, tusks are trimmed and Rs.10, 000 per year is earned from it. The owner spends about Rs.12, 000 for mahout as salary per year. As his children did not show any interest in keeping elephants, he could be forced to sell the elephants to someone.

Another owner was from Eastern U.P, Gorapura district, had 5 elephants, and one of the elephants was purchased from Assam six months ago. It was a logging elephant and the previous owner was not able to take care of it. The owner walked the elephants from U.P to Bihar to the Mela. It takes about seven days to reach the Mela. It stayed 10 days at the mela and like other owners, he considered this visit as a vacation for him. He cultivated wheat on his farmland, spending Rs. 1000 per month for the mahout.

One owner was from Deorya district, U.P. Elephants were walked to the Mela, and he spent Rs.15, 000 for keeping 2 elephants for 10 days at the Mela. He had 2 elephants: one a 3 year old (with him since three years) and second was 25 years (with him since five years). About 3 acre land was kept exclusively for elephant feed. Had they used this land for themselves they would have earned Rs 3 lakh from the land. Wheat, rice, banana, sugarcane are given to the elephants. According to him, there are about 100 elephants in U.P. Elephants are kept for display of wealth and for auspicious reasons. As people lose interest in keeping elephants with the advent of technology and pursuit of other interests, captive conditions become bad generation after generation for the elephants.

Departure of elephants

On 25th of November, 4 days after the Karthik poornima, there were only 17 (41%) elephants in the mela. The pattern indicates that about 42 % elephants leave the mela (see 25a and b) days after Poornima. The pattern of elephants leaving on other days is not clear, but all the elephants leave the mela on the 9^{th} day of the Poornima.

a

b

Figures 25a and b: Departure of elephants from the mela

Overall welfare elephants in Sonepur mela

Every factor associated with the mela, including, the process involved in bringing elephants, their shelter at the mela, food , water, scope of interaction among other elephants, departure of elephants from the mela and other aspects associated with displaying elephants, directly or indirectly influence the overall welfare of elephants kept in the mela. Elephants arrive from a long distance walking 30 to 40 km/day. They walk on tar roads, through heavy traffic from very early morning to late evening and they appeared to be exposed to very limited food, water, shade and rest.

Elephants are made to stand or are chained for a long time and exposed only to only few varieties of food. This leads to eating a lot, leading to obesity or nutrient deficiency which is reflected in dry skin or other associated problems. Food waste remains next to the animal for long periods of time, dung piles are periodically removed but it's important to know where they are disposed off. There was no mechanism noticed for draining out the urine. Spike chains are commonly used to tether elephants; these chains are known to cause open wounds and sores.

If elephants throw mud on their body, they are beaten; someone (mahout or his assistant) climbs on the animal, cleans dust, removes leaves using a gunny bag (Figure 26a). Mahouts appeared to be interacting with an elephant violently–if the animal refused to feed or drink or did not cooperate while bathing, they were beaten or poked with a long stick with one sharp edge (Figure 26b) and the other edge armed with an ankush. Animals appeared to be going through a lot of stress surrounded by people (Figures 26c and d). People kept watching, sleeping next to them and loud music with devotional songs was being played. Along with the decorations, cloths covering the animals could lead to severe stress for animals

a

b

Figures 26a and b: Mahouts and his assistant removing dust (that had been thrown by elephants) from their body (a), tools used to handle elephants violently; stick with sharp edge and iron ankush (b)

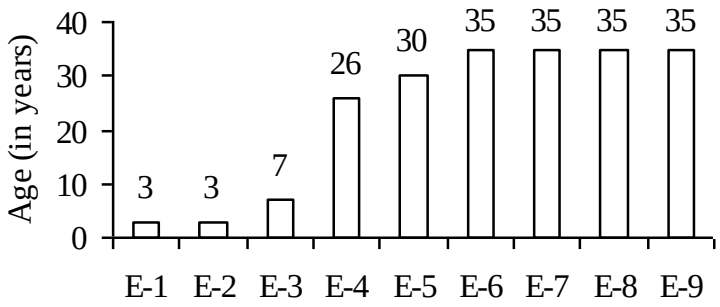
c

d

Figures 26c and d: Elephants surrounded by people in different locations of elephant display

Status of elephants housed with private owners (apart from Mela elephants)

For this investigation, data from 2005 and 2009 was considered. 2009 data shows 90% of elephants displayed in the Mela belonged to owners from Bihar itself. Data was collected through observation and interview of relevant personnel on ten elephants (9 males, 1female), each belonging to a single owner. A sample of only ten elephants (or owners) was possible due to inaccessibility, non-co-operation of owners. The small numbers could be offset by the uniformity in keeping methods observed across the owners. Thus, captive conditions may be similar across other elephants with private owners in this state. Mean age of males was 23.2 year (SE= 5.1, N= 9) and the single female was 30 year old. Figure 27 gives age of the male elephants observed.



E: Elephant

Figure 27: Age of observed male elephants

Source

Change of ownership maybe stressful for elephants as it is likely to involve change of locations/ altered daily schedules/ different management styles. Separation of dependent young (male/ female) from their mothers/ related animals can be traumatic (Bradshaw, 2007).

- Information on source was available for four elephants; all were purchased.
- Sonepur Mela was cited as the source of purchase for two males
- Names of previous owners was available for only two of the elephants
- Age at purchase/ transfer/gifting ranged from 2-30y for males; for the female it was 8y
- Among the elephants observed, three were less than 10y old and were maintained singly by each owner

M-R was 1.5 (SE= 0.0, N= 4) showing a deviation of 75% from E-R.

