

# Welfare Status of Elephant Lakshmi



An Investigation into the welfare status of Elephant Lakshmi of Sri Venkateswara Swamy Vari Devasthanam, Dwaraka Tirumala, Chinna Tirupathi, West Godavari District, Andhra Pradesh, southern India

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Elephants in Captivity- CUPA/ANCF Occasional Report 8



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## CONTENTS

Preface	1
Acknowledgments	2
Executive Summary	3
Introduction	5
Objective	5
Method	5
The rating method	5
Result	6
Source	6
Purpose of keeping	6
Shelter	6
Water	7
Sleep	9
Walk	10
Social interaction	10
Chaining	10
Observed behaviour	12
Work type	12
Food provisioning	13
Reproductive status	14
Health status and veterinary care	15
Mahout/ Cawadi status	17
Overall ratings	19
Discussion	19
References	21

## **Preface**

This investigation on Elephant Lakshmi, maintained by the Sri Venkateswara Swamy Vari Devasthanam, Dwaraka Tirumala Village and Mandal of the West Godavari District in Andhra Pradesh, was done at the specific behest of the temple management seeking to improve the current condition of the animal.

The captive elephant research team at Bangalore visited the Tirumala temple to study the elephant in its living environment. The results of the study and observations from the data collected is a source of knowledge and information that will assist the authorities in assessing the scientifically relevant options for the improvement in the living conditions of the 41 year old female temple elephant.

Elephant Lakshmi is a representative of the genre, of what is termed as the “temple elephant” category of captive elephants, which has certain classical features of management common to all the animals. Each elephant, however, has a unique story and a past, which explains many of their behavioural anomalies and habits.

The data was collected as per the methodology developed to assess and identify welfare parameters that would reflect the diverse aspects of the elephant’s condition and its overall status. This data was then processed and graded, and apart from a detailed investigation of welfare aspects, each of the parameters is rated on a scale of 0-10 as a measure of the welfare status of the elephant under study. 10 is representative of a satisfactory condition and 0 is indicative of the bad condition for the animal for that parameter. The greater the deviation from the natural condition or environment, the lower is the rating accorded.

The positive aspect of scientific scrutiny of such situations, assisted by the authorities, is an indication that the circumstances will definitely improve, modify or change the life of the elephant. The report has been developed keeping the above aspects in mind. It is important to note that the temple authorities have taken the step forward to initiate positive changes.

## **Acknowledgements**

We express our deepest thanks to the management of the Sri Venkateswara Swamy Vari Devasthanam, Dwaraka Tirumala Village and Mandal, A.P. represented by their Executive Officer, Shri M.V.S.S. Vishnu Prasad for their help, kindness and courtesy that made this report possible. We thank Dr.M. Shivaram, Veterinary Officer (Retd.) for his many helpful observations and suggestions.

We deeply appreciate the effort made by Shri M.N.V. Murali Krishna, Founder, Sri Sai Seva Sangam, for helping us logistically to reach the temple and efforts to update us on the welfare activities of the Eluru district Gosamrakshana Samithi. Without their support and help, this report would not have been possible.

## Executive Summary

Lakshmi, the female temple elephant maintained by the Sri Venkateswara Swamy Vari Devasthanam (henceforth SVSVD or Devasthanam) in Dwaraka Tirumala, Chinna Tirupathi, West Godavari District, Andhra Pradesh, southern India was observed in order to assess her welfare status and that of her handlers.

The parameters related to the physical environment - social, physiological and health were reviewed. These parameters were compared to the conditions seen in the wild – the greater the deviation from wild conditions, the poorer is the welfare status of the elephant.

Knowledge of the living conditions in the wild was arrived based on expert evaluation that may be referred to, as an Expert Rating (E-R) and the ground status was assessed by the Mean Rating (M-R). The differences between E-R & M-R were assessed to know the deviations in living conditions.

The Devasthanam received the elephant as a donation from a devotee in 2004. Elephant Lakshmi previously belonged to a circus. Mean Rating (M-R) for this parameter was 1.5 showing a deviation of 75% from Expert Rating (E-R).

Lakshmi was housed in an asbestos shed measuring 250 square yards; her day and night habitation was on cement flooring; and the available shade was in the form of an asbestos roof. M-R was 2.6 implying a deviation of 67.9% from E-R.

Tap water, from the four available taps, was given to Lakshmi for drinking and was used for bathing her twice a day. Occasionally, pond water was accessed. The bathing took place in the same enclosure where she lived in an area of 160 square yards for 30-45 minutes each time. Stones were used as scrubs. M-R was 3.2 with a deviation of 54.2% from E-R.

Lakshmi was walked for the duration of one hour daily, for a distance of 2 kms, accompanied by two mahouts. M-R was 9.0 for opportunity to walk and 4.0 for walk duration. Percent deviation from E-R was 0% and 50% respectively.

Lakshmi was kept alone. The absence of elephant companions automatically ensured her inability to engage in species-typical behaviours. M-R was 0.0, indicating complete divergence from E-R.

Lakshmi was chained for 18 hours within her enclosure. The plain type of chain used weighed 10 kg., band width of the chain was 6 inches in size, and had a length of 3 metres. Shackles and spikes embedded in a foot collar chain were also used for the hind legs. M-R was 0.8, showing a deviation of 89.6% from E-R.

Lakshmi was made to perform temple related activities such as, giving blessings to pilgrims and standing outside the temple, seeking donations from pilgrims and shopkeepers, among other things. She attended three festivals at a distance of 5 km each. Each festival timing was: six hours during the day from 6 am to 12 noon and then again in the evening for three hours from 6 pm to 9 pm. M-R was 1.3 showing a deviation of 83.3% from E-R.

Lakshmi was given only stall feed of 300 kgs of banyan (*Ficus* sp.), banana (*Musa* sp) and coconut (*Cocos nucifera*) leaves, green grass and jaggery (solidified extract of sugarcane-

Sacharum sp.-juice) were also given by devotees. 40 kg. of paddy straw was provided daily. M-R was 2.2 with a deviation of 75.9% from E-R.

Lakshmi was reported to have oestrus cycles once in 2-3 months. She was not exposed to male elephants, nor given the opportunity to breed. M-R was 2.0 indicating a deviation of 75% from E-R.

