Traveling and Begging Elephants of India

An Investigation into the Status, Management and Welfare Significance

Surendra Varma, Suparna Ganguly, S.R.Sujata , Snehal Bhavsar, Sandeep K Jain and Nilesh Bhanage

Elephants in Captivity-
CUPA/ANCF Technical Report No.16

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Published by
Compassion Unlimited Plus Action (CUPA)
Veterinary College Campus, Hebbal, Bangalore 560 024
www.cupabangalore.org

In collaboration with
Asian Nature Conservation Foundation (ANCF)
Innovation Centre, Indian Institute of Science,
Bangalore 560 012
www.asiannature.org

Title: Travelling and begging elephants of India
Autours: Surendra Varma, Suparna Ganguly, S.R.Sujata, Snehal Bhavsar, Sandeep K Jain and Nilesh Bhanage

Suggested Citation: Varma, S., Ganguly, S., Sujata, S.R., Bhavsar, S., Jain, K. S., and Bhanage, N. (2010) Travelling and begging elephants of India – An Investigation into the Status, Management and Welfare Significance. Elephants in Captivity: CUPA/ANCF-Technical Report No.16. Compassion Unlimited Plus Action (CUPA) and Asian Nature Conservation Foundation (ANCF), Bangalore, India

First limited Edition 2010
Published by CUPA and ANCF

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Preface

Keeping wild animals like elephants in captivity outside their natural distribution range may compromise the ability to provide them with a natural environment and scope for natural behaviour. Elephants kept chiefly to generate income by travelling and begging (labeled Travel-Begging elephants) are generally found far from their natural distribution range and are forced to go through unnatural lifestyles. States such as Gujarat, Maharashtra and Punjab do not have any wild elephants but they have a sizeable number of captive elephants, most of which come under the category of Travel-Begging syndrome. Although there are recent reports of wild elephants straying into Maharashtra from adjoining forest regions of Karnataka, this does not qualify Maharashtra as a state where wild elephants are found.

Observations of the daily routine of travel-begging elephants have much to teach us on the status of elephants. It is surprising to witness the respect and affection people have for elephants and how strongly elephants are associated with our culture. When an owner of a travel-begging elephant parks his animal near a hotel, he is looked after very well by the hotel owner. However, the same hotel owner, though willing to offer his support to the animal, is not in a position to fulfill the needs of the elephant for even a single day. He usually ends up giving the elephant food waste including vegetable peels and left-over portions of junk, oily, sweet and spicy food. Such elephants, usually in an acute state of hunger and exhaustion due to a long working day accept any food, however alien it may be to their real diet. Although there is a clear interest and respect for the animal by people, they lack an understanding of the needs of an elephant, leading to an unnatural and unhealthy régime for the animal. Owners who may be the mahouts as well, usually like to maintain their elephants within city limits as it provides easy access to an audience who are the main source of revenue for him as well as three of his assistants, their families (an average of four children in each family, totaling approximately twelve people) and for the elephant. This exposure to city environs decides the status and type of food, water and bathing opportunities, shelter and flooring provided for housing the elephant. Conversely, when the elephant becomes old, it is a nonviable commodity and a burden to the owner's economic status.

This, as we would like to emphasize in every document we have developed so far on the species in captivity, is the first of its kind report on the status of captive elephants in the category of Travel-begging. It attempts to trace the welfare of elephants in this category. The data obtained through these investigations was processed using two approaches: one was the use of a rating scale developed by experts based on their concept of importance of a particular parameter to an elephant and the other was a scale from zero to ten with with zero representing the worst possible situation and ten implying a satisfactory state, closer to what an animal experiences in the wild. The scale from zero to ten was further divided into the 0 to 2.4 representing bad welfare conditions, 2.5 to 4.9 as poor, 5.0 to 7.4 as moderate and the values 7.5 to 10 indicating satisfactory conditions. The rating scale for welfare conditions developed by experts has been used in section one and the zero-ten scale in all other sections.

This report has four sections. Section one is dedicated to providing details of overall population status, management and welfare of captive elephants belonging to the begging and travel category from the states where the investigation was carried out. The first section with the executive summary also provides recommendations for this category of animals. Section two describes the welfare status of the Travel-begging elephants belonging to Gujarat; section three describes

welfare status of this category from Maharashtra and section four is dedicated to understanding the welfare status of the Travel-begging elephants of Punjab. All these sections have executive summary, introduction, objective, methodology, results, discussion and references.

As mentioned earlier, elephants in captivity belonging to the begging and traveling category have seldom been considered for their management or upkeep. They represent a specific group of animals in a questionable place in highly inappropriate settings. We assume that our learning through this investigation will help dismiss some of the ignorance associated with the genuine keeping and husbandry of these elephants.

Our study of age classification of this category of begging and travelling elephants clearly indicates that they are usually in the age range of 35-50 years , and that the old elephants (> 50 years) and their owners undergo tremendous stress. At the least, such elephants need to be banned from being used for begging and blessing people and there should be an effort to rehabilitate both elephant and owners to lead a meaningful life.

Acknowledgements

Our thanks are due to the team members of Gujarat Society for Prevention of Cruelty to Animals (GSPCA), Plant and Animal Welfare Society (PAWS), based in Dombivli and Care of Animals & Protection of Environment (CAPE) based at Ludhiana, for support and concern on improving the quality of the management and welfare of elephants and their handlers through their active involvement in this specific investigation of the status of welfare of traveling and begging elephants.

The investigation was possible with the support of Ms. Anuradha Ramaswamy, Mr. Shivprasad Phadke, Ms. Sonali Bagde of PAWS, Shri Mahavir Singh, DFO, Kadian Forest Division, Ludhiana, Dr. Bhajan Singh, Veterinary Officer, Animal Husbandry Department, Ludhiana, Mr. Harbhaj Rai, Range Forest Officer, and Mr. Pritpal Singh, Block Forest Officer of Kadiyan Forest Range of Ludhiana and Mr. Sanjiv Kumar and Mr. Parmanand Shukla, Animal Welfare Officers in Ludhiana. Elephant owners Banwarilal Lal, Kewal Baba, Billoo Ram, Babloo Ram, Bakoli Ram, Bire Ram, Sher Singh were enthusiastic and helpful. Critical information received from Mahout Chotelal of elephant Lakshmi, encountered on the highway from Daudpur to Ludhiana, was especially helpful, leading to many insights into the management and welfare of the elephants.

Mr. Raj Bhavsar provided photographs of the elephants observed in Gujarat during the investigation. Dr. Shiela Rao and Suparna Ganguly of Compassion Unlimited Plus Action (CUPA) provided critical inputs. Mrs. Sunanda Vinayachandran IISc campus, Mr. Guruprasad (ANCF), Sowmya Gokarna – Club for Awareness and Nature Study (CAN), Ms. Meera Pillai, (CUPA) Ms. Nirupa Rao (CUPA) and Ms. Ramya Ramachandran (of Symbiosis Institute of Media and Communication, Pune and intern CUPA and WRRC) provided editorial and layout design supports.

Section 1:
Traveling and begging elephants of India

Executive Summary

Elephants belong to travel and begging category predominantly to private owners and have been so classified because of their work type involving traveling across regions and seeking money from the public.

Data collected on Travel-begging elephants in order to develop a profile of welfare status of temple elephants in terms of physical and biological features provided in captivity and to obtain information on the professional experience and socio-economic status of handlers (mahouts/cawadis)

Details related to elephants and handlers were obtained by direct observations of elephants and by interview and interaction with people associated with this category of elephants. The data was processed by comparing the features in captivity with those observed in the wild. Deviations from conditions in the wild have been considered to represent poor welfare. The greater the deviation, the poorer is the welfare. Deviation from the wild state for the parameters observed was rated using a scale developed by elephant experts.

Thirty-five elephants were observed, these elephants were from Gujarat, Punjab and Maharashtra. Twenty one elephants were observed in Gujarat, 10 in Punjab and four in Maharashtra. Mean age of females of observed elephants were was 33.6yrs; ranging from 13-45yrs. Male age ranged from 35-43yrs. Females outnumbered males and all elephants (male and female) were between 13-45yrs. There were no calves/juveniles or adults aged more than 60yrs.

All the elephants had been purchased/exchanged; information was not available for 10 elephants.MR was 1.5 with a deviation of 75% from ER.

Seventy seven percentages of elephants were confined in man-made structures (urban flyover, enclosure of asbestos); remaining were kept in the open, under a tree. Concrete floors were observed for 89% elephants; earthen floor for 9%. MR was 1.8 showing a deviation of 77% from ER.

Ninety seven percentages of elephants used ponds/tanks/buckets/tap water as water source. Bathing place and frequency of bath was random; no material was used as scrub, except for 10 elephants for which coconut husk was used occasionally and mean duration of bath was 0.7hrs. MR was 1.4 (SE= 0.4, n*= 3) indicating a deviation of 80% from ER.

All observed elephants were walked on tarred roads. Mean distance covered was 38km and mean duration of walk was 13.8hr. MR was 2.7 implying a deviation of 66% from ER.

All observed elephants were allowed to interact at night (after work hours). Ninety four percentages of elephants were allowed to interact and mean group size was 10. MR was 4.4 with a deviation of 45% from ER.

None of the observed elephants was allowed to range-free, all were chained. When not working, all elephants were chained and mean chaining duration was 9.1hrs. MR was 1.0 with a deviation of 88% from ER.

All elephants were used for work. Mean duration of work was 12.3hrs and 31 elephants carried howdah made of bedding material, 2 carried metal howdahs and mean howdah weight was 29.9kg. Mean maximum distance carrying weight was 40km and MR was 1.7 (SE= 0.5, n*= 3) showing a deviation of 79% from ER.

None of the elephants was allowed to forage, stall feed was leaves of banyan, sugarcane, chapatti, banana, food offered by the public. MR was 1.9 with a deviation of 79% from ER.

Oestrus cycles were not reported for any of the elephants, of 35 female elephants, 32 had never been exposed to males; three had been exposed to males once and no calf birth reported. MR was 0.7 indicating a deviation of 91% from ER.

Of 88 instances, eye problems accounted for 26%, foot or leg problems 34%, abscess 35% and other medical problems (GI problems or fever) 5%. Ninety one percentages (n=35) had access to veterinary doctors; all doctors were on call, however, immunization or sample tests of blood/dung/urine was not done for any. MR was 1.3 showing a deviation of 84% from ER.

Overall welfare rating for Travel-begging elephants was 2.4 showing a deviation of 70% from ER. Considering the deviations for each of the parameters observed, eight of the ten parameters showed deviation of 50% or more from ER, implying divergence to this extent from norms prescribed by the expert team.

Based on information on three handlers, professional experience was 6.5 to 7 years for two and 20 years for the third handler. Experience with recent elephant was 6 and 7.9 years for two handlers, 20 years for the other. MR was 3.7 (SE= 1.2, n*= 3) showing a deviation of 59% from ER.

Mean annual salary was Rs.29, 455/-, mean number of children per family was 4, none of the handlers was covered by insurance and ninety seven percentages (n= 32) of mahout reported alcohol consumption. MR was 1.5 with a deviation of 81% from ER.

The use of elephants for travel and begging imposed a lifestyle for economic gain. The use of elephants for work— walk and beg— dominated all aspects of the elephants' life, as its shelter, water, food and choice of mates to interact/reproduce were limited by work schedule. The elephants were walked for half a day, mostly on tarred roads, to earn a living. All aspects of the elephant's life – its need for water, shade, rest, food— were dictated by the work regime. Thus, even though, behaviourally there appeared no overt expression, their overall welfare status was marked by deviation from what is considered appropriate by experts. The handlers too appeared to be poorly paid and were not covered by any sort of insurance. Added to this, most were said to consume alcohol.

RECOMMENDATIONS

Existing conditions suitable for elephant keeping

None

Negative conditions of elephant keeping

- Absence of most features basic to elephants' essential biological needs
- Walking amidst heavy urban traffic and use in tourist centres
- Poor nutrition
- Water from contaminated sources
- No interaction with con-specifics
- Frequent change of mahouts
- Subject to high commercial usage including election rallies, weddings and public functions

Elephants that belong to the category of begging and traveling have been found in these states for a long time without any defined legal status. There is a need for the Forest Department of these states to take an unambiguous and clear stand on the presence and possession of captive elephants by individuals for commercial purposes. If possession is granted, then elephants need to be micro-chipped and their handlers/mahouts given Ownership Certificates (OC). This is important since most of the elephants presented in our investigation did not have any papers pertaining to ownership, despite their reported presence in the current location for at least ten years.

However, keeping in mind that the WLPA Amended 2003 clearly states that OC can be granted at the discretion of the State Chief Wildlife Warden only after Section 42 is taken into account. This section enjoins responsibility of proper "upkeep, housing and maintenance" on the owner, failure to provide which can lead to OCs being cancelled. Additionally, the Declaration of the Wildlife Stock Rules of 2003 necessitates all owners to re-validate and declare their Ownerships. Failure to do the same implies that if there is OCs, these are null and void.

Temperatures in all the three states where travel-begging elephants were studied touched an unbearable high during summer. Except for 3 months of the winter months, all afternoons were hot (30 ^{0}C or more).

Corrective steps need to be initiated urgently to improve the welfare of the elephants in these locations:

The first step is to recognize the legal status of the animals followed by improvement of their welfare and that of the owner- mahout families by creating a model of elephant keeping that would benefit both the elephants and the humans who use them as a source of livelihood. The following approach could be adopted:

a. The forest department or concerned authorities could be encouraged to start an Elephant Park and Conservation Centre (EPCC) as part of eco-tourism projects. Some of these elephants could be leased from the present owners who use the

animals for their livelihood against a designated monthly sum payable to them and maintained in the park. This would give the owners a clear signal that the Government is interested in elephant and mahout welfare. If they do not comply with the directions, they could lose links with the elephant and the monthly lease compensation of such a model. This kind of a revenue generating and self-sustaining model will succeed in giving a better life to the community. It will improve the welfare of the animals considerably by providing natural and healthy surrounding, with basic needs like water, diet, shade, veterinary care and interaction with other elephants being fulfilled.

b. Each family member can be given a job as a mahout against a government-approved salary. Simple mahout quarters can be provided with basic hygiene in place. Insurance cover for elephant and mahouts should be purchased by the government.

c. The EPCC could be open to the public, against ticket money, to watch and enjoy elephants in their natural habitats-feeding, playing, bathing, mud-play and wallowing without chains and within a suitable enclosure. The welfare of the elephants should be an uppermost concern while designing or allocating such a habitat.

d. Government, as a stakeholder in this unique conservation and welfare measure, should take assistance from NGOs active in the field. This kind of collaboration could become a model for the rest of the country to follow. The agency created should monitor the EPCC, and send regular reports to the concerned forest officers.

e. Reports are available of person/s willing to donate 200acres of land adjoining Surpaneshwar Sanctuary on banks of the river Narmada, Gujarat. This proposal should be assessed for its viability as an option. Otherwise state governments should allocate land with shade, flowing water, accessibility and grazing opportunities for the elephants.

f. The current elephants could be micro-chipped (with NGO participation, for additional assistance) and all new arrivals in these States should be banned. Private ownerships should no longer be given. , since the dry climate and extreme temperatures are not conducive for elephant keeping.

g. The current age estimated for these elephants is 35-45 years. They are likely to survive another 20 years. Therefore, the Government has to make provision for their welfare in their budget for this period. When the elephant dies, the monthly lease amount would cease and the mahout could be compensated from a proposed insurance amount.

h. Public awareness building measures need to be undertaken to discourage the use of elephants in activities like begging, racing, etc. Such activities generally involve harsh training schedules for the animal and are not part of their natural repertoire.

The ‘owners’/ ‘guardians’ of the animals should be prevented from overexploiting them for commercial gains.

i. Currently, the elephants are made to walk on major city roads and highways. Some years ago a speeding truck in Sangrur district, Punjab collided with an elephant resulting in a painful death for the animal. Elephants should be prevented from being walked around on major roads as it is unsafe for them, the mahout and the general public.

j. A work schedule that nears the activity pattern of wild elephants: working during cooler parts of a day and rest during the hottest periods; provision of food/ clean and adequate water to be ensured while working. Hotel waste and garbage should not be the source of food

k. Proper retiring area when not working, food and water facility, drainage and dung disposing facility need to be developed immediately for those individuals/organizations that are serious about retaining their elephants.

l. A committee should be appointed to regularly monitor health and upkeep of elephants in these states and elephant experts should be brought in for regular check up of the animals once a year. Periodic health checks have to be made mandatory for elephant and mahout

m. There needs to be a ban on elephant rides and blind elephants should be confiscated from the owners.

n. Mahouts are to be re-trained for better care of the elephants.

o. Maintenance of records of ownership/health/management practices followed

p. Confiscation of animals and punitive action against owners/ handlers needs to be initiated if prescribed regulations not followed

Introduction

Elephants in this category belong predominantly to private owners (Bist, et al., 2002) and have been so classified because of their work type involving travelling across regions and seeking money from the public. Captive conditions experienced by these elephants depends on their location; all features such as shelter type, water availability, food, companions are decided by their location as part of their work.

Objective

The 2005 – 2010 All India Captive Elephant survey (conducted by CUPA-ANCF-WSPA) collected data on Travel-begging elephants in order to:

- Develop a profile of welfare status of temple elephants in terms of physical and biological features provided in captivity
- Collect information on the professional experience and socio-economic status of handlers (mahouts/cawadis)

Method

An All India Captive Elephant Survey was launched in 2005 with the joint participation of World Society for Animals (WSPA), U.K., Compassion Unlimited Plus Action (C.U.P.A.), Bangalore and Asian Nature Conservation Foundation (A.N.C.F.), Bangalore. Information regarding elephants and handlers was collected by direct observation and through interview of relevant personnel (Figures 1a and b) . This was achieved by involving teams of volunteers drawn from educational institutions/ nature clubs. The teams were given short-term training by experts from A.N.C.F. regarding collection of data. A section of the data related to population demography was assessed for the same. Another section was used for assessing welfare status of elephants as well as professional experience/ socio-economic status of handlers.

a

b

Figure 1a and b: Data collection by interactions with elephant handlers and with officials from district administration

Welfare status of elephants

The living environment, physical and biological, experienced by elephants in captivity may impose deficiencies or inequalities from those experienced by their wild counterparts. It is this difference

from the wild that has been used to assess the welfare status of captive elephants. A range of captive features, both physical and biological, have been observed and compared with those observed for wild elephants. These features include the physical environment as well as the social, reproductive and health aspects of the elephants. The greater the difference between captive and wild variables, the poorer the welfare of the captive animal. In addition, veterinary care and health parameters were considered, as any captive situation cannot do without these two important features.

As captive living conditions are not uniform across regions/management types, each of the observed variables was rated on a 0 – 10 scale.

The rating method

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

- The experts, based on their concept of the importance of a particular parameter to an elephant, developed rating for each parameter. For example mean expert rating of 8.0 (SE= 0.5, n=29; n= number of responses) for a parameter 'floor' and 9.0 (SE=0.4, n=31) was arrived for 'source of water' from the ratings suggested by each expert.
- A mean rating for each parameter, across all the participating experts, has been used as the Experts' Rating (E-R) which represents the importance attached to a parameter.
- Elephants were visited on the ground; data for each parameter was collected by direct observations or with the interviews of people associated the animal. Ratings were assigned to each parameter for each elephant and Mean Rating (M-R) was calculated for a given parameter by averaging across the observed elephants. Thus the Mean Rating (M-R) denotes welfare status of existing conditions on the ground for the particular parameter.
- For example, if an elephant is exposed only to natural flooring, the animal receives a M-R of 8 and for entirely unnatural flooring the value is 0; if an animal is exposed to both natural and unnatural flooring, the value is 4 (as 8+0/2= 8/2= 4). If an elephant is exposed to a natural water source, such as a river, it receives a value of 9; if the source of water is large lakes or reservoirs, it gets 4.5. A value of 3.5 is assigned for small water bodies like tanks and ponds. Tap water (running) gets 2.5 and if only buckets, pots, and tankers are in use, then the allocated value is 0.5.
- In this investigation, variables which represent a common feature of the captive condition have been grouped to form a parameter. For example, the variables shelter type, shelter size, floor type in the shelter; all represent different aspects of the physical space provided to the elephant. Hence, they are grouped together to form the parameter "Shelter" and each constituent variable is a sub-parameter. In this investigation, the E-R for a parameter (say, shelter) represents the mean of E-Rs across all related sub-parameters. M-R is also based on similar lines.

- E-R and M-R for each of the regimes represent the average across related parameters observed for the regime. For instance, E-R / M-R for a parameter "shelter" represents the average of related parameters (termed sub-parameters) such as type, flooring, size, and shade availability.
- Results have been presented comparing E-R and M-R as a means of comparing the extent of deviation present in the parameters observed. The difference between E-R and M-R (expressed as percentage) indicates deviations from the prescribed norm.
- The same rating logic has been applied to the set of observed features for handlers, viz., comparison of mean rating for each of the observed variables (M-R) with those prescribed by the expert team (E-R). Greater deviation implies poorer professional experience or socio-economic status.
- n* refers to number of states.
- n refers to number of elephants observed
- $n^{\dagger}$ refers to total number of parameters observed

Results

Thirty-five elephants were observed, these elephants were found in three states: Gujarat, Punjab and Maharashtra. Mean age of females was 33.6yrs (SE= 1.3, n= 27; ranging from 13-45yrs). Male age ranged from 35-43yrs (n=3). Figure 2 gives age based distribution of observed elephants. In terms of states, 21 elephants were observed in Gujarat, 10 in Punjab and four in Maharashtra. Females outnumbered males and all elephants (male and female) were between 13-45yrs. There were no calves/juveniles or adults aged more than 60yrs.

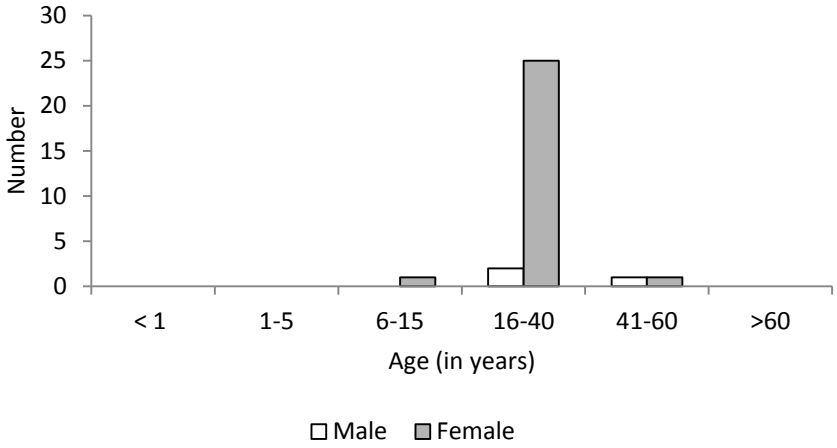

Figure 2: Age class of observed elephants

Source

Shifting of elephants across owners/regions exposes the animals to a sudden change in the set of husbandry methods, a potential cause for occurrence of stress. This could also involve breakage of established bonds among elephants and between elephant and handler, exposure to unknown individuals.

- All the elephants (n= 25) had been purchased/exchanged; information was not available for 10 elephants

MR was 1.5 (SE=0.0, n=25) with a deviation of 75% from ER.

Shelter

The absence of space or vegetation with natural substrates will inhibit any opportunity available to the elephants to express their natural repertoire of behaviours.

- Seventy seven percentages (n= 35) of elephants were confined in man-made structures (Figures 3a and b) (urban flyover, enclosure of asbestos); remaining were kept in the open, under a tree
- Concrete floors were observed for 89% (n= 35) elephants; earthen floor for 9%
- Hygiene was not maintained in the shelter for any of the observed elephants (n=31)

MR was 1.8 (SE= 0.9, n*= 3) showing a deviation of 77% from ER.

a b

Figures 3a and b: a flyover acting as shelter for traveling and begging elephants.

Water

Situations in captivity, such as exposure to sunlight without recourse to free movement, long working hours, absence of earthen substrates, add to the need for elephants to access water to consume and to regulate body temperature. Improper sources which make the animal dependent on its human handlers will reduce timely access to water.

- Ninety seven percentages (n= 34) of elephants used ponds/tanks/buckets/tap water as water source (Figure 4)
- Bathing place and frequency of bath was random; no material was used as scrub, except for 10 elephants for which coconut husk was used occasionally
- Mean duration of bath was 0.7hrs (SE= 0.1, n=34)

MR was 1.4 (SE= 0.4, n*= 3) indicating a deviation of 80% from ER.

Figure 4: Pipe water as source for traveling and begging elephants

Walk

Foraging, and as a consequence walking, forms a major activity for elephants. This activity, however, is not done at a stretch and without recourse to rest/shade/water. In captivity, work schedule determines how much walking is allowed and on what terrain.

- All observed elephants were walked on tarred roads
- Mean distance covered was 38kms (SE= 1.4, n= 33)
- Mean duration of walk was 13.8hrs (SE= 0.5, n= 35)

MR was 2.7 (SE= 0.2, n*= 3) implying a deviation of 66% from ER.

Social interaction

While it is the basis of an elephant's life (Poole and Moss, 2008), social interaction maybe restricted or absent for captive elephants.

- All observed elephants were allowed to interact at night (while or after work hours- Figures 5a, b, c and d)
- Ninety four percentages (n= 35) of elephants were allowed to interact
- Mean duration was 9.0hrs (SE= 0.5, n= 32)
- Mean group size was 10 (SE= 1.3, n= 32)

MR was 4.4 (SE= 1.0, n*= 3) with a deviation of 45% from ER.

a

b

c

d

5a, b, c and d: Social interaction available for traveling and begging category of elephants

Chaining

Opportunities available for captive elephant to express species-typical behaviours are restricted by the use of chaining.