Purpose of keeping

Keeping elephants for symbolic purposes, even when commercial utilization is not a priority, may have negative consequences on the elephants if the needs of the animals are not known to the owner or are not adhered to.

- All elephants were kept as a symbol of social status, except one which was also used for work.
- Natural conditions such as appropriate physical features (land, vegetation)/ ability to perform species-typical activities were absent

M-R was 1.0 (SE= 0.0, N= 10) with a deviation of 87.5% from E-R.

Shelter

Physical living conditions can be considered to be one of the major factors defining welfare of captive elephants. Absence of appropriate substrates, lack of space or vegetation can

hinder performance of species-specific activities; elephants cover vast distances across varied terrain as part of their home-range (Sukumar, 2006).

- Types of shelters varied from open (Figures 28a, c and d) to covered (Figure 28b) and maximum elephants were provided "covered-type" of shelters

a

b

Figures 28 a, and b: Type of shelters and floor provided to elephants, a) example of open shelter, b) example of closed shelter ; note the extent of natural light available in the shelter

- Shelter size varied from 20' X 20' to a maximum of 50' X 50'
- The elephants were kept in this place for 16-24h
- Floor types varied among the animal observed, some had mud floor and most of the elephants; even they were kept in open shelter, the floor was concert

c

d

Figures 28c and d: c) open shelter with concrete floor, d) open shelter with mud floor

- The shelter was cleaned daily for nine of the elephants and once in 2-3days for another; disinfectants, broom/ water was used.

- Although shelters were cleaned daily, animal defecation, urine, food waste and other associated materials (Figures 28e and f) observed around the shelter appeared to be problematic

e f

Figures 28e and f: Shelter hygiene; note defecation, urine and food waste around the animal

M-R was 2.9 (SE= 3.3, N*= 3) with a deviation of 62.9% from E-R. Figures 29 and 30 compare E-R with M-R and Percentage wise deviation from E-R, respectively, for shelter sub-parameters.

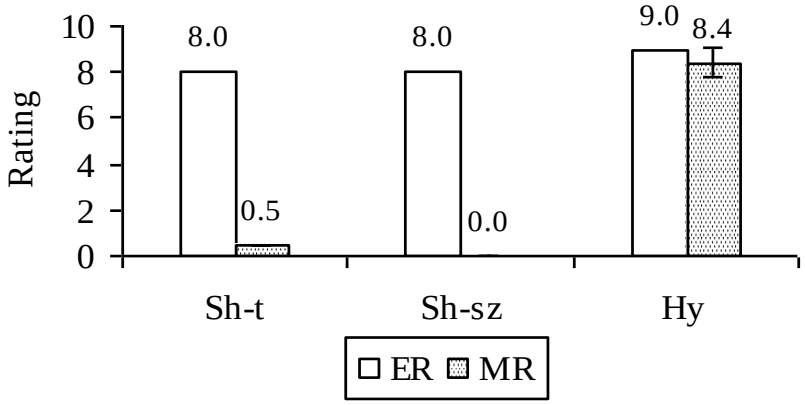
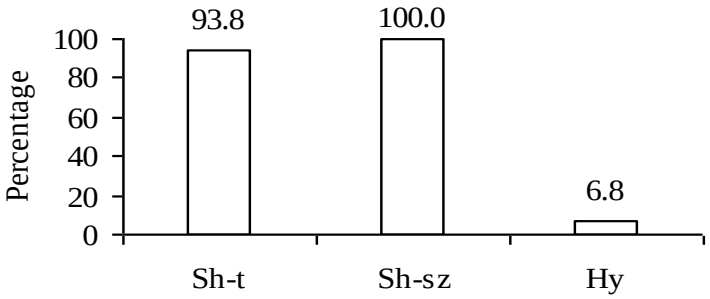


Figure 29: Comparison between E-R and M-R for shelter sub-parameters



Sh-t: Shelter type Sh-sz: Shelter size Hy: Hygiene maintenance

Figure 30: Percentage wise deviation from E-R for shelter sub-parameters

Water

For captive elephants, opportunities for engaging in species typical behaviours such as bathing, dust-bathing, wallowing maybe limited or absent due to lack of suitable water sources or other features of captivity.

- Only one elephant had access to river as the sole source of water; the remaining elephants had access to river/ ponds/ tap water
- Tap or tank (Figure 31) water was available within the shelter; distance to river ranged from 0.5-2kms from the shelter

Figure 31: Elephant standing next to a water tank; the tank water is used for both drinking and washing the animal

- The elephants consumed water 1-3 times/day
- Bathing place was river/pond/ shelter, bath duration was 1-2h; bathing materials used were brush, medicated soap; no scrub was used for one elephant

M-R was 3.5 (SE= 0.7, N*= 5) with a deviation of 55.8% from E-R. Figures 32 and 33 compare E-R with M-R and Percentage wise deviation from E-R, respectively, for water sub-parameters.