No report or record has been maintained for Lakshmi's health status. Foot rot and general toe nail cracks were observed. Body measurements were not taken because the veterinary doctor with experience in treating wild animals was unavailable. M-R was 2.9 with a deviation of 63.2% from E-R.

Lakshmi had two mahouts, aged 30 and 28 years. They have been with her for the past six years. They gave greater employment opportunity as the reason for opting for this profession. Both handlers spent 8 hours each by rotation with Lakshmi, and both mahouts used tools like the wooden stick, and, occasionally, the ankush to handle her. M-R was 3.7 with a deviation of 58.5% from E-R.

Neither of the mahouts had relatives in this field; both came from agricultural backgrounds. Both earned annual salaries of Rs. 30,000/- each, with periodic health check-ups and medical insurance provided by the temple. M-R was 4.4 with a deviation of 37.3% from E-R.

The overall M-R was 2.7 when averaged across all observed parameters. This rating indicates an overall deviation of 66.3% from E-R. In other words, each parameter deviates 66% from those considered acceptable by experts. This implies that most of the observed parameters are unsuitable for the elephant. In addition, 64% of the parameters showed either the complete absence of a suitable feature, or the presence of an unsuitable feature.

## **Recommendations**

Considering the safety of public and devotees visiting the temple, and also the poor welfare rating obtained through this investigation, it would be beneficial to both man and animal to move the elephant from its present location.

Her new accommodation should take care of her ecological and behavioural needs, including access to regular as well as emergency veterinary care.



## **Introduction**

The symbolic significance of elephants in temples has led to the maintenance of these animals in various regions. Maintaining elephants in and by temples entails a number of responsibilities for the management towards its care and welfare. One such temple is the Sri Venkateswara Swamy Vari Devasthanam (henceforth SVSVD or Devasthanam) in Dwaraka Tirumala, Chinna Tirupathi, West Godavari District, Andhra Pradesh, southern India. The temple is under the administrative control of the Commissioner, Endowments Department, Government of Andhra Pradesh.

## **Objective**

The elephant maintained by the temple was observed, along with interviews of relevant personnel, in order to:

- Assess the welfare status of the elephant by evaluating its physical, social, physiological and health aspects
- Assess the professional experience and socio-economic status of handlers (mahouts/cawadis)

## **Method**

Keeping an animal in captivity under human control does not mean the animal is domesticated. Lair (1997) states that elephants are not domesticated, they are wild animals even when living in captive conditions.

Keeping wild animals in captivity ensures imposition of new and/or altered living conditions which may deviate from those in the wild. It is this deviation from the wild that has been used to assess welfare status. The captive condition has been reviewed under different parameters: physical, social, physiological and health. Each of these has been compared to the conditions seen in the wild. The greater the deviation from wild conditions, the poorer is the welfare status of the elephant. This deviation has been quantified by rating each of the parameters using a scale developed by a team of experts.

## **The rating method**

A team of experts, from wildlife biologists to welfare activists, rated different parameters of importance to the welfare of captive elephants (Varma, 2008; Varma, et al., 2008; Varma and Prasad, 2008). This rating was then used to assess the welfare status of elephants and mahouts/ cawadis.

- Experts from different fields rated a total of 114 welfare parameters covering all the major aspects of captivity
- The rating scale was from zero (unsuitable conditions) to ten (suitable conditions), wild conditions were considered ideal for all parameters except veterinary aspects. Experts used different maxima based on their concept of importance of a particular parameter to an elephant. A mean rating for each parameter, across all the participating experts, has been used as the Experts' Rating (E-R) which represents the importance attached to a parameter i.e., for a parameter with 8.0 as the maximum value, only 2.0 (20%) deviation from the prescribed norm is considered acceptable.
- Using the maxima given by experts as a base, a rating scale, starting from zero to the particular maximum value for that parameter, has been used to rate the welfare status. This forms the Mean rating (M-R) denoting welfare status of existing conditions for the particular parameter.
- The experts rated 114 different parameters. In this report, variables which represent a common feature of the captive condition have been grouped to form a parameter. The

variables have been termed sub-parameters. For example: the variables - shelter type, shelter size, floor type in the shelter, represent different aspects of the physical space provided to the elephant. Hence these are grouped together to form the parameter “Shelter” and each constituent variable is the sub-parameter. In this report, the E-R for a parameter (say, shelter) represents the mean of E-Rs across all related sub-parameters. Similarly for M-R also.

- Results compare E-R and M-R as a means of charting the extent of deviation present in the sub-parameters observed. The difference between E-R and M-R (expressed as a percentage) indicates the extent of deviation from the acceptable standards as suggested by experts.

## Results

Lakshmi, a 41-year old female elephant, is the only elephant maintained by the Sri Venkateshwara Swamivari Devasthanam Temple in West Godavari district, Andhra Pradesh.

## Source

When elephants are transferred across locations, they often undergo a change in their living conditions and daily routines.. This leads to a period of adjustment that is stressful for the animal. Lakshmi, the ward and property of the Sri Venkateshwara Temple was donated to the temple in 2004 by a devotee. She previously belonged to a circus. M-R was 1.5, showing a deviation of 75% from E-R.

## Purpose of Keeping an Elephant

Keeping elephants in their non-natural habitat in conditions differing vastly from the wild and, at the same time, making them work to generate income for their owners has been given a low rating.

- Lakshmi was donated for the purposes of participating in temple activities and for providing 'entertainment' to the public.  
*M-R was 0.0 indicating complete deviation from E-R.*

## Shelter

The physical space provided for elephants largely determine the kind of species-typical activities the animal can engage in. Limited space with non-natural substrates and lack of vegetation is not suitable for elephants in the long-term.



Figure 1a: Shelter provided to elephant Lakshmi



Figure 1b: Shelter; note she is exposed to the concrete floor

- Lakshmi was housed (Figure 1a) in an asbestos shed

measuring 250 square yards

- She spent her days and nights on cement-covered floors (Figure 1b).
- She was provided shade in the form of asbestos roofing that trapped the heat from the sun and made her enclosure extremely hot. This enclosure was cleaned twice daily using water and a broom.