- None of the observed elephants was allowed to range-free, all were chained
- When not working , all elephants were chained
- Mean chaining duration was 9.1hrs (SE= 0.4, n=35)

MR was 1.0 (SE= 0.7, n*= 3) with a deviation of 88% from ER.

Observed behavior

Even when an elephant is described as quiet or calm it does not mean the elephant is comfortable in its environment. It could mean conditioning to be quiet/calm.

- Among 35 elephants, 97% were described as quiet, 1% as quiet and/ or aggressive / nervous/ agitated/undependable
- Stereotypy was observed among 6% (n=35) elephants

MR was 7.0 (SE= 1.2, n*= 3) indicating a deviation of 13% from ER.

Work

Two aspects related to work are: duration and type. Long hours of work would automatically ensure inability to perform natural behaviours. Alien or un-natural forms of work such as standing still or moving continuously without pause are damaging physically and psychologically.

- All elephants (n=35) were used for work
- Mean duration of work was 12.3hrs (SE= 0.2, n= 34)
- Thirty one elephants carried howdah made of bedding material, 2 carried metal howdahs; Mean howdah weight was 29.9kgs (SE=0.4, n= 34)
- Mean maximum distance carrying weight was 40kms (SE= 0.0, n= 31)

MR was 1.7 (SE= 0.5, n*= 3) showing a deviation of 79% from ER.

a

b

c

d

Figures 6a, b, c and d: Elephants used for generating money through different modes (waiting near malls with decorations (a), on streets (b and c) and used in marriage functions (d)

Food
Stall feed provided in captivity not only limits food variety it also limits expression of species-typical behaviours as wild elephants spend most parts of a day foraging.

- None of the elephants was allowed to forage
- Stall feed was leaves of banyan, sugarcane, chapatti, banana, food offered by the public
- Ration chart was not maintained for any

MR was 1.9 (SE= 1.0, n*= 3) with a deviation of 79% from ER.

Reproductive status
Among the many reasons, one conspicuous reason for poor reproductive status is the absence of individual of opposite sex.

- Oestrus cycles were not reported for any of the elephants
- Of 35 female elephants, 32 had never been exposed to males; three had been exposed to males once
- No calf birth

MR was 0.7 (SE= 0.8, n*= 3) indicating a deviation of 91% from ER. MR refers to reproductive status considering both males and females together.

Health status and veterinary facilities
Exposure to un-natural substrates/ excessive workload, poor hygiene/nutrition/ poor psychological stimulation results in ill-health, physically and psychologically. Even when captive conditions are suitable, presence of veterinary care is indispensible.

- Of 88 instances, eye problems accounted for 26%, foot or leg problems 34%, abscess 35% and other medical problems (GI problems or fever) 5%
- Eleven percentages (n= 35) of elephants had been dewormed; immunization or sample tests of blood/dung/urine was not done for any
- Ninety one percentages (n=35) had access to veterinary doctors; all doctors (n= 25) were on call

MR was 1.3 (SE= 0.3, n*= 3) showing a deviation of 84% from ER.

Overall welfare rating
Overall welfare rating for Travel-begging elephants (MR, considering all parameters together) was 2.4(SE= 0.6, $n^{\dagger}$= 10) showing a deviation of 70% from ER. Considering the deviations for each of the parameters observed, eight of the ten parameters showed deviation of 50% or more from ER, implying divergence to this extent from norms prescribed by the expert team.

Handlers' (Mahout/(cawadi) professional experience and socio-economic status

Considering the intensive interaction between handler and elephant, as a result of the economic benefit expected from the elephant, it is important to assess the professional experience and socio-economic status of the handlers.

Professional experience:

Knowledge of elephant's behaviour and ways to handle his/her animal without causing stress to it is essential in maintaining a non-negative relationship between elephant and handler.

- Based on information on three handlers, professional experience was 6.5 to 7 years for two and 20 years for the third handler
- Experience with recent elephant was 6 and 7.9 years for two handlers, 20 years for the other
- Two handlers opted for this profession out of interest

MR was 3.7 (SE= 1.2, n*= 3) showing a deviation of 59% from ER.

Socio-economic status

Insufficient remuneration, a large family to be maintained, exposure to dangers from handling elephants can lead to dissatisfaction with the profession. Addictive consumption of alcohol is noticed among some handlers.

- Mean annual salary was Rs.29,455/- (SE= 2251.8, n= 33)
- Mean number of children per family was 4 (SE= 0, n= 21)
- None of the handlers was covered by insurance
- Ninety seven percentages (n= 32) of mahout reported alcohol consumption

MR was 1.5 (SE= 0.5, n*= 3) with a deviation of 81% from ER.

a

b

c

d

Figures 7a, b, c and d: Profiles of mahouts associated with the category of travel and begging (a, b and c); mahouts' children (d)

Discussion

Despite the status of ownership of elephants, be they individually owned or owned by religious institutions, the use of elephants for travel and begging imposed a lifestyle for economic gain. This ownership type was categorized as Travel-begging, as the main purpose was to wander and seek benevolence from the public in cash or kind. The categorization of such elephants distinct from other regimes seems justified by the welfare status of the elephants as well as handlers. It appears that the use of elephants for work— walk and beg— dominated all aspects of the elephants' life, as its shelter, water, food and choice of mates to interact/reproduce were limited by work schedule. The elephants were walked for half a day, mostly on tarred roads, to earn a living. All aspects of the elephant's life – its need for water, shade, rest, food— were dictated by the work regime. Thus, even though, behaviourally there appeared no overt expression, their overall welfare status was marked by deviation from what is considered appropriate by experts.

The handlers too appeared to be poorly paid and were not covered by any sort of insurance. Added to this, most were said to consume alcohol.

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Section 2:
Traveling and begging elephants of Gujarat

Executive summary

The maintenance of wild animals beyond their natural range areas may involve exposing the animals to an unsuitable environment.

Twenty-one elephants belonging to three temples – Jaganathpur temple at Ahmedabad, Hanuman temple at Baroda and Suraj Ramji Mandir at Surat in the state of Gujarat, were assessed for their welfare status.

Welfare status of these elephants in captivity was evaluated by collecting data using 86 parameters that includes physical aspects of the living environment, social and behavioural profile, and physiological status as well as aspects of management related to feeding, working conditions and provision of infrastructure.

Ratings were graded in the following manner:

- 0 – 2.4 :Bad welfare conditions
- 2.5 – 4.9 :Poor
- 5.0 – 7.4 :Moderate
- 7.5 –10.0 :Satisfactory

All the animals were housed within the temple premises. Physical conditions of housing provided to the animals were rated across seven sub-parameters. Overall mean rating was 1.3 with 86% of the score being less than three.

Mean rating for shelter was 0.0 showing lack of space for these animals. Animals were exposed to hard surfaces and low rating reflects this situation. Accumulation of dung and urine near an animal's tethering site leads to associated diseases. Mean rating for the parameter related to overall hygiene was 2.0.

There was no access to perennial source of running water. Drinking water source was taps/buckets/ponds or any source available at location while working. Bathing was not frequent, due to the constant move from place to place demanded by their work schedule. Overall rating was 1.4 with 89% of all the ratings getting scores less than four.

The animals were rarely provided rest. Rest depended on the work schedule or on the ability of the mahout to gauge if the animal was tired. Resting hours/day and places for resting were random; the animals slept at random locations if they were not near the temple, and were tied with one meter chain while sleeping.

All animals walk as they move from one place to another as part of their work. Animals would walk was from 7 a.m. to 11 p.m. covering a distance of 20 – 60 km. At times, they had to cover 300 km over a period of four days, mostly on tar roads.

Overall mean rating was 3.0 with 83% of the ratings occurring in the bad – poor category.

Normal rectal temperature of an elephants is 35.9 °C. The temperature of Gujarat state varies from a minimum of 24 °C to a maximum of 45 °C in summer and from a minimum of 12 °C to a maximum of 31 °C during winter. Summer temperatures can reach a maximum of 46 °C. During this period, the animals are walked over hot tar roads without any access to shade, water or rest.

Coupled with increased body temperatures during the day is the practice of enclosing the animals within closed structures at night, thereby preventing easy loss of body heat to the surrounding environment. Maintenance of elephants in states like Gujarat with high mean temperatures entails making extra efforts to provide suitable environment for the animals.

None of the animals were allowed to range free, and were chained for 8 – 12 hours with one meter chain during the night. Overall mean rating is 1.25 with 75% of all the ratings getting a value of zero.

Work type included blessing/begging, use in marriage functions and religious processions, travel all over Gujarat, used in parties and taking people and children for rides around a big lake in the city. No shade is available during work, even during the hottest parts of the day. Overall mean rating was 1.6 with 82% of all ratings getting a score less than three.

Stall feed was the only source of food; overall mean rating is 3.0 with 50% of all the values getting a rating less than three.

Abscesses and foot problems was common among the elephants. Some elephants had damaged eyes, 4 to 5 females were blind. One female whose left eye was damaged was fit only to walk around the temple area as blood was oozing from a wound, but was made to travel for begging and other work reasons all over the state. Overall mean for health status was 2.1 with 50% of all the animals getting a rating of zero.

Elephants were referred to a local veterinary doctor, who had no experience in treating elephants, and would visit only when called/when a problem was severe or depending on the owners' interest. Overall rating was 0.0 with absence of any facility and lack of any record (service/clinical/other records).

The overall mean for the elephants across all the 86 parameters was 2.3 with 71% of all the values getting a rating less than four. Significantly, only five percent of the observed sub-parameters showed variation. 95% of the values were uniform, even though the animals belonged to different owners.

Introduction

Different figures are quoted for the number of elephants in Gujarat: unofficially the number maybe around 100. This survey came across twenty-five elephants maintained by temples/ private owners and the forest department. The ownership status of elephants belonging to temple / private owners is tenuous: temple elephants are leased out to private owners or private elephants are allowed to be kept in temples. Elephants are used by private owners as begging animals; they are also used for rides around Kankaria Lake at Ahmedabad.

Objective

The major objective of the investigation was

- To assess the welfare status of elephants being maintained by several temples in the state of Gujarat by documenting living conditions encompassing physical, social and health status of the animals.
- Assessment of the welfare status of the elephant handlers through a series of socio-economic variables as also their experience in handling elephants.

Method

Welfare of the captive elephants was evaluated by collecting data on the physical aspects of its living environment, its social and behavioural profile, physiological status, as well as aspects of management related to feeding, working conditions and provision of infrastructure. Data was collected through observations and interviews. Each of these features was represented as a variable or parameter. Each variable/parameter was rated on a 0 – 10 scale for its suitability to the animal. Zero represented the worse possible situation and ten was considered to be satisfactory. The suitability of a parameter depended on the replication of near natural conditions for the animal.

Ratings were graded in the following manner:

- 0 – 2.4 :Bad welfare conditions
- 2.5 – 4.9 :Poor
- 5.0 – 7.4 :Moderate
- 7.5 – 10.0 :Satisfactory

Some variables have been clubbed together to represent the overall condition for that parameter. For instance, the parameter shelter includes sub-parameters such as shelter type, size, flooring, closed or open type, duration the animal is kept within, maintenance of hygiene and materials used. Each sub-parameter is given a mean rating calculated across the observed number of individuals. The mean sub-parametric values are then considered together to give an overall mean for the parameter. Welfare status of the mahout was rated by studying his socio-economic profile. Information on experience in handling elephants was also recorded. The rating scale is the same as for the elephants. High ratings imply suitable social and economic conditions or satisfactory experience levels in handling elephants.

Result

Background

There are 21 Elephants in Gujarat with private owners/ temples:

- One female approx 30 years of age with Ramji Mandir, Surat.
- Two adult female elephants of above 30 years with Jaganathpur Temple Ahmedabad.
- Fifteen elephants (3 adult males and 12 adult females) owned by a private individual were allowed to be kept in Jaganathpur Temple. These elephants also independently begged, were used for rides around Kankaria Lake at Ahmedabad.
- Two female elephants were totally blind and one female was partially blind at the Hanuman temple. All of them live in a pathetic state and have no ownership certificate.

Twenty-one elephants belonging to three temples, Jaganathapur and Hanuman temple at Baroda and Suraj Ramji Mandir at Surat, in the state of Gujarat were assessed for their welfare status. Mean age was 34.1 yrs. (SE = 1.0, N = 21). Ages given for the observed animals are approximate. Of the eighteen females, age ranged from 25 – 40 yrs while the males ranged from 35 – 43 yrs.

Welfare status of the elephants was assessed using 86 sub-parameters. Ratings for various parameters are presented. Graphs have been presented depicting the percent distribution of rating from 0 to 10 for a parameter considering all the observed individuals. Ratings for sub-parameters have also been shown in graphs.

Source of elephant

All the observed elephants belonged to temples/ private owners in the state of Gujarat. Nineteen animals (91%) were said to have been purchased. Two elephants were obtained from circus companies. Elephants which have been purchased/transferred/exchanged across different owners have been given low rating, this implies change in the living conditions for the animal. Transfer between facilities implies breakage of established social relationships with other elephants (Kurt & Hartl, 1995)[†], transfer of young and growing animals might lead to stress (Clubb & Mason, 2002); all factors resulting in psychological distress of the animals with potential effects on physical health. Mean rating given was 2.0 (SE = 0.0, N = 21).

All the animals were housed within the temple premises.

- Seventeen elephants belonging to Jaganathpura temple in Baroda were housed in a closed type shelter, half the shelter had tin sheet roofing the other half had asbestos.
- Flooring for all the shelters was concrete.
- The elephants remained enclosed for eight hours/day.

Physical conditions of housing provided to the animals were rated across seven sub-parameters. Overall mean rating was 1.3 (SE = 0.71, N= 7) with 86% of the scores being less than three (Figure 1).

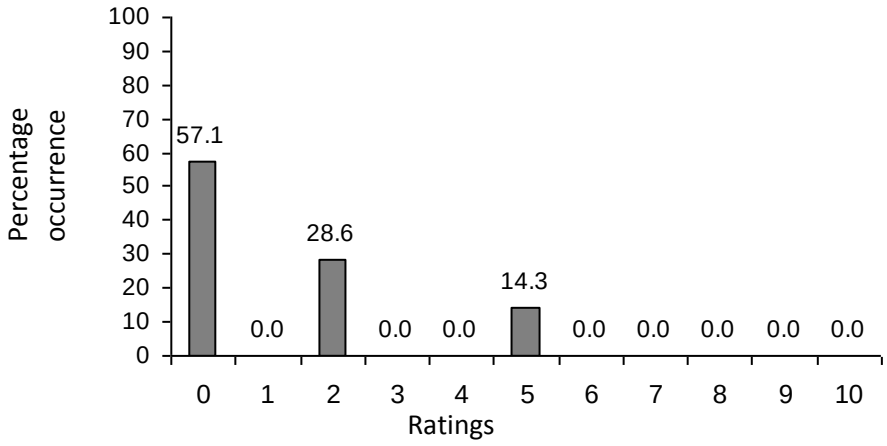
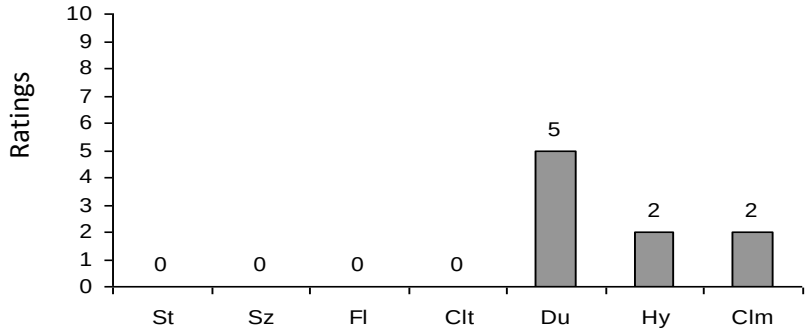


Figure 1: Percent occurrence of ratings for shelter

Elephants allowed to free-range under natural forest conditions were given high rating.. Mean rating was 0.0 (SE = 0.0, N = 21) with all the observed animals getting a value of zero, implying provision of improper and unsuitable shelters for the elephants. Providing at least 1% of the area available to wild elephants was considered to be satisfactory for captive animals. Mean rating was 0.0 (SE = 0.0, N = 21) showing lack of space for these animals.

Animals exposed to hard surfaces (Figure 2) have foot related problems and diseases (Benz, 2005) and low rating reflect this situation. Mean rating was 0.0 (SE = 0.0, N = 21). Accumulation of dung and urine near an animal's tethering site leads to associated diseases. Mean rating was 2.0 (SE = 0.0, N = 21).



St: Shelter type
Sz: Shelter size
Fl: Floor type
Clt: Type of closed enclosure
Du:Duration animal kept in enclosure
Hy:Number of times shelter is cleaned
Clm: Cleaning materials

Figure 2: Ratings for shelter sub-parameters

Water

- There was no access to perennial source of running water.

- Drinking water source was taps/buckets/ponds and any source available at location while working.
- Drinking water source was nearby within the temple, but availability was random while working.
- The elephants were said to drink once per day.
- Bathing was not frequent, even though there was a pond within temple premises. This was because the animals were constantly moving from place to place due to their work schedule.
- Bathing place was at random locations depending upon where the animal was while working.
- Bath duration was 30 minutes.
- No scrubbing material was said to be used while bathing the animals.

Water is a very important requirement for elephants in terms of their need to maintain body temperature and sustain water intake. Thus, availability and access to proper water sources has been rated. Also, the procedures followed while bathing elephants has been assessed. Overall rating was 1.4 (SE = 0.6, N= 9) with 89% of all the ratings getting a score less than 4 (Figure 3).

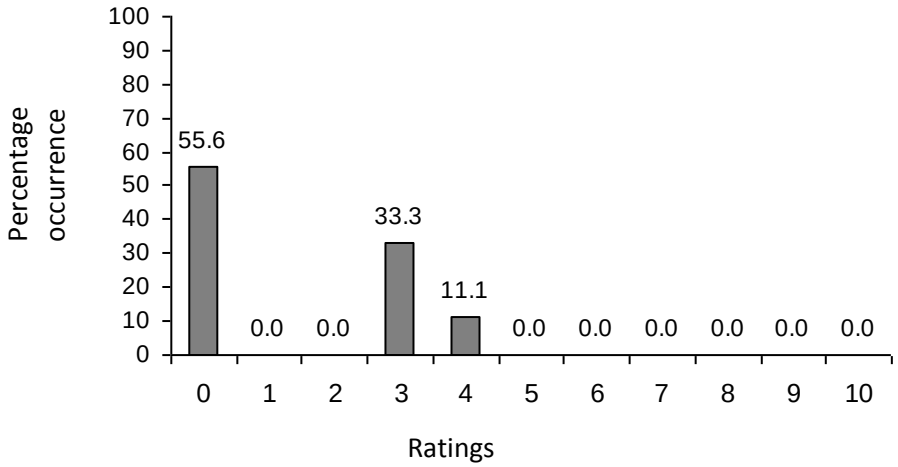
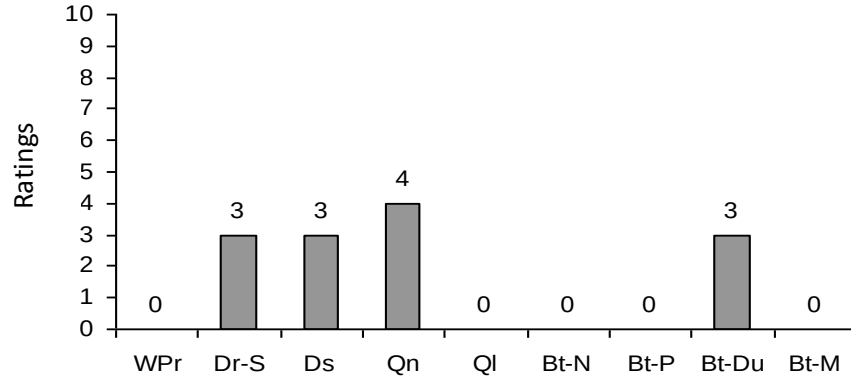


Figure 3: Percent occurrence of ratings for water

Access to running water throughout the year was given high rating. Running water reduces chances of contamination. Mean rating was 0.0 (SE = 0.0, N = 21). Ease of accessibility to the animal and provision of non-stagnant sources were features considered suitable for the elephant. Mean rating was 3.0 (SE = 0.0, N = 21) showing use of tap water which is not accessible to the animal when the need arises.

Elephants which are bathed at least once a day have been given high rating. Mean rating was 0.0 (SE = 0.0, N = 21) as all the observed animals were bathed infrequently (Figure 4). This is important for the elephant in terms of being able to express such behaviours as mud-wallowing and scratching against suitable landscape features, which help in maintaining good skin condition

(Kurt and Garai, 2007). Also, bathing animals in cramped spaces will add to unhygienic conditions. Mean rating was 0.0 (SE = 0.0, N = 21).



WPr: Perennial source of running water
Dr-S: Drinking water source
Qn: Quantity of water intake by elephants
Ql: Water quality tests
Bt-N: Number of times bathing
Bt-P: Bathing place
Bt-Du: Duration of bath
Bt-M: Bathing materials used

Figure 4: Ratings for water sub-parameters

Rest and sleep

- The animals were rarely provided rest, depending on the work schedule or on the ability of the mahout to gauge if the animal was tired.
- Resting hours/day and places for rest were random.
- All the animals were allowed to sleep within the temple or at random locations if they were not near the temple.
- The animals were tied with one metre chain while sleeping.
- Duration of sleep was three hours.

Wild elephants known to rest and sleep during different parts of a day (Kurt and Garai, 2007). These activities assume greater importance for captive elephants as they are subjected to a number of work related activities which may involve physical effort. Mean rating was 4.6 (SE = 1.4, N = 7) with 72% of all the values getting a rating less than 4 (Figure 5).

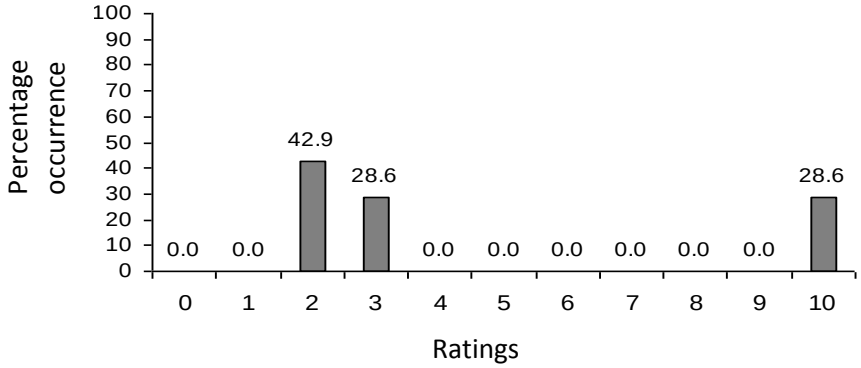
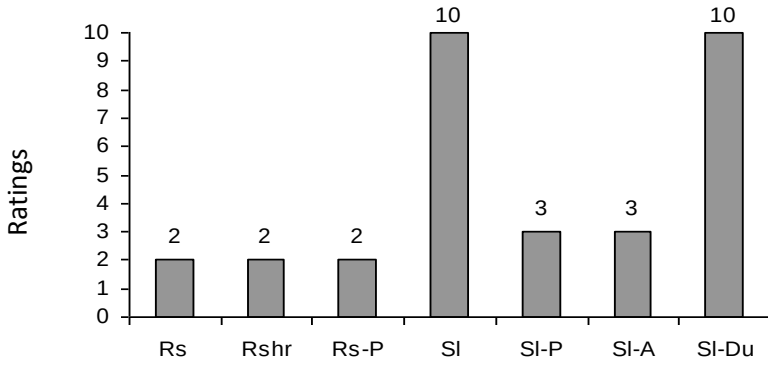


Figure 5: Percent occurrence of ratings for rest and sleep

The practice of allowing the animal to rest when they are tired or during certain parts of a day was given high rating. Mean rating was 2.0 (SE = 0.0, N = 21) showing irregular and infrequent resting opportunity. Duration of rest was given high rating if it provided sufficient resting period for the working animal. Mean rating was 2.0 (SE = 0.0, N = 21).

All the observed animals were allowed opportunity to sleep (Figure 6), hence rating was 10.0 (SE = 0.0, N = 21). Provision of suitable space and substrate for the animals while sleeping was given high ratings. Mean rating was 3.0 (SE = 0.0, N = 21) indicating occurrence of bad conditions.



Rs: Rest availability Rshr: Resting hours/ day
Rs-P: Resting place Sl: Sleep availability
Sl-P: Sleeping place Sl-A: Sleeping place size
Sl-Du: Sleep duration

Figure 6: Ratings for Rest & Sleep sub-parameters

Opportunity for exercise

Walk

- All the animals were walked as they had to move from one place to another as part of their work.
- Walking hours was from 7 a.m. to 11 p.m. for a distance of 20 – 60 km. At times, they had to cover 300 km within a period of four days.
- The elephants were walked on tar roads.

Allowing captive elephants to walk among natural conditions replicates, to a certain extent, conditions experienced in the wild. The use of elephants for work does not ensure that the animals are allowed optimum exercise in the form of walking and in conditions suitable for expression of their natural behaviour. Overall mean rating was 3.0 (SE = 0.52, N = 6) with 83% of the ratings occurring in the bad – poor category (Figure 7).