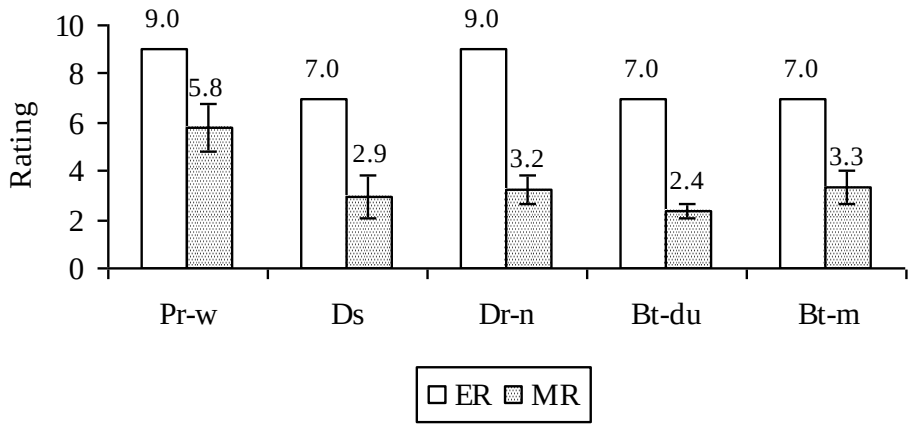
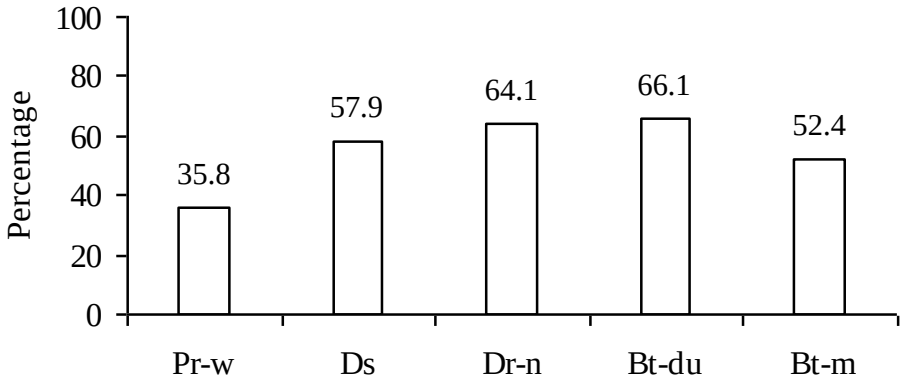


Figure 32: Comparison between E-R and M-R for water sub-parameters



Pr-w: Perennial source of running water Ds: Distance to water source Dr-n: Number of times drinking water
Bt-du: Bath duration Bt-m: Bathing materials

Figure 33: Percentage wise deviation from E-R for water sub-parameters

Sleep

Poor sleep conditions or restriction on movement, in captivity, hinders normal sleep patterns resulting in altered sleep duration. Adult elephants were reported to sleep for 3-4h while younger elephants were observed to sleep for 4-6h (Kurt and Garai, 2007).

- Shelter was also the sleeping place for the elephants
- Sleep duration ranged from 5-9h; elephants were observed to sleep during day as well as night

M-R for sleep area was 0.0 (SE= 0.0, N= 7) with a 100% deviation from E-R.
M-R for sleep duration was 0.0 (SE= 0.0, N= 5) with a 100% deviation from E-R.

Walk
Wild elephants are known to cover several kilometers (Sukumar, 1991) as part of their home range as they engage in species typical activities. Lack of exercise may result in foot problems (Olson et al., 1994).

- Except for a 35 yrs old male, all elephants were allowed to walk
- Time of walking was morning and/or evening; distance covered ranged from 2-6kms, duration from 2-5 hrs

M-R for opportunity to walk was 8.1 (SE= 0.9, N= 10) with a deviation of 10% from E-R.
M-R for walk duration was 1.0 (SE= 0.0, N= 4) with a deviation of 87.5% from E-R.

Social interaction
Female elephants the wild live in groups of related individuals, their society marked by fluidity, i.e., groups are formed or separated but social relationships are long-lasting (Poole and Moss, 2008). Young males form part of the close-knit family groups, leaving their natal herds gradually between 9- 18y of age, learning about the strengths and weaknesses of other males as they play with new individuals (op.cit).

- None of the elephants was given any opportunity for social interaction (Figures 34a and b)

a b

Figures 34a and b: Elephants kept alone without any scope for interactions with other elephants

M-R was 0.0 (SE= 0.0, N= 6) with complete (100%) deviation from E-R.

Chaining
Captive elephants are subjected to various periods/types of chaining as a form of controlling the animals.

- Two male elephants (one 35y old and another 26y old) were chained using spiked chains (Figures 23a and b); the remaining elephants, including one with spiked chains, were chained with a plain type chain (Figures 35c and d)

Figures 35a and b: Type of spike chain used (the photograph was taken at Sonepur mela from a elephant belong to an owner from Bihar)

Of the seven elephants for which data was available, six were chained by their leg, (Figures 36a and b) the remaining elephant was chained in the leg and neck

- Chain length ranged from 3-10ft., weight from 10-30kgs
- All the elephants (N= 7) were reported to be chained all the time
- Hobbles was used for two, a 3y old and a 35y old, elephants
- None of the elephants (N= 5) was allowed to range free at night

a b

Figures 36a and b: Types of chains used; a) long chain with all the legs chained; b) short chain with all the legs tied

M-R was 0.9 (SE= 0.7, N*= 6) with a deviation of 88% from E-R. Figures 37 and 38 compare E-R with M-R and Percentage wise deviation from E-R, respectively, for chaining sub-parameters.

