Pro Elephant Network

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PRO ELEPHANT NETWORK SUBMISSION
TO THE PARLIAMENTARY STANDING COMMITTEE ON FORESTS, WILDLIFE AND CLIMATE CHANGE
ON THE PROPOSED WILDLIFE PROTECTION AMENDMENT BILL 159 OF 2021

12 February 2022

The Pro Elephant Network (PREN) consists of an international community of diverse elephant individual experts, academics and organizations, comprising specific expertise on wild and captive elephants, with specialisations in science, health, conservation, ecology, elephant welfare, ethology economics, culture, social justice and the law.

The undersigned members of PREN and elephant specialists are very appreciative and are grateful for the opportunity to submit comments on the proposed Bill.

PREN fully supports and endorses the submission of the Wildlife Rescue and Rehabilitation Centre, annexed.

We have concerns with regard to section 43 of the Wildlife Protection Act specifically in relation to clause 27 with the prospect to exclude "live elephants" from the ban on trade, this despite the consistent and widespread illegal capture of wild elephants, illegal ownership, trade and transport of thousands of elephants who have been unlawfully caught in the past years. Members of our network have expressed such concerns publicly, in terms of the loopholes this proposed amendment to the Wildlife Act would create[1]. Such amendment would also go against international treaties and established science[2].

The Asian elephant is endangered and there is no doubt that legalising the trade in live elephants both nationally or internationally, would be detrimental towards the conservation of the species and would further worsen the current situation. Furthermore, the Government has an obligation to comply with its own Constitution and with important recent

[1] Response: The proposed amendment to the Wildlife Act will create loopholes for elephant trade (scroll.in)
[2] Why the ban on trade of captive elephants must stay | The Indian Express

judgements which have ruled in favour of elephant protection and which condemns the cruel behaviour of some private owners. Since the inception of the Convention on International Trade in Endangered Species of Fauna and Flora (CITES) the Asian elephant has been listed under Appendix I, giving this threatened species the maximum protection under this convention.

It has been proved that elephants suffer immensely when forced into captivity such as enclosures and in work and or training camps. To understand the magnitude of the worldwide welfare problem, globally there are approximately 17,000 African and Asian elephants living in forced captive situations.

Our concerns are based on authoritative knowledge of elephant biology, ecology, behaviour and ethology, as well as the current international and national legal frameworks and an understanding of public sentiment in relation to elephants.

It is internationally recognized that elephants are wide-ranging, vastly intelligent, sentient beings with a highly organised and complex social structure and form strong family bonds that last a lifetime. Elephants require access to large, complex, stimulating ecological and social environments, and the freedom to exercise choice over their foraging options and companions. Their needs can never be met under captive conditions; elephants in captivity are deprived on many different levels and as a result they inevitably suffer from either physical or psychological illnesses or a combination of both.

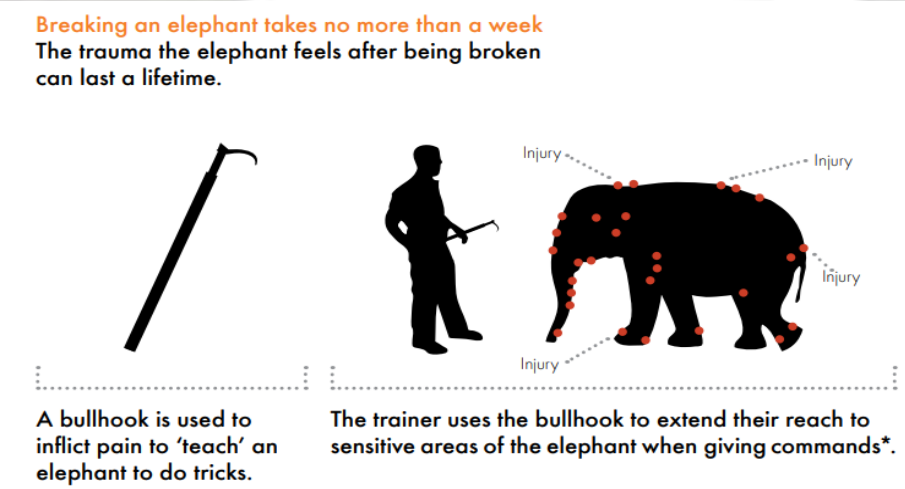
Young elephants are greatly dependent on their mothers and other family members to acquire the necessary social and behavioural skills. Males only leave their natal families when they are approximately 12 to 15 years old and females remain with their families for life. Disruption of this bond through the removal of young elephants from their family groups is physically and psychologically traumatic for both the calves and remaining family members. The negative psychological, behavioural and physical effects can be severe and last a lifetime[3] [4]. The well-documented symptoms of Post-Traumatic Stress Disorder (PTSD)[5] displayed by elephants in captivity around the world are testimony to the damage caused by the operations of capture, the harsh and cruel treatment to force them to submit and the keeping for work and exhibition purposes.