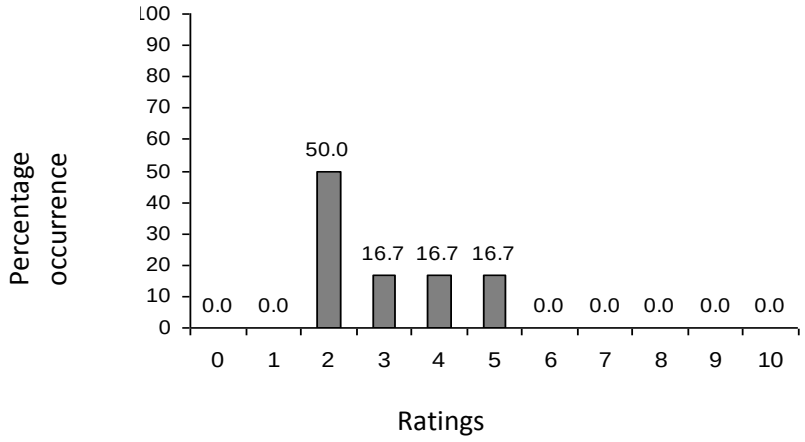
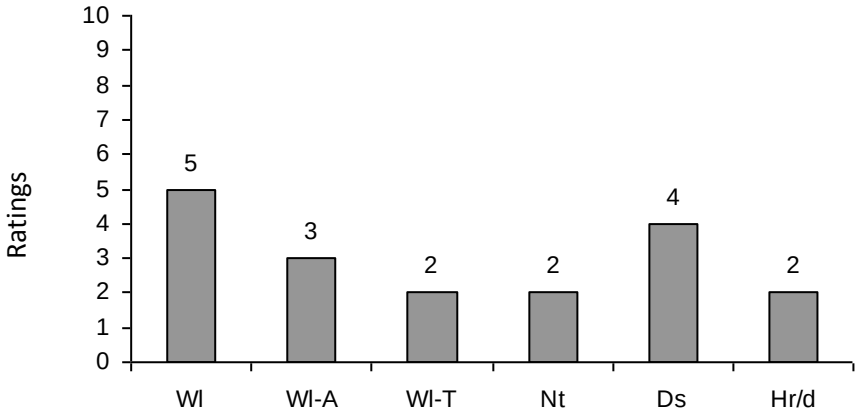


Figure 7: Percent occurrence of ratings for walk

All the elephants were said to be walked during the day (Figure 8). Mean rating was 5.0 (SE = 0.0, N = 21). Wild elephants are known to wander over vast areas. However, this activity is combined with periods of rest/sleep during hot parts of the day (Kurt and Garai, 2007). Mean rating was 2.0 (SE = 0.0, N = 21) pointing at bad conditions for time of the day when walked. Exposure to hard surfaces on a prolonged basis while walking results in foot related injuries. Mean rating was 2.0 (SE = 0.0, N = 21) as all the observed animals were said to be walked on tar roads.



Wl: Allowed to walk
Wl-A: Area of walking
Wl-T: Time of walking
Nt: Nature of terrain
Ds: Distance covered
Hr/d: Hours/day of walking

Figure 8: Ratings for walk sub-parameters

Social interaction

- 95% of the elephants (N = 21) were allowed social interaction. The lone elephant without access to this feature belonged to Suraj Ramji Mandir at Surat.
- Each elephant at Jaganathpura temple had access to sixteen other elephants which included adult females and three adult males. At Hanuman temple, each elephant had access to two other elephants, all of which were females.
- These elephants would be tied only at night within the shelter, when they were not working.
- All the animals were chained using one meter chain.

Allowing animals to interact among themselves is important as wild elephants are known for maintaining stable family groups involving diverse social behaviours (Vidya and Sukumar, 2005). Overall mean rating was 5.1 (SE = 1.1, N= 5) with 62% of all the values getting a rating less than 5 (Figure 9) indicating poor conditions for interaction.

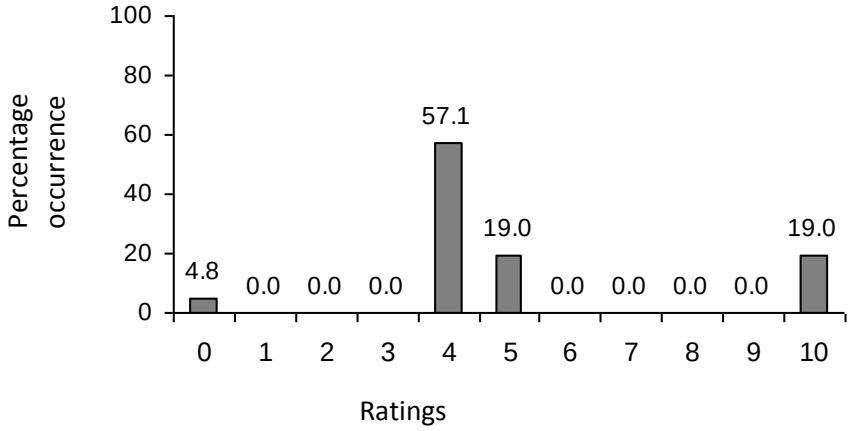
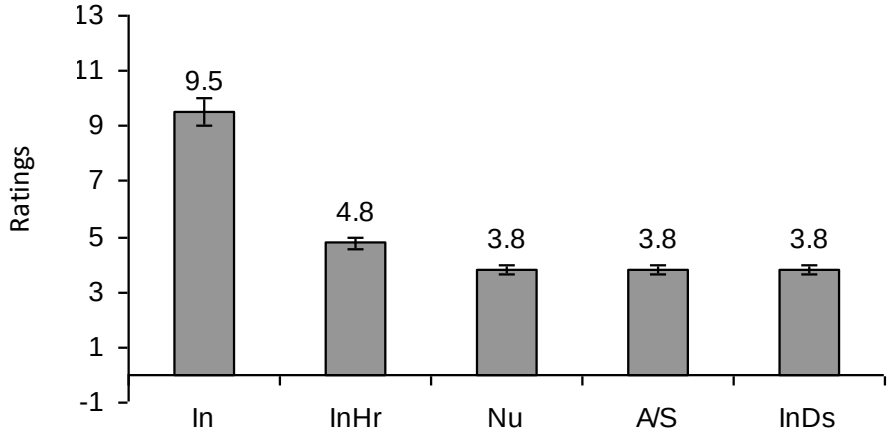


Figure 9: Percent occurrence of ratings for social interaction

High rating indicates occurrence of interaction amongst the animals. Mean rating was 9.5 (SE = 0.48, N=21) showing that 95% of the animals were given opportunity to interact. Duration for which interaction was allowed was rated. Rating was 4.8 (S.E. = 0.24, N = 21) implying existence of poor conditions. The presence of other individuals does not ensure that interaction will take place as the animals are restricted in their movements by being chained (Figure 10). Mean rating was 3.8 (SE = 0.2, N = 21). The ability to touch and feel another within the shelter/enclosure has been given high rating. Mean rating was 3.8 (SE = 0.2, N = 21).



In: Interaction InHr: Interaction hours
Nu: Number of individuals A/S: Age and sex class
InDs: Interaction distance

Figure 10: Ratings for social interaction sub-parameters

Chaining

- None of the animals was allowed to range free.
- All the animals were chained for 8 – 12 hours with one metre chain during the night.

The use of chains to control captive elephants is almost universal. Chains not only impose restrictions on the movement of animals but also might cause injuries due to improper usage and chafing (Kurt and Garai, 2007). Overall mean rating was 1.25 (SE = 1.25, N = 4) with 75% of all the ratings getting a value of zero (Figure 11).

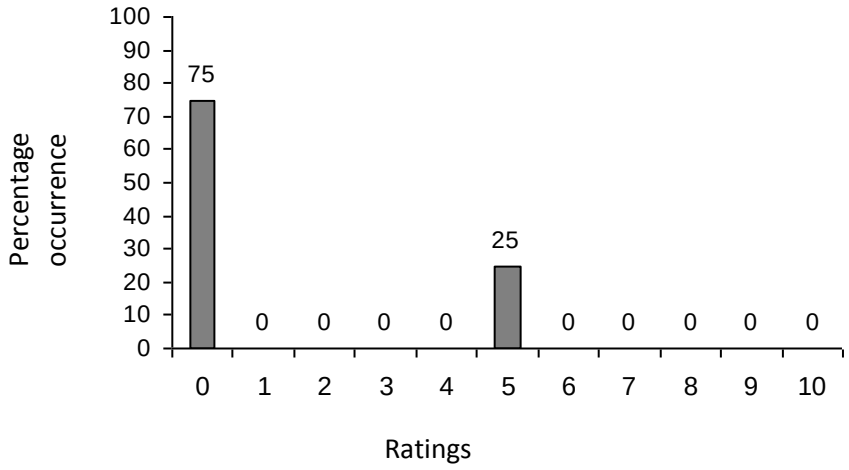
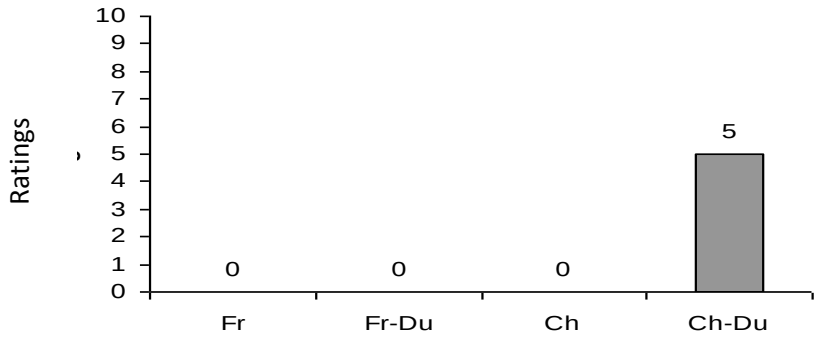


Figure 11: Percent occurrence of ratings for chaining

None of the observed animals was allowed to range free (Figure 12). Mean rating was 0.0 (SE = 0.0, N = 21). All the animals were chained for an average of 12 hours. Mean rating was 0.0 (SE = 0.0, N = 21).



Fr: Free ranging status
Fr-Du: Duration of free range
Ch: Chaining status
Ch-Du: Duration of chaining

Figure 12: Ratings for chain sub-parameters

Behaviour

- All the elephants were described as calm.
- There were no reports of injury or death to people caused by elephants.

- None of the animals exhibited stereotypic behaviour.

The observed behaviour of the animals was rated across several parameters to provide an indication of the ease of handling the animal and expression of abnormal behaviours, if any. Overall mean rating was 10.0 (SE = 0, N = 4) implying that rating of 10.0 was given for all the sub-parameters.

Work type

- Work involved blessing/begging, use in marriage functions and religious procession; Jains were said to use elephants extensively for processions. These begging elephants target cities which are economically viable, like Ahmedabad — the number of elephants in a place is believed to depend on the presence of affluent people who can use them for marriages, processions, etc.
- Jaganathpura procession is said to be the biggest in this state, where number of elephants are used.
- Travel all over Gujarat, used for parties and rides for people and children around a big lake in Ahmedabad.
- Duration of work varied from 10 to 16 hours a day, 7 a.m. to 11 p.m.
- The maximum distance covered, carrying any load, was 20 – 60 km, at times 300 km within a span of four days.
- Howdah put on the elephant's back, made of a cushion, was tied to the elephant's body and tail using a rope. It weighed around 30 kg.
- There no shade available during work, not even during the hottest parts of the day.
- Water availability was random depending on the location of the animal.
- Quantity and quality of water available also varied.
- Food availability during work was rare as it depended on devotees providing items such as bananas, apples, etc.

Work is a defining feature of most captive elephants as it is the mainstay for keeping the animals. This was rated across several features covering the nature of work, its intensity and conditions existing while working. Overall mean rating was 1.6 (SE = 0.6, N= 11) with 82% of all ratings getting a score less than 3 (Figure 13).

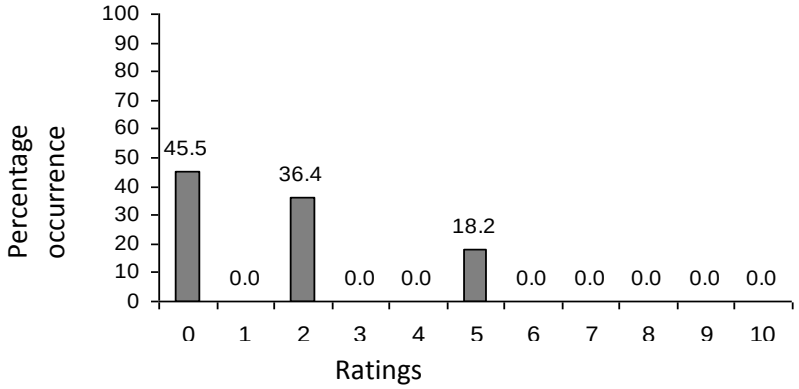
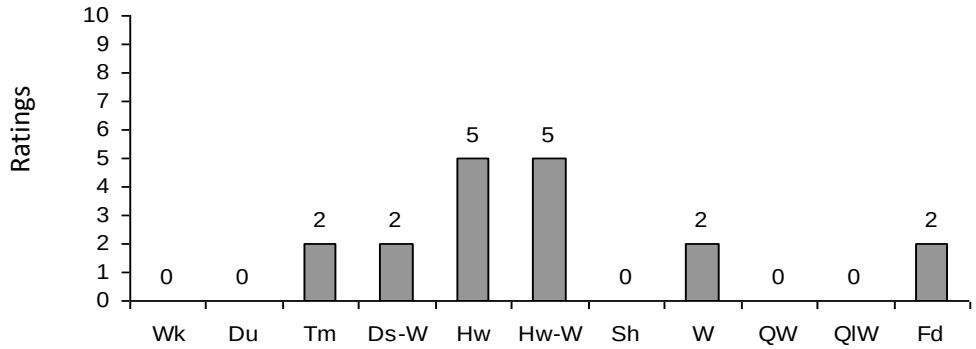


Figure 13: Percent occurrence of ratings for work

Any work alien to an elephant's natural way of life was given low ratings. Mean rating was 0.0 (SE = 0.0, N = 21). Work involving extreme physical efforts or exposure to extreme environmental conditions for prolonged periods was given low rating. Mean ratings was 0.0 (SE = 0.0, N = 21). Elephants were used for rides for tourists and for public.

The distance covered with the weight carried was rated. Mean rating was 2.0 (SE = 0.0, N = 21). Making the animal to work under extreme temperatures without proper safeguards, such as provision of shade (Figure 14), was given low rating. Mean rating was 0.0 (SE = 0.0, N = 21).



Wk: Work type
Ds-W:Maximum distance covered with weigh t
Hw: Howdah type
Hw-W: Weight of Howdah
W:Water availability during work
Tm:Time of work
Du: Duration of work
Sh: Shade availability during work
QW: Quantity of water intake
Fd: Food available during work
QlW: Quality of water for drinking

Figure 14: Ratings for work sub-parameters

Provision of food

- Stall feed was the only source of food which primarily included leaves or stems (banyan, sugar cane, banana – depending on the availability of items).
- Ration charts were not used for feeding. There was no planning regarding food availability and time of feeding for the animals.
- Quantity of food was 50 – 75 kg, with a maximum of 100 kg per day

Elephants which perform taxing work should be given stall feed along with free-ranging browse or graze by the animals in order to compensate for the high energy expenditure (Kurt and Garai, 2007). High ratings were designed to reflect this feature along with such factors as the variety of foods and usage of ration charts for the animals. Overall mean rating was 3.0 (SE = 1.2, N = 4) with 50% of all the values getting a rating less than 3 (Figure 15).

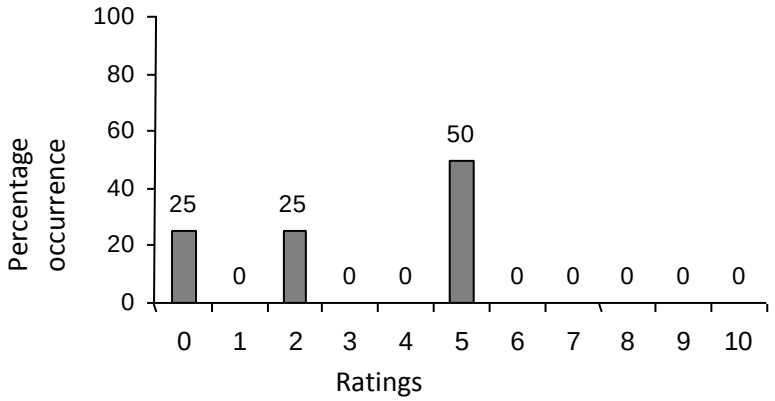
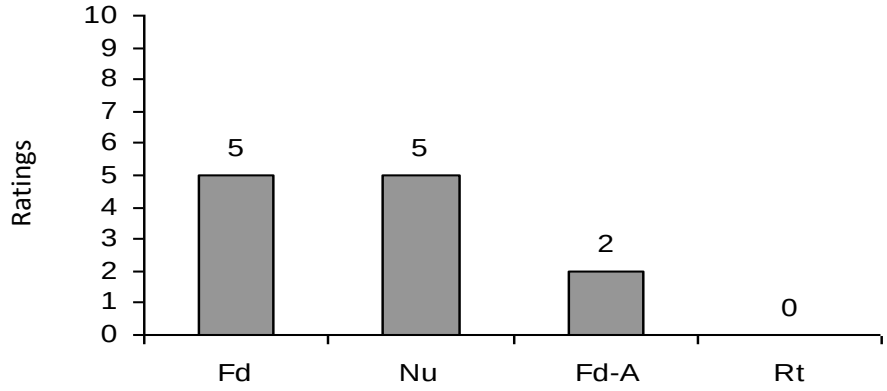


Figure 15: Percent occurrence of ratings for food

Mere provision of stall feed will not be able to cover the range of foods accessible to animals while ranging free. Hence, such food provisioning has been given lower rating. Mean rating was 5.0 (SE = 0.0, N = 21).

The variety of foods provided was rated (Figure 16) considering opportunity to range free. Mean rating was 5.0 (SE = 0.0, N = 21).

The place of feeding has been assigned low rating designed to show unsuitability in terms of chances of contamination, accessibility of food to the animal and absence of appropriate physical environment while feeding. Mean rating was 2.0 (SE = 0.0, N = 21).



Fd: Type of food provisioning
Nu: Number of food items
Fd-A: Feeding area
Rt: Usage of ration chart

Figure 16: Ratings for food sub-parameters

Reproductive status of elephants

- None of the elephants, either male or female, were reported to be reproductively active.
- None of the adult females were in oestrus cycles.

- Though Jagadnathpura temple kept both male and female elephants. There was no opportunity for mating as the elephants' work schedule involved constant travel with restricted movement. They were restricted within the shelter, due to chaining.

Normal reproductive processes being expressed in animals of appropriate age is considered to be an indicator of the animal's health and welfare. Its absence could have several causal factors, more so in a captive environment. Overall mean rating for reproductive status of both male and female animals was 0.0 (SE = 0.0, N= 6) indicating absence of all the six sub-parameters associated with this parameter

Health status

- Abscesses and foot problems were seen among the elephants.
- Some elephants had damaged eyes, 4 to 5 females were blind.
- One female whose left eye was damaged with blood was oozing from a wound, was fit only to walk around the temple areas, but was made to travel for begging and other work reasons all over the state. Another elephant had reportedly died earlier with the same set of problems.

The following procedures were not followed:

- Deworming
- Vaccination
- Biochemical tests of blood/urine/dung samples
- Body measurements of the animal

Poor health of animals can be associated with poor captive conditions, especially if the animals have yet to cross their prime or are not considered geriatric. Overall mean for health status was 2.1 (SE = 0.8, N = 8) with 50% of all the animals getting a rating of 0 (Figure 17). Occurrence of disease or injury has been given a low rating. Mean rating was 4.0 (SE = 0.0, N = 21) as all the observed animals were said to have abscesses and foot problems, among other health issues.

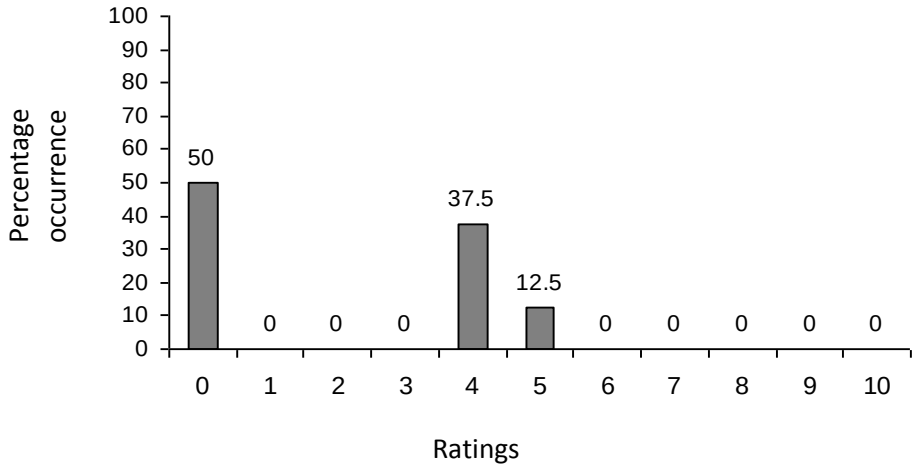
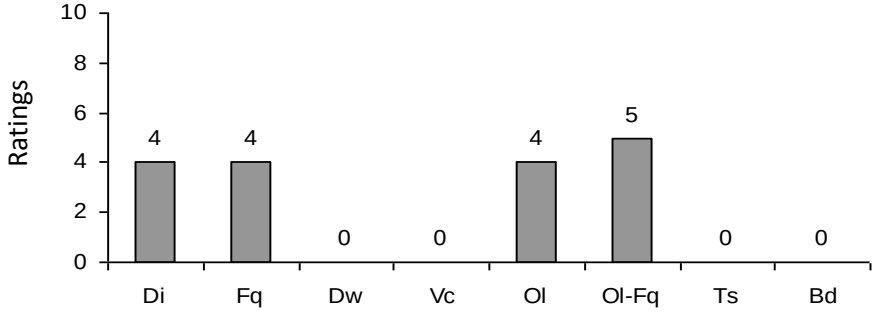


Figure 17: Percent occurrence of ratings for health status

Consistent occurrence of disease or injury points towards causes related to captive conditions and/or poor or absent veterinary care. Mean rating was 4.0 (SE = 0.0, N = 21). None of the observed animals were said to have been vaccinated (Figure 18). Rating was 0.0 (SE = 0.0, N = 21). Oiling was practiced for various reasons as a fly-repellant or as a coolant. This was given a rating of 4.0 (SE = 0.0, N = 21).



Di: Disease/Injury occurrence
Fq: Frequency of occurrence
Dw: Deworming status
Vc: Vaccination status
Ol: Oiling status
Ol-Fq: Frequency of oiling
Ts: Blood/ Dung/ Urine tests
Bd: Body measurements taken

Figure 18: Ratings for health sub-parameters

Veterinary care

- All the elephants were referred to a local veterinary doctor who had no experience in treating elephants.
- Doctor's visits were only when called/when a problem was severe or it depended on the owners' interest.
- Veterinary assistant was not available for any of the animals.
- Clinical or health records were not maintained.
- There was no veterinary care facility for any of the animals

Availability of veterinary doctor, veterinary assistant and facilities were evaluated. Overall rating was 0.0 (S.E. = 0.0, N= 9) with absence of any facility and lack of any record (service/clinical/other records). Provision of staff quarters for mahouts, status of howdah and maintenance of service, clinical or other records was rated. Overall rating was 0.8 (SE = 0.8, N= 5) with 80% of the values getting a rating of zero (Figure 19).

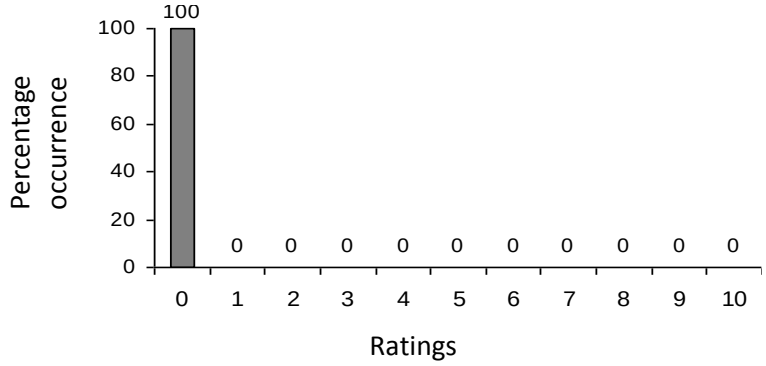
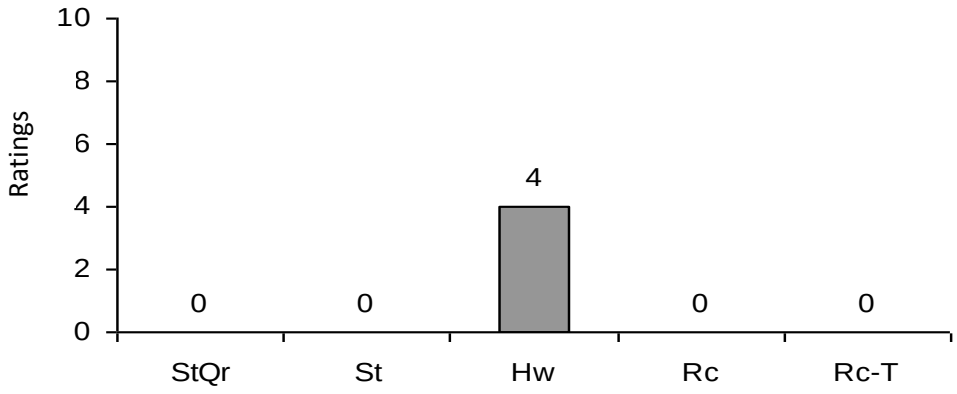


Figure 19: Percent occurrence of ratings for veterinary care

- Howdah was said to be in a bad condition (Figure 20)
- No records of any kind was maintained



StQr: Availability of staff quarters St: Status of quarters
Hw: Status of howdah Rc: Record keeping
Rc-T: Record keeping type

Figure 20: Percent occurrence of ratings for infrastructure and record keeping

The overall mean for the elephants across all the 86 parameters was 2.3 (SE = 0.1, N= 1806) with 71% of all the values getting a rating less than 4 (Figure 21). Ratings less than four are considered to represent poor welfare conditions.