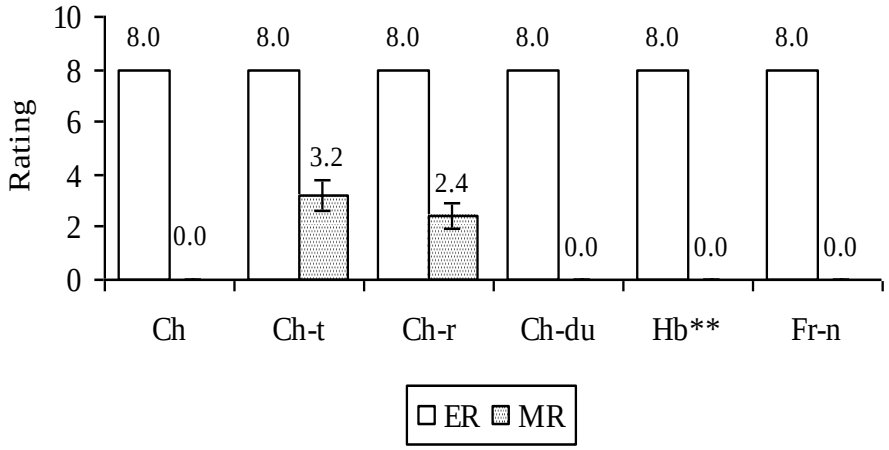
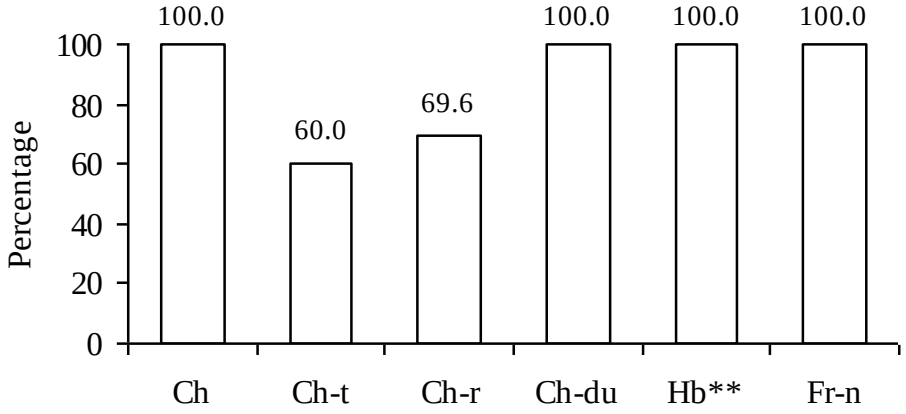


Figure 37: Comparison between E-R and M-R for chaining sub-parameters



Rating based on two individuals only

Ch: Chaining status Ch-t: Chain type Ch-r: Chaining region Hb: Hobbles
Fr-n: Free-ranging at night

Figure 38: Percentage wise deviation from E-R for chaining sub-parameters

Behaviour

Elephants which are aggressive or unpredictable maybe difficult to manage, as compared to those described as calm/ quiet.

- Except for two adult males, all elephants were described as calm/quiet
- The two adult males (26yrs and 35yrs) were reported to be "rough" with one of the males having injured its mahout
- None of the elephants exhibited stereotypy

M-R was 7.2 (SE= 0.7, N*= 3) indicating a deviation of 9.5% from E-R. Figure 39 and 40 compare E-R with M-R and Percentage wise deviation from E-R, respectively, for behaviour sub-parameters.

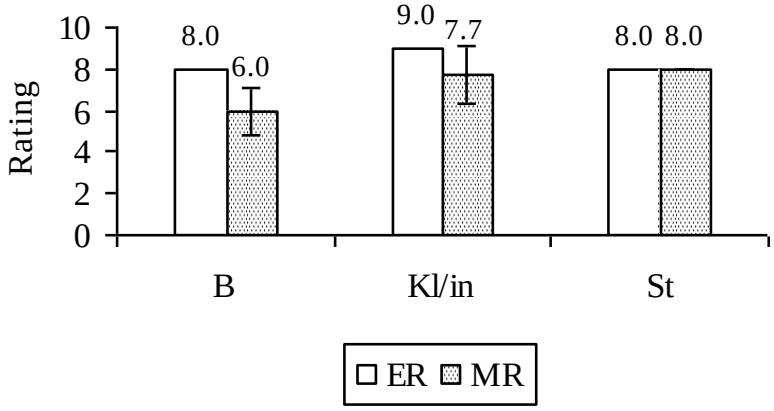
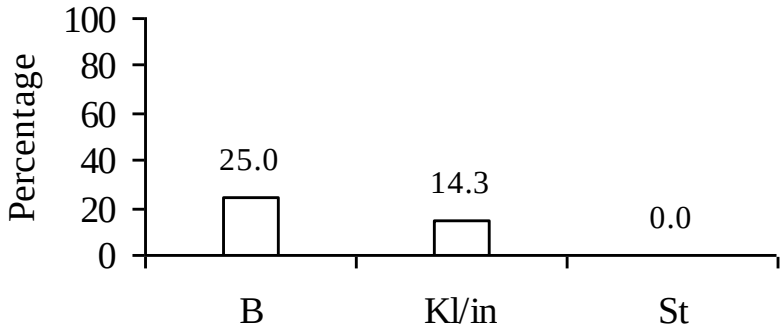


Figure 39: Comparison between E-R and M-R for behaviour sub-parameters



B: Observed behaviour Kl/in: Incidents of killing/injury St: Occurrence of stereotypy

Figure 40: Percentage wise deviation from E-R for behaviour sub-parameters

Work

Any work that involves performance of natural behaviours without imposing restrictions on the animals' ability to choose its activity can be considered to be psychologically and physically stimulating.

- Except for a 35yrs old male, none of the elephants was used for work
- The lone working elephant was used in functions such as marriages or other social occasions (Figures 41a and b); time of work was in the evening for a duration of 4-5h; the elephant had begun to work when it was 7y old

a

b

Figures 41a and b: Types of work elephants are exposed to a) elephant that was used for marriages or other social occasions, b) displaying animals along the main roads

M-R was 7.2 (SE= 0.8, N= 10) indicating a deviation of 10% from E-R.