[3] G. A. Bradshaw and Allan N. Schore, "How Elephants Are Opening Doors: Developmental Neuroethology, Attachment and Social Context," Ethology 113, no. 5 (2007): 426–36, https://doi.org/10.1111/j.1439-0310.2007.01333.x; Graeme Shannon et al., "Effects of Social Disruption in Elephants Persist Decades after Culling," Frontiers in Zoology 10, no. 1 (2013), https://doi.org/10.1186/1742-9994-10-62
Rob Slotow et al., "Older Bull Elephants Control Young Males," Nature 408, no. 6811 (2000): 425–26, https://doi.org/10.1038/35044191
G. A. Bradshaw et al., "Elephant Breakdown," Nature 433, no. 7028 (2005): 807–807, https://doi.org/10.1038/433807a

[4] 2 Shannon, G., Slotow, R., Durant, S. M., Sayialel, K. N., Poole, J., Moss, C., & McComb, K. J. F. i. Z. (2013), Effects of social disruption in elephants persist decades after culling. Frontiers in Zoology, 10(1): 62. doi:10.1186/1742-9994-10-62

[5] G. A. Bradshaw et al., "Elephant Breakdown," Nature 433, no. 7028 (2005): 807–807, https://doi.org/10.1038/433807a .

According to a paper presented at the 69th meeting of the Standing Committee of the Convention on International Trade in Endangered Species (CITES SC69) in Geneva (Switzerland), 27 November – 1 December 2017, "captured calves suffer depression, lethargy, anxiety, increased stress, intraspecific aggression, and a diminished or non-existent appetite, sometimes resulting in death or contributing to premature mortality. Training in temporary facilities may include food and/or light deprivation, restriction of movement, forcing the animal into an uncomfortable position for extended periods of time and regular beatings[6].



Credit: World Animal Protection[7]

Direct contact requires that the trainer first exert physical dominance over the animal, which is usually done at a young age using extreme physical restraint. Restrictions include denying food, water and sleep, and also direct physical punishment. The elephants are punished, and thereafter controlled using a tool called a bullhook, also known as an ankus, or guide[8].

[6] E-SC69-Inf-36.pdf (cites.org)
[7] World Animal Protection Report - 2015 Breaking_africas_elephants_report.pdf (worldanimalprotection.org)
[8] Dr Heather Rally, Wildlife Veterinarian, Symposium Big Brains in Small Spaces, July 21

EFFECT OF CAPTIVITY ON THE BRAIN

Research carried out by Dr Bob Jacobs et Al[9], an expert in comparative neuroscience, and in particular elephant brains, has highlighted how elephants and cetaceans share several characteristics that make them especially vulnerable to impoverished artificial environments, to the point that captivity affects the physiology of their brain.

Dr Jacobs highlighted the existing evidence on the neurological effects of impoverished environments in mammals. The trans-generational evidence gathered from Jacobs research has underscored the profound functional, anatomical, chemical and molecular effects that the environment has on the brain and on the central nervous system.

The negative effects of an impoverished environment are distinguishable on the cerebral cortex of the brain. Neurons were smaller in what he called the "impoverished animal".