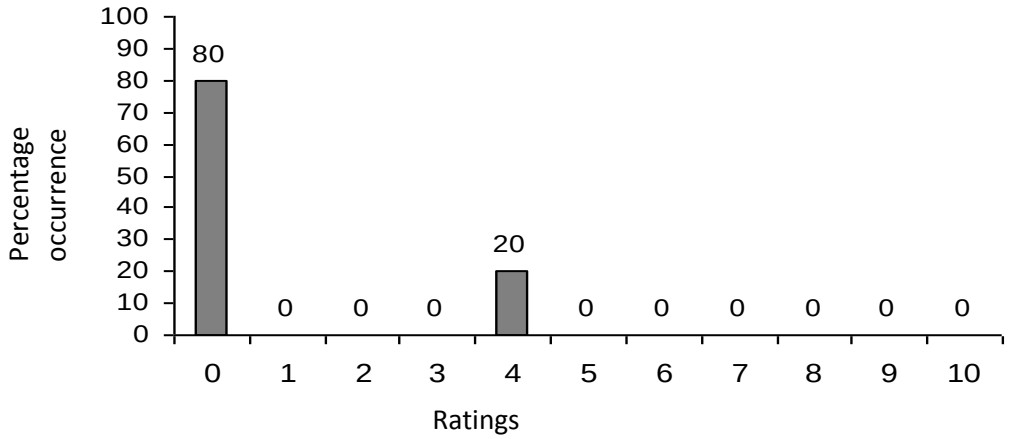


Figure 21: Percent occurrence of ratings across all parameters

Significantly, only 5% of the observed sub-parameters showed variation. 95% of the values were uniform (Figure 22), even though the animals belonged to different temples.

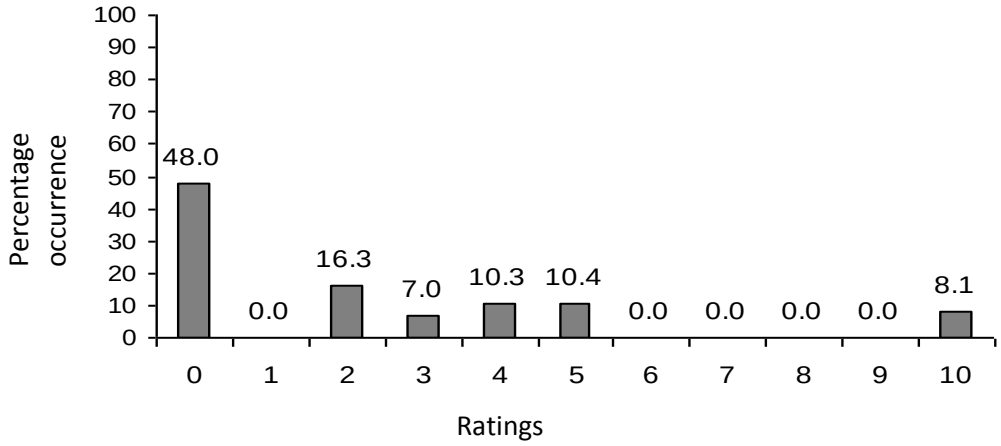


Figure 22: Percentage occurrence of ratings for the elephants

Mahout welfare status

Mahout profile

- Experience in this profession was said to be more than two years.
- Experience with one particular elephant was less than a year.
- Training in this profession was through experience.
- Seventy-six percent of the mahouts (N = 21) came from one family of mahouts.
- Mean salary of the mahouts was Rs. 2380/- per month, ranging from Rs. 2000 to 2500/- per month.
- All the handlers were married and had four to five children.
- None of them were educated.
- Each mahout was said to use a stick and ankush to control his elephant.
- There was no periodic health check-up or provision of insurance cover for the handlers.
- All the mahouts were said to consume alcohol.

The socio-economic condition of the mahout is an important for his welfare as well as that of the animal he handles. Poor welfare status may reflect on the way the animal is handled. A total of thirteen parameters were observed and rated. Overall mean rating was 2.8 (SE = 1.1, N = 13) with 62 % of the values getting a rating less than 4 implying poor welfare conditions (Figure 23).

Greater experience as a handler may help in better care for the animal and also equip mahouts to have greater caution in handling unpredictable elephants. Mean rating was 5.0 (SE = 0.0, N = 21). It is assumed that greater experience with one specific animal is good for the animal as both handler and animal develop greater understanding of each other. Mean rating was 5.0 (SE = 0.0, N = 21).

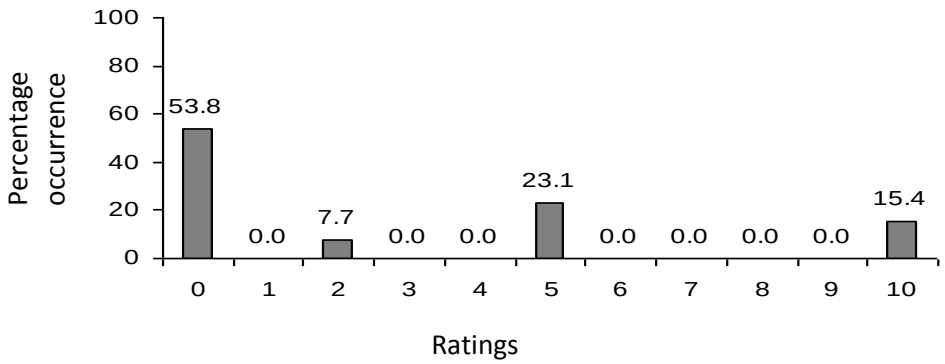
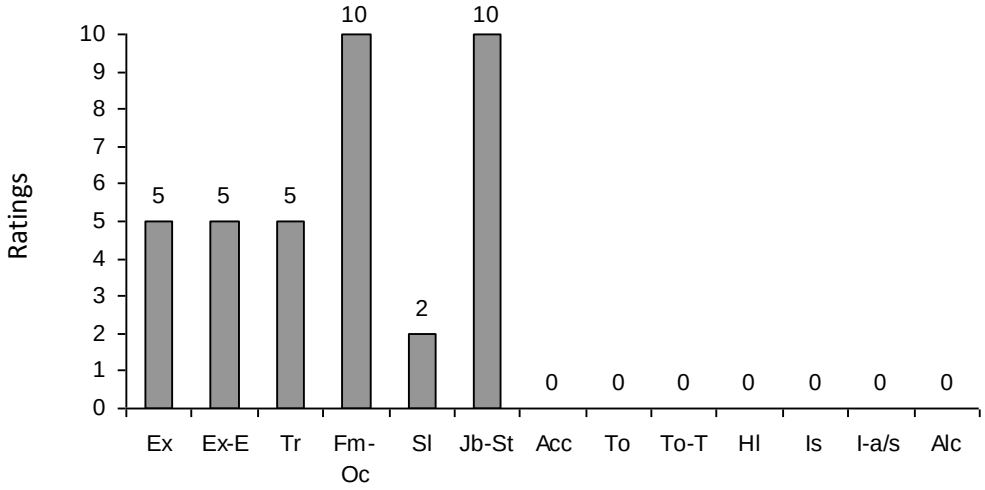


Figure 23: Percent occurrence of ratings for mahout

Salary which could support a family of four to five in an urban environment was given high rating. Rating was 2.0 (SE = 0.0, N = 21) implying poor remuneration for the handlers. All the mahouts were said to be permanently employed. Mean rating was 10.0 (SE = 0.0, N = 21). Provision of insurance in case of death/injury of the mahout was rated. The nature of the profession makes it necessary for such insurance to be available to the handlers. Mean rating was 0.0 (SE = 0.0, N = 21). Consumption of alcohol by the handler was given a low rating. Mean rating was 2.5 (SE = 0.75, N = 4) with three of the four handlers interviewed said to be consuming alcohol (Figure 24).



Ex: Experience as % of handler age
Ex-E: Experience as % of elephant age
Tr: Training received
Rel: Having mahout/cawadi as relatives
Fm-Oc: Family occupation
Sl: Salary paid
Jb-St: Job status
Acc: Accommodation availability
To: Use of tools to control elephant
To-T: Tool type
Hl: Health check-up
Is:Insurance avaialbility
I-a/s: Insurance amount/ source
Alc: Alcohol consumption

Figure 24: Ratings for mahout sub-parameters

The overall ratings (Figure 25) value for mahout as well as elephant represented poor welfare status.

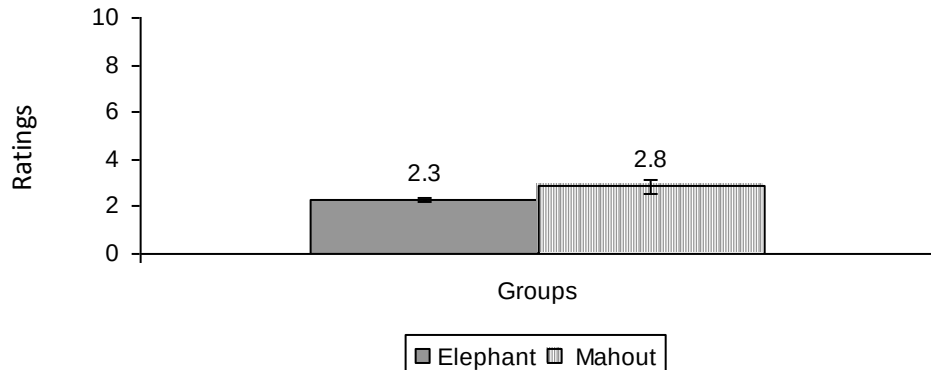


Figure 25: Patterns of ratings for both elephants and their handlers

Discussion

All the elephants, observed at the three temples were given the same rating for most of the observed parameters. There were differences in only 6% (for social interaction related variables) of the 86 parameters assessed. This shows uniformity in conditions of captivity for the animals. The maintenance of these elephants by temples did not ensure their stay in one place. In fact, the opposite was true — the animals were made to walk all over the state. The overall mean for the elephants across all the 86 parameters was 2.3 with 71% of all the values getting a rating less than four. Ratings less than 4 are considered to represent poor welfare conditions.

Ratings have been given considering each parameter independently. Thus, more than half of the ratings occur under the category of "poor" welfare status, which is of immense significance. This is so because the animal experiences these conditions in totality and undergoes a cumulative or associated effect. Hence, the effect of prevailing conditions could lead to shortened life-span as an extreme effect; a fact that might not be brought to notice in the absence of maintenance of any records by the management.

Welfare conditions deleterious to the animals were:

- Absence of a suitable shelter was observed for the animals. Provision of a shelter with concrete flooring without regular cleaning is an ideal prescription for unhealthy conditions and potential health hazards for the animals. The existence of wet/dirty conditions and hard substrates has been reported to cause foot problems (Rajankutty, 2004; Mikota, et al., 1994) [†]. The animals were kept within such structures for at least eight hours in a day.

- Exposure to extreme temperatures: All the elephants were made to work between 10 to 16 hours a day. This involved walking on tar roads for 20 – 60 km from 7 a.m. to 11 p.m. Hence, the elephants were walked irrespective of the prevailing temperatures during the day. Mean temperature vary from 11°C to 45°C for the state of Gujarat. Mean body temperature of elephants is said to be 35.9 °C Summer temperatures can reach a maximum 42°C. During this period, the animals are walked over hot tar roads without any access to shade, or rest. Wild Asian elephants have been reported to rest/sleep during the hottest parts of the day (Kurt and Garai, 2007). Wild African elephants have been reported to seek

suitable landscape to regulate body temperatures during periods of high ambient temperature (Kinahan, et al. 2007). Coupled with increased body temperatures during the day was the practice of enclosing the animals within closed structures at night, thereby effectively preventing easy loss of body heat to the surrounding environment.

Prolonged exposure to sunlight can be deleterious to the eyes (Kurt and Garai, 2007, Baruah, 1998). This is borne out by the fact that nearly eight elephants (38%) were either blind in one eye or had eye problems.

- Maintenance of elephants in states like Gujarat with high mean temperatures entails making extra efforts to provide suitable environment for the animals. This was conspicuous by its absence as the animals were neither provided a bath regularly nor was there any provision of bathing place with sufficient water as the elephants were constantly on the move as part of their work schedule. Drinking water for the animals was also contingent upon availability at the location.

- The presence of more than one elephant in a temple during the night, post-work, did not ensure normal expression of social interaction, as all the animals were chained using one metre long chain.

- The absolute lack of normal reproductive expression among all adult elephants points to serious underlying causes. Stress can lead to absence of reproductive activity among captive animals (Clubb and Mason, 2002).

- All the observed animals had access to veterinary doctors with no experience in treating elephants. There were no regular visits either. None of the animals had been vaccinated or dewormed.

- There was complete absence of record keeping of any kind. This implies lack of knowledge and apathy in providing care and resources to the animals.

The overall rating for mahout as well as elephant represented poor welfare status.

- Salary paid to the mahouts was low. A yearly income of Rs. 27,000/- is inadequate, in today's context, to support a family. All the mahouts were said to be married and had to maintain four to five children.

- None of the handlers had had any kind of health checkup. Medical check-ups help in maintaining the person's health profile. Also, elephant handlers are advised to be checked for incidence of tuberculosis (Anon., 2003).

- There was no provision of insurance cover for the mahouts.

Mahout and elephant relation

- All the mahouts were said to use stick and ankush to control their animals.

- Duration spent with each animal was reported to be less than a year which implies frequent changes of mahout and related lack of welfare for the animal and safety for the mahout.

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† Original not seen.

Section 3:
Traveling and begging elephants of Maharashtra

Executive Summary

The conditions experienced by animals exploited for commercial gain may vary from a satisfactory state to one deprived of all basic necessities for the animal. This investigation assesses the captive conditions of four female elephants and welfare status of the mahouts through a socio-economic profile of each with different individual owners in the cities of Thane and Pune, Maharashtra, for welfare status.

Data was collected through observation and interviews with the management/ personnel regarding each feature of captivity such as shelter/ availability of water/ shade, etc. Each parameter was rated on a 0 – 10 scale for its suitability to the animal. Zero represented the worst possible situation and ten, a satisfactory condition. The suitability of a parameter depended on the replication of near natural conditions for the animal.

Ratings were graded in the following manner:

- 0 – 2.4: bad
- 3.5 – 5.4: poor
- 5.5 – 7.4: moderate
- 7.5 – 10.0: satisfactory

Mean age of the animals that are used for begging was 29.5 yrs. Two elephants were obtained from a Temple, Varanasi, U.P. Two were obtained from the Sonepur Mela and these two elephants were reported to be from Assam. The rating for all the four elephants was 2.5 implying purchase/ transfer/ gifting across managements.

All the four female elephants were being maintained for begging as a way of resource generation. All the four elephants were given ratings of zero, indicating commercial use. Mean number of mahouts changed was 9.5 ranging from 6 – 11 per animal. Rating was zero for this feature for all the elephants observed implying frequent changes of mahout.

There was no provision of a shelter for any of the animals. Overall mean rating for shelter related parameter was 3.6 with 64 % of all the rating s getting a score of zero indicating poor shelter conditions

All the animals had access to a perennial source of water. However, this was accessible only through taps. Distance to water source depended on the location of the working animal**.** Bathing place was random depending on the location of the working animal and the overall rating for water related parameter was 4.2.

Three elephants were allowed opportunity for interaction, among them two females, were maintained together in one location and were said to interact at night, after their work schedule. The overall mean rating for interaction and related parameter was 5.5 with 58 % of all the values getting a rating less than five implying poor conditions for social interaction.

All the animals were chained and not allowed to range free, the mean chaining duration was 7.3 hrs and two elephants were restrained with spike chains. Overall rating for chaining related parameter was 0 with all the observed animals getting a rating of zero.

Walking and begging was the main form of work, one female was maintained for "exhibition," an elephant, 40y, was hired to film crews earning Rs. 65,000/- per hire, if hired for festivals it involved standing for 8 hours in a day. Overall rating for work related parameter was 2.8 indicating existence of poor work conditions.

All the four elephants were given only stall feed and any food given while begging, feeding place was random and hygiene was not well maintained and food per day included sugarcane, fruits, vegetables and rice. Overall rating for food related parameter was 0.33 with all the values getting a rating less than three showing existence of bad feeding conditions

Two females were exposed to males, once, for the purpose of mating. Overall mean rating for reproductive status of females was 3.1 showing poor conditions for female reproductive status.

All the elephants were reported be suffering from stomach problems and two elephants experience eye problems, foot-rot was observed for two elephants. Overall rating for health status was 2.3 with 82 % of all values getting a rating less than three. Veterinary doctor was not available for three of the four elephants. Veterinary care facilities were not available for any of the elephants. Overall rating for veterinary care was 0.7 and 93 values fall under zero indicating bad conditions of veterinary care.

Mean age of mahout was 30.3 yrs, mean experience in this profession was 11.2 yrs, salary ranged from Rs. 8000/- to 36,000/- per year. Overall rating for mahout was 4.4 implying poor welfare conditions with 55% of all the values getting a rating less than four.

Overall rating for elephants was 2.9 showing existence of poor welfare conditions with 66 % of the values getting a rating less than four. Ratings have been designed such that low values indicate poor welfare conditions as a consequence of deviation of an elephant's natural living conditions and life history patterns.

Introduction

Individual owners keeping and maintaining elephants in captivity profess various reasons for the practice, nurturing a commercial interest and extracting an income from their animals is a practice that seems to occur frequently. The conditions experienced by animals exploited for commercial gain may vary from a satisfactory state to one deprived of all basic necessities for the animal.

Objective

Captive conditions are likely to impose an environment that is alien to a wild animal's life. This may be compounded by the handling of such animals by mahouts whose living conditions may not be ideal.

- To assess the captive conditions of four female elephants with different individual owners in the cities of Thane and Pune, Maharashtra, for welfare status.
- To assess the welfare status of the mahouts through a socio-economic profile of each.

Method

The deviation imposed by captive conditions on an elephant's natural life history pattern can affect its social, psychological, physical and physiological state. The existing captive conditions for the four elephants along with changes observed in the animal's natural life cycle have been considered in assessing its welfare status. Four female elephants belonging to different individual owners were assessed for their welfare status in the districts of Thane and Pune, Maharashtra. Data was collected through observation and interviews with the management/ personnel regarding each feature of captivity such as shelter/ availability of water/ shade, etc. Each of these features has been labeled as a sub-parameter. Each sub-parameter was rated on a 0 – 10 scale for its suitability to the animal. Zero represented the worst possible situation and ten, a satisfactory condition. The suitability of a parameter depended on the replication of near natural conditions for the animal, i.e., any feature which provided conditions experienced by the animal its wild state was given a rating of 10. The more the deviation from this state, the lesser the ratings assigned to the animal.

Ratings were graded in the following manner:

- 0 – 2.4: bad
- 3.5 – 5.4: poor
- 5.5 – 7.4: moderate
- 7.5 – 10.0: satisfactory

Results

Population Status

Mean age of the animals was 29.5 yrs (SE = 6.5, N =4). Sixty sub-parameters were observed and the data collected was rated.

Source of elephant

- Two elephants, Laxmi, 25 yrs and Rani, 40 yrs. were both obtained from a Temple (Shiv temple, Varanasi, U.P.). The other two, Laxmi, 13 yrs and Ramu 40 yrs. were obtained from the Sonepur Mela. These two elephants were reported to be from Assam.

Elephants which have been purchased may have been subjected to frequent change in ownership and consequent changes in captive conditions as a result of the economic considerations deciding

an animal's length of stay in a facility or management. This may entail established social bonds (with other elephants, if any) and or introduction of new and unknown elephants into a system causing distress among the animals. Hence, low ratings have been given for animals which have been purchased/ gifted across facilities. The rating for all the four elephants was 2.5 implying purchase/ transfer/ gifting across managements.

Purpose of keeping

- All the four female elephants were being maintained for begging as a way of resource generation. Mean duration of their stay in this region was 2.7 yrs. (SE = 1.2, N = 4).

Elephants kept in captivity purely to extract monetary benefit from it have been given low rating. Such keeping systems tend to exploit animals at the cost of welfare of the animal. All the four elephants were given a rating of zero, indicating commercial use.

Mahout change

- Mean number of mahouts changed was 9.5 (SE = 1.3, N = 3), ranging from 6 – 11 per animal

When elephants are constantly exposed to different mahouts, they undergo stress in the form adjusting to the differences in the way the animal is handled by each; hence, low rating have been given for frequent mahout changes. Rating was zero for this feature for all the elephants observed (N = 4) implying frequent changes of mahout.

Shelter / enclosure

- There was no provision of a shelter for any of the animals.
- Three of the four elephants had access to earthen flooring. There was no data for the fourth elephant.
- Shade was available for two of the elephants: Laxmi, 25 yrs and Rani, 40 yrs. No shade was available for the elephant Ramu, 40 yrs.

The living space of a captive elephant is a pointer to the care provided to it, as the animal is constrained to spend its lifetime within the conditions provided. This feature was rated across three sub-parameters. Overall mean rating was 3.6 (SE = 1.3, N = 14) with 64 % of all the rating getting a score of zero indicating poor shelter conditions.

The overall value appears to suggest existence of poor welfare conditions. However, this rating was based on data available for only 29 % of the various shelter sub-parameters. Even within this low percentage of data, more than half the features of the shelter were given a rating of zero (Figure 1).

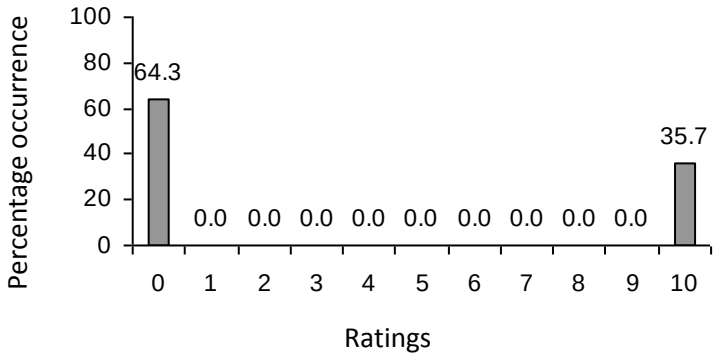


Figure 1: Percent occurrence of ratings for shelter

None of the four elephants was provided any enclosure or shelter; it was kept tied in the open. Rating for all the animals for this feature was zero. Shelter type was given a rating of zero for all the four elephants as there was no provision of shelter. Of the three elephants, two (Rani, female, 40 yrs. and Laxmi, female, 25 yrs.) were said to have access to shade within the shelter; a rating of ten was given for both. Ramu (female, 40 yrs.,) did not have access to shade. Hence, a rating of zero was given.

Water availability

- All the animals had access to a perennial source of water. However, this was accessible only through taps.
- Distance to water source depended on the location of the working animal
- Laxmi, 25 yrs and Rani, 40 yrs were said to drink around 6 times a day.
- Water quality tests were not done
- Bathing place was random depending on the location of the working animal
- Mean bath duration was 1.4 hrs (SE = 0.6, N = 3).
- There was no seasonal variation in bathing for two of the elephants observed.

Provision for and access to suitable sources of water and its use by captive elephants is integral to maintaining its health and welfare. This was rated across six sub-parameters. Overall rating was 4.2 (SE = 0.7, N = 15) and 80% values fall below ratings of five (Figure 2).

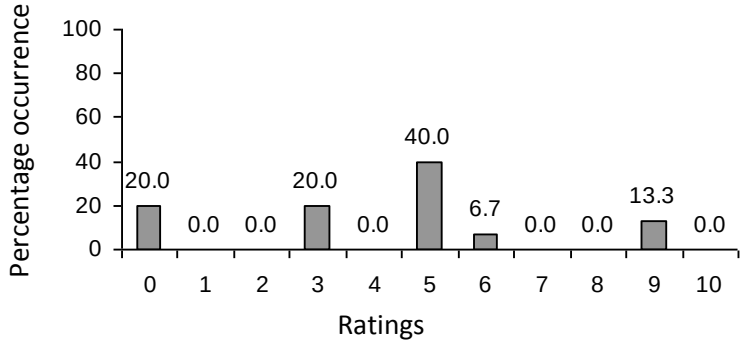
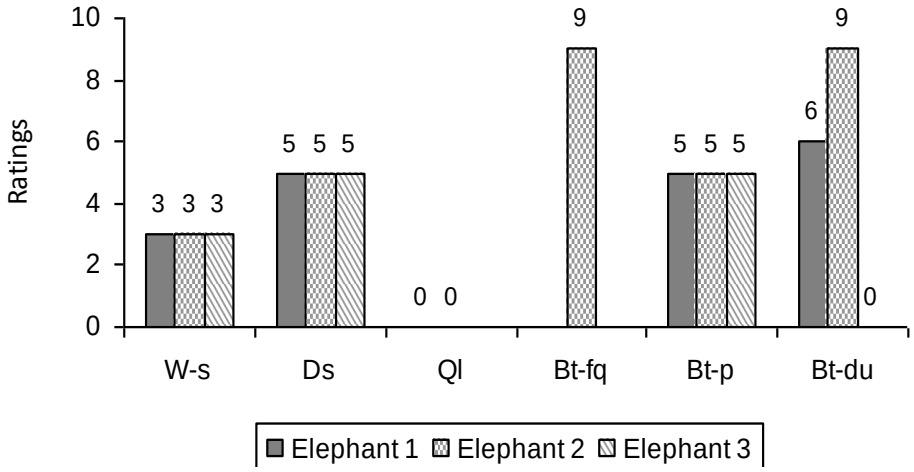


Figure 2: Percentage occurrence of ratings for water

Two factors have been considered while rating: accessibility and chance of contamination. Any source that is not easily accessible to the elephant when it needs to drink or bathe is given a low rating. Running sources of water are considered to be good as they reduce chances of contamination. Rating was 3.0 for the three elephants for which data was available, as they were said to use tap water.