M-R was 2.6 (SE= 1.7, N= 7) implying a deviation of 67.9% from E-R (Figure 2a and b).

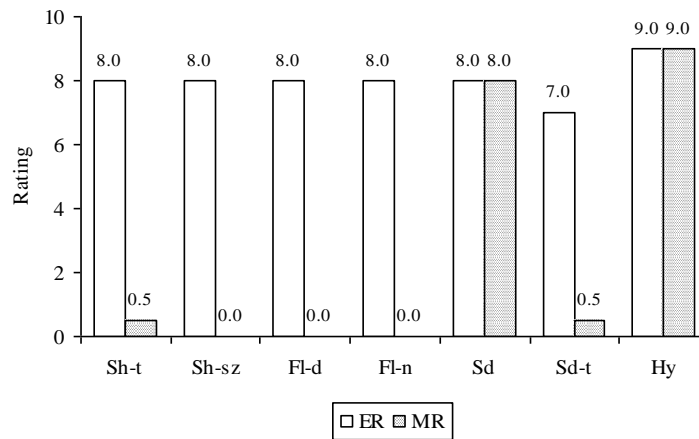
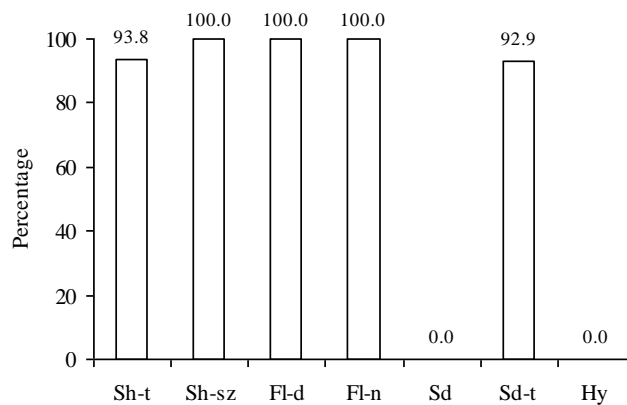


Figure 2a: Comparison of E-R and M-R for shelter sub-parameters



Sh-t: Shelter type                      Sh-sz: Shelter size                      Fl-d: Flooring (day)  
 Fl-n: Flooring (night)                  Sd: Shade availability                  Sd-t: Shade type  
 Hy: Hygiene maintenance

Figure 2b: Percent deviation from E-R for shelter sub-parameters

### Water

Studies on wild elephants have reported elephant activity to include periods of primarily drinking water and bathing (Mckay1973). Additionally, while drinking water, elephants indulge in dust-bathing, wallowing and socializing with other elephants. Captive conditions have been rated against the repertoire of elephant activities in the wild. The handlers bathe the elephants with man-made materials such as scrubs.



Figure 3: Source of water for elephant Lakshmi

- Lakshmi was given tap water through a hose pipe (Figure 3) to drink and bath in, from the four available taps. Occasionally, pond water was accessed.
- The taps were within her enclosure; the pond was at a distance of 500 metres.
- Lakshmi consumed 10-12 trunkfuls of water three times a day.
- The elephant was bathed twice a day within the housing enclosure in an area of 160 square yards for 30-45 minutes. Stones were used as scrubs.

M-R was 3.2 (SE= 1.2, N= 7) with a deviation of 54.2% from E-R (Figures 4a and b).

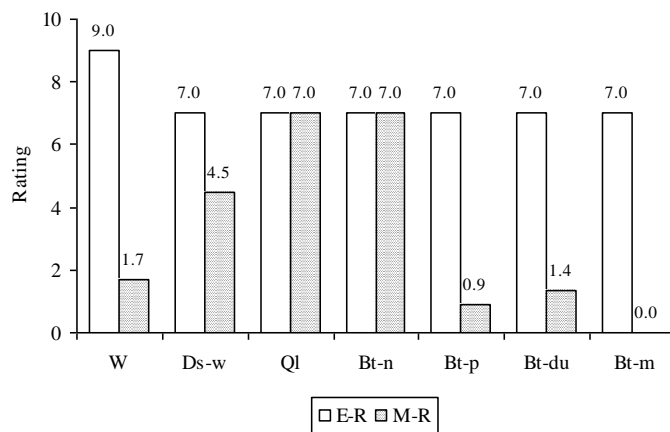
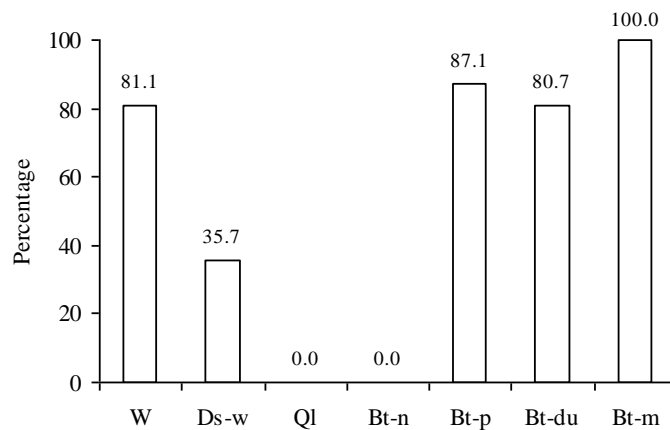


Figure 4a: Comparison of E-R and M-R for water sub-parameters



W: Perennial source of running water      Ds-w: Distance to water source  
 Ql: Tests on water quality                      Bt-n: Bathing no. of times/ day  
 Bt-p: Bathing place                                Bt-du: Bathing duration  
 Bt-m: Bathing material

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

## Sleep



Figure 5: Elephant Lakshmi's sleeping location was within the normal range.

Kurt and Garai (2007) observed sleep durations of 3-4 hours for elephants. When sleep duration deviates from this length of time, it may indicate health abnormalities or the absence of psychological stimulation for the elephant. Furthermore, sleeping on artificial substrates may result in injuries and wounds that can become chronic and difficult to heal.

- Lakshmi slept in a concrete-floored enclosure (Figure 5), and foot rot and toe nail cracks were observed, a condition commonly resulting from long hours on hard flooring.
- Lakshmi slept for 3-4 hours at night, which

M-R was 2.8 (SE= 3.2, N= 3) indicating a deviation of 64.6% from E-R (Figure 6a and b).