At the molecular level, you have disruptions in neurotransmitter systems throughout the brain. All of the neurotransmitter systems are affected negatively by an impoverished environment. Then you have nerve growth factors and BDNF (Brain Derived Neurotrophic Factors), that are positively associated with neurogenesis with neuroplasticity with emotional resilience and improved cognitive performance. All of these are severely disrupted in an impoverished environment.

A final important aspect vital to the well-being of an elephant is exercise and space. And of course, unfortunately, large captive animals in particular are deprived of exercise and space[10].

STEREOTYPY

Stereotypy is described as an invariant restrictive and apparently purposeless repetition of motor patterns and you certainly see in many captive held animals who have no place to go or cannot exercise and certainly do not receive much stimulation from a rather severely impoverished environment. We see similar things in psychiatric conditions in humans as well.

[9] Dr Jacobs et Al, 2021 (PDF) Putative neural consequences of captivity for elephants and cetaceans (researchgate.net)
[10] Fobar R, 2022 on Dr Jacobs research 'Nothing to do, nowhere to go': What happens when elephants live alone | National Geographic

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Stereotypy in the brain has been observed in both humans and non-human animals. In the early 2000s it was estimated that about 85 million captive animals exhibited stereotypies[11].

In relation to impoverished conditions and elephants living with chronic stress, research has indicated that their brain pathways are dysregulated. Dysregulation is a poor ability to manage emotional reponses or to keep them within an acceptable range of typical emotional reactions. This can refer to a wide range of emotions including sadness, anger, irritability, and frustration. This can allow for stereotypies to emerge. Excessive movements are conditions of stereotypies.

The behavioural and clinical effects of captivity are often visible; a captive and impoverished environment is damaging the brain itself.

Captivity is directly stressful to elephants and robs them of their most basic sense of autonomy. Factors including behavioural deprivation, developmental and social traumas, direct physical abuse, have dramatic negative impacts on the psychological health of captive elephants.

Elephants can develop behavioural indications of chronic stress, which include abnormal repetitive behaviours such as those motor stereotypies−an overall decrease in behavioural complexity, including a decrease in natural exploratory behaviours, and overall behavioural withdrawal.

Exposure to psychological stress has direct physiological consequences that, of course, impact the body's ability to function. Captive elephants suffer from high rates of illness. Gastrointestinal and skin disease is common in both African and Asian elephants. There is a very high prevalence of infectious disease for both species living in captivity. Captive individuals are affected by pathogens that are rarely observed in the wild or are only rarely observed under different circumstances. In many cases the pathogens are associated with known exposure to a physical or social stressor, or are otherwise correlated with some other condition from captivity.

Various studies indicate that the cumulative negative impacts of captivity leads to the overall deterioration of elephant health over time and eventually, debilitation and premature death.

[11] Dr Lori Marino, Big Brain in Small Spaces – The impacts of confinement on Cetaceans and Elephants – Conference 15 July 2021

Although an elephant can be kept alive while in captivity, such captive conditions do not and cannot provide a reasonable quality of life in comparison to a free-living existence. The elephant species evolved in the richness of the Indian forests, feeding for 18 hrs / day navigating across multiple ecosystems. None of these conditions can be observed in captivity, which causes progressive physical and psychological decline in the elephant. H*ead bobbing* and weaving have never been observed in the wild. Lack of movement and stimulation may cause elephants chronic loss of muscle tone and physical damage to bones and joints, as well as psychological damage due to the lack of continuous and diverse foraging challenges, social deprivation, and the frustration of being unable to make their own decisions[12].

PREN members therefore recommend that the Committee reviews the overwhelming science beyond our position and takes a decision to stand against the ownership of and trade in elephants, in favour of protecting them and the heritage of the Country.

Below we provide a library on the impacts of captivity and the need to protect and conserve the elephant in the wild.