Water sources close to the site of the animal have been given higher ratings. The elephants were given a rating of five for this feature as water sources were said to be random locations. Suitable bathing sites should allow for the expression of natural behaviors of the animals. The observed animals were given a rating of five as bathing sites were also random locations, depending on availability of sufficient water.



W-s: Water source
Ds: Distance to water source
Ql: Test for water quality
Bt-Fq: Bathing frequency
Bt-p: Bathing place
Bt-du: Bathing duration

Figure 3: Ratings for water related parameters

Rest and sleep

- All the elephants were allowed to rest
- Locations were random depending on their work schedule
- Shade availability was lacking for all the four elephants
- All the elephants were allowed to sleep, sleeping place was random.
- Duration of sleep for Laxmi, 25 yrs., and Rani, 40 yrs was said to be 6 hrs.

Working elephants need provision of adequate amount of rest and sleep. This was rated across five sub-parameters. Overall rating was 5.0 (SE = 1.2, N = 17) with 53 % of all the rating getting a score less than three (Figure 4).

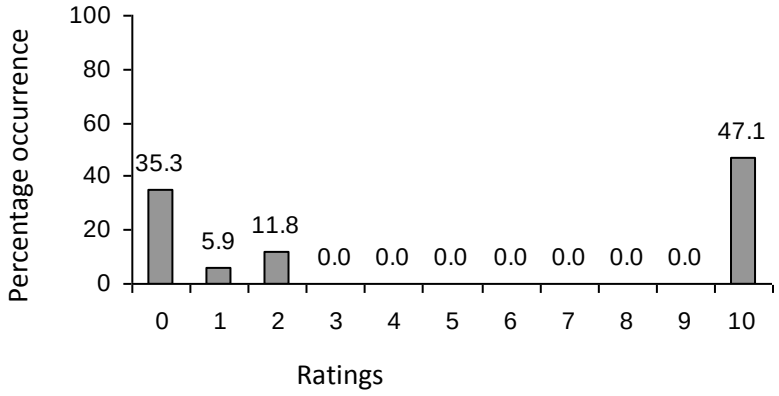
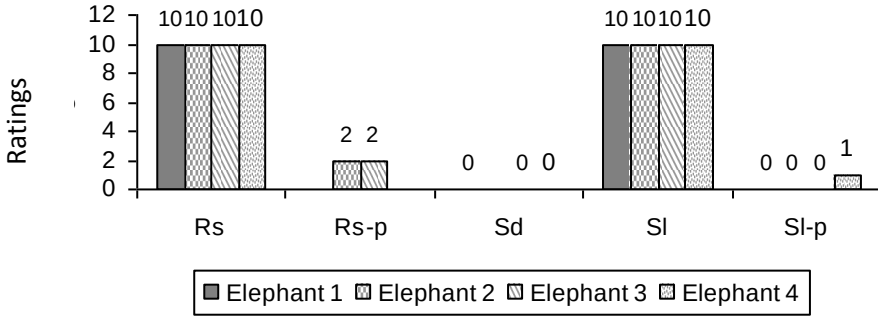


Figure 4: Percentage occurrence of ratings for rest and sleep

All the observed animals were said to be allowed to rest. Rating of ten was given. There was no provision for shade for any of the animals; hence, a rating of zero was given. Of the four elephants, three were given a rating of zero due to its unsuitability of the sleeping place to the animals (Figure 5).



Rs: Rest availability Rs-p: Resting place
Sd: Shade availability Sl: Sleep availability
Sl-p: Sleeping place

Figure 5: Rating for rest & sleep related parameters

Opportunity for exercise

- All the elephants were allowed to walk, accompanied by mahout
- Nature of terrain was tar roads
- Mean walking hours per day was 10.5 (SE = 0.9, %CV = 16.5, N = 4)
- Distance covered while walking ranged from 6 – 8 kms for two elephants for which data was available.

Allowing elephants to walk on suitable substrates without subjecting the animal to excess or restricted routines of walking duration was rated. Overall rating was 3.3 (SE = 1.4, N = 12) implying poor walking conditions (Figure 6).

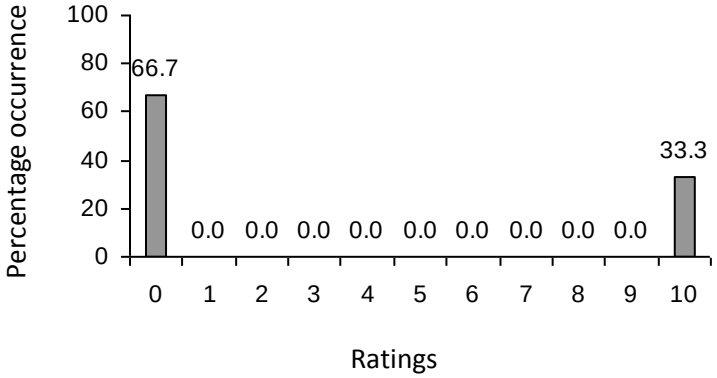


Figure 6: Percentage occurrence of ratings for walk

- All the four elephants were allowed to walk, a rating of ten was given
- A rating of zero was given for the four elephants for hour/ day of walking
- Likewise, all the four animals were given a rating of zero for nature of terrain

Social interaction

- Three elephants were allowed opportunity for interaction. The elephant Ramu (40 yrs.) did not have any interaction
- Laxmi, 25 yrs and Rani, 40 yrs. were maintained together in one location and were said to interact at night, after their work schedule

Social interaction forms a crucial and integral part of a social animal such as the elephant's behaviour. This feature was rated across five sub-parameters. The overall mean rating was 5.5 (1.2, N = 12) with 58 % of all the values getting a rating less than five implying poor conditions for social interaction (Figure 7).

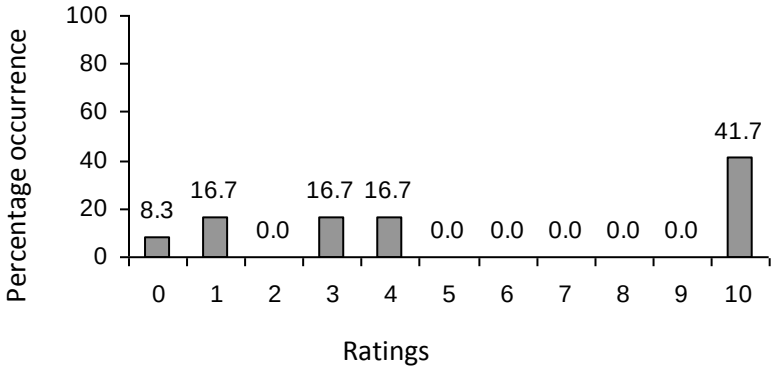
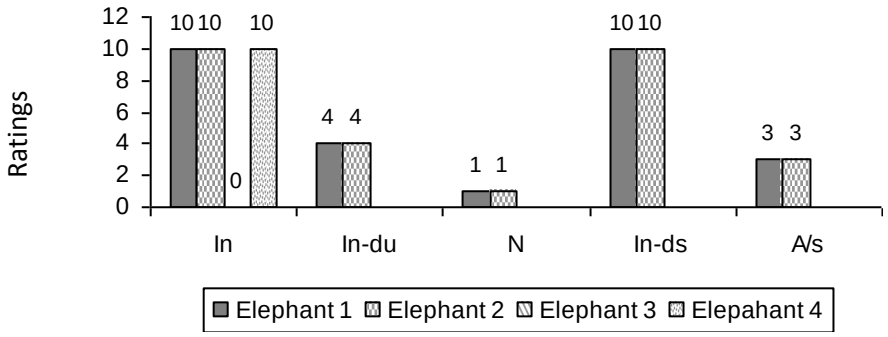


Figure 7: Percentage occurrence of ratings for social interaction

Allowing the animals to interact with other elephants was rated. Three of the four elephants were said to be allowed to interact, and were given a rating of 10. Group size which replicated average group size found in the wild was given higher ratings. Rating was two for the two elephants for which data was available.



In: Opportunity for interaction
In-du: Duration of interaction (hours)
N: Number of individuals
In-ds: Distance between animals for interaction
A/s: Age/ sex class of the animals

Figure 8: Ratings for interaction related parameters

Chaining

- All the animals were chained and not allowed to range free.
- Mean chaining duration was 7.3 hrs (SE = 1.9,N = 4).
- Laxmi, 25 yrs., Rani, 40 yrs. and Ramu 40 yrs., were restrained with spike chains

Restriction on the movement of captive elephants through the use of chains is common practice. This feature was rated considering such aspects as whether the animal is allowed to range free/ not and chain type used. Low ratings indicate that animal is not allowed to range free and/ or use of hobbles or spike chains. Overall rating was (SE = 0.0, N =7) with all the observed animals getting a rating of zero for all the observed sub-parameters.

Behaviour

- Three elephants, Rani, Laxmi and Laxmi were said to be quiet and reliable.
- Ramu was described as agitated and nervous
- Two elephants, Rani (40 yrs.) and Ramu (40 yrs.) were said to exhibit stereotypy of medium intensity.

The observed temperament of the elephant, incidences of aggression towards people along with occurrence of abnormal behaviors such as stereotypy have been considered while rating this parameter. Overall rating (Figure 9) was 5.8 (SE = 1.3, N = 13)

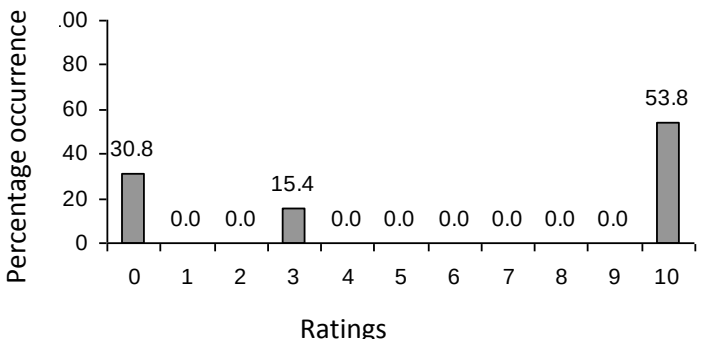
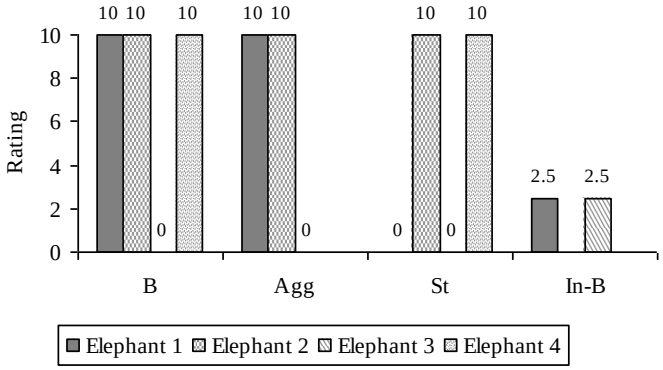


Figure 9: Percentage occurrence of ratings for observed behaviour

The ease of handling an elephant as well as the overt expression of stress through nervousness was rated. High rating indicates calm and quiet behaviour. Three of the four elephants were given a rating of ten. Two elephants were said to express stereotypy and were given a rating of zero (Figure 10).



B: Observed behaviour (temperament) Agg: aggressive behaviour towards people
St: Stereotypic behaviour In-st: Intensity of stereotypy

Figure 10: Ratings for behaviour related parameters

Work

- Walking and begging was the main form of work
- Laxmi (13 yrs.) was also said to be maintained for "exhibition."
- Ramu was also said to hired to film crews earning Rs. 65,000/- per hire
- Duration of work was 12 hours a day ranging from 8 a.m. to 9 p.m. on all days of the year
- Laxmi (25 yrs) began this work schedule from the age of 20 yrs. while Ramu (40 yrs.) began at the age of 12 yrs.
- Laxmi (25 yrs) was said to be hired for festivals which involved standing for 8 hours in a day. These festivals earned more than Rs. 5000/- per day.

- All the elephants were used for tourism which involved carrying a mean of 6 people (SE = 0.3, N = 3). The entire day was allotted for such trips without any specific timing.
- Metal howdah was used to carry people. Mean howdah weight was 29.2 kg (SE = 4.4, N =3).
- There was no provision for shade or rest during work
- Food was available and depended on people providing it while the elephant s were begging
- Fruits and vegetables were provided

This forms the defining feature of a working animal. This was rated considering the nature of work, working conditions such as shade/ water/ food availability, and accessories used on the elephant for work. Overall rating was 2.8 (SE = 0.88, N =23) indicating existence of poor work conditions (Figure 11).

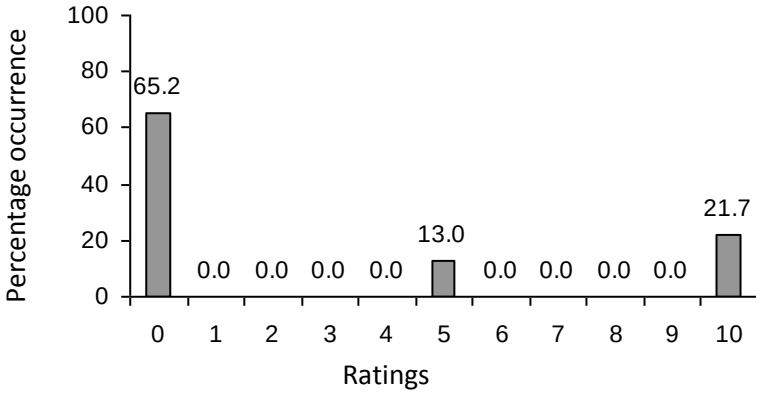
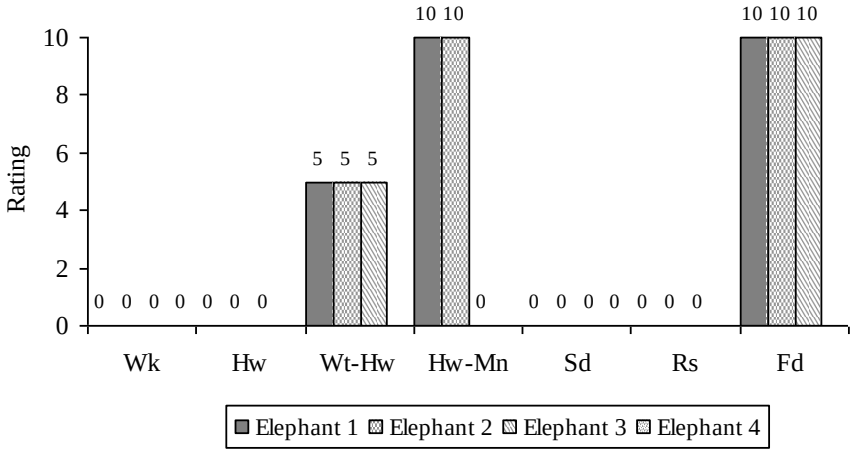


Figure 11: Percentage occurrence of ratings for work

Work that is alien to an elephant's natural way of life was given a low rating. All the four elephants were given a rating of zero. The howdah used for carrying people is carried by the elephant during the duration of its work. Hence, use of howdah made of heavy, abrasive materials will create a constant source of discomfort and consequent health problems. Rating for the three elephant observed was zero. When elephants are used for work during daytime, it becomes imperative to provide for shade as physical exertion and high surrounding temperatures can be stressful for the animal. Rating was zero for all the four elephants implying absence of shade (Figure 12).



Wk: work type Hw: Howdah type
Wt-Hw: Weight of howdah Hw-Mn: Howdah maintenance
Sd: Shade availability during work Rs: Rest availability during work
Fd: food availability during work

Figure 12: Ratings for work related parameters

Provision of food

- All the four elephants were given only stall feed and any food given while begging
- Feeding place was random and hygiene was not well maintained
- Food per day included sugarcane, fruits, vegetables and rice. Straw was provided for only two of the elephants
- Ration chart was not being used

Opportunity to range free to browse/ graze for food is considered important for elephants as they are said to be active for nearly 18 hrs a day engaging in foraging (Eisenberg, 1981). Also the supplements provided in form of stall feed should contain a balanced proportion of the different food types. High ratings are designed to reflect this. Overall rating was 0.33 (SE = 0.15, N = 15) with all the values getting a rating less than three showing existence of bad feeding conditions (Figure 13).

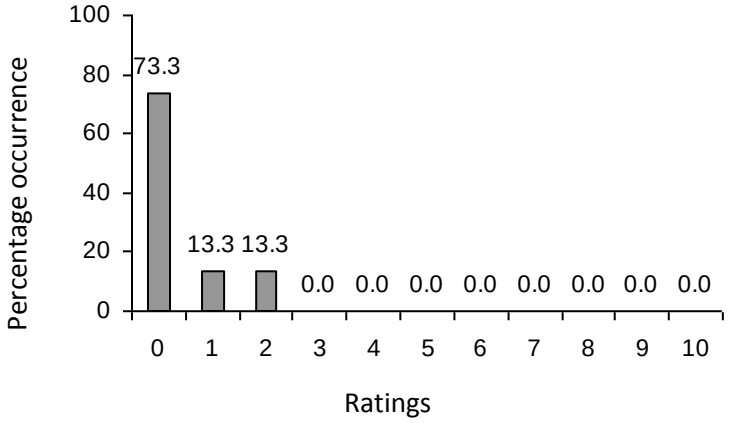
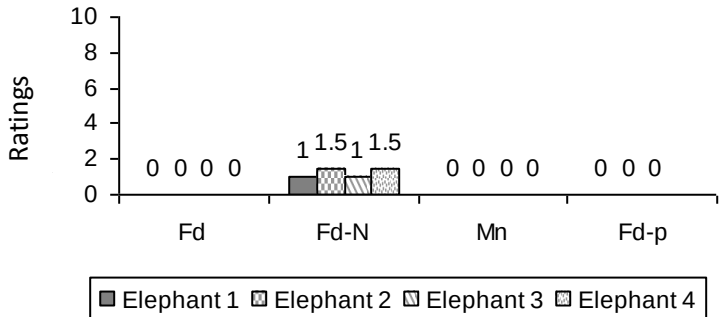


Figure 13: Percentage occurrence of ratings for food

None of the four elephants was allowed to range free. Hence, a rating of zero was given. All the four elephants were not given any mineral mix as a supplement (Figure 14).



Fd: Food provisioning type Fd-N: Number of food items given during stall feed
Mn: Mineral mix given Fd-p: Hygiene of feeding place

Figure 14: Ratings for food related parameters

Female reproductive status

- Laxmi (25 and 13 yrs.) and Rani (40 yrs.) were exposed to males, once, for the purpose of mating. Ramu had never been exposed to males
- Mating was unsuccessful for the three elephants

The normal expression of reproductive state in an animal is considered to be an indicator of its health and a pointer to the welfare conditions existing. This parameter was rated using five sub-parameters. Overall mean rating was 3.1 (SE = 1.2, N = 16) showing poor conditions for female reproductive status.

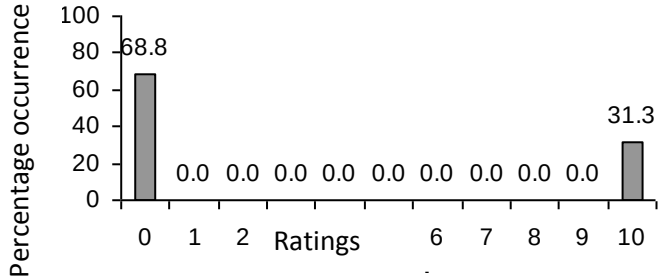
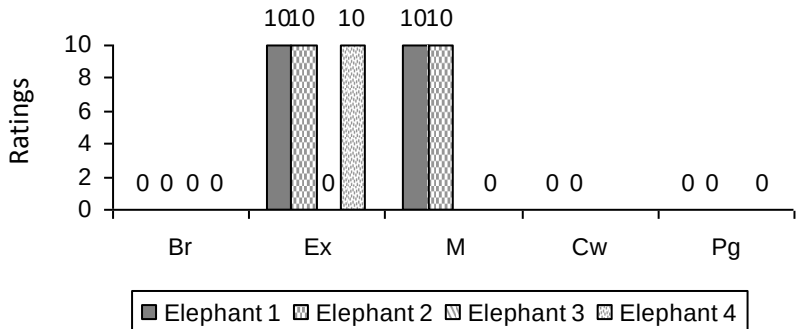


Figure 15: Percentage occurrence of ratings for female reproductive status

None of the animals were said to have raised/ tended to young calves, despite being adult animals. Rating was zero. Three elephants were said to been exposed to males, rating of ten was given (Figure 16).



Br: Breeding opportunity Ex: Exposed to males
M: Mating observations Cw: Presence of cows during parturition
Pg: Number of successful pregnancies

Figure 16: Ratings for female reproductive status related parameters

Health status

- All the four elephants were reported be suffering from stomach problems.
- Ramu was said to have experienced fever
- Stomach problems were said to occur frequently
- Laxmi and Rani (belonging to one owner) were both experiencing eye problems: injury in one eye for Laxmi and discharge for Rani.
- Foot-rot was observed for Rani (40 yrs) and Ramu (40 yrs).
- All the elephants were oiled on the head. Frequency ranged from once in a day once in a year.
- Tests of blood/ urine/ dung had never been done for the elephants
- No vaccination or deworming was done for any of the animals
- Body measurements were not taken for the observed elephants

Ill health/ occurrence of injuries can be an indicator of an underlying problem with the conditions of captivity. Occurrence of disease/ injury, intensity in terms of frequency, adherence to prescribed veterinary schedules and use of routine practices such as application of oil on elephants have been rated to indicate the animal's health status. Overall rating was 2.3 (SE = 0.8, N = 29) implying bad health status with 82 % of all values getting a rating less than three (Figure 17).

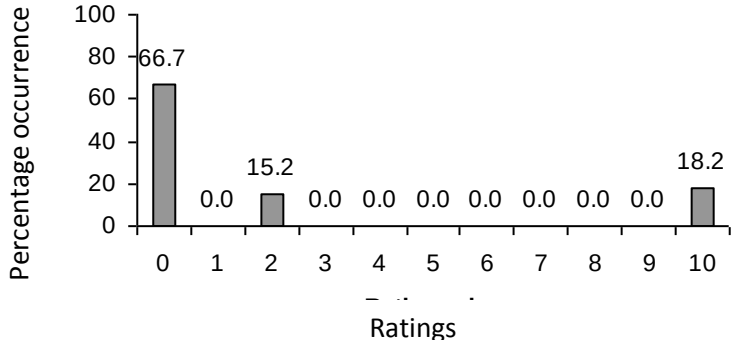
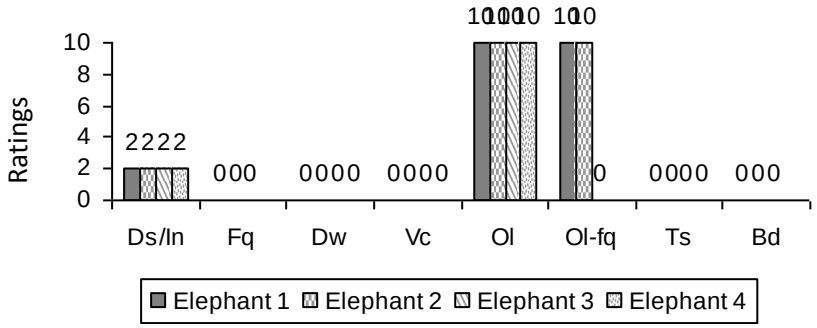


Figure 17: Percentage occurrence of ratings for health status

The nature of the disease or injury in terms of its effect through its virulence, incidence of pain with consequences on further deterioration of health has been considered for rating. All the four elephants have been given a rating of 2.0. None of the animals had been dewormed or vaccinated against known parasites/ pathogens. Hence, a rating of zero was given. Oiling, the application of oil on the animal, was said to be practiced for all the four animals, hence, a rating of ten was given. However, oiling was repeated only rarely for one of the observed elephants, hence a value of zero was given for it (Figure 18).



D/In: Occurrence of disease/ injury
Fq: frequency of disease/ injury
Dw: Deworming status
Vc: Vaccination status
Ol: Oiling done
Ol-fq: Oiling frequency
TS: Blood/ urine/ dung samples tested
Bd: Body measurements taken

Figure 18: Ratings for health related parameters

Veterinary care

- Veterinary doctor was not available for three of the four elephants.
- Veterinary care facilities was not available for any of the elephants
- Records were not maintained

Facilities with easy access to a veterinary doctor with experience in treating elephants have been given high ratings. Also, such facilities should have provision for veterinary facilities and maintain records regularly. Overall rating was 0.7 (SE = 0.7, N = 14) and 93 values fall under zero indicating bad conditions of veterinary care (Figure 19).