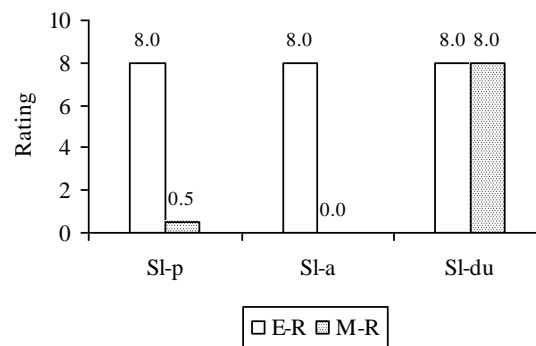
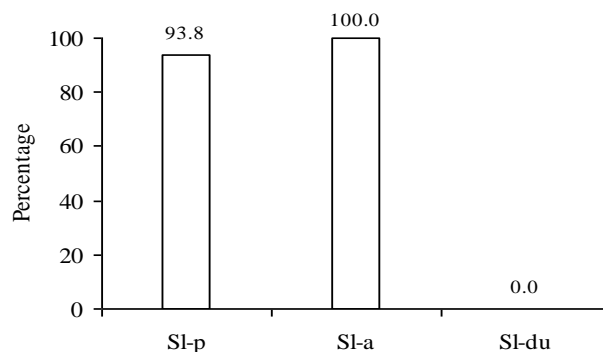


Figure 6a: Comparison of E-R and M-R for sleep sub-parameters



SI-p: Sleeping place SI-a: Sleep area (size) SI-du: Sleep duration

Figure 6b: Percent deviation from E-R for sleep sub-parameters

## Walk

Wild elephants are known to cover vast areas in search of food and water (Sukumar 2003). In captivity, the need to search for food is eliminated, but the need to walk remains.



Figure 7a: Lakshmi walks on tar roads



Figure 7b: Elephant Lakshmi getting ready for walk with her mahouts

- Lakshmi was walked on tar roads (Figure 7a) for the duration of one hour for a distance of 2 km each day.
- Her two mahouts accompanied her (Figure 7b) on her walks.

M-R was 9.0 for opportunity to walk and 4.0 for walk duration. Percent deviation was 0% and 50% for walk opportunity and duration respectively.

## Social interaction



Figure 8: Lakshmi has no companion of her own, but mahouts

Elephants, especially females, are known to live in groups of related individuals, maintaining relationships across generations (Sukumar 2006). Absence of elephant companions automatically ensures inability to engage in species-typical behaviours, with consequences for the psychological and physical health of the animal.

- Lakshmi was kept alone (Figure 8). M-R was 0.0, indicating complete divergence from E-R.

## Chaining

Chaining of captive elephants, using different types of restraints on various regions of the body, is used as a way of managing and controlling the animals. Chaining is frequently practiced in an environment that is already constrained by the absence of free-ranging opportunity for the elephants.

- Lakshmi, was restrained by a plain type of leg chain (Figure 9a and b) which was 6 inch band, embedded with spikes on the inside.



Figure 9a and b: Types of chains used for elephant Lakshmi

- Weighing 10 kgs, and with a length of 3 metres. Lakshmi also had shackles on her forelegs.
- She was chained for 18 hours within her enclosure.
- She had no opportunity to range free.

M-R was 0.8 (SE= 0.7, N= 6) showing a deviation of 89.6% from E-R (Figure 10a and b).

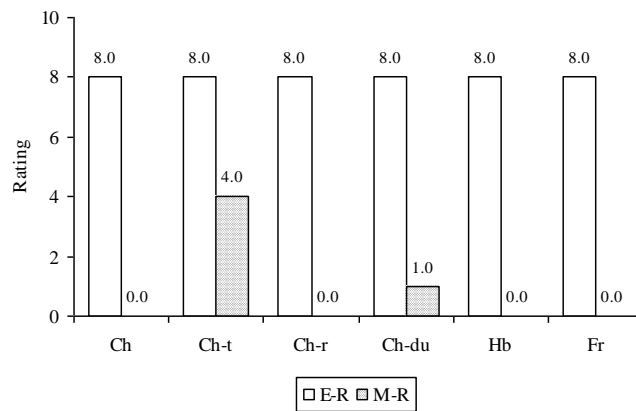
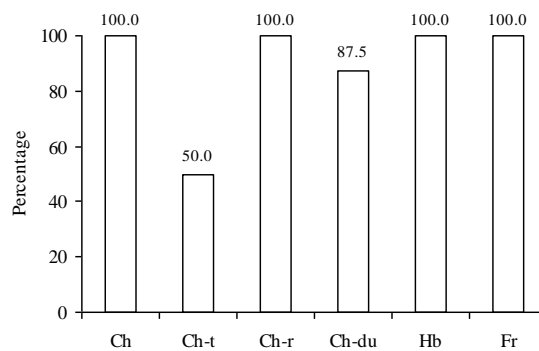


Figure 10a: Comparison of E-R and M-R for chaining Sub-parameters



Ch: Chained/ free-ranging      Ch-t: Chain type      Ch-r: Chaining region  
 Ch-du: Chaining duration      Hb: Hobbles (shackles)      Fr: Opportunity for free-ranging

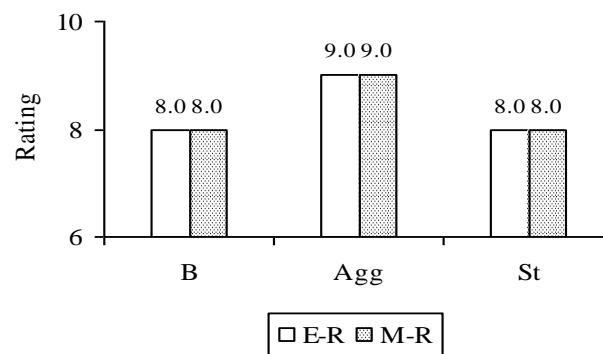
Figure 10b: Percent deviation from E-R for chaining sub-parameters

## Observed behaviour

The temperament of the elephant dictates how easily it can be managed. Occurrence of abnormal behaviour such as stereotypy- repetitive movements without any apparent purpose - would indicate the need for providing suitable conditions.

