



IUCN/SSC Asian Elephant Specialist Group

Management and Welfare of Captive Asian Elephants used in Tourism



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Photo: Jose Louies

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Scope of the Guidelines

Within the mandate of the Asian Elephant Specialist Group it states that the group shall “set forth standards or guidelines for the management and welfare of wild and captive elephants”. Recent work by AsESG members has documented how a wide range of management regimens directly impacts the welfare of captive elephants in the tourism industry of Thailand, itself a tourism model spreading to other range states as more traditional roles for captive elephants have declined.

While taking no position on the ethics of using elephants in tourism or for other uses, this group was given the mandate to produce a set of guidelines outlining achievable practices to standardize a baseline level of welfare within the industry according to the needs of elephants as defined by scientific studies and management experience.

These guidelines are intended to be used by elephant managers in tourism camps as a set of MINIMUM standards to ensure that elephants are not subject to unacceptable welfare practices, and for use by welfare auditing organizations as an ENTRY LEVEL standard. While we acknowledge that all elephants have basic welfare needs whatever their circumstance, addressing the provision of welfare to elephants outside of tourist camps (e.g. those participating in parades and ceremonies, begging on streets, being kept in temples, used in logging) was outside of our purview. However, these guidelines could and should be adapted to address welfare concerns of all elephants under human care.

Introduction

The Asian Elephant Specialist Group (AsESG) is a global network of professionals dedicated to studying, monitoring, managing, and conserving Asian elephants (*Elephas maximus*) throughout range states in Asia. While the overall aim of the AsESG is to promote the long-term conservation of Asia's wild elephants and, where possible, the recovery of populations to viable levels, the AsESG recognizes that elephants in captivity comprise a significant portion of the global Asian elephant population. The welfare needs of these elephants must be addressed. Common concerns raised about elephant tourism in particular are complex in their nature and impact, and call for ongoing scientific evaluation, as well as for realistic solutions to ensure the sustainable and ethical management of captive elephants. A basic tenet of good welfare is the provision of some level of **choice** and **control** over the environment, which for elephants would include the ability to forage in natural habitats and decide with whom to socialize, if at all.

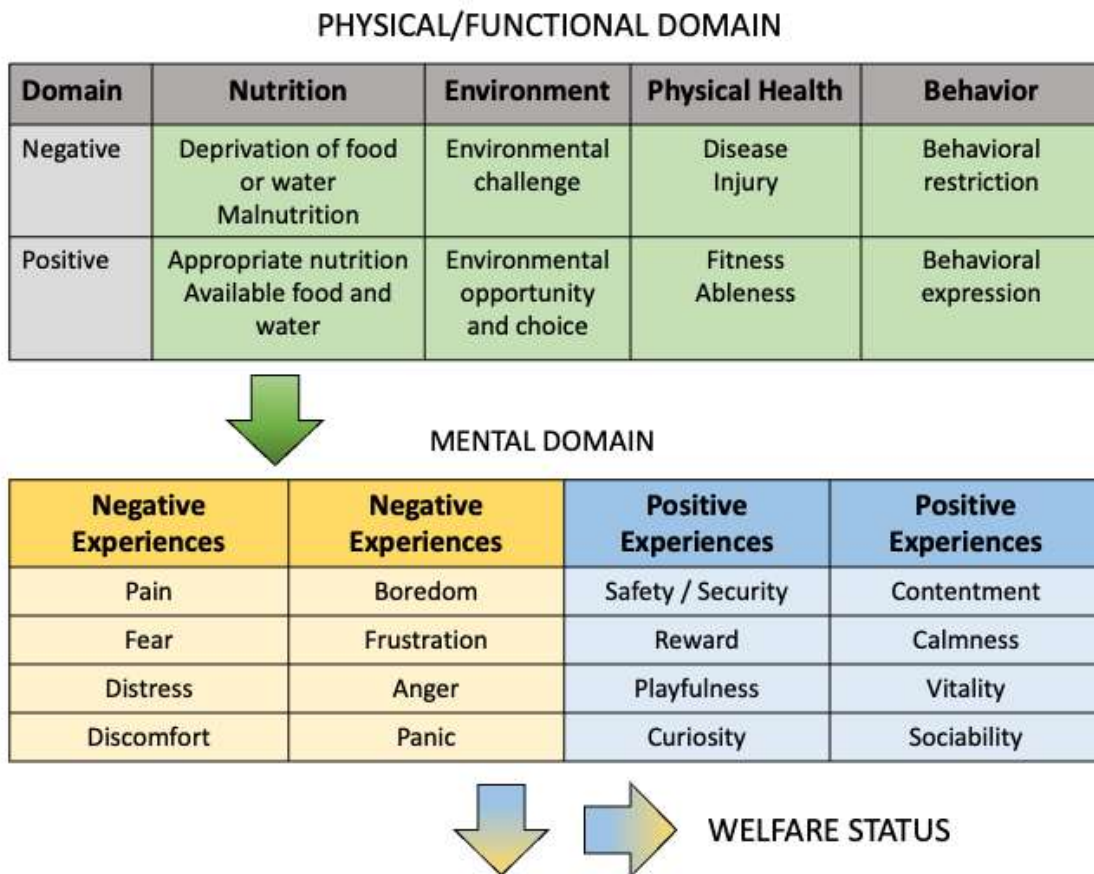
The interaction between elephants and people has a long-standing cultural and commercial history, and elephants continue to play a role in the human economy. There are approximately 15,000 Asian elephants in captivity (about a third of the total global population) used for tourism, logging and transport throughout the Asian elephant range countries (Menon and Tiwari, 2019). The use of elephants in tourism is increasing; for example, about 2,700 elephants from an estimated total captive population of 4,500 were used for such purposes in Thailand in 2014 (Pintawong et al., 2014), and in 2017 there were nearly 3,000 (Schmidt-Burbach, 2017). Due to the conservation importance of wild elephants and inherent welfare issues of bringing free living elephants into captivity, as well as the potential reduction of welfare that captivity would entail, we strongly urge that no elephant be taken from the wild for tourism purposes and that policies be put in place to ensure that elephants taken from the wild cannot be used for any commercial purposes.