Statement	Comment	Reference
Captive elephants suffer from conditions not seen in the wild	Elephants in captivity shave shorter live spans, poor fertility Captive animals suffer stress	**Clubb et al 2008** Compromised survivorship in zoo elephants **Clubb et al 2009** Fecundity and population viability in female zoo elephants **Clubb and Mason 2002 RSPCA Report** A review of the welfare of zoo elephants **Wiese & Willis 2004** Calculation of longevity and life expectancy in captive elephants **Morgan & Tromborg 2007** Sources of stress in captivity
	Captive elephants frequently suffer from foot and joint diseases, arthritis, weight related diseases, infertility, herpes virus, TB	**Richman et al 1999** Novel endotheliotropic herpesviruses fatal for As and Af elephants **Lewis et al 2010** A Survey of elephant husbandry and foot health in N American zoos. **Mikota & Maslow 2011** Tuberculosis at the human-animal interface

[12] Keith Lindsay Meeting between PREN and SANBI over Charlie the Elephant, 31st March 21

		Saddiq et al 2020 Degenerative Joint Disease **Mobasheri & Buckley 2020** Elephants mobility and captivity **Wendler 2019** (PhD) Foot health of As elephants in European zoos **Miller et al 2016** Housing and demographic risk factors impacting foot and muscoskeletal health in elephants in zoos **Lamglait et al 2015** Fatal encephalomyocarditis virus infection in an African savanna elephant (Loxodonta africana) in a French zoo
Captive elephants are not domesticated	Domestication involves artificial selection of desirable traits over multiple of generations, as is evident in dogs, horses, sheep and cattle, which all bear significant genetic, physical and behavioural differences from their wild counterparts. Trained or captive elephants are not genetically different from their wild counterparts.	**Russell N 2002** The wild side of animal domestication. **Wentzel & Hay 2015** The welfare status of elephants in captivity in South Africa
Captive elephants suffer compromised welfare Elephants in captivity cannot perform all their natural behaviour patterns	A captive environment cannot adequality meet the needs of elephants, neither physically, space wise, nor mentally or socially.	**Carlstead et al 2013** An epidemiological approach to welfare research in zoos **Hartley 2016** Assessing risk factors for reproductive failure and associated welfare in elephants in zoos **Meehan et al 2016** determining connections between the daily lives of zoo elephants and their welfare. **Jacobs 2020** The neural cruelty of captivity **Harris et al 2008** The welfare housing and husbandry of elephants in UK zoos **Williams et al** A review of current indicators of welfare in captive elephants

		Lahdenperä et al 2019 Capture from the wild has long-term costs on reproductive success in Asian elephants **Kumar et al 2019** Non-Invasive Assessment of Physiological Stress in Captive Asian Elephants
Movement and exercise are vital for physical and psychological health	Elephants in captivity do not have the necessary space and stimulation the vitally need for physical and brain health	**Poole & Granli 2008** Mind & Movement
Space is one of the most important aspects of elephant welfare	Elephants are built to walk vast distances	**McGreevy 2007** How much space does an elephant need? **Leighty et al 2010** assessment of the use of exhibit space and resources by African elephants
Captive elephants frequently stereotype	Stereotyping has been shown to indicate poor welfare and is detrimental to physiological health	**Greco et al 2016** Using epidemiology to better understand stereotypic behaviour in elephants in zoos **Haspeslagh et al 2013** A survey of foot problems stereotypic behaviour and floor type in Zoo elephants **Mason & Latham 2004** Can't stop won't stop: is stereotypy a reliable animal welfare indicator? **Rees 2004** Low temperature cause increase in stereotypic behaviour in captive elephants **Mason 1991** Stereotypies and suffering
<u>Elephants are highly social, and need extended social networks</u>	Elephants build social relationships that radiate out from the mother-offspring bond, through extended family, bond group, clan, population and beyond to strangers.	**Archie et al 2006.** Dominance rank relationships among wild female African elephants, *Loxodonta Africana.*