- Lakshmi was described as quiet, with no incidents of aggression towards people.
- She did not exhibit stereotypic behaviour. There were two reports of Lakshmi running away: In 2004, when she was once kept unchained at night, Lakshmi walked to a nearby village. The mahout brought her back the next day without any incident. In 2008, when the elephant was among cattle, one of the cows became agitated for unknown reasons following which, the elephant became aggressive and damaged 12-14 trees and a statue in the premises. No one was injured.

M-R was 8.0 (SE= 0.0, N= 3) with no observed deviation from E-R (Figure 11)



B: Observed Behaviour    Agg: Aggression    St: Stereotypic behaviour

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

## Work type

Performance of work that is alien to an elephant's behavioural repertoire has been assigned a low rating. Working conditions such as rest, food and water availability have been included.

- Lakshmi was made to perform temple-related activities such as giving blessing to pilgrims and standing outside the temple (Figure 12).
- Duration for the above activities was for 4 hours, from 8 am to 12 noon, every day of the month
- Lakshmi is directed by the mahout or manager in a controlled fashion, to go up to the pilgrim or shop keepers and seek donations, which are then given to the temple.

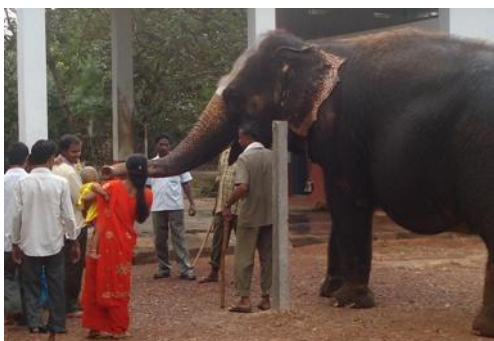


Figure 12: Elephant Lakshmi made to bless

- Lakshmi attended three festivals at a distance of 5 kms each from the temple. The festival timings were as follows: During the day for six hours between 6 am and 12 noon, and in the evening for three hours between 6 pm and 9 pm.
- Lakshmi was not provided any shade, water or breaks during her work period. The only food provided was by devotees and included items like banana (*Musa sp.*) and jaggery made from



sugarcane (*Saccharum sp.*).

M-R was 1.3 (SE= 1.5, N= 6) showing a deviation of 83.3% from E-R (Figure 13a and b).

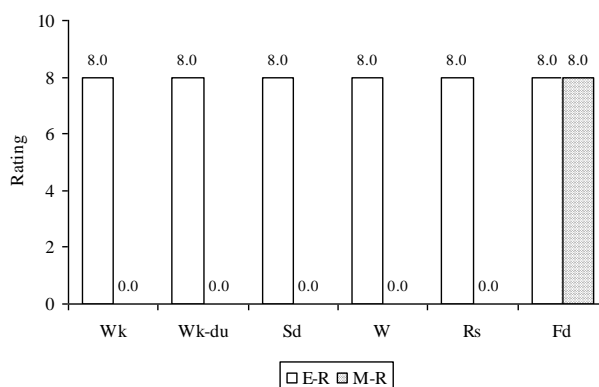
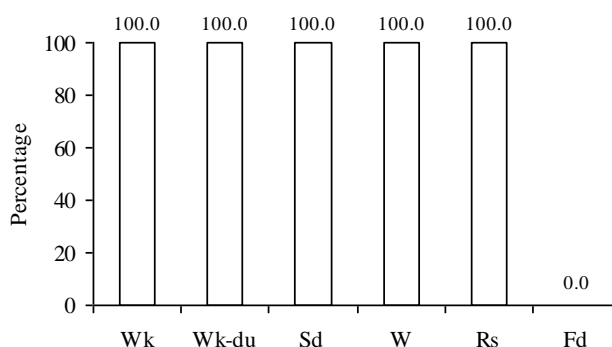


Figure 13a: Comparison of E-R and M-R for work sub-parameters



Wk: Work type    Wk-du: Work duration    Sd: Shade availability  
W: Water availability    Rs: Rest availability    Fd: Food availability

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

### Food provisioning

Researchers have reported the wide variety of plants eaten by elephants in the wild (Sukumar 1991; McKay 1973). When captive elephants are stall fed, this variety is absent. In addition, foraging and related activities do not occur.

- Lakshmi is exclusively stall fed (Figure 14a, b).
- The feeding place is either the enclosure or wherever she was; it is understood that Lakshmi is fed over a period of 24 hours. Food fed to Lakshmi while working is given by devotees and consists of bananas and jaggery.
- The food consists of primarily 300 kg of banyan (*Ficus sp.*), banana (*Musa sp.*), and coconut (*Cocos nucifera*) leaves (Figure 14a and b); other eatables



Figure 14b: Elephant Lakshmi's source of food; green grass

such as sweet or biscuits are generally given by devotees.

- 40 kg of paddy straw was provided occasionally as supplement
- No ration chart was used.

M-R was 2.2 (SE= 1.4, N= 3) with a deviation of 75.9% from E-R (Figure 15a and b).



Figure 14a: Elephant Lakshmi's source of food; coconut leaves

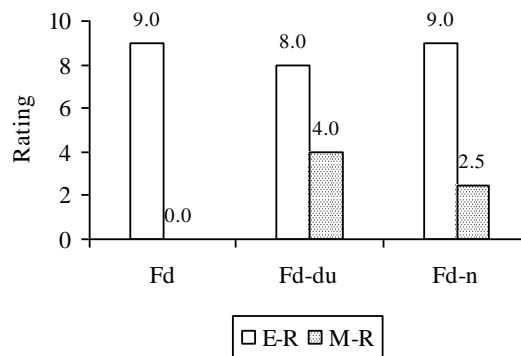
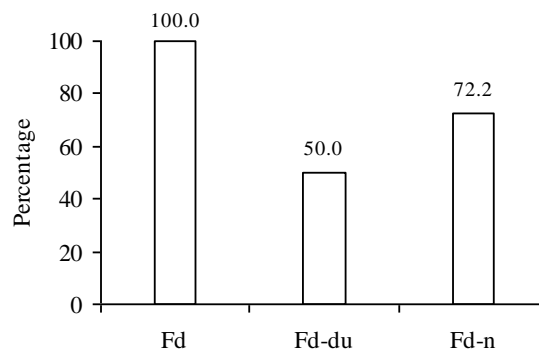


Figure 15a: Comparison of E-R and M-R for food sub-parameters



Fd: Food provisioning type      Fd-du: Feeding duration      Fd-n: Food items number

Figure 15b: Percent deviation from E-R for food sub-parameters

### Reproductive Status

Opportunity to express normal reproductive behaviour among adult elephants is an important factor, considering the solitary nature of their captivity. Occurrence of reproductive processes is another factor signifying normalcy, which many captive elephants do not experience because of the un-natural conditions under which they are kept and which leads to stress and psychological distress.