Food

The variety of plant species and plant parts eaten in the wild (Sukumar, 1991) cannot be replicated in captivity if the animals are given only stall feed. Management protocol such as maintenance of ration charts can help in maintaining inventory of stocks as well as diet of the elephant/s.

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- Except for a 35yrs old male, all elephants were given only stall feed (Figures 42a and b); the elephant allowed to browse/graze did so within a farmland

a

b

Figures 42a, b, c, and d: Types of food provided and the hygiene of feeding place; a) paddy straw b) dry grass and leaves given to young animal; c and d) tree leaves; note the accumulation of food waste

- Hygiene of feeding place (Figures 43a and b) need to be improved a lot
- Stall feed included leaves, rice (milled grains of *Oryza sativa*), paddy (unmilled grains of *Oryza sativa*), wheat (milled grains of *Triticum aestivum*), Sugarcane (*Sacharum* sp.), Jaggery (unrefined, concentrated product of sugarcane juice)

a b

Figures 43a and b: Hygiene of feeding place; a and b) elephants surrounded by their food waste

- Mineral mixture was given for two male elephants, no data was available on this aspect for other elephants
- Ration chart was not used for any of the elephants

M-R was 3.1 (SE= 1.7, N*= 6) showing a deviation of 61.7% from E-R. Figures 44 and 45 compare E-R with M-R and Percentage wise deviation from E-R, respectively, for food sub-parameters.

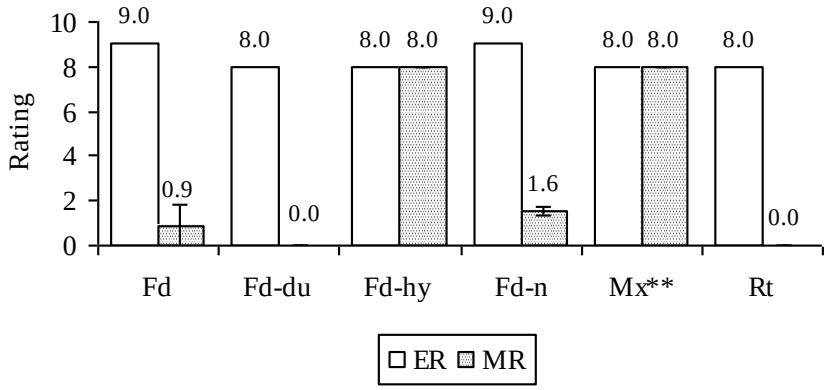
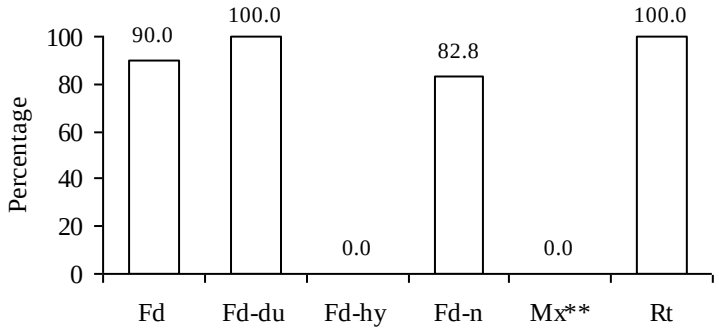


Figure 44: Comparison between E-R and M-R for food sub-parameters



Fd: Food provisioning type Fd-du: Feeding duration Fd-hy: Hygiene of feeding place
Fd-n: Number of food items Mx: Availability of mineral mixture Rt: Usage of ration chart

Figure 45: Percentage of deviation from E-R for food sub-parameters

Reproductive status

Normal reproductive functioning among captive elephants is an indicator of not just presence of individuals of opposite sex and opportunities to mate but also absence of physiological anomalies.

- The single adult female elephant was not reproductively active
- None of the adult males (six in number) was reproductively active
- Musth was reported for a single adult male

M-R for reproductive activity of elephants was 0.0 (SE= 0.0, N= 7) showing complete (100%) deviation from E-R. M-R for musth occurrence was 8.0 (N= 1) showing no deviation from E-R.

Health status

In captivity, elephants are prone to certain diseases/disorders (Mikota et al., 1994) such as foot problems, exposure to new diseases as a consequence of their living conditions.

- There was no information on the diseases or injuries sustained by the elephants
- All the observed elephants (N= 3) had been dewormed
- None of the elephants (N= 4) had been immunized
- Oil (Mustard/ coconut oil) was applied in the head region after bathing the elephants

M-R was 5.0 (SE= 3.1, N*= 3) with a deviation of 37.5% from E-R. Figure 46 and 47 compare E-R with M-R and percentage of deviation from E-R, respectively, for health sub-parameters.