For the tourist camps in Asian range countries, there are currently no acknowledged and/or widely used guidelines or best practices for the management and care of elephants. This has resulted in a large number of facilities operating with an insufficient capacity to properly care for them. Such facilities are extremely vulnerable to criticism, creating false assumptions about captive elephant management, which undermines the reputation of good facilities. Recognizing the urgent need to create more awareness about problems and possible solutions regarding captive elephants, this document summarizes what we know about elephant welfare and what can be done to meet their needs, and provides basic guidelines to improve welfare standards.

Literature review on captive elephant welfare

A generally accepted concept for animal welfare is based around the 'Five Freedoms', which states that animals should be granted: 1) freedom from injury and disease; 2) freedom from hunger, thirst and malnutrition; 3) freedom from thermal or physical distress; 4) freedom to express most 'normal' behaviors; and 5) freedom from fear. These freedoms aim to ensure basic needs are met, but do not necessarily capture the more nuanced needs of biological processes that are germane to animal welfare. Therefore, a newer, more comprehensive welfare assessment tool was developed to encourage **a life worth living**, called the Five Domains Model (Mellor, 2016). This Model has a significant focus on subjective experiences, known as affects, which collectively contribute to an animal's overall welfare state. Operationally, the focus of the Model is on the presence or absence of various internal physical/functional states and external circumstances that give rise to welfare-relevant negative and/or positive mental experiences, i.e., affects.

The internal states and external circumstances of animals are evaluated systematically by referring to each of the first four domains of the Model, designated “Nutrition”, “Environment”, “Health” and “Behavior”. Then affects, considered carefully and cautiously to be generated by factors in these domains, are accumulated into the fifth domain, designated “Mental State” (Mellor and Beausoleil, 2015) (Fig. 1). The model has been further refined to include human-animal interactions in assessing welfare (Mellor, 2020). These methodologies are well applicable to elephants, although interpretation and application across venues varies greatly.



Five Domains Model modified from Mellor and Beausoleil 2015

Standards specific to the management and welfare of elephants in western zoos are provided by organizations such as the American Zoo and Aquarium Association (AZA), European Endangered Species Program (EEP) of the European Association of Zoos and Aquaria (EAZA), and the British and Irish Association of Zoos and Aquariums (BIAZA). In Asia, some countries have husbandry guidelines, but with varying degrees of enforcement and oversight. In Thailand, captive elephants fall under the jurisdiction of the livestock ministry, and are considered 'beasts of burden' with limited welfare protections. However, more recently (2022), development of a welfare standard with legal penalties for not adhering is being developed by the Ministry’s Department of Livestock Development as part of the Animal Cruelty law they enforce. Asian Captive Elephant Standards, an independent organization based in Thailand, is now conducting welfare audits of tourist camps throughout southeast Asia using welfare standards created by

the Asian Captive Elephant Working Group. In Myanmar, government-owned elephants in the logging industry are managed under a written set of standards that establish work hours and activities, and include a mandatory retirement age and access to veterinary care. Myanmar also has among the best record keeping systems in Asia, with each elephant given a registration number and log book to record sex, name, age at time of acquisition or date of birth, age of training, date of registration, date of mating/calving, veterinary records, musth condition (males), camp locations, prescribed workloads and nature of work (Mar, 2002; Schmidt and Mar, 1996). Such an extensive record keeping system, like the studbooks used by western facilities, has allowed for the analysis of demographic and health data over time, and insights into factors affecting population fecundity and mortality (U Mar et al., 2012; Hayward et al., 2014; Lahdenperä et al., 2014; Mumby et al., 2015a,b).