- Lakshmi was said to be in oestrus once in 2-3 months.
- She was not exposed to male elephants or given the opportunity to breed.
- No other cow elephant was ever present with her.

M-R was 2.0 (SE= 2.3, N= 4) indicating a deviation of 75% from E-R (Figure 16a and b).

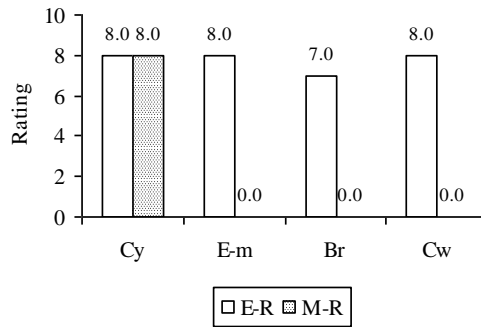
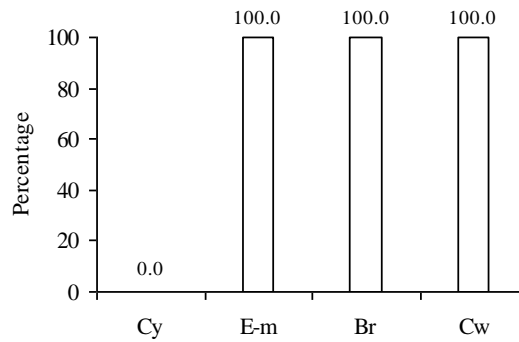


Figure 16a: Comparison of E-R and M-R for reproductive status sub-parameters



Cy: Occurrence of oestrus cycles  
Br: Opportunity to breed

E-m: Exposure to males  
Cw: Presence of cow elephants

Figure 16b: Percent deviation from E-R for reproductive status sub-parameters

### Health Status and Veterinary Care

Conditions in captivity predispose the elephant towards certain diseases and injuries such as tuberculosis and foot problems.

- No report or record was maintained on Lakshmi's health status.
- Foot rot and toe nail cracks on the front foot were observed (Figure 17a and b).



Figure 17a and b: Foot rot and toe nail cracks are some of the regular problems for elephant Lakshmi

- Lakshmi was de-wormed with local medicine, once in four months.

- She was never vaccinated.
- Lakshmi's skin was oiled, once in two months, using a mixture of coconut and mustard oils.
- Samples of her blood, dung and urine were never tested
- Body measurements were not taken
- Veterinary doctor with experience in treating wild animals was not available
- Staff quarter and cooking shed, both Reinforced Cement Concrete (R.C.C) buildings, were available for observation

M-R was 2.9 (SE= 1.1, N= 11) with a deviation of 63.2% from E-R (Figure 18a, b and c)

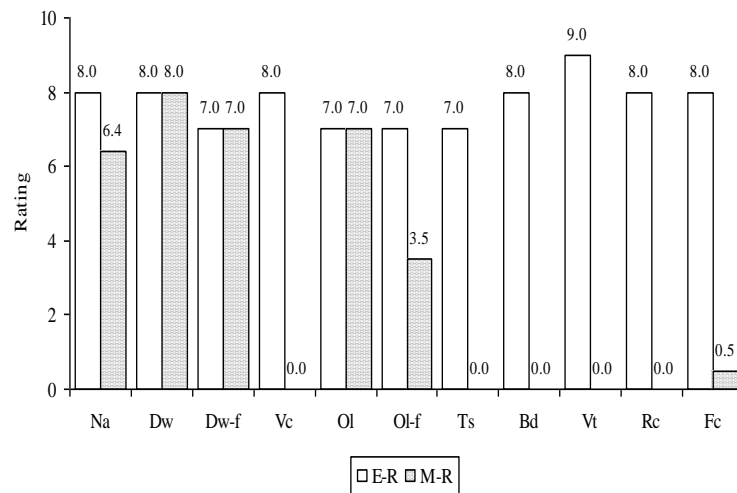
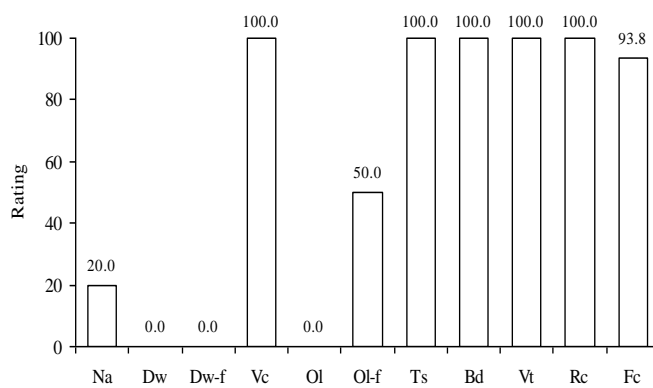


Figure 18a: Comparison of E-R and M-R for reproductive status sub-parameters



Na: Nature of disease/ injury  
 Dw: Deworming status  
 Dw-f: Frequency of deworming  
 Vc: Vaccination status  
 Ol: Oiling status  
 Ol-f: Frequency of oiling  
 Ts: Blood/dung/urine tests  
 Bd: Body measurement taken  
 Vt: Availability of veterinary doctor  
 Rc: Maintenance of records  
 Fc: Facilities available