offering a range of social relationships	Within this complex, multi-tiered social network, elephants exhibit strong and enduring relationships, some of which last a lifetime.	**Moss CJ & Poole JH 1983.** Relationships and Social Structure of African Elephants. In: Primate Social Relationships; An integrated approach. R Hinde (Ed). Blackwell Publ. **Wittemyer et al 2007**. The socioecology of elephants: analysis of the processes creating multitiered social structures
	Social relationships are vital to elephant development and survival.	**Lee & Moss 1986** Early maternal investment in male and female African elephant calves.
Male elephants are sociable, just as females are	Males require social networks comprising a wide range of potential social partners, particularly including older, prime, males	**Goldenberg et al 2014** Controlling for behavioural state reveals social dynamics among male African elephants **Chiyo et al 2011** Association patterns of African elephants in all male groups: the role of age genetic relatedness. **Allen et al 2020** Importance of old bulls: leaders and followers in collective movements of all-male groups in African savannah elephants (*Loxodonta africana*)
Elephants have complex emotional and cognitive abilities	Elephants have excellent long-term memory. They recognize individuals; they recognize the social roles and intentions of others and empathize with others.	**Bates et al 2008** Do elephants show empathy **Byrne & Bates 2009** Elephant cognition in primate perspective **McComb et al 2000** Unusual extensive networks of vocal recognition In African elephants **Irie & Hasegawa** 2009 Elephant psychology:
	They are self-aware	**Plotnik et al 2006** Self recognition in an Asian elephant
	They have insightful problem solving ability	**Foerder et al 2011** Insightful Problem Solving in an Asian elephant

	Summary / Description	FURTHER OBSERVATIONS	REFERENCES
	Neuroscientists have recently asserted that human and nonhuman animals share comparable brain structures and	The study contends that psychosocial data on the mental, emotional, and social functioning of wildlife societies and their	Bell Rizzolo, Bradshaw, 2019. Nonhuman Animal Nations: Transforming Conservation into Wildlife Self-Determination

	processes that govern cognition, emotion, and consciousness.	members should be included in wildlife assessments and policies.	Nonhuman Animal Nations: Transforming Conservation into Wildlife Self-Determination | Request PDF (researchgate.net)
	Abnormal behaviours have been systematically observed in African elephants (*Loxodonta africana*) in human-caused altered social contexts. Such disruptions impair normative socially mediated neuroendocrinological development leading to psychobiological dysregulation that expresses as non-normative behaviour.	There is a concrete link between effects of human disturbance on social context, and short- and long-term neuroethology	Bradshaw et a, 2007. How Elephants are Opening Doors: Developmental Neuroethology, Attachment and Social Context
	Though conditions of captivity vary widely for humans and for other animals, there are common ethical themes that imprisonment raises. This volume brings together scholars, scientists, and sanctuary workers to address these issues in fifteen new essays.		Lori Gruen (ed.), The Ethics of Captivity, Oxford University Press, 2014 - Kennedy Institute of Ethics Journal (georgetown.edu)
	In decades of studying the brains of humans, African elephants, humpback whales and other large mammals, it emerged the brain great sensitivity to the environment, including serious impacts on its structure and function from living in captivity.	Neuroscientific research indicates that living in an impoverished, stressful captive environment physically damages the brain. These changes have been documented in many species, including elephants, large primates, large marine mammals, rodents, rabbits, cats and humans.	Bob Jacobs, 2020. The Neural Cruelty of Captivity: Keeping Large Mammals in Zoos and Aquariums Damages Their Brains | Science Times

	Neuroscience has demonstrated that all mammals share a ubiquitous developmental attachment mechanism and a common stress regulating neurophysiology. Now, a wealth of human–animal studies and the experiences of human victims of violence are available to help elephants and other species survive.	Social trauma: early disruption of attachment can affect the physiology, behaviour and culture of animals and humans over generations.	Bradshaw et al, 2005. Elephant Breakdown
	Elephants who experience one or more traumatic events, injury, capture, translocation, maternal separation, exhibit damaged social and emotional functioning consistent with symptoms found in humans survivors of trauma (Bradshaw)	Two-month field study at two elephant sanctuaries in Thailand	Bell Rizzolo J. et al, 20016. Prevalence and Patterns of Complex PTSD in Asian Elephants (Elephas maximus)
	Prolonged captivity progressively deteriorates elephant welfare	A novel tool was created to assess the welfare of captive elephants using behavioural indicators of welfare. The tool was designed for use by elephant keepers to provide a rapid, reliable and valid way to monitor changes in the welfare of elephants over time.	Lucy Asher et al, 2018. Developing Behavioural indicators, as part of a Wider Set of Indicators, to assess the Welfare of Elephants in Zoos
	There is an opportunity for rescuing, rehabilitating and reintroducing captive elephants to the wild with the help of the traditional expertise of a mahout culture		Liv Baker et al, 2020. Asian elephant rescue, rehabilitation and rewilding