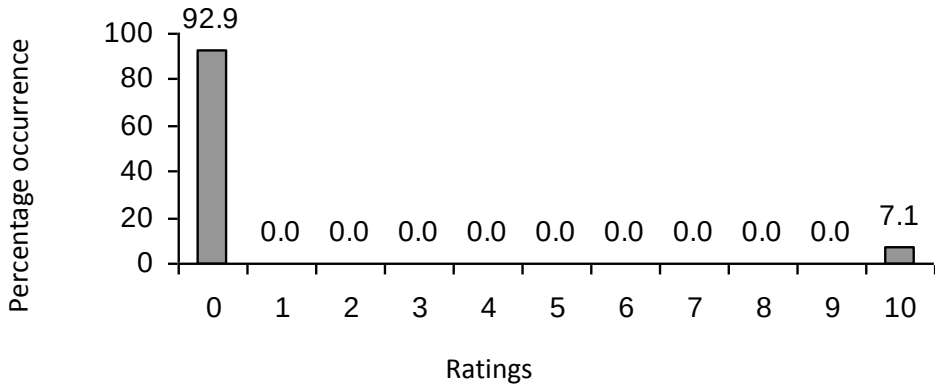
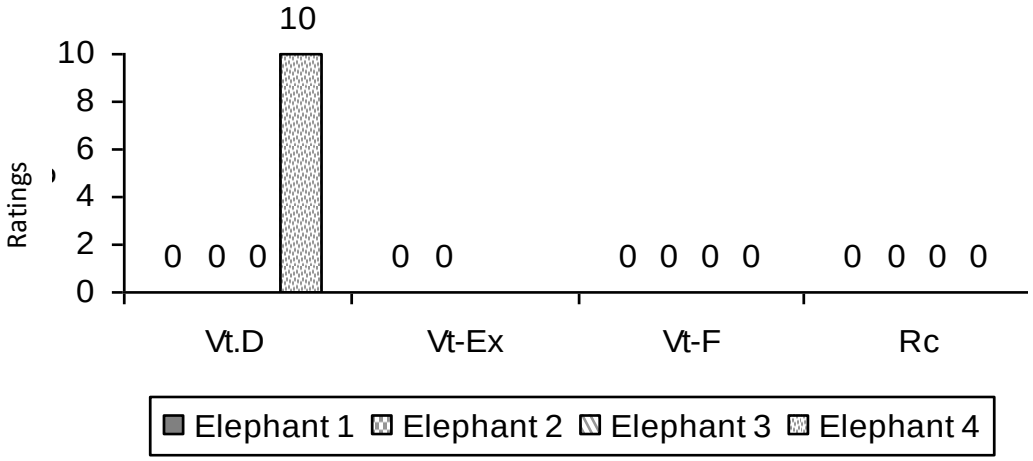


Figure 19: Percentage occurrence of ratings for veterinary care

Only one elephant was said to have access to a doctor (Figure 20). There was no provision for any other facility and records were not maintained.

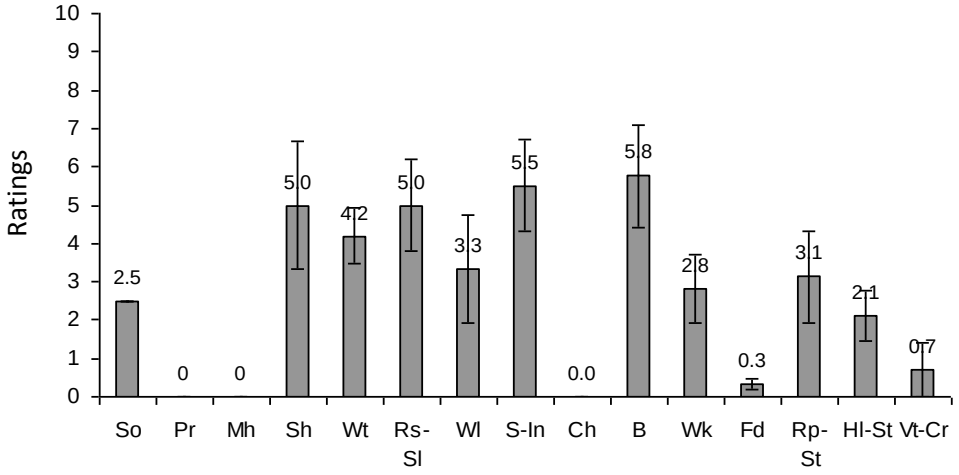


Vt.D: Veterinary doctor availability Vt-Ex: Experience
Vt-F: Veterinary care facilities Rc: Record keeping

Figure 20: Ratings for veterinary care related parameters

Overall Welfare status of begging elephants

Among the fifteen important parameters considered for assessing the welfare status of begging elephants, 3 parameter get the value of zero, and 10 parameters values are below five (Figure 21)



So: Source of elephant Pr: Purpose of keeping Mh: Mahout change
Sh: Shelter Wt: Water Rs-Sl: Rest and sleep
Wl: Walk S-In: Social interaction Ch: Chaining
B: Behaviour Wk: Work Fd: Food
Rp-St: Reproductive status Hl-St: health status Vt-Cr: Veterinary care

Figure 21: Overall ratings patterns for parameters investigated

Overall rating for elephants (when considered across each individual rating including all sub-parameters) was 2.9 (SE = 0.3, N = 202) showing existence of poor welfare conditions with 66 % of the values getting a rating less than four (Figure 24).

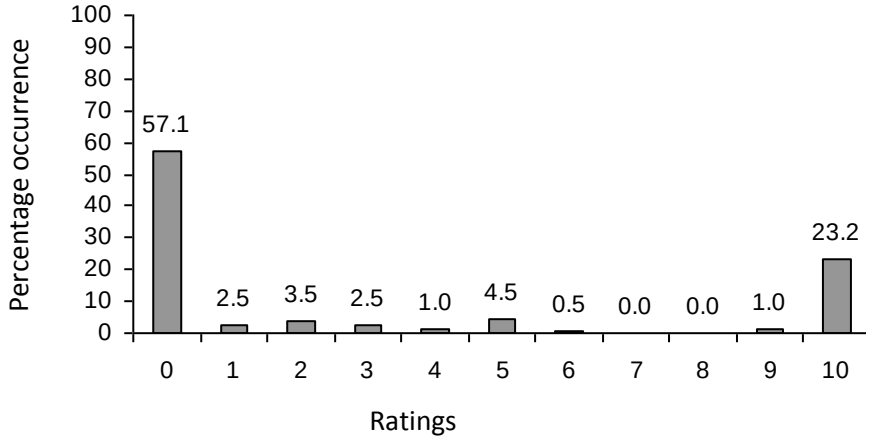


Figure 22: Percentage occurrence of ratings for elephants

Welfare status of mahout

- Mean age of mahout was 30.3 yrs (SE = 5.4, N = 3).
- Mean experience in this profession was 11.2 yrs (SE = 3.8, N =3).
- Mean experience with his animal was 11.3 yrs (SE = 3.8, N =3).
- Two mahouts had entered this profession out of interest while one needed a source of employment
- Family occupation was said to farming for the three mahouts
- Salary ranged from Rs. 8000/- to 36,000/- per year
- All the mahouts were single
- All the mahouts used a stick pike and / or metal ankush to control his elephant
- Only one mahout was said to have had a health check-up
- Insurance cover was not available for the two mahouts for whom data was available

The socio-economic status of the elephant handlers was rated to assess his welfare condition. Mahout's welfare is important not only to the person but also to the animal he cares for. Bad welfare conditions may lead to worse treatment/ handling of the elephant. Parameters with direct bearing on the elephant's welfare such as experience of the mahout, use of tools and knowledge of commands has also been rated. Elephant: mahout ratio was 1: 0.75 with two adult female animals cared for by a single mahout. Mean age was 30.3 yrs, ranging from 18 – 38 yrs. Overall rating for mahout was 4.4 (SE = 0.83, N = 31) implying poor welfare conditions with 55% of all the values getting a rating less than four (Figure 22).

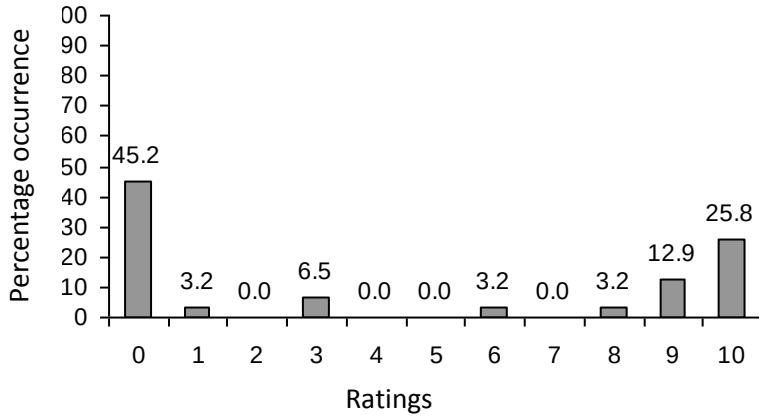
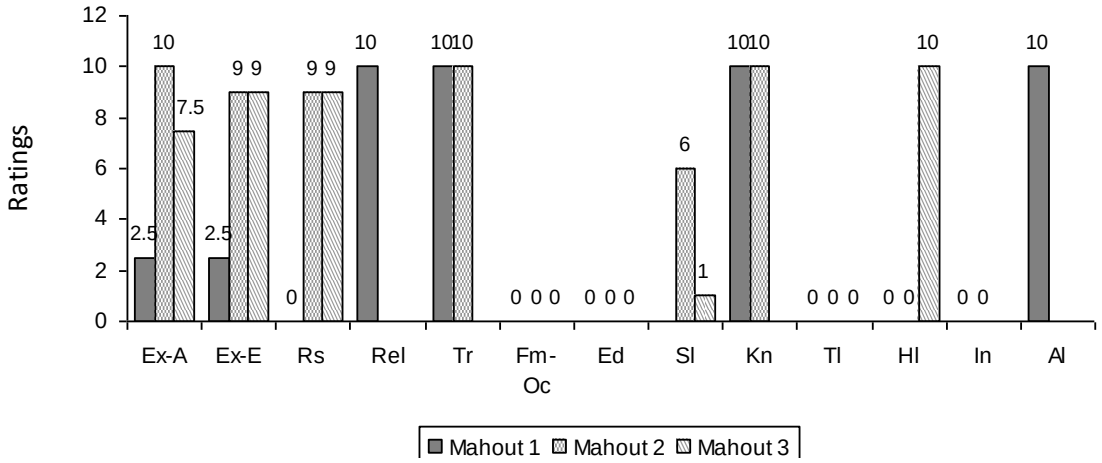


Figure 23: Percent occurrence of overall ratings for mahout welfare

When a mahout spends more than 50 % of his age in the profession he is given a high rating value. Of the three, two mahouts experience ranged from 33 – 57 % of their ages. Greater experience with a particular animal would lead to fewer periods of adjustment between an elephant and its handler. Only one mahout had less than 20 % experience in terms of the elephant's age. The others reported to have been with this elephant for 50 % of the animal's age.

None of the mahouts reported handling elephants to be their family occupation. None of the mahouts was educated. The salary paid ranged from Rs. 8000- 36,000/- per year. High ratings were given if the remuneration was sufficient to support a family of four in an urban environment. Only one mahout had had a health check-up. There was no insurance cover for the handlers (Figure 23).



Ex-A: Experience as % of mahout's age
Ex-E: Experience as % of elephant's age
Rs: Reason for choosing this profession
Rel: Having mahouts as relatives
Tr: Trained/ not
Fm-Oc: Family occupation
Ed: Education status
Sl: Salary
Kn: Knowledge of commands
Tl: Use of tools to control elephant
Hl: Periodic health check-ups
In: Insurance availability
Al: Alcohol consumption

Figure 24: Rating for mahout welfare related parameters

Discussion

Overall rating for elephants for begging elephants was 2.9 (66 % of the values getting a rating less than four). This rating and the distribution of the values suggest a poor welfare condition. Ratings have designed such that low values indicate poor welfare conditions as a consequence of deviation of an elephant's natural living conditions and life history patterns.

Reasons for poor welfare status are:

- Studies have shown that elephants are active for most part of a day (18 -20 hrs) foraging (Sukumar, 2003), resting during periods of high temperatures (Kurt and Garai, 2007), and engaging in social activities within the herd.

The only similarity between natural elephant behaviour and that seen among these four begging elephants is that they are active for 12 hrs a day. Activities for the entire day are completely controlled by the mahout who decides where and when the animal will work/ rest/ sleep/ eat/ drink, etc.

- Elephants are said to drink at least once a day not wandering away to great distances from a water source (Shoshani and Eisenberg, 1982). This was absent for these elephants as their nature of work impelled them to depend on random sources of water, if available. Likewise, bathing times and place was also random depending on location and availability. Physical activity increases body temperatures. Rest periods are not determined by the elephants, but by the mahouts. These two interrelated factors make the need for a bath an imperative issue. However, bathing frequency and duration depended on location and availability of water.
- Chaining the elephants in open spaces, without access to a shelter, for the duration of the night. Three of the four elephants were said to be chained using spikes. The harmful effects of non-abrasive chains causing skin wounds as the animals walk has been reported along with the long duration of treatment needed to heal such wounds (Kurt and Garai, 2007). Physical activity during the day followed by restraint using spikes at night can result in physiological and psychological distress as will be seen in the discussion on stereotypy and reproductive malfunction. Coupled with this is the occurrence of foot injuries in two elephants, both without access to a veterinary doctor.
- Nature of work was to travel from place to place in search of food for the animal and remuneration for the mahout. One of the elephants was also said to be hired to people making films. All the animals were used for tourism through joy-rides. It is a well-known fact that working elephants need greater care with food provisioning due to the nature of their physical exertion (Kurt and Garai, 2007). However, none of the animals was allowed to range free to browse/ graze. Only stall feed was given with few variations in the number of items.
- Two of the four elephants were said to exhibit stereotypy. Restraining elephants by inhibiting performance of species-typical behaviour can result in stereotypy (Wiedenmayer and Tanner, 1995)[†] . Higher frequency of stereotypy was observed among chained elephants (Kurt and Garai, 2007). The expression of stereotypy suggests psychological distress.
- One elephant was maintained in isolation and two belonged to one owner. Elephants are known for maintaining social relations within a herd over time and space (Sukumar, 2003). Such restricted or absent instances of group living for a highly social species can be

deleterious to their welfare. One of the elephants Ramu (40 yrs., female) was said to be nervous/ agitated and aggressive towards people. This elephant was maintained without any social interaction.

The absence of reproductive behaviour in the observed adult females indicates deviation from the normal. Such abnormal reproductive states can be attributed to psychological distress or social isolation (Bearden and Fuquay, 2000) † among other causal factors.
Efforts made to expose the females to male elephants for mating proved unsuccessful. Kurt and Garai (2007) state that exposing unknown elephants for the purpose of mating may not result in successful mating/ pregnancy.

The absence of veterinary care facility for most of the elephants even though all the animals showed signs of ill-health or injury indicates poor focus on the animals' needs. Records regarding ownership of the elephants were absent or not accessible. No records were maintained regarding clinical/ service or any other type by the management.

Overall rating for the mahouts suggests existence of poor welfare conditions.

- Absence of health or insurance cover. Both these factors are important considering the nature of their profession.
- Lack of education among all the mahouts.
- Absence of suitable accommodation for the handler
- All the mahouts were said to use tools to control their animal.

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†: Original not referred

Section 4:
Traveling and begging elephants of Punjab

Executive summary

Owners and mahouts, as individuals or members of organizations ‘owning’ elephants, wander with them from place to place for monetary returns for their efforts.

There are 17 elephants in Punjab. This report assesses the status of their welfare in the city of Ludhiana as to their physical, social and health conditions along with issues related to their management.

Ten elephants, in the possession of seven private individuals as per the records of the Department of Wildlife, Ludhiana, were observed, and their keepers/managers were interviewed to collect relevant data. A number of parameters related to the animals' captive situation was observed and recorded. Observations through interviews with handlers were also noted. The parameters were rated on a scale of 0–10, 0 representing bad welfare condition and 10 satisfactory.

Ratings of 83 parameters (inclusive of sub-parameters) for the elephants and 13 for the handlers have been presented. Related parameters are grouped together to provide an overall rating for that feature.

The elephants are, to a greater part, housed in a slum under a flyover in the city of Ludhiana. Hygiene in the animal shelter is poor with dung and urine accumulating at the tethering sites. Overall rating for shelter is 1.3, reflecting its gross unsuitability for housing the elephants.

Municipal taps are used as a source of drinking water for the animals. There is no access to a perennial source of running water, e.g. river or lake. Bathing the elephants is irregular depending upon the availability of water. Bathing places vary depending upon the station where the elephant performed at a particular point of time and on the availability of water in the specific area.

Availability and access to water are of great importance to elephants, especially to maintain body temperature and proper physiological functioning following intake of food. Overall mean rating for water-related parameters is 1.4, with all the ratings being less than 5.

Rest is a rarity and its duration is also random, and depends on the work type. This parameter is rated across seven sub-parameters. Overall mean rating is 4.6, with 72% of the ratings getting a score less than 4.

The elephants are made to walk on tarred roads to participate in ceremonies, commercial events and political rallies. Rating for this parameter is 3.0. Elephants' feet are sensitive to hard surfaces. They are sometimes made to walk between 20 and 60 km a day on tarred roads. Mean rating for walk and related parameters is 2.0.

Social interaction is a feature of primary significance, considering the complex society and social structure of elephants in the wild. They are tied together under the flyover at night, which restricted interaction.

Elephants stationed in Ludhiana that move around in rural areas for alms, to participate in marriage functions and other religious and social ceremonies. Ludhiana's mean monthly temperatures are 35–40°C, peaking at 45–46°C in summer. The elephants work upwards of 12 h a day often without any shade, water or food.

We had encountered an elephant walking from Daudpur, 60 km from Ludhiana, having started the journey at 4 a.m., to reach Ludhiana city at 4 p.m. It covered the distance without any food, water or rest. One female elephant, Laxmi, apprehended with her mahout, in April'08 had an abscess on her leg and had difficulty in walking. She was brought from Haryana to Punjab to participate in a function, and was later kept at the local zoo for treatment. It was later released to her 'owner', who had no ownership documents.

Elephants are used in religious processions, rides for children, and for product advertisement and are walked around or transported to other districts and states to participate in marriages and functions. Overall mean rating for work-related parameters is 1.7 with 82% of the scores getting a rating below 3.

The animals are put to work irrespective of the ambient day temperatures. Physical exertion of walking or standing in the sun increases body temperature. At night, the animals are rested under concrete structures in urban and densely populated areas.

The heat generated in the body by physical exertion during the day is not allowed to dissipate easily due to the surrounding micro-environment of concrete walls and absence of vegetation. Additionally, the restriction imposed by chaining the elephants further hinders the animals' ability to choose a suitable place within a restricted environment.

The general health of the animals is an indicator of the status of their welfare. Poor health or frequent occurrence of injuries is observed and is associated with poor living conditions. The mean for health status is 2.6 with 83% of the ratings occurring in the range 0–4.

The overall ratings for elephants, across each individual value and all parameters, is 2.4 implying bad welfare conditions.

Introduction

The use and maintenance of elephants for public performance, though not in the category of circuses, is a well-established fact. Elephants 'owned' by individuals or organizations are taken from place to place to earn a living. The ownership of such elephants is more often than not unsubstantiated. The natural environment—physical, social and psychological—experienced by wild elephants varies from those of captive situations.

The abominable conditions where the elephants are confined to affect their well-being. The animals are maintained under varied conditions of captivity, most of which are not monitored on a regular basis. There are 17 elephants in Punjab, of which about 10 are in Ludhiana. This report aims to assess the welfare of elephants observed in the city in terms of their physical, social and health conditions along with management issues.

Method

Ten elephants, belonging to seven private owners, were observed and their keepers/managers were interviewed to collect relevant data. A number of parameters related to the animals' captive situation were observed and recorded as also through interviews with handlers. The parameters were rated on a scale of 0–10 with zero representing bad welfare condition and 10 considered satisfactory.

Ratings were graded in the following manner:

- 0–2.4: bad conditions
- 2.5–4.9: poor
- 5.0–7.4: moderate
- 7.5–10.0: satisfactory

Ratings for 83 parameters (inclusive of sub-parameters) for the elephants have been presented. Thirteen parameters for mahouts/cawadis have been rated. Parameters that were related were grouped together to provide an overall rating for that feature. For example, shelter included such parameters as type, size, flooring, number of hours enclosed within and open or closed type.

The socio-economic conditions of the elephant handler were rated in terms of observations collected on relevant parameters as a means of assessing his welfare status. In addition, the experience of the handler was also considered. The rating scale for mahout/cawadi remains the same. High ratings imply suitable economic, social and other living conditions.

Result

Population status

All the animals were females, with mean age of 38.2 years (S.E. = 2.5, %CV = 14.6, N = 5) ranging from 30 to 45 years.

Source of the animal

The few elephants with valid papers at the present location have been bought from Sonepur in Bihar. None of the elephants had any authorization papers from the Punjab State Forest Department and certainly no documents pertaining to the Central notification of 2003 and its

extension of 2004, to revalidate the old Ownership Certificate, if any or declare possession of the animal, as per the guidelines of the Wild Stock Rules 2003, of the WLPA. However, the elephants seem to have stayed at the present location for the past 10 years. Change in ownership of an animal implies altered living conditions as a consequence of new management. This also pinpoints to the source of the captive population.

Shelter

The elephants were housed in about 450 sq. ft of concrete flooring under a flyover surrounded by slums (Figure 1a & 1b) in the city of Ludhiana. Dung and urine accumulates at the tethering sites, and hence hygiene of the shelter is very poor.

The housing condition of the animals is rated across seven sub-parameters. Low ratings signify existence of improper or unsuitable physical conditions. Overall rating for shelter is 1.3 (SE = 0.71, N=7) with 86% of the ratings being less than 5 (Figure 1).

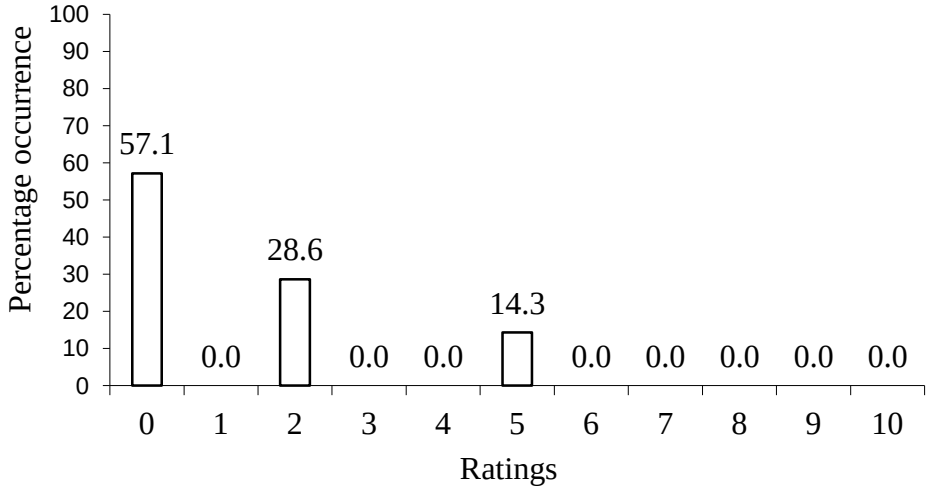
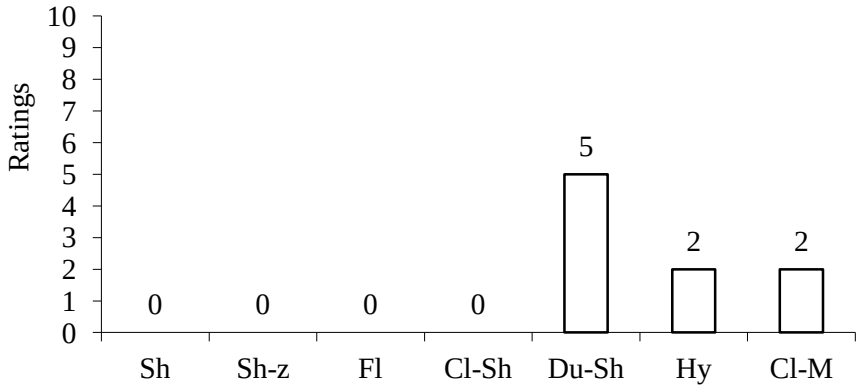


Figure 1: Ratings for shelter

High rating is given to natural/ near-natural forest conditions as they resemble the wild environment and to shelters which provide free-ranging opportunity under forest conditions. Mean rating for shelter size is 0.0 (SE = 0.0, N =10). Natural substrates provide suitable living environment. Low-quality flooring is given low rating.

Mean rating is 0.0 (SE = 0.0, N = 10). The enclosure or shelter, if closed, needs care with respect to maintenance of ideal temperature, especially considering the elevated body temperatures of working elephants. Cleaning the premises is important as uncleared animal excreta leads to health problems both for the animal and the general public. Mean rating (Figure 2) is 2.0 (SE = 0.0, N = 10).



Sh: Shelter type
Sh-Z: Shelter size
Fl: Floor type
Cl-Sh: Type of closed enclosure
Du-Sh: Duration animal kept in shelter
Hy: Hygiene of shelter
Cl-M: Cleaning materials used

Figure 2: Ratings for shelter and associated parameters.

Water availability

There is no access to a perennial source of running water. Tap water is used as a source for drinking. The animals drink water thrice a day. Bathing depended on the availability of water and is irregular. Water is provided by villagers occasionally through pipes when the elephant is hired. Places for bathing depended on the place where the elephant is at that point of time and on the availability of water. Scrubs are not used, but coconut fiber is used occasionally for scrubbing. Access to water is of immense importance to elephants to maintain body temperatures and proper physiological functioning. This parameter has been rated across nine sub-parameters. Overall mean rating is 1.4 (SE = 0.6, N = 9) with all the ratings being less than 5 (Figure 3).