Methods to assess welfare

Assessment of elephant welfare relies on measures of physiological function (e.g., health, reproduction, stress) and behavior, and can be applied on an individual or population level. Behavioral studies are a popular approach to welfare assessment in animals, with the goal of providing captive conditions that allow expression of natural behaviors. Stereotypies are the most described welfare-related behaviors in captive elephants. These are repetitive, invariant behavior patterns with no obvious goal or function. The etiology of stereotypic behavior in elephants often is unclear, but it has been associated with chaining (de Mel et al., 2013; Friend and Parker, 1999; Gruber et al., 2000; Schmid, 1995; Varadharajan et al., 2016), limitation of space (Elzanowski and Sergiel, 2006; Greco et al., 2017; Harris et al., 2008) and social isolation (Greco et al., 2016, 2017; Kurt and Garai, 2001; Varadharajan et al., 2016). Stereotypies can have negative consequences, including contributing to foot problems (Haspelslagh et al., 2013) or as a coping mechanism when ‘fight or flight’ is not possible. Some stereotypic behaviors, however, appear to be anticipatory in association with food and water provisioning, or prior to training or show performances (Friend, 1999; Rees, 2004, 2009), and so may not always reflect negative emotions. Rees (2004, 2009) found that the frequencies of stereotypic behavior in elephants were higher in low environmental temperatures, so they could also be adaptive for maintaining body homeostasis.

Although less attention has been paid to factors affecting expression of positive behaviors, they are equally important in assessments of welfare. For example, Lee and Moss (2014) reported that play behaviors in early development are a good indicator of individual quality (the capacity for growth, survival and reproduction) later in life in African elephants. Other behaviors, like mental alertness and responsiveness, relaxed trunk movements, tail switching, vocalizations, and flapping of ears in a rhythmic manner also relate to positive welfare. Recumbence is another behavior associated with positive welfare, and one study found that flooring substrate was important to recumbent rest (Holdgate et al, 2016). Health assessments are another way to assess animal welfare, and in elephants have involved measures of body condition (Morfeld et al., 2016), foot health (Lewis et al., 2010; Miller et al., 2016) and reproductive cycle activity (Brown et al., 2016). Positive health status, however, does not guarantee positive welfare conditions, and all factors, positive and negative, should be considered as indicators to the whole.

One component of the physiological response to poor welfare, a presumed stressor, is activation of the hypothalamic-pituitary-adrenal axis, which results in, amongst other things, an increase in glucocorticoid

(GC) secretion. Immunoassays have been developed and validated for measuring cortisol or its metabolites in serum (Brown and Lehnhardt, 1995; Brown et al., 1995), saliva (Dathe et al., 1992; Menargues et al., 2008, 2012a,b), urine (Brown et al., 1995, 2010; Brown and Lehnhardt, 1995), and feces (Watson et al., 2014). Stimuli, both favorable and unfavorable to welfare, can increase GC release. Normal physiological responses have been observed before (Kajaysri and Nokkaew, 2014) or after (Brown and Lehnhardt, 1995) parturition in females, and during musth in bulls (Brown et al., 2007; Kumar et al., 2014). In captivity, stressful conditions that have been found to increase GC secretion include human interactions and episodic loud noises (Millspaugh et al., 2007), opening of a zoo to the public for the first time (Menargues et al., 2008), work associated with logging (Mumby et al., 2015a,b), introduction of an unfamiliar conspecific (Dathe et al., 1992), being in public festivals and processions (Kumar et al., 2014), being housed in small enclosures (Stead et al., 2000), construction (Boyle et al., 2015), and transportation and relocation (Fanson et al., 2013; Laws et al., 2007; Millspaugh et al., 2007). Thus, while elevations in GCs may be a sign of poor welfare, unchanged or even reduced activity can also be associated with chronic stress, making proper interpretation of GC data difficult. For this reason, it is important to assess GCs in conjunction with other welfare measures, like those associated with behavior and health.



Figure 1: Elephants socializing | Photo by Chatchote Thitaram

Epidemiological approaches have been applied to identify factors related to welfare outcomes in elephants. In particular, two comprehensive, multidisciplinary, multi-institutional studies in the U.K. (Harris et al., 2008) and U.S. (Carlstead et al., 2013) revealed a number of issues facing zoo elephants, including foot problems, obesity, poor gaits, stereotypic behaviors, and ovarian acyclicity. Multivariable modeling then

identified a number of husbandry and management factors related to these varied welfare indicators. In general, good welfare was associated with highly diverse and enriched environments, exercise opportunities, feeding diversity (encouraging foraging, and offering food in different ways), compatible social groups, natural substrates, and good elephant-keeper relations (Brown et al., 2016; Morfeld et al., 2016; Holdgate et al., 2016). By contrast, elephants housed alone, even with tactile contact through bars, exhibited higher rates of stereotypies and ovarian cycle problems (Brown et al., 2016; Holdgate et al., 2016, 2017). While conditions obviously differ between western zoo venues and captive settings in Asia, many aspects of welfare are applicable to both, including the need for socialization (human and conspecific), proper nutrition and feeding practices, freedom of movement, mental stimulation, and good veterinary care (Brown et al., 2020).