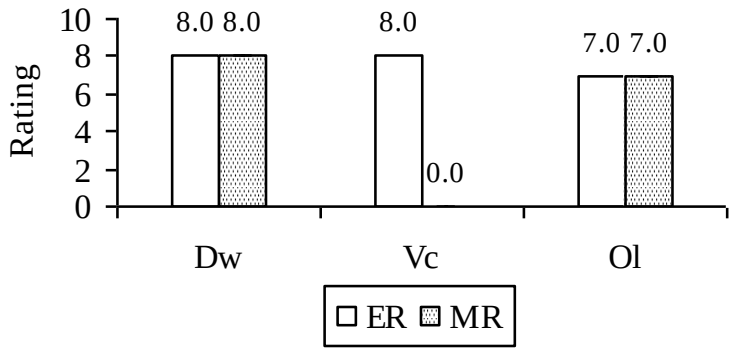
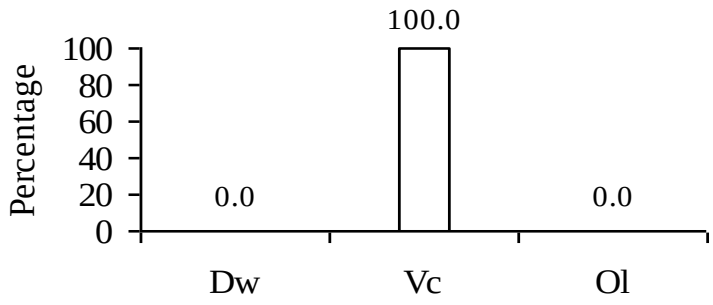


Figure 46: Comparison between E-R and M-R for health sub-parameters



Dw: Deworming status Vc: Vaccination status Ol: Oiling status

Figure 47: Percentage of deviation from E-R for health sub-parameters

Veterinary personnel

Maintenance of health of captive elephants involves availability of personnel with relevant experience. An important aspect of this system is the regular maintenance of records (health/ service/ body measurements, etc.).

- 67% (N= 9) of the elephants did not have access to veterinary doctors
- Two, of the three, doctors available did not have experience in treating elephants
- Frequency of visits was dependent on calls by owners with one doctor said to visit weekly
- Veterinary assistant was not available for any of the observed elephants (N= 6)
- Records were not maintained

M-R was 1.9 (SE= 1.0, N*= 6) showing a deviation of 75.4% from E-R. Figures 48 and 49 compare E-R with M-R and Percentage of deviation from E-R, respectively, for the sub-parameters.

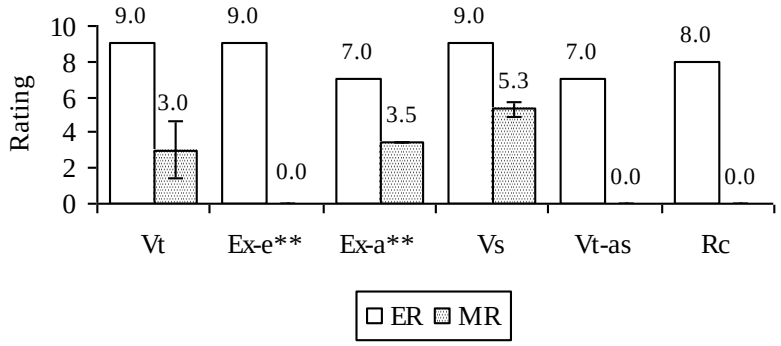
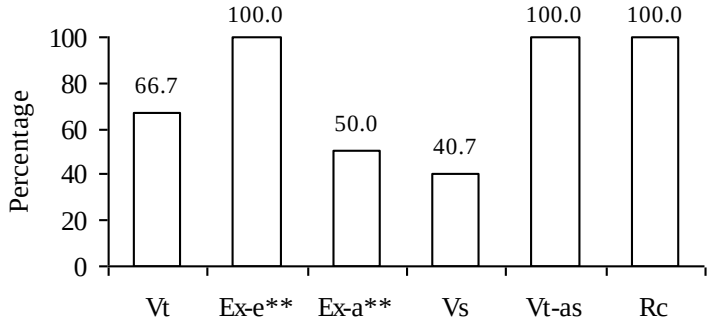


Figure 48: Comparison between E-R and M-R for veterinary personnel sub-parameters



**: Rating based on two individuals only

Vt: availability of veterinary doctor Ex-e: Experience with elephants
Ex-a: Experience with specific animals Vs: Frequncy of visits
Vt-as: Availability of veterinary assistant Rc: Maintenance of records

Figure 49: Percentage of deviation from E-R for veterinary personnel sub-parameters

Handlers' socio-economic status

Handlers are an essential part of a captive elephant system; a socio-economic profile of handlers may indicate the deficiencies within welfare status of elephant keepers

- None of the handlers came from a background associated with elephant handling
- Mean age of mahouts/cawadis was 38 yrs (SE= 2.9, N= 10) ranging from 22-50 yrs (Figures 50 a, b and c).
- Except two, all handlers were literate
- Mean annual salary was Rs9800/-, ranging from Rs.8400 to Rs.12000/-
- All handlers were married, number of children per family ranged from 3-4

- Languages known to the handlers were Hindi and/ or Bhojpuri
- All handlers used tools: metal ankush, wooden ankush, stick
- Insurance cover was not provided for any of the handlers
- Handlers consumed alcohol after work hours (two of the three for whom data was available)

a b c

Figures 50a, b and c: Examples of different age classes of mahouts working as elephant handlers

M-R was 2.1 (SE= 0.6, N*= 7) indicating a deviation of 74% from E-R. Figure 51 and 52 compare E-R with M-R and Percentage wise deviation from E-R, respectively, for the sub-parameters.