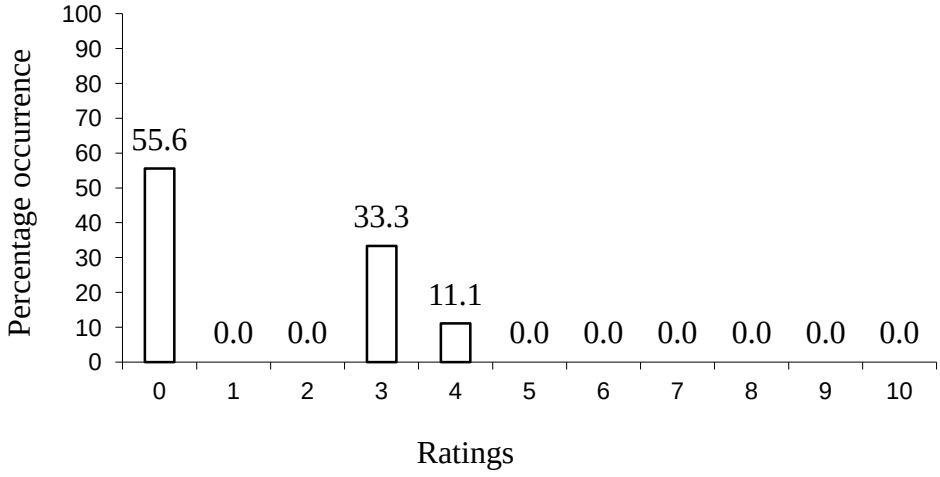


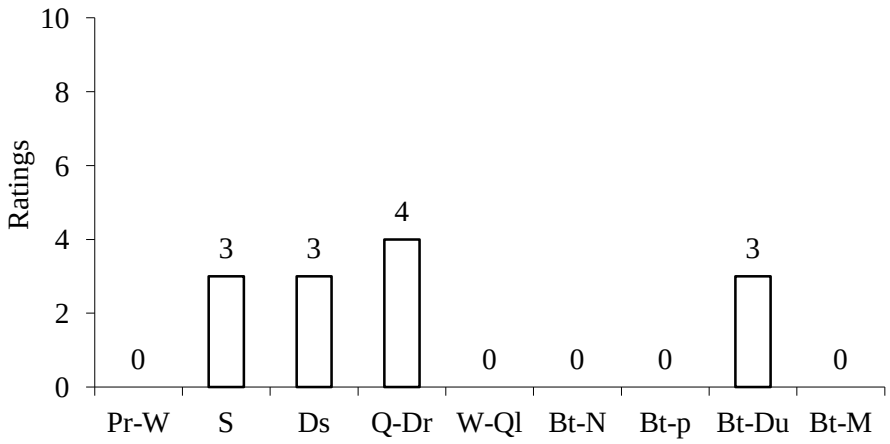
Figure 3: Ratings for availability of water.

Access to running water throughout the year is considered important as stagnant water could lead to contamination and unhygienic conditions for the elephant. Mean rating is 0.0 (SE = 0.0, N =10) implying use of stagnant water source.

Ease of access to water by the animal is considered important in giving high rating for this parameter. Rating value is 3.0 (SE = 0.0, N =10). Elephants consume around 150 l of water per day (BIAZA, 2006), 160 l per day (Poole and Granli, in press). Any deviation from this is given a lower rating. Mean rating is 4.0 (SE =0.0, N =10). Since water is not tested for quality (Figure 4). The mean rating for quality is 0.0 (S.E= 0.0, N =10).

Bathing place

Elephants need enough water to immerse themselves completely and to allow for related activities such as mud wallowing, dusting, etc. (BIAZA, 2006). Mean rating is 0.0 (SE =0.0, N= 10). Materials such as plastic brush or brick which are hard and are abrasive have been given lower rating values. Use of natural materials is given a high rating.



Pr-W: Perennial source of running water
S: Water source
Ds: Distance to water source
Q-Dr: Quantity of drinking water
W-Ql: Water quality tests
Bt-N: No.of times bathing/day
Bt-p: Bathing place
Bt-Du: Bath duration
Bt-M: Bathing materials used

Figure 4: Ratings for water sub-parameters.

Rest and sleep

The working animals are rested only rarely. The duration of rest depended on the work type and is random in nature. Resting place is also random depending upon the location of the elephant during its working hours. When not on duty, the animals are allowed to sleep at night for about three hours a day in their shelter under the flyover.

Allowing elephants sufficient rest and sleep would help in maintaining their physical and psychological well-being. This parameter is rated across seven sub-parameters. Overall mean rating is 4.6 (SE = 1.4, N = 7) with 72% of the values getting a score less than 4 (Figure 5).

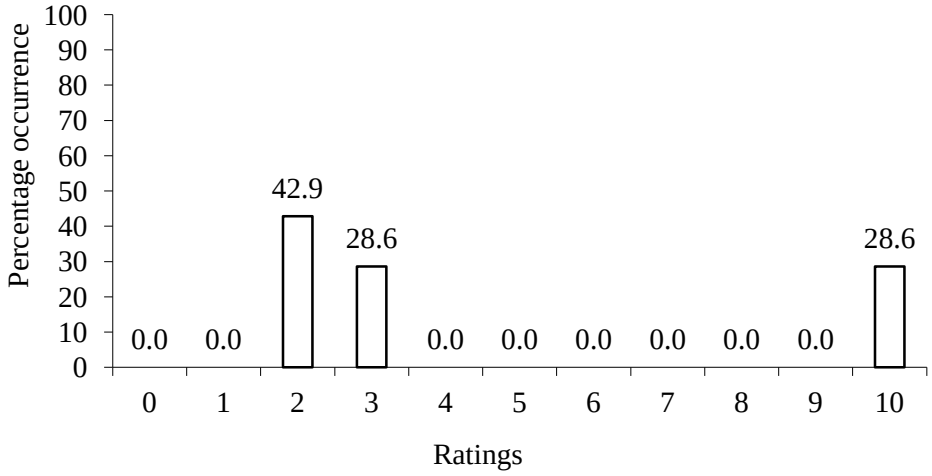
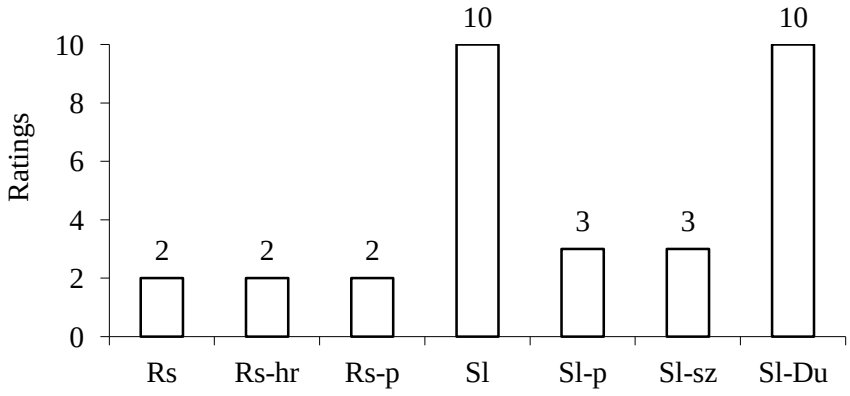


Figure 5: Ratings for rest and sleep.

Opportunity for rest

The fact that elephants are used for work makes it all the more important to provide them sufficient rest. Mean rating is 2.0 (SE = 0.0, N =10) showing poor availability of rest for the observed animals. Unsuitable sleeping places are given low ratings (Figure 6). Mean rating is 3.0 (SE =0.0, N =10) as the animals sleep under urban structures.



Rs: Rest availability
Rs-Hr: Resting hours/day
Rs-p: Resting place
Sl: Sleep availability
Sl-p: Sleeping place
Sl-sz: Sleep area size
Sl-Du: Duration of sleep

Figure 6: Ratings for rest/sleep sub-parameters.

Opportunity for physical exercise

The animals are walked on tarred roads for 8–12 hours (Figure 10) over 20–60 km a day from 4 a.m. to 4 p.m/8 a.m. to 5 p.m. This parameter is rated using six sub-parameters. The mean rating is 3.0 (SE = 0.52, N = 6) with 67% ratings getting a score less than 4 (Figure 7).

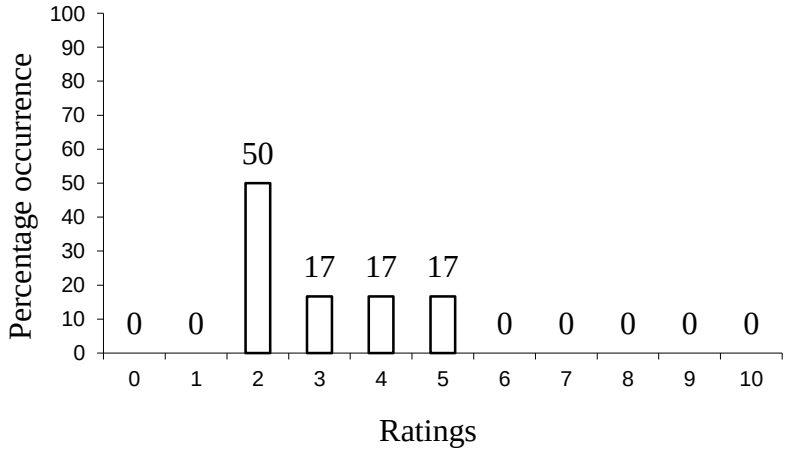
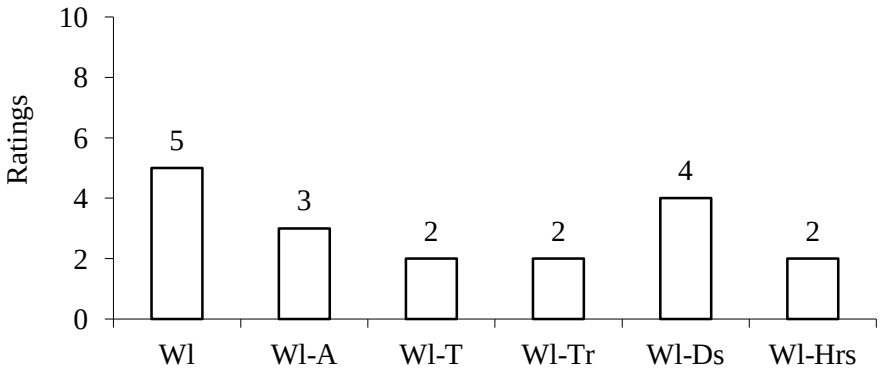


Figure 7: Ratings for walk.

The elephants are generally walked in an urban environment to participate in ceremonies. Rating is 3.0 (SE = 0.0, N =10). Elephants' feet are sensitive to hard surfaces (Rajankutty, 2004). The observed animals are made to walk on tar roads (Figure 12) which hurt their feet. Hence, a rating (Figure 8) of 2.0 is assigned (SE = 0.0, N =10).



Wl: Allowed to walk
Wl-A: Area (size) of walking
Wl-T: Time of walking
Wl-Tr: Walking terrain
Wl-Ds: Distance covered while walking
Wl-Hrs: Duration of walking

Figure 8: Sub-parameters of ratings for walk.

Social interaction

The elephants are tied together at night with a meter length of chain under the flyover or made to walk together while traveling, which allows for extremely restricted interaction. Interaction is among 2–3 adult female elephants, and only among animals tied together. Distance between elephants is 1–2 m. Social interaction among the animals is a feature of significance considering the social nature of elephants in the wild. Overall rating for this parameter is 5.0 (SE = 1.3, N = 5) with 60% of the values (Figure 9) getting a score less than 5.

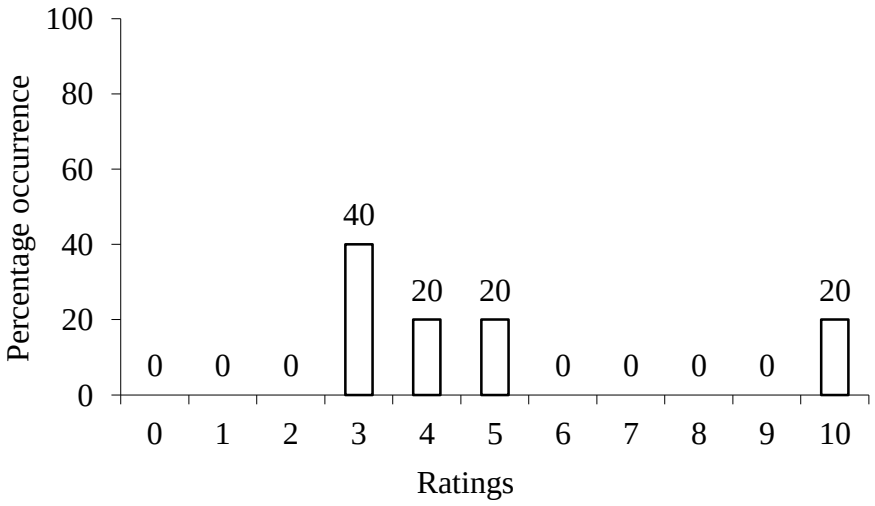
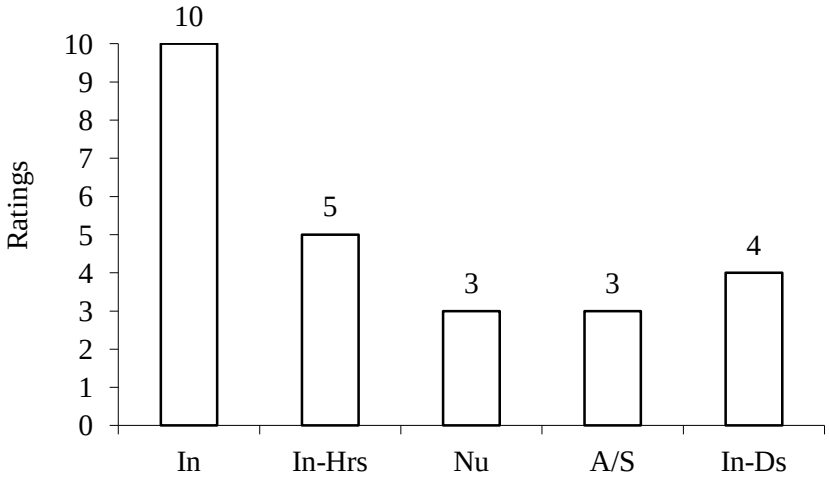


Figure 9: Overall rating for social interaction.

The mean rating for interaction among elephants is 10.0 (SE =0.0, N =10); however, the mean rating value for group size (Figure 10) is 3.0 (SE = 0.0, N = 10.0).



In: Allowed to interact or not In-Hrs: Hours of interaction
Nu: Number of individuals A/S: Age-Sex class
In-Ds: Interaction distance (between individuals)

Figure 10: Ratings for interaction sub-parameters.

Chaining

All the elephants are chained during the night for 8–12 h, approximately between 8 p.m.and 5 a.m. None of the animals is allowed to range free and is tied with 1–2-m long chain. Use of chains on captive elephants is a characteristic feature, restricting their movement. The rating allowing to range-free is 0.0 (SE = 0.0, N =10.0). Mean rating is 5.0 (SE =0.0, N = 10).

Observed behaviour

All the observed animals were calm. There were no incidents of aggressive behaviour towards the public. None of the elephants exhibited stereotypic behaviour. Captivity imposes a number of alien conditions on the life of animal. This might be expressed as abnormal behaviour by the animals. Behaviour was assessed using three sub-parameters. Overall mean rating is 10.0 (SE =0.0, N = 10) with all the observed elephants getting a rating of 10.0 for the three sub-parameters.

The behaviour of the animal was rated for signs of aggression/nervousness or any form of deviant expression. Mean rating is 10.0 (SE = 0.0, N =10) showing calm or quiet behaviour by all the observed animals. Low ratings are given for expression of aggression towards people/other animals. Mean rating is 10.0 (S.E = 0.0, N = 10) implying absence of aggressive behaviour. Mean rating for observed stereotypic behaviour is 10.0 (S.E. =0.0, N =10) with no observed stereotypic behaviour.

Work type

Animal Racing is held at Kila Raipur, about 35 km from Ludhiana, once a year in February. The Ludhiana elephants participate in it along with animals like camels and bullocks. Elephants are also engaged in political rallies as well as in temple processions, for begging, children rides and are also leased to sadhus.

The elephants are hired for Rs.3, 500 per ceremony - (US$1=43.75), reportedly twice or thrice a month within the city limits. Begging fetches Rs.800–1000 a day, with nearly half of about 200 people assembled giving alms.

The elephants are used in religious processions by all sections of people—Sikhs, Hindus and occasionally by Jains —about 10–15 times a year. Processions last about 5–6 h, usually between 2 and 8 pm. Child rides are for approximately 2–4 kids, each trip fetching Rs. 50–100. Elephants are also used for product advertisement by private companies; they are also hired by people in distant places on similar errands. Howdah used on the animal is made of bedding material and weighs about 30 kg. Availability of water during work is uncertain and when available varied between 50 and 100 l. This parameter is rated across eleven sub-parameters. Overall mean rating is 1.7 (SE = 0.6, N = 11) with 82% of the scores getting a rating below 3 (Figure 11).

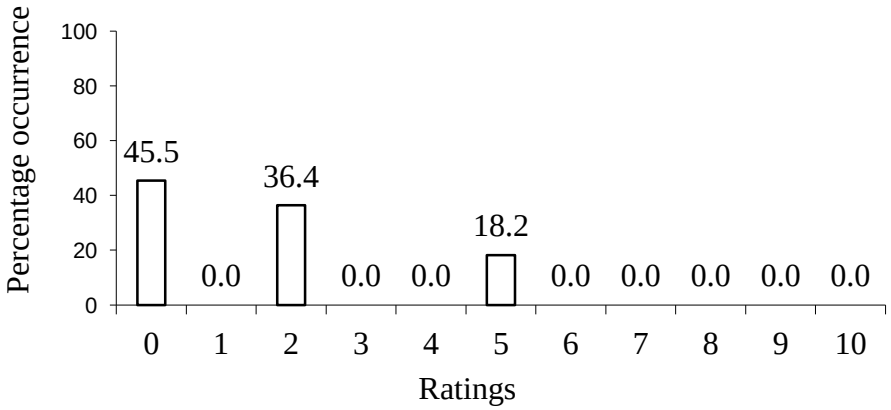
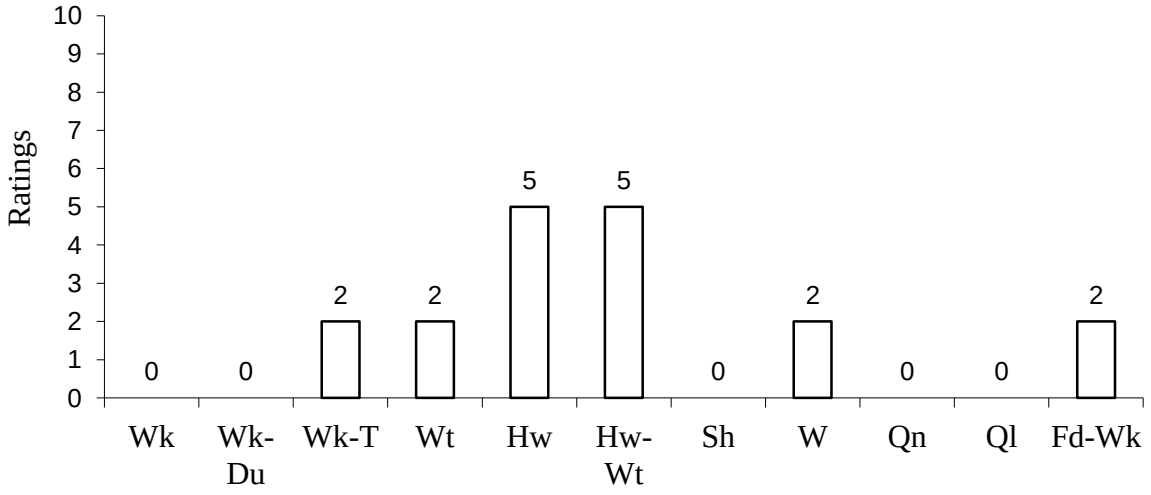


Figure 11: Ratings for work.

Any form of work that is alien to an elephant's natural way of life is given a low rating. Mean rating value is 0.0 (SE = 0.0, N =10). The physical burden carried by the elephants over long distances compounds the unfavorable conditions already being encountered. Mean rating value is 2.0 (SE = 0.0, N =10). Provision for shade while on the move or during work is of immense importance, considering the poor thermoregulation of the animal and increased body temperatures from physical exertion. Mean rating value for provision of shade during work is 0.0 (SE =0.0, N =10). Provision for water during work is given high rating value as the animals need to drink water during the course of a day. Mean rating value is 2.0 (SE = 0.0, N =10.0) which implies bad condition for water availability (Figure 12).



Wk: Work type
Wk-Du: Work duration
Wk-T: Timings of work
Wt: Weight carried during work
Hw: Howdah type
Hw-Wt: Weight of howdah
Sh: Shade available during work
W: Water available during work
Qn: Quantity of drinking water
Ql: Quality of drinking water
Fd-Wk: Food during work

Figure 12: Ratings for work sub-parameters.

Provision of food

The following food items are provided to the elephants at the shelter or while begging for alms depending upon availability and season—grass, 'bajra' (Pearl millet, *Pennisetum* sp.), 'jowar' (sorghum, *Sorghum* sp.), 'roti' also called chappatis (cooked wheat dough), sugarcane (*Saccharum* sp.), berseem (Clover-*Trifolium* sp.) fodder. About Rs.300 (US$ 6.8) is spent on food per day on each animal. The animal picks up grass along the way while walking and is also helped by caretakers with tree branches like those of banyan (*Ficus* sp.), peepal (*Ficus religiosa*), etc. Devotees offer banana, jaggery (sugarcane molasses), sugarcane and occasionally chapattis and 'ghee' (clarified butter). The food provided to the elephants indicates the restrictions on movement of the animal and implies absence of free foraging. Overall mean is 3.0 (SE = 1.2, N = 4) with 50% being less than 3 (Figure 13).

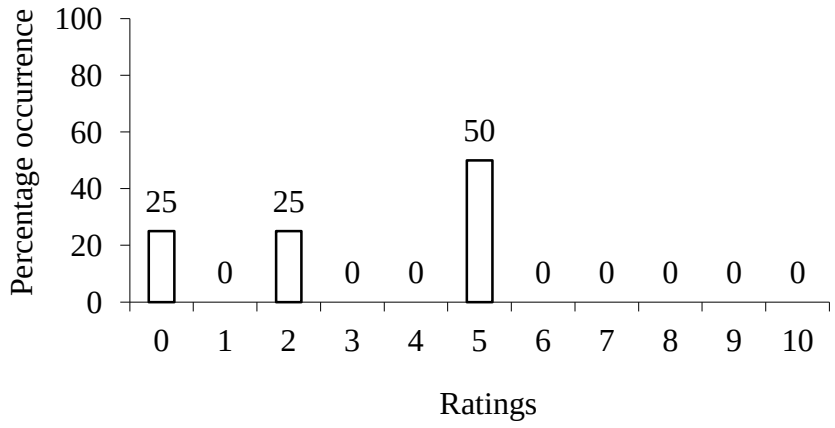
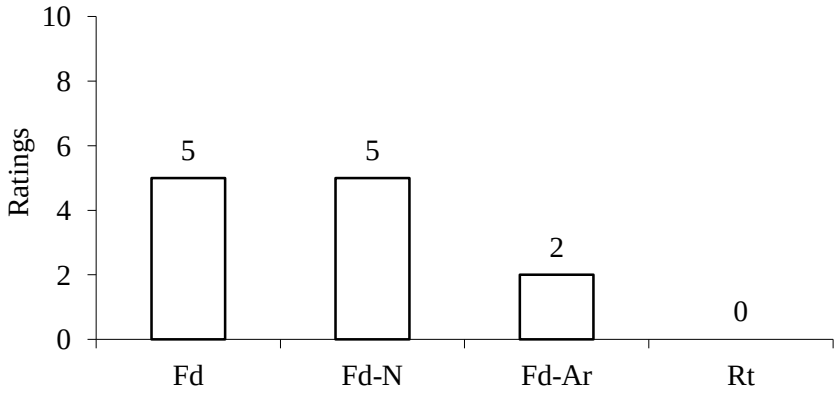


Figure 13: Overall ratings for food.

Animals that are allowed to range free for browsing/grazing and provided stall feed are given high ratings. Mean rating is 5.0 (SE = 0.0, N =10.0) implying the use of only stall feed (Figure 14). The food chosen by the animal on free ranging in forest conditions cannot be replicated during stall feeding. Hence, a lower rating value is given for stall feed.



Fd: Food provisioning type
Fd-N: Number of food types
Fd-Ar: Feeding area
Rt: Usage of ration chart

Figure 14: Ratings for food sub-parameters.

Reproductive status of females

Oestrus cycles have not been reported for any of the observed females. None of the animals was exposed to males or given an opportunity to mate. The occurrence of oestrus cycles in adult female elephants could be related to maintenance of normal health and psychological state. Overall mean rating is 0.0 (SE =0.0, N = 6, Figure 15) implying no opportunity to mate.