Finally, it is important that elephants be trained using positive reinforcement techniques (McLean, 2014). Regular training for medical or enrichment purposes is important to improve not only management, but the welfare of captive elephants (Hambrecht et al., 2021).

Welfare studies of captive elephants in Asia

Relatively few studies have critically examined welfare of captive elephants in Asia. In India, logging activities have been banned, so that means of employment has stopped for captive elephants. A nation-wide welfare survey of captive elephants in India examined how captive conditions met ecological and biological needs and found poor welfare was common among privately owned elephants and those held by religious institutions, with a few exceptions (Varma, et al., 2011). In places such as Rajasthan (Jaipur), privately owned elephants are used for tourism and during the “off-season” are returned to places of permanent residence or used as “begging” elephants; i.e., traveling from place to place and begging from the public to generate income. Another study in India conducted a visual health assessment and survey questionnaire on elephants housed in zoos, forest logging camps, and tourist camps (Ramanathan and Mallapur, 2008). Significant problems with body and skin condition, foot health, ocular condition, edema, wounds and abscesses were identified, with elephants in tourist camps having overall poorer condition. A report by Animal Nepal (Vries, 2014) examined the welfare of 42 privately-owned captive elephants in Sauraha, near Chitwan National Park through observation and interviews with mahouts. Based on scores of shelter, hygiene, welfare and body condition of elephants, mahout welfare, and camp management, 82% of elephants were deemed to be living under ‘Unsuitable Conditions’. They further found significant wounding and spinal injuries that appear to have been caused by hobbles and ropes (Vries, 2014).

In Thailand, where elephant tourism is an important and growing industry, criticism of welfare management has become intense in recent years. In 2016, TripAdvisor, one of the world’s largest travel websites, and its booking service, Viator, announced they will no longer sell tickets to hundreds of attractions where travelers come into contact with wild animals or endangered species held in captivity, including those that offer elephant riding. However, to date, only a few studies have attempted to assess welfare in these populations.

The first survey, carried out by Chatkupt et al. (1999), consisted of an interview and a visual assessment of elephants working in permanent and seasonal camps. Indicators of elephant well-being included signs

of health (mental alertness, motion of trunk, tail and ears, body condition score), rest conditions (shade, feed, substrate type, sanitation) and work activities (work hours, time of start and finish of work). Elephants working in permanent camps had better health, received adequate shade, were kept on natural substrates, and worked fewer hours. Street wandering elephants had the poorest condition.



Figure 2: Elephant hobble | Photo by Chatchote Thitaram

A decade later, Kontogeorgopoulos (2009a,b) surveyed several elephant camps in northern Thailand and described a number of problems in several areas: lack of an appropriate set of laws and regulations, injuries related to giving rides, inappropriate use of the ankus, poor nutrition, inadequate social environment, harsh training practices, and the declining quality of mahouts. Magda et al. (2015) evaluated cutaneous lesions in anatomic regions (i.e., neck, girth, back, tail) in contact with saddle-related equipment among tourist elephants in northern Thailand and found a high prevalence of active lesions, most often located on the back region. Risk factors for having an active lesion were identified as: increasing elephant age, the use of rice sacks as padding material in contact with the skin, longer working days, and the provision of a break. The provision of a break may have been related to camps offering more breaks in response to current or previous problems with lesions.

More recently, Schmidt-Burbach et al. (2015) working with an international animal welfare organization, World Animal Protection, assessed the welfare conditions of 1,688 Asian elephants at 106 tourism venues in the north, central and south of Thailand. Data were gathered through observations and interviews with staff on several key factors, including animal mobility, hygiene and shelter, environmental noise quality, naturalness of the environment, social interactions, diet, entertainment intensity and animal management. They concluded the majority of elephants (86%) were kept in inadequate conditions. A subsequent study

of 2,923 Asian elephants in 220 tourist venues in Sri Lanka, Nepal, India, Laos, Cambodia and Thailand similarly reported that about three quarters of elephants lived in unacceptable conditions (Schmidt-Burbach, 2017). Correlations with biological welfare indicators were not examined, however.

Finally, a series of epidemiological studies in northern Thailand identified a number of ways tourist camps could improve elephant welfare (Bansiddhi et al., 2019a,b, 2020), including ensuring they have sufficient exercise and are fed limited amounts of high calories treats, especially in the high tourist season, to avoid problems with high body condition and unhealthy alterations in lipid profiles and metabolic function (e.g., glucose and insulin). Limited use of concrete floors and walkways can prevent foot and nail problems, while equipment to control elephants (e.g., ankus, chains) must be used properly to prevent injuries and unnecessary wounding. Last, providing more naturalistic housing conditions, opportunities to exercise, and controlling the number of tourists per day are important to reduce stress levels. Thus, while strategies used to manage elephants in tourism or other captive conditions are diverse and may not always meet animal welfare needs, scientific studies are playing an important role in identifying best practices.