Figure 18b: Percent deviation from E-R for reproductive status sub-parameters

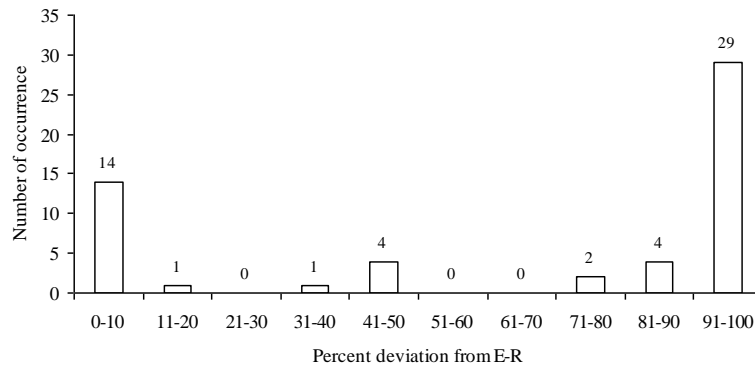


Figure 18c: Distribution of percent deviation across all observed parameters

### Mahout/ Cawadi status

Lakshmi, the elephant, had two mahouts (Figure 19a and b), aged 30 and 28 years respectively. These handlers had not been with her at her previous place of captivity and, therefore, were new to her. What makes a good mahout is not only the handling of elephants in an efficient and sensitive manner, born of long experience in the profession, but also working for many years with one particular elephant. In addition, people coming from a traditional lineage of mahouts, where the knowledge of the profession is passed along from one generation to another would have a far superior understanding of elephants and their needs.



Figure 19a and b: Mahouts currently working for elephant Lakshmi

- Both mahouts handling Lakshmi had been in the profession only since 2004.
- Their experience with Lakshmi was for a period of six years.
- They had opted for this profession for the sole reason of having stable employment.
- Both handlers spent a total of eight hours with Lakshmi in a shift system.
- Both handlers used the wooden stick and occasionally, the ankush to handle Lakshmi.

M-R was 3.7 (SE= 1.7, N= 4) with a deviation of 58.5% from E-R (Figure 20a and b).

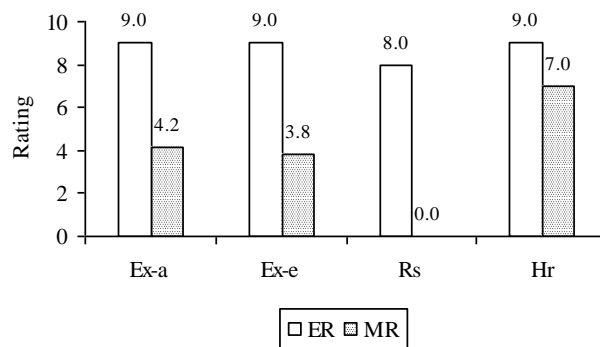
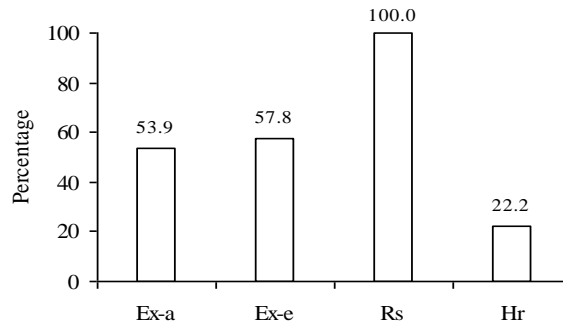


Figure 20a: Comparison of E-R and M-R for mahout professional status



Ex-a: Experience as % of mahout age    Ex-e: Experience as % of elephant age  
 Rs: Reason for choosing this profession    Hr: Hours spent with elephant

Figure 20b: Percent deviation from E-R for mahout professional status

Employees with poor remuneration generally care less about their job and may not be as conscientious in performing their tasks. In circumstances where the mahouts are not related to each other or come from backgrounds alien to this profession, further hindrances for effective handling may occur.

- Neither of the mahouts had relatives in this field; both came from an agricultural background.
- One of the handlers was illiterate, while the other had a Bachelor's degree
- Both earned annual salaries of Rs. 30,000/- each.
- Both were married: one had three children and the other had none.
- Each of the mahouts spoke two or three languages.
- Both the handlers had periodic health check-ups.
- The temple provides the mahouts with life insurance.
- Both handlers did not consume alcohol.

M-R was 4.4 (SE= 1.1, N= 9) with a deviation of 37.3% from E-R (Figure 21a and b).

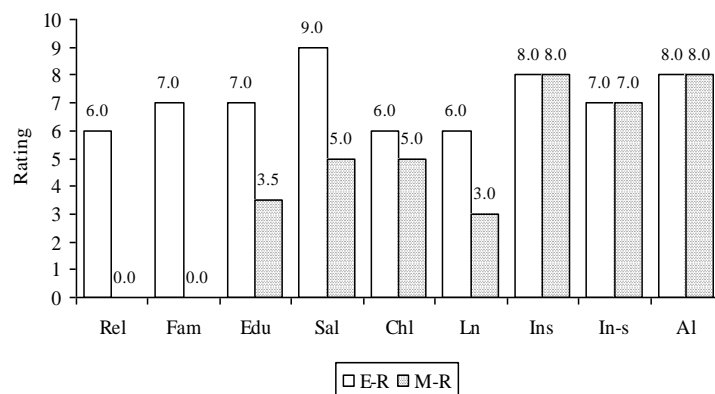
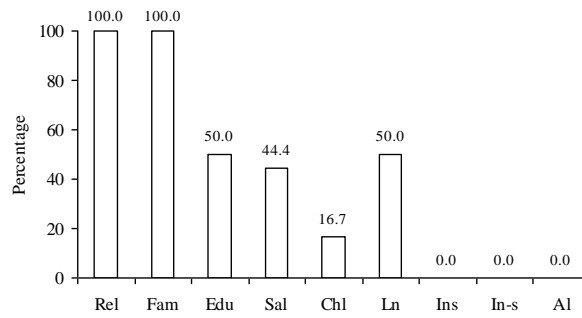


Figure 21a: Comparison of E-R and M-R for mahout socio-economic status



Rel: Relatives working as mahout    Fam: Family occupation    Edu: Education  
 Sal: Salary    Chl: Number of children    Ln: Language known  
 Ins: Insurance    In-s: Insurance source    Al: Alcoholism

Figure 21b: Percent deviation from E-R for mahout socio-economic status

### Overall ratings

The overall M-R was 2.7 (SE= 0.5, N= 55) when averaged across all observed parameters. This rating shows a deviation of 66.3% from E-R, which means that, on average, each parameter deviates to an extent of 66% from those considered acceptable by experts. The distribution of parameters, when percent deviation from E-R is considered, shows the occurrence of 35 parameters (of a total of 55) with a deviation of 70% or more from E-R. This deviation, which is spread across all observed parameters except behaviour, strongly implies unsuitability of most of the observed parameters for the temple elephant, Lakshmi. In addition, 64% of the parameters indicate a complete absence of a suitable feature or the presence of an unsuitable feature such as chaining.