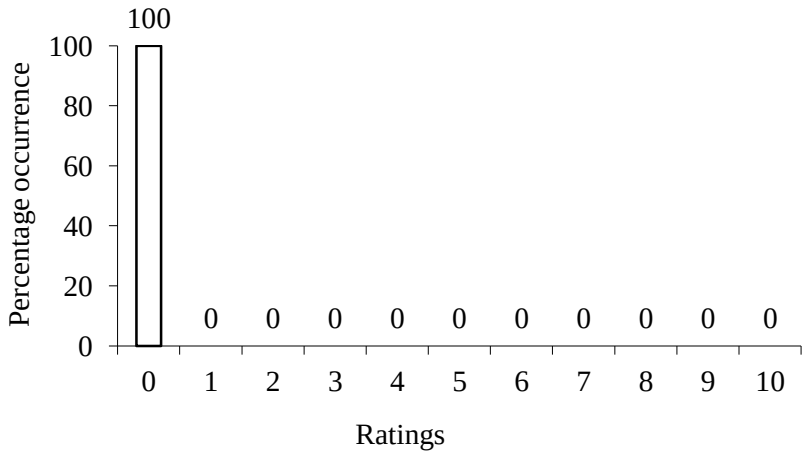


Figure 15: Overall ratings for female reproductive status.

All the sub-parameters such as occurrence of oestrus cycle, exposure to males, frequency of exposure, opportunity to breed, male source for mating and number of calves born received a rating of zero.

Health status

All the animals have abscesses and nail cracks, one even having a nail penetrating into its pad. One 45-year old female elephant, Roopkali, has its left eye damaged. Four animals have been de-wormed. None of the elephants had been vaccinated against specific diseases. All the animals are oiled using mustard oil twice a week. Health of animals is considered to be an indicator of its welfare. Poor health or frequent occurrence of injuries could be associated with poor living conditions. Overall mean for health status is 2.6 (SE = 0.8, N = 8) with 83% of the rating occurring in the range 0–4 (Figure 16).

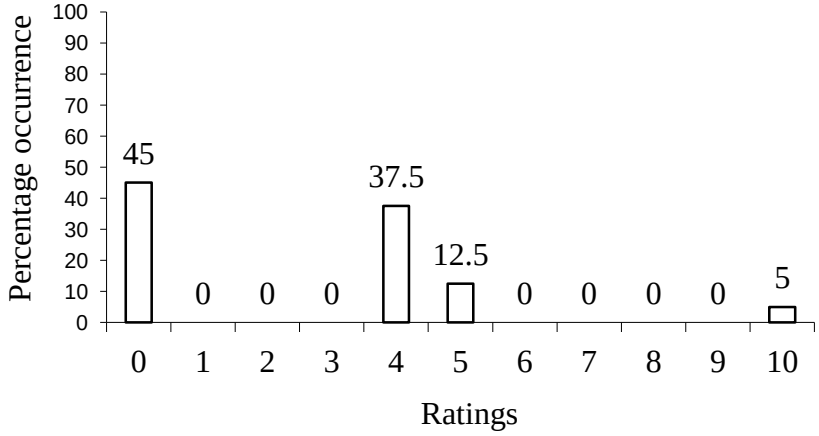
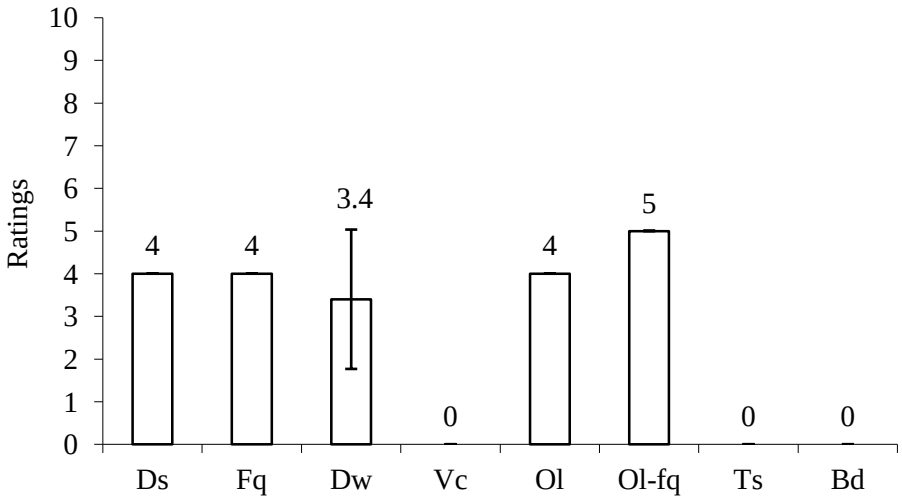


Figure 16: Ratings for health status.

Rating for the occurrence of disease or injury is 4.0 (S.E. = 0.0, N =10) with all the observed animals having disease/injury. Deworming status (Figure 17) of the observed animals is not

uniform. Mean rating is 4.0 (SE = 1.6, N = 10). None of the observed animal had been vaccinated. Mean rating is 0.0 (SE = 0.0, N =10).



Ds:Occurrence of disease/injury
Fq: Frequency of disease/injury
Dw: Deworming status
Vc: Vaccination status
Ol: Oiling done
Ol-Fq: Frequency of oiling
Ts: Blood/dung/urine tests done
Bd: Body measurement taken

Figure 17: Ratings for health sub-parameters.

Veterinary care

No veterinary doctor is available. The mahouts usually treat the animal using traditional medicines. Otherwise, it is referred to the Government Veterinary hospital. Prescribed medicines are purchased by the owner. None of the doctors treating elephants had experience with this species. There is no provision for a veterinary assistant. Regular and timely veterinary care is important to maintain an animal's health. Overall mean rating is 0.88 (SE = 0.4, N = 10) with 88% of the values being less than 3 (Figure 18).

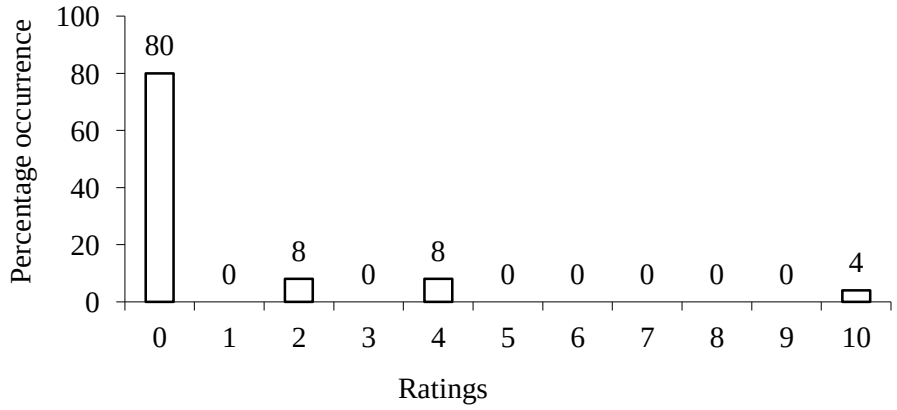
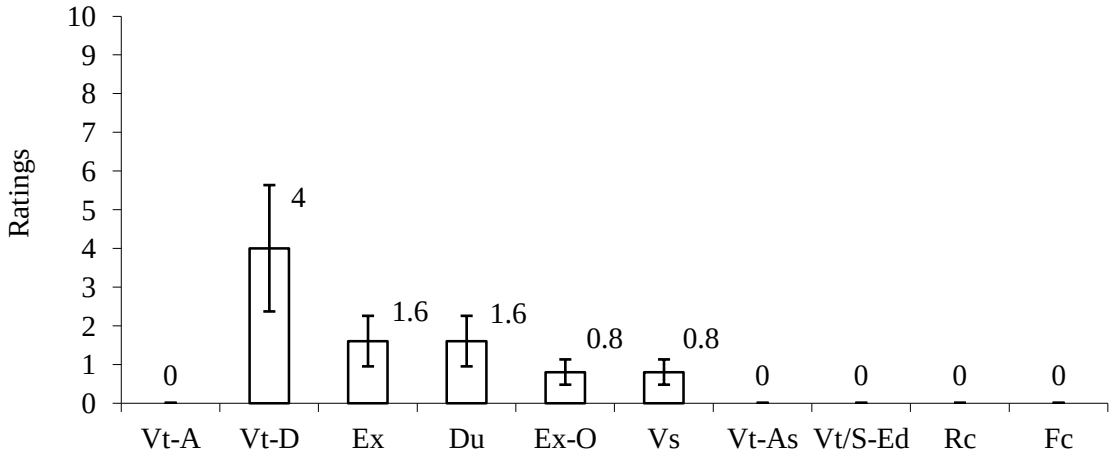


Figure 18: Overall ratings for veterinary care.

Treatment by veterinary doctors with experience in handling elephants is given high rating. Mean rating for availability of doctor is 0.0 (SE = 0.0, N = 10). Rating for experience with elephants is 1.6 (SE = 0.7, N =10) implying low level of experience (Figure 20) for most of the doctors. None of the observed animals had provision for any veterinary facility. Mean rating is 0.0 (SE = 0.0, N =10). Body measurements and sample testing of blood/dung/urine is not done for any of the animals. Record keeping (medical/service/clinical/other types) is absent. Rating for type of record keeping is 0.0 (SE = 0.0, N = 10) implying absence of records.



Vt-A: Veterinary care availability
Vt-D: Veterinary doctor availability
Ex: Experience in treating elephants
Du: Years of experience
Ex-O: Experience with other animals
Vs: Frequency of visits
Vt-As: Availability of veterinary assistant
Vt/S-Ed: Qualification of Vet.Assistant
Rc: Record keeping type
Fc: Veterinary care facilities for elephant

Figure 19: Ratings for veterinary care sub-parameters.

Expenditure on animal

The 'owners' spend about Rs. 72,000 (about US$1636) on each animal per year.

Infrastructure

Provision of staff quarters, their condition, the status of howdah, maintenance of service/clinical records and record keeping type was rated to provide an indication of the resource use. Overall mean rating is 0.8 (SE = 0.8, N= 5) with all the values being less than 5 (Figure 21).

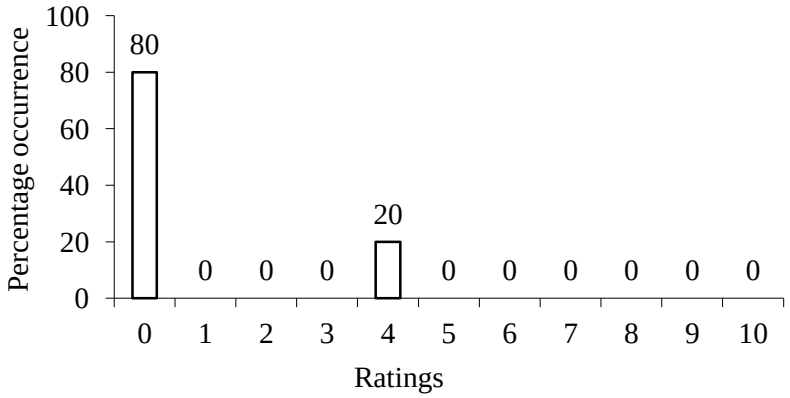
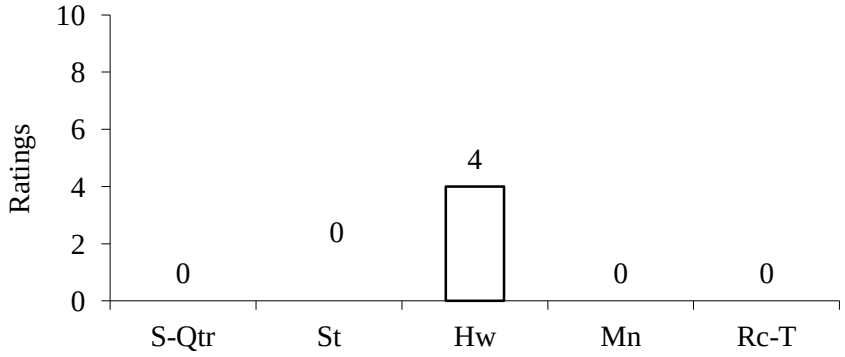


Figure 20: Rating values for infrastructure and records

There is no accommodation for elephant handlers. Mean rating is 0.0 (SE =0.0, N =10) and the mean rating for the condition of the howdah is 4.0 (SE = 0.0, N =10).



S-Qtr: Staff quarters St: Status of quarters
Hw: Howdah condition Mn: Maintenance of service/clinical/other records
Rc-T: Record keeping

Figure 21: Ratings for infrastructure sub-parameters.

A significant feature of the rating values is the lack of variability among elephants observed with only 7% of the parameters showing variation. This shows the uniform occurrence of the features for assessing the animals' welfare. The overall ratings for elephants, considered across each individual value and all parameters is 2.4 (SE = 0.1, N= 830, Figure 22). This value implies bad welfare condition for the elephants.

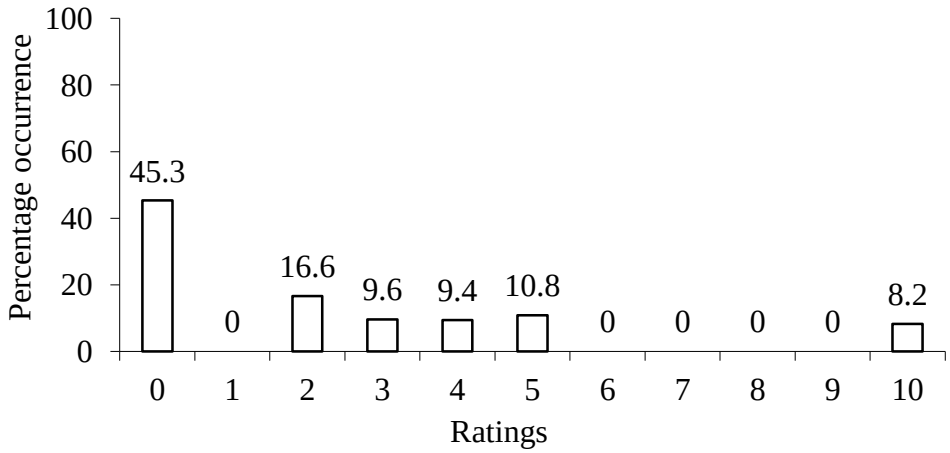


Figure 22: Ratings for elephants across all parameters.

Welfare status of the mahout

The welfare of the elephant handler (in this case the mahout) is important not only to the mahout, but also to the animal in his care, as his own poor condition results in poor handling and care of the elephant.

Each elephant has to support the owner, the mahout, two assistants and their families (Figure 31). Professional experience for handlers is more than two years and with a specific animal less than a year. Most learnt of handling elephants on the job and is a family occupation for all. Salary range is Rs1, 500–2,000 (US$= Rs. 43.75) per month and none is permanently employed with the owner. No accommodation is available for them. Some slept with the elephants under the flyover (Figure 32). All the mahouts use stick and 'ankush' to control the animal. There are no periodic health check-ups or insurance cover for the handlers. All the mahouts consume alcohol. Overall mean rating for the mahout is 2.9 (SE = 1.1, N = 13) with 62% rating being less than 3 (Figure 23), implying poor welfare condition.

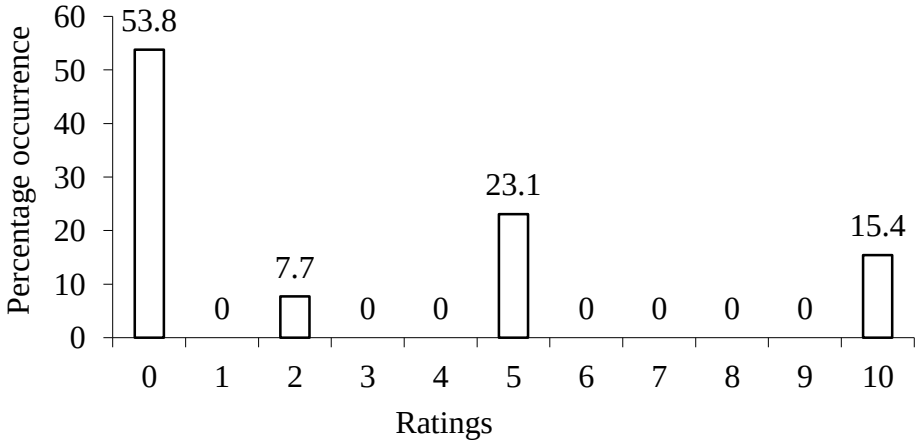
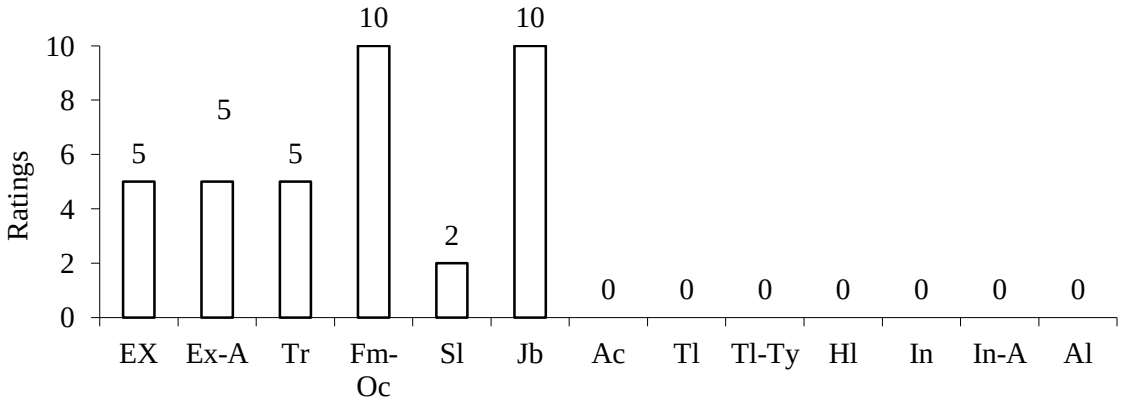


Figure 23: Overall ratings for mahouts.

The greater the experience of the mahout better the handling of the animal. More experience with a specific elephant would mean greater understanding between the particular animal and its handler. Frequent changes imply repeated learning taking place between handler and animal. Mean rating is 5.0 (SE =0.0, N =10). Handlers whose family tradition is handling of elephants might perform better and are more experienced in the profession. Mean rating is 10.0 (SE = 0.0, N =10). Mean rating is 2.0 (SE =0.0, N =10) indicating poor remuneration. Health maintenance through regular check-ups is necessary in view of the zoonotic diseases that can be transmitted. The welfare status is rated across 13 parameters (Figure 24) and the mean rating is 0.0 (SE = 0.0, N =10) implying absence of any healthcare.



Ex: Experience as mahout
Ex-A: Experience with specific animal
Tr: Trained/not
Fm-Oc: Family occupation
Sl: Salary/year
Jb: Job status (permanent/temporary)
Ac: Availability of accommodation
Tl: Use of tool to control animal
Tl-Ty: Tool type used
Hl: Health check up
In: Insurance cover availability
In-A: amount of insurance
Al: Consumption of alcohol

Figure 24: Ratings for sub-parameters of mahout welfare.

Comparison of ratings between elephant and mahout

The mean ratings for both elephant and mahout fall under 3, and there is hardly any difference (Figure 25) in the welfare values of elephant and mahout. This is also a clear indication that both elephant and mahout have poor standard of life in the city.

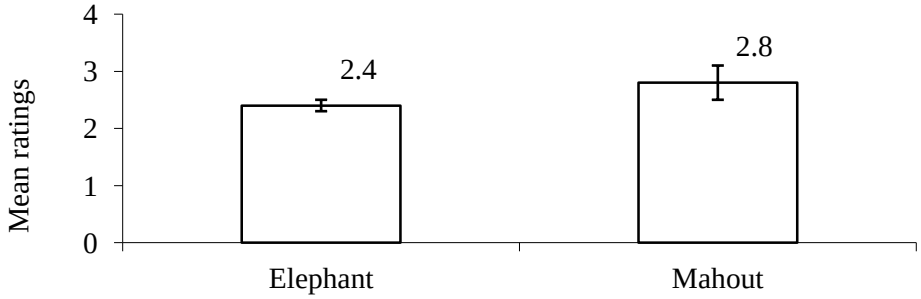


Figure 25: Comparison of mean ratings between elephant and mahout.

Discussion

Deviations from the physical, social and behavioural conditions found in the wild have been used to rate the welfare status of the captive elephant. The more unnatural the condition in captivity, the greater is the reduction in the welfare of the animal. There is a striking similarity in the way the animals are cared for and used in Punjab, more specifically in Ludhiana, by different 'owners'. The overall rating considered across each individual value and parameters is 2.4 indicating poor welfare conditions. Some of the parameters used for assessing welfare status were of the Yes-No type with a rating values of zero or ten. Such parameters formed 24% of the entire dataset. Zero values from such parameters formed 19% of all the individual rating values which show complete absence of the particular feature for that animal.

Conditions detrimental to the animals are:

- Overall rating for shelter is 1.3 highlighting its unsuitability to the animals. The housing of all the elephants depended on makeshift arrangements under available urban structures amidst densely populated lower income group zones.

- This endangers the lives of the animals and also those of the people living nearby. All the animals are chained for a minimum duration of 12 h in the shelters. Unhygienic conditions due to accumulation of dung and urine at the tethering sites in the shelter spread disease among the animals. Wild elephants are known to forage and be active for 18–20 h a day (Eisenberg, 1981) [†].

- Hard substrates such as concrete/tarred roads and stone affect the feet of the animals leading to health problems (Rajankutty, 2004)[†]. Significantly, all the observed elephants had cracked nails.

- Access to water source with enough space and quantity of water to immerse them along with opportunities for wallowing and dusting is of considerable importance for elephants (Kane *et al.*, 2005). None of this is provided as the only source of drinking water is taps. Bathing is not frequent.

- Temperature regulation of the elephants: an aspect of significant association with the animals' health is the need for a suitable environment to regulate body temperature within tolerable limits. The mean monthly temperature is around 35–40°C in the location where the animals are housed with summer temperatures exceeding 45°C. All the elephants are made to work early in the day for a minimum of 12 h without shade or water or food. This effectively means that the animals are worked irrespective of the surrounding temperatures. Physical exertion of walking or being made to stand exposed to the sun increases body temperature. Kurt and Garai (2007) report that wild elephants rest in the shade during the hottest parts of the day.

- Sweat glands are located near the feet in elephants (Lamps *et al*., 2001) [†]. Their need to regulate body temperature depends largely on the surrounding environment as well as unrestricted movement to choose such an environment. Both these features are absent in the observed elephants. Even at night, when the animals are rested, they live only under concrete structures in urban and densely populated areas. This implies that the heat generated in the

body by physical exertion during the day is not allowed to dissipate easily due to the surrounding micro-environment of concrete walls and absence of vegetation. Added to this, chaining of the elephants further hindered their ability to move around within the restricted environment too.

- An example of a reported activity of the elephants is: The elephant Laxmi, aged 35 years, was walked from Daudpur, 60 km from Ludhiana, with the mahout and his assistant seated on top, between 4 a.m and 4 p.m. During the period the elephant was not fed, given water or allowed to rest.

- Constant exposure to long hours of sunlight may result in diseases of the eye (Kurt and Garai, 2007).

- All the elephants have abscesses. Elephant skin is prone to pus formation (Kurt and Garai, 2007). Neglect of skin care or injuries caused by mechanical means such as abrasive action of chains or due to injuries caused by ankush leads to abscess formation (Kurt and Garai, 2007).

- Absence of oestrus cycle in all the adult females observed is a strong indication of unhealthy and unfavorable conditions. The absence of oestrus cycles leads to stress (Clubb and Mason, 2002).

- No records of health/service/ownership are maintained. None of the animals had access to proper and exclusive veterinary care by doctors with experience in treating elephants.

Welfare of the mahouts is given an overall rating of 2.9 implying poor conditions. Parameters which were given rating values less than 3 were:

- Low income. A salary of Rs.1500–2000 per month cannot support a family of four in urban areas. Four–five people and their families (an average of 10–12 people) are dependent for livelihood on one or two animals.

- There is no proper accommodation for the handlers.

- Use of tools to control his animal is universal among the handlers interviewed. This might imply lack of understanding between the animal and its handler and may lead to tool-use related injuries to the animal. None of the mahouts had any insurance cover in the event of any mishap involving the animal. Also periodic health check-ups are not conducted. The incidence of tuberculosis among elephant handlers makes it imperative for periodic check-ups (Cheeran, 1997).

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†: Original not seen

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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 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 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.

Gujarat Society for Prevention of Cruelty to Animals (GSPCA) was founded in 1993 by Snehal Bhavsar in Baroda, GSPCA works with the State Government and other agencies in issues relating to the rescue and rehabilitation of wild animals, trading and poaching of wildlife and related issues. The organisation is very active in Gujarat and has been working, for the last few years, towards raising awareness on the plight of captive elephants in the State.

Plant and Animal Welfare Society (PAWS) was established in 2001 by 4 youngsters with the mission to save urban wildlife, and help distressed domestic animals. The other activities of PAWS also include conducting awareness programs on animal rights, environmental Conservation & tree protection. PAWS has strength of 3 People's staff, 200 volunteers, 2 Ambulances for animal rescue and the team working tirelessly to help distressed animals & wildlife past 7 years. In first year PAWS helped around 600 animals, now PAWS helps more than 1,500 animals each year.

Care of Animals & Protection of Environment (CAPE)-India is an NGO working for the welfare of animals, conservation of wildlife and its habitat and creating a congenial environment for all living creatures. It coordinates with other organizations with similar aims and objectives and creates awareness amongst general public as well as NGOs. CAPE-India is involved in enforcement, rehabilitation, awareness and projects like veterinary aid camps, tree plantation, etc.

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

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Maintenance of elephants for commercial interests, particularly making elephants to travel a long distance through unnatural surface to earn a living of both elephant and their handlers may make elephant to go through diverse conditions which may not be in the best interest of them. This document assesses the welfare status of elephants kept the category of traveling and begging. Thirty-five elephants and their handlers from Gujarat, Punjab and Maharashtra, were observed for this investigation.