Basic welfare guidelines for elephants managed in tourist camps

Good elephant welfare provides adequate **space** for exercise and mental stimulation, access to **natural habitats** for proper nutrition, and the ability to socialize in ways that offers some level of **choice**. Asian elephants are used in tourism throughout their range in camps that vary greatly in size, infrastructure and management. It is important to evaluate and develop guidelines for good animal management and welfare practices regardless of how the animals are used. To do this comprehensively, we need to evaluate not just the overall camp operation, but the individual animal as well.

With that, there are several important aspects of an elephant camp that can directly or indirectly affect animal wellbeing:

Directly impacts animal welfare:

1. *General conditions*
2. *Breeding*
3. *Musth bulls*
4. *Arrival of new elephants and transport*
5. *Elephant-human interactions*
6. *Elephant interactions with conspecifics*

Indirectly impacts animal welfare:

1. *Camp management and legal requirements*
2. *Staff management*
3. *Overall camp infrastructure*
4. *Visitor safety and experience*
5. *Community relations and conservation communication*

Directly impacts animal welfare

1. General conditions

Living conditions

To ensure the health and wellbeing of the elephants and the local community surrounding an elephant facility, all captive elephants must be confined to an area that precludes negative interactions and possible violent conflicts with that community, and the possibility of injury due to encountering dangerous novel situations (e.g. speeding vehicles, electrical lines). However, elephants should be allowed freedom to interact safely with conspecifics and forage as much as possible.

- Main living area
 - There must be enough space in the living area for elephants to move at least several meters in each direction, and be able to interact with other elephants - a *minimum* of 154 sq. m. per elephant. This can be provided by a 5-meter chain (assuming an elephant step of 2 m) or a 12 m x 12 m enclosure. A preferable enclosure size is at least 1,500 sq. m. (provided by a 20 m chain or 38 m x 38 m enclosure).
 - The elephant's living area must include shaded or roofed parts, providing sufficient protection from the elements.
 - A roof should be at least 6 meters high; if forested, the trees must be mature enough to provide shade.
 - Elephants must be able to lie down comfortably at any time.
 - Elephants should spend the majority of a 24-hour period on natural substrates (e.g., dirt, sand, or grass).
 - The living area must have sufficient drainage and be kept dry and clean at all times.



Figure 3: Elephant in shade | Photo by Chatchote Thitaram

- Temporary confinement area (e.g. during holding for tourist activities or for medical procedures)
 - For a maximum of 1 hour at a time and not repeated for 3 hours.
 - They should have access to at least 50 sq. m. per elephant (which can be provided by a 2 m chain or an enclosure 7 m x 7 m). Elephants undergoing medical treatment may need to be confined at a treatment wall and for longer periods if necessary, and must be evaluated daily by a veterinarian.
 - Temporary holding areas should provide protection from the elements as described above.
 - Confinement must not be used to keep elephants socially isolated, unless deemed to be necessary by a veterinarian for the safety of the elephant.
- Chain alternatives
 - Free roaming (without chains) must be implemented wherever and whenever possible and supervised by mahouts.
 - When elephants share an enclosure unsupervised, care must be taken to ensure those elephants are compatible.
 - Use of hobbles is discouraged, but if they are used to give elephants access to natural habitat, they must be loose enough to allow the elephant to walk without hopping and preferably padded to not cause injury.
 - A drag chain may be used alone (unanchored) or in conjunction with hobbles. The drag chain should be applied to alternate legs to avoid repetitive stress to one limb, and the elephant's leg inspected daily. Use of hobbles should be discontinued at the first sign of rubbing or injury.
- Fences
 - If fences are in place they should have a proper height and strength so that adult elephants cannot step over them or break through them.
 - The distance between the unsupervised visitor and the elephant must be not less than 3.5 m (length of a fully extended trunk and human arm).
- Sanitation
 - The elephant resting area must be cleaned of feces and urine at least twice a day.
 - There should be someone in charge of managing elephant waste disposal.
 - Feces must be removed and kept well away from the elephants.
- Food, water and diet plan
 - There must be a specified diet plan for each elephant that includes a variety of roughage and supplements as recommended by a veterinarian.
 - Food provided to visitors for feeding elephants must be aligned with the diet plan and provided by the venue.
 - Sugary or starchy treats (e.g., bananas, sugar cane) are not a required element of the elephant's diet and must be limited to only a small percentage of the calorie intake per day, no more than 8%.
 - Elephants should be able to forage for food in their natural habitat in addition to the provided diet for specified periods during a 24-hour period.
 - Elephants must have access to clean drinking water at least four times a day.
 - Ideally food is presented in such a manner as to encourage browsing behavior and mental stimulation.



Figure 4: Water basin for elephant | Photo by Chatchote Thitaram

- Bathing
 - Elephants should have access to a river or other clean water source for bathing 1-2 times a day (no limit if free choice).
 - Elephants should have access to sand or a mud pit.