### Discussion

The requirements of a species are determined by the natural conditions in which the species evolved. Poole and Taylor (1999) compare the environment and behaviour of wild elephants to that of elephants living in captivity. This report builds on Poole and Taylor's research, and rates the welfare status of captive elephants by making similar comparisons between the living conditions experienced by elephants in captivity and elephants living in the wild. It is important to note that the wild environment in which elephants evolved and thrived is used as a benchmark to evaluate the lives of elephants kept in various man-made milieus, like the circus and the temple. Wild environments are the source in which elephants evolved and hence, the lives of wild elephants have been used as a benchmark.

- **Features showing no deviation from E-R:** Observed behaviour: the elephant was described as quiet, with no aggression towards people or exhibition of stereotypy - (repetitive patterns of monotonous fixed behavior). It should be noted that the elephant became agitated in one instance, only because the cows near it at the time, were nervous and stirred up. In October 2009, a child was mildly injured when he/she accidentally came too near the leg of the elephant
- Certain aspects of health such as de-worming and oiling; the presence of oestrus cycles indicating a healthy reproductive physiology; the upkeep of the shelter and its hygienic appearance were positive for Lakshmi.

Features showing > 50% deviation from E-R (39 of the observed 55 parameters showed deviation of 50% or more):

- Shelter type, size, and flooring: Lakshmi, the temple elephant, was restrained within her confined quarters for most of the day, thus being exposed to an unsuitable substrate with little or no exercise and psychological stimulation.
- Water source, bathing place, bathing material: Taps cannot be accessed by elephants when they need to consume water, especially during the summer, so water availability is dependent on her mahouts making the same available to her at their convenience. There was no provision for Lakshmi to perform species-typical behaviours such as dust-bathing and wallowing.
- Practice of chaining: Lakshmi was chained for 18 hours per day with no free-ranging opportunities. Following the negative incident with the child, the elephant was reportedly tied by more than one chain within the enclosure. This severely restricted Lakshmi's movements, with the potential for damage to physical and psychological health.
- Social interaction: Lakshmi had no elephant companions at her present location. The severance of ties with other elephants from her previous location, and the introduction of new mahouts at her current location, was all catalytic conditions that created a stressful social environment for the animal.
- Exposure to males: Lakshmi had no opportunities to engage in species-typical inter-gender activities.
- Duration of walk: Lakshmi was given consistently limited opportunities to walk which had the overall health-specific deleterious effect of foot problems (that Lakshmi exhibited) and weight gain.
- Opportunity to forage: Lakshmi was given absolutely no free-ranging opportunity to forage.
- Performing alien activities: Lakshmi was forced to perform atypical, alien activities when she was working for the temple standing continuously in one place without any rest, shade, or water
- Veterinary doctor: No provision had been made for a veterinary doctor with suitable experience in treating elephants to attend to Lakshmi.
- Records: There were no records of any kind maintained for Lakshmi by the temple authorities.
- Handlers: Lakshmi, the elephant, had two handlers, both new to this profession with no prior experience. This was a big disadvantage for both the elephant and her handlers, especially in the area of physical and psychological health, where long-term professional experience can play a large part in noticing changes in the elephant's general well being. Unrecognized health disruptions of the elephant can lead, among other things, to aggressive behavior that the mahouts may be ill equipped to manage.

Each of the features listed above cannot be viewed in isolation. The elephant experiences its captivity as a complex system of the control imposed by people. The psychological and physical health of the elephant can be vastly improved by (a) providing space with mixed vegetation, (b) by allowing the elephant to interact with both male and female companions of her species), (c) by making available natural running water sources such as streams, (d) by ending the practice of chaining with (e) the opportunity to range-free to forage, thus replicating as closely as possible the environment experienced by elephants in the wild.



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**Compassion Unlimited Plus Action (CUPA)** is a non-profit public charitable trust that was registered in 1991 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 whatever is required to alleviate their suffering at the hands of humans. CUPA does not differentiate between pet, stray or wild animals, since all require assistance and relief from cruelty, neglect and harm. The organization's objective has been to design services and facilities which are employed fully in the realization of these goals.

**Wildlife Rescue & Rehabilitation Centre (WRRC)** is a registered public charitable trust for the welfare of animals and birds that often find themselves trapped in an urban environment. The Trust is a sister concern of CUPA and both organizations complement each other in their services. WRRC was established as a separate Trust in 1999.

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

**SAHYOG** is an animal welfare organization that mainly deals with the rescue of animals from illegal transportation, slaughter and cruelty. SAHYOG pioneers in creating awareness among people about animal welfare laws. In the last three years, the organization has rescued more than 1000 snakes from snake charmers and over 800 pigeons which were injured in a kite festival. Additionally, SAHYOG has booked more than 50 cases against cow slaughter and punished over 100 people, as well as booked cases against nearly 500 lorry owners who were violating animal transportation norms. They were also able to close down all the three circuses which were performing in Hyderabad. They currently maintain an animal shelter for rescued animals and have also established a healthy population of peacocks in and around Hyderabad city as well as closing down several shops involved with illegal pet trade

**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 hundreds of thousands of supporters worldwide.

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This document is based on the study of an elephant maintained by the temple Sri Venkateshwara Swami Vari Devasthanam in West Godavari district, Andhra Pradesh. The investigation was carried out to assess the welfare status of the elephant and handlers by evaluating the elephant's physical, social, physiological and health aspects and the professional experience and socio-economic status of handlers.