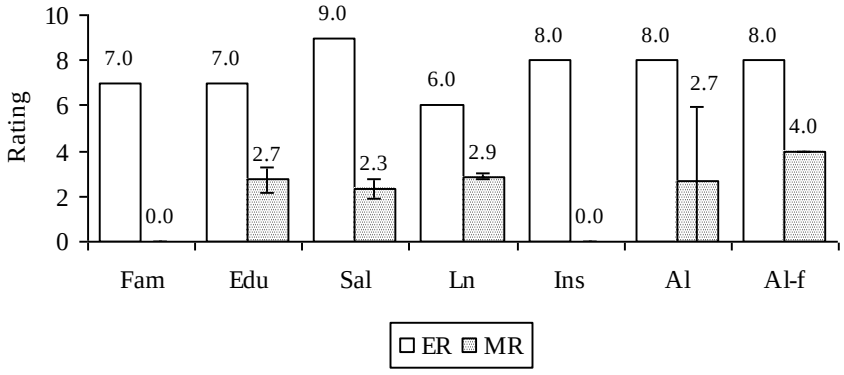
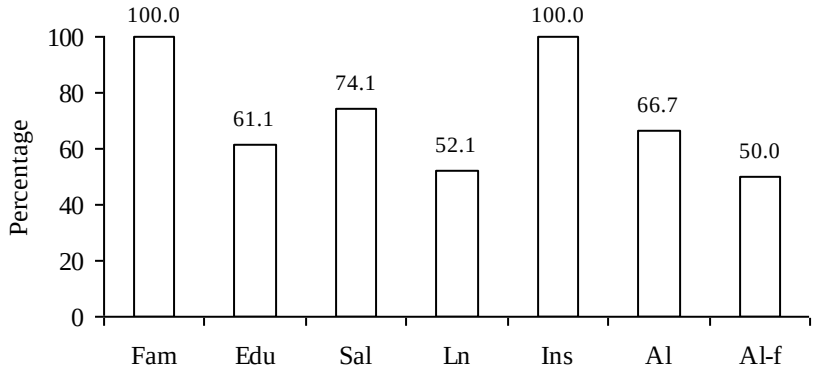


Figure 51: Comparison between E-R and M-R for socio-economic status



Fam: Family occupation Edu: Education status Sal: Salary drawn
Ln: Languages known Ins: Insurance availability Al: Alcohol consumption
Al-f: Frequency of alcohol consumption

Figure 52: Percentage of deviation from E-R for socio-economic status

Overall welfare status

Overall M-R, across all observed parameters, was 3.0 (SE= 0.5, N*= 41) showing a deviation of 62.5% from E-R. Hence, on an average, a parameter would deviate to this extent from the prescribed norms. Figure 53 shows Percentage of deviation from E-R for all the observed parameters. Apart from higher occurrence of maximum deviation from E-R, deviations of 50% or more accounted for 69% of all the deviations (N*= 42). Thus, only 30% (N*= 42) of the observed parameters showed a difference of less than 50% from E-R.

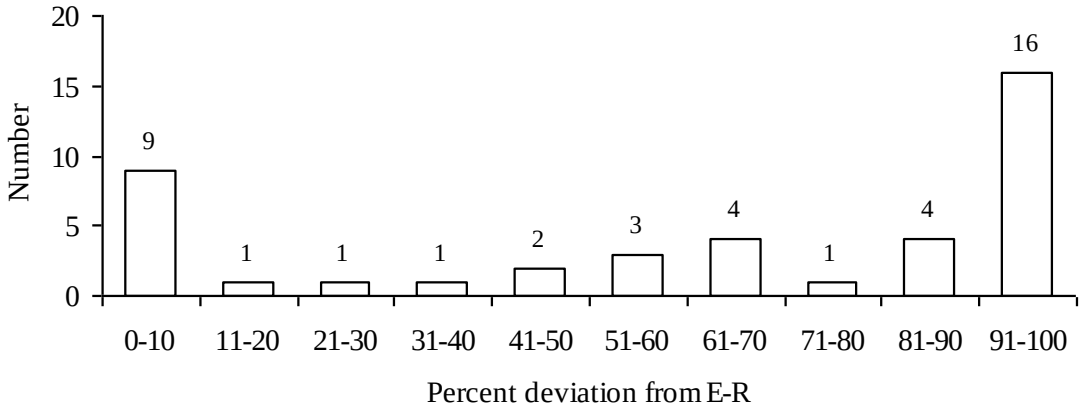


Figure 53: Distribution of Percentage wise deviation from E-R across all observed parameters

Elephants in the circus

In addition to a number of resident elephants found in the State, there are reports of circus companies with elephants camping some cites in Bihar. There are incidents of .elephants belonging to circuses being reported in the city of Ranchi in the neighboring State of Jharkhand. Circus animals were occasionally reported in some cites in Bihar. Almost after

every two to three years there are reports of circus companies with elephants camping in Ranchi and they conduct their shows for about 2 to 3 months in a year.

These circuses are reported to have about 3-4 animals (Figures 54a and b), generally 2 adult females, one adult male and a male calf or juvenile and the main work for the animals is performance in front of the public.

a b

Figures 54a and b: Elephants kept in a circus in Ranchi, Jharkhand

Type of shelter provided to them is a tent, which is established on a mud floor (Figures 55a). The elephants, except for short duration of performance are made to stand with all legs chained (for about 20 to 22 hours in a day). The nutrient intake of these animals also appeared to be poor as they are observed to be feeding only paddy straw (Figure 55b)

a b

Figures 55a and b: Shelter provided (c) and paddy straw, elephant food being unloaded from a lorry

Discussion

Sonepur Mela

The demography of the elephants in Sonepur Mela suggests predominance of males, with owners expecting demand for males from buyers in southern states. These elephants do not belong to this region, as sellers travel from the north/ north-east to this Mela. There is also the illegal sale of trimmed tusks to contend with. Owners appear to consider elephants as an

investment with potential to yield profits through their sale. Welfare status of the elephants on display at the Mela was poor with the elephants standing continuously, for 20h, in one place with no exercise for the duration of the Mela. Young, dependent elephants (male and female) were also available for sale. Improper chains (spiked) were used to restrain the elephants.