Figure 5: Elephants bathing | Photo by Chatchote Thitaram

- Socialization
 - The camp must facilitate socialization of the elephants, allowing compatible elephants to touch each other and stay in close proximity when not working.
 - Efforts must be made to promote positive social interactions among elephants, including for bulls.
- Aggression management plan
 - An aggression management plan should be in place to ensure safety of elephants, people and property.
- Enrichment
 - Environmental enrichment plans must be implemented into the daily management of elephants (e.g., to prevent boredom, frustration, or development of behavioral problems, and permit exploration and engagement with the environment).

Medical

- Health care
 - The elephant must receive regular health checks, at least annually, but also in any cases of illness or injury.
 - Elephants must be trained for medical care (e.g. blood draws, foot care, mouth inspection).
 - The medical/ vaccine record of each elephant must be available for inspection.
- Veterinary capacity and medical treatment
 - Larger camps (more than 30 elephants, Bansiddhi et al., 2019b) should employ at least one full time veterinarian on-site.
 - If the camp has less than 30 elephants, it must partner with local camps to employ a shared full-time veterinarian. On-site accredited veterinary nurses or veterinary assistants can be used to help monitor health care.
 - The elephant camp veterinarian must have a university-level degree (i.e., doctor of veterinary medicine) from a nationally accredited university and be adequately trained in large animal medicine.
 - The elephant camp veterinarian must be legally licensed in the country.
 - The elephant camp veterinarian must have received training in elephant medicine.
 - Veterinarians must have the right to order elephants to stop working or to be given a break if medically necessary.
 - The elephant facility must have staff that are trained to 1) recognize signs of health and disease 2) carry out medical treatments as prescribed by the veterinarian, and 3) perform essential procedures such as foot care.
 - First aid kits and appropriate medical equipment must be in place and staff properly trained to use them.
 - There should be an onsite area for elephant treatment or an agreement with the closest clinic to treat elephants as needed.
 - Elephants that need medical treatment must be properly restrained to minimize risk to humans and to prevent elephant injury. A treatment wall or chute, preferably isolated from the main tourist area, can facilitate safe treatment.

- There must be a policy in place that elephants will only be sedated for medical treatment or musth management, and under the guidance of an appropriately trained veterinarian.
- There should be a policy in place to not surgically modify the skin, tusks or tail of an elephant unless there is a veterinary reason to do so and may only be performed under the guidance of an appropriately trained veterinarian.
- Facilities must be checked at least annually by independent veterinary authorities to ensure appropriate standards of care and up to date best practices are in place.
- Geriatric management
 - Geriatric elephants must be provided specialized diets (e.g., chipped or easily digestible fodder, herbal drugs, supplements) and safe living areas (e.g., enclosure, stable).
 - Soft floor substrates (e.g. sand, soil etc.) with a slope should be provided to facilitate lying/standing, and padding added to rails or fences to prevent pressure sores or abrasions.
 - Increased surveillance of gastrointestinal and musculoskeletal system health, including skin and eyes should be conducted.



Figure 6: Geriatric management of chopped food and Natural floor or sand for geriatric elephant | Photo by Chatchote Thitaram

- Postmortem examination
 - Deceased elephants should be documented photographically, and date of death reported to the authorities with the microchip number.
 - A full postmortem examination should be conducted by a veterinarian or trained veterinary assistant.
 - There must be a special disposal area for elephant carcasses.

2. Breeding

- Breeding program
 - Camps that have a breeding program in place must maintain written breeding records.
 - Breeding elephants should be properly evaluated and screened for suitability and compatibility.
 - Breeding pairs should be selected to maintain genetic diversity and avoid inbreeding.
 - A full health exam, ideally including a reproductive tract ultrasound evaluation, should be conducted on female elephants before breeding.
 - Mating attempts, paternity, births, and pregnancy losses/stillbirths should be recorded.
 - Females must have the ability to refuse mating and be protected from male aggression (i.e., must not be forced to mate).
- Management of pregnant elephants
 - There must be a plan in place to reduce activity of pregnant elephants used in tourist activities (reduced work hours and loads), although they should still be exercised (walking, bathing) to maintain physical fitness, which is crucial for a smooth natural birthing process.
 - After 15 months (last trimester) of gestation, the elephant's health should be monitored and additional supplements given if needed.
- Calf management
 - Calves must be trained from an early age (starting within 2 – 4 months) alongside and in close proximity to their mother, and with positive techniques for short periods once or twice per day.
 - There must be an area away from tourists and other traffic for parturition and for newborn calves, and qualified individuals should continuously monitor the situation.
 - Baby elephants must be allowed to stay with their mothers until at least 3 years of age for unlimited suckling and be chained for only short periods as necessary (e.g., veterinary exams, treatment of mother).
 - There need to be options/measures in place (e.g., surrogate mothers or hand rearing protocols) if the calf is born premature, undersized, or the mother cannot care for it (e.g., the mother rejects the calf or maternal death).
 - Calves under no circumstances should be allowed to push, attack, lie on or play fight with people. Calves also should have the choice not to participate.
 - A calf should be introduced as early as possible to other elephants (social companions/close friend of the mother) to learn to socialize with other elephants (initially under the control of the mahouts). Ideally the calf should be socialized with other calves of different ages.

3. *Musth bulls*

Musth is a natural phenomenon in healthy male elephants that is associated with physiological and behavioral changes such as temporal gland swelling and secretion, urine dribbling, elevated androgen concentrations (e.g., testosterone, dihydrotestosterone, androstenedione), unpredictability and aggression. So, musth bull management presents significant challenges for safety of people and property, as well as animal welfare.

- Management plans
 - Guidelines for managing bulls in musth are in a separate document (see AsESG musth management protocol).
 - Good musth records should be maintained for all bull elephants.
 - The camp manager or person in charge must have experience on how to score musth signs (e.g. use a musth log with photos or drawings as indicators).
 - Elephants with a first indication of musth must be removed from all visitor activities.
 - There should be a secure and appropriate area away from visitors that provides adequate welfare (e.g., access to shade, shelter and safe areas to receive food and water) to elephants in musth.
 - Ideally, musth bulls should not be completely socially isolated, but still have visual and/or auditory contact with other elephants.
 - There should be signs in at least two languages (e.g. local + English) to warn staff and visitors about the musth reserved area.

- Chains
 - Musth bulls should be moved to an area where they can be kept safely on a long chain (at least 20 m or 38 m x 38 m enclosure) away from other elephants and people, but ideally with visual, auditory contact with conspecifics.
 - The confinement/chaining area must allow musth bulls to have access to fodder and water ideally ad lib, but offered four times a day minimum.



Figure 7: Secured and isolated place for musth elephant | Photo by Chatchote Thitaram

4. *Arrival of new elephants and transport*

- There should be proper health screenings for all new elephants before they come into the camp for the first time.
- New elephants need to be quarantined for at least 1 month before being exposed to other elephants, and introductions should be carefully managed.
- Transportation of elephants
 - Elephant must have at least 1 full day (24 hours) of rest and be deemed healthy by a specialized elephant veterinarian prior to transport.
 - Vehicle must stop every few hours (no more than every 5 hours) to check on the elephant and allow it a chance to eat and drink.
 - Journey should be timed to avoid the heat of the day - ideally overnight to avoid traffic delays.
 - Any journey of over 12 hours must include a 12-hour break for the elephant, off truck and in a suitable habitat.
 - Mahout accompanying the elephant must be in good health and not under the influence of alcohol or any other substances, and have appropriate tools (ankus, chains) to control the elephant if necessary.
 - Driver must be experienced in animal transport and have a valid driver's license for that type of vehicle.
 - The vehicle must be capable of holding the elephant and be registered and insured.
 - The owner must obtain transportation and elephant identification papers as locally required.
 - Upon arrival, the elephant must be offered food and water, inspected by a specialized elephant veterinarian and treated if needed, and cautiously introduced to any resident elephants after a quarantine period.
 - The camps must have the necessary documents to legally transport the elephants.
 - There should be a documented history of elephant transportation (e.g., studbook for the legal trade and/or transport of the elephants).

5. *Elephant interactions with tourists*

Working elephants

- There must be a written policy regarding which elephants can work, and in what activities, and all mahouts must be aware of and comply with this policy.

Safety Measures

- Safety measures must be in place before any public interaction with elephants.
- Members of the public must be briefed on the safety measures before interacting with elephants.
 - Safety briefing must include Do's and Don'ts around elephants in a language understood by all guests.
 - If no mutually understood spoken language is possible, a written document must be provided.
- A minimum number of staff per number of guests should be decided per activity and documented.
- First aid supplies must be available and staff members trained in their use.

Riding

- Elephant selection
 - Elephants selected for riding must be fit for the job, and not have an aggressive temperament.
 - Elephants with signs of potential back pain (such as resisting putting on the saddle while otherwise compliant) or leg or foot pain (such as lameness or slower than usual walking) must not be used for riding.
- Saddle riding
 - If saddles are used, they must be of good quality that fit the elephants well and do not cause harm (e.g., lesions or other sores, rubbing, uneven weight distribution).
 - The saddle must be designed in such a way that weight is not applied directly to the vertebrae and the movement of the elephant's backbone is not restricted.
 - Load on the back of the elephant must be a maximum of 10% of the elephant's weight, including howdah, mahout and tourists. For example, a 3200 kg cow must carry no more than 320 kg (~ 700 lbs).



Figure 8: Saddle riding | Photo by Chatchote Thitaram

- Bareback riding
 - Specific safety measures must be in place.
 - The mahout must accompany a rider, on foot or on the neck.
 - Only the tamest elephants should be used for bareback riding.