Elephants with private owners

Welfare status of captive elephants with private owners, across the state of Bihar, has been rated using the premise that greater deviation from wild conditions is an indication of poor welfare. Importance of different parameters (sub-parameters), to the captive elephants, has been assigned using a scale developed by a team of experts to quantify this deviation through a rating system. One distinguishing aspect of the elephants with the observed owners was its symbolic nature— the animals were maintained to represent a human quality; features characteristic of elephants were either completely absent or deficient.

Features not suitable for captive elephants were:

- All the elephants were confined to a restricted space and chained for most parts of a day. Elephants, especially adult males, tend to cover larger distances (Fernando et al., 2008) showing their ability and their need to move as they perform species-typical activities; wild elephants, in general have rarely been observed to be still (Poole and Granli, 2009).
- Water was provided within the shelter through hose-pipes/ taps, both of which cannot be accessed by the elephants when they need to drink/ bathe
- Wild elephants spend a major part of their day moving across varied terrain as they forage and engage in species-specific activities— an activity restricted to being walked by handlers for a couple of hours for the observed elephants. One elephant was not provided this opportunity also.
- None of the observed elephants was allowed to forage at night; most of the elephants (except for an adult male) were not allowed to free range at all; thus stall feed was the predominant type of food provisioning.
- Ashraf and Mainkar (2004) recommend the removal of hobbles for calves observed in Sonepur Mela. During this survey, hobbles were observed to be used for a calf as young as three years old. In addition to hobbles, an adult male was also restrained using spiked chains. Gruber et al., (2000) report increasing incidence of stereotypy among chained elephants as compared to those left free in pens.
- Elephants, especially females and dependent young, live in social groups, lasting across generations (Poole and Moss, 2008). All elephants, even those which were less than five years were kept singly, in isolation.
- Stall feed was the sole source of food provisioning for nine of the ten observed elephants. This has two effects: absence of variety of food types and consequent imbalanced nutrition and secondly, absence of physical/ psychological activity for the elephants. More so, since most of the elephants (nine of the observed ten) were not put to work. The lone adult male was used for such unnatural activities as participating in social occasions such as marriages.
- Absence of reproductive functioning among adult elephants

- Most of the observed elephants (67%) did not have access to veterinary doctors or veterinary clinic facility
- None of the elephants were immunized against known diseases
- There was no record maintenance (health/ clinical) of the elephants.

Handlers:

- None of the handlers came from a family background dealing with elephants. This implies new entrants into the profession and a possible lack of knowledge about elephants
- The salary paid to the handlers was insufficient for a family with an average of four members
- None of the handlers was covered by insurance, despite the occurrence of injury to a mahout by his elephant

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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 among pet, stray or wild animals, since all of them may require assistance and relief from cruelty, neglect and harm. The organisation's objective has been to design services and facilities which are employed fully in the realisation 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 coordination with governmental agencies, research institutions, conservation NGOs and individuals from India and abroad, in all matters relating to the 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 fora.

Be As One Foundation, is an international non-profit conservation organisation; working as an open community providing support, advice, education and research to holistic projects that benefit wildlife, promote animal welfare, the environment and local people. The Foundation believes in working in close collaboration with local community leaders, organizations and governments. Be As One is dedicated to the principles of openness and transparency it all its projects

Wildlife Trust of India (WTI) is a non-profit conservation organisation, committed to urgent action that prevents destruction of India's wildlife. It was formed in 1998 with just three staffers. WTI today, is tackling a diverse range of issues with over 50 projects and two dozen field offices across the country. These projects are implemented by close to 150 full-time professionals and consultants, in addition to volunteers from all walks of life. The core team includes scientists, field biologists, conservation managers, veterinarians, lawyers, finance, business management and communication specialists, who collectively bring into play a huge bank of professional experience. The mission of WTI is to conserve nature, especially endangered species and threatened habitats, in partnership with communities and governments.

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 organisations in 153 countries. WSPA brings together people and organisations throughout the world to challenge global animal welfare issues. It has 13 offices and thousands of supporters worldwide.

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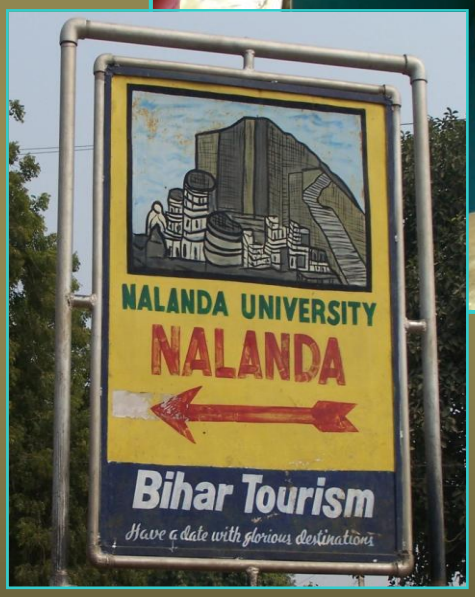

Bihar has history of 2 major religions established here and had a big university with 10,000 students, 2000 teachers,700 years before Oxford, Cambridge and other well known universities in Europe were established. Bihar is also known for its wealth of natural resources and wildlife, however, it does not have elephants in the wild, but interestingly, there is an active culture of keeping elephants as pets and status symbols. This investigation is aimed at assessing the welfare status of captive elephants and the socio-economic status of their handlers in the state of Bihar.