- Working conditions for riding
 - There must to be a good balance between work and rest time. Daily work should not exceed 5 hours, with a break of 15 minutes after every hour of activity.
 - Distance of hourly activity should not exceed 4 km to ensure a natural average pace.
 - Elephants must not be ridden when temperatures are higher than 38°C (100 °F).
 - During the break between activities, water must be provided.
 - The trekking surface must be safe and natural, and not more than 30% of the distance be on concrete or asphalt.
 - No feeding by tourists during the ride should be allowed.



Figure 9: Bare back riding | Photo by Chatchote Thitaram

Bathing

- Elephants must be bathed by their mahout once a day for skincare purposes. Additional bathing are permissible, but an elephant that shows an aversion to extra bathing should not be forced.

- Elephant bathing with tourist interaction should only happen under strict guidance and supervision of experienced mahouts.
- No water should be splashed into the eyes of the elephant.
- Harsh control (i.e., use of hooks or other equipment) should not be used when bathing the elephant, and the elephant should have the option of keeping away from visitors if it so chooses.
- The visitors must be well informed before engaging in any elephant activity, and must comply with rules and guidelines when bathing an elephant.
- At least one mahout per elephant must be present.
- No more than five visitors should be allowed to interact with one elephant during the bathing period.

Feeding

- The visitors must be informed of the rules regarding feeding the elephant.
- Food provided to visitors for feeding elephants must be aligned with the diet plan and provided by the venue.
- Sugary treats (e.g., bananas, sugar cane) should be discouraged and be no more than 8% of the diet.
- Visitors must be encouraged to wash their hands before and after feeding elephants and have facilities to do so.

Walking with the elephant

- Safety guidelines must be available and staff providing safety guidance must do so in English or a mutually intelligible language prior to the walk.
- Mahouts must have the necessary equipment to control elephants (e.g., ankus) in emergency situations.
- At least one mahout per elephant is present.
- At least one additional person (guide) must be responsible for public safety and ensuring they do not harass the elephants.
- A maximum of four visitors per elephant is allowed; visitors are encouraged to walk as a group behind the elephants.

Free-roaming elephants

- Elephants need exercise and space to forage on natural vegetation for at least some part of every 24-hours.
- For facilities that provide free-roaming (not being guided by a person or used for riding), elephants should be able to make their own choices with mahout interactions limited to safety interventions and the public must not share the same space.
- Facilities must have written guidelines regarding free-roaming (including social management, space, food, water, night time, etc.).
- Elephants must be managed to prevent aggressive elephant-elephant interactions.
- Human interactions should be limited, including excessive feeding of sugary treats.
- A protocol needs to be in place to encourage the elephants to exercise.

Preparation and care of the elephant

- Visitor activities must not prevent the mahout from providing basic care before and after work: including bath, cleaning, body check-up.

Unacceptable activities

- Funding or encouragement of capture of free living wild elephants to supplement captive populations for economic or entertainment purposes (i.e., not conservation).
- Accepting or employing an elephant known to be illegally sourced.
- Using elephants with a known history of aggression in activities with people.
- Any activity that causes injury to the elephant, visitors or staff.
- Keeping elephants confined or on chains for long periods of time.
- Removing a calf from its mother before it is 3 years old.
- Using tools to intimidate or inflict pain outside of emergency situations.
- Working, participating in riding, or other unshaded activities if the temperature exceeds 38°C.
- Using an elephant that is ill or physically unfit for work of any kind.
- Separating dependent offspring from mothers to interact with tourists.

Indirectly impacts elephant welfare

1. Management and legal requirements

The camp must adhere to all local laws, pay taxes and have insurance commensurate with receiving international visitors. This area addresses the general management structure of the facility as well as aspects of potential safety and liability concerns. It also ensures good record keeping (i.e. all animals should be microchipped and registered in identification book) and transparency to where elephants are from and how long they have been kept in the facility. To ensure highest standards of welfare, a camp should hire an experienced Welfare Coordinator who conducts regular elephant welfare assessments.

2. Staff management

Good staff welfare and human resources practices are key to a sustainable business. Proper work contracts for mahouts, competitive wages, insurance and good living conditions must be provided to ensure that they as well as the animals receive consistent care.

3. Overall camp infrastructure

The overall infrastructure must involve appropriate set-up and maintenance of all public and back of house facilities (i.e. public areas, parking spaces, food storage etc). It also must include environmental sustainability, such as waste and water management.

4. Visitor safety and experience

Facilities must be safe for visitors and appropriate set-ups of toilets and other amenities have to be provided. Also all staff must be well trained to engage and educate visitors about the camp and the elephants, and there must be clear educational signs and interpretive panels available instructing visitors on do's and don'ts, as well as provide messages about elephants and conservation. Visitors must be made aware of rules of engagement for interacting with elephants. Tourists should not be allowed near any elephant without a mahout present.

5. Community relations

All camps must have a local license and pay taxes to the relevant local authorities. Ideally the camp should work closely with local communities in regard to sourcing food and hiring staff.

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