	that has been elephant-keeping for centuries.		
	The extinction crisis and the pandemics of the past few centuries have killed and continue to claim the lives of trillions of animal victims, including elephants and humans.	Population extinctions share a common cause with pandemics – namely, humans; they offer a common solution: putting an end to anthropocentrism.	Adrian Treves, 2020. Elephants and Pandemics, Commentary on Baker & Winkler on Elephant Rewilding
	Despite greater demand for 'ethical tourism' and awareness of the distress caused by elephant rides, the vast majority of captive elephants in Asia still endure widespread and lifelong cruelty, living in severely inadequate conditions.	Distressing cruelty to captive elephants is consistent in all countries. It involves separation of mothers and calves, harsh training methods, restriction of movement, poor nutrition, limited or no veterinary care, social deprivation and punishment.	Dr r Jan Schmidt-Burbach for the World Animal Protection, 2020. Elephants, not commodities. Taken for a ride.
	Elephants have complex emotional and cognitive abilities	Elephants have excellent long-term memory. They recognize individuals; they recognize the social roles and intentions of others and empathize with others.	Naoko Irie et al, 2009. Elephant psychology: What we know and what we would like to know
	In the wild, elephants exercise their feet by walking on rocks, digging around and by rubbing their fat pads against the ground. These activities keep their feet moist and their fat pads stay supple.	Hard surfaces with floors covered in urine and faeces can cause infections around the pad. A cracked or infected fat pad can't absorb pressure effectively making the	Olga Panagiotopoulou, 2017. Why elephants kept in captivity suffer from sore feet (theconversation.com)

		outside part of the foot more prone to diseases.	
	The main risk factors for musculoskeletal disorders included time on hard substrate and space experienced in indoor/outdoor exhibits.	Elephants exposed to hard surfaces for four hours each day were more likely to develop joint stiffness or lameness.	Michele A. Miller, 2016. Housing and Demographic Risk Factors Impacting Foot and Musculoskeletal Health in African Elephants [Loxodonta africana] and Asian Elephants [Elephas maximus] in North American Zoos (plos.org)
	Captive environments cannot meet the needs of elephants	The restrictions that captivity imposes on an animal's behaviours are increasingly recognised as being deleterious to cognitive development, normal social development, and, later in life, on reproduction and health	Knight J. 2001. Animal data jeopardised by life behind bars. Nature, 412:669. Animal data jeopardized by life behind bars | Nature
	Elephants have a highly developed communication system using all their senses in a wide range of tactile, olfactory and visual signals, seismic and acoustic communication		Elephant Voices, Elephant Communication Elephant Communication (elephantvoices.org)
	Because elephants have never been selectively bred over generations by their human captors, their genetic makeup is the same as wild elephants and so are their needs, behavioural responses, and neurology.	Captive environments, with their inherent limitations, remain unsuitable for elephants because they fail to meet their complex physical, social, and psychological needs.	Roots C. Domestication. Greenwood Press; 2007.
	Abnormal behaviour in captive elephants include self-mutilation, anxiety, stereotypies, and aggression.		C.M. Doyle, personal communication, November 4, 2020.

	Captive elephants have limited or no freedom to make meaningful independent choices about their daily activity or social companions and no significant level of autonomy over their lives, both of which are necessary for their welfare		Vanitha V., Thiyagesan K. & Baskaran N. 2016. Prevalence of sterotypies and its possible causes among captive Asian elephants (Elephas maximus) in Tamil Nadu, India. Applied Animal behaviour Science
	Welfare assessment including behavioural and cognitive responses, should play a central role in evidence-based elephant management.	Indices suggested as valid, partially validated, include: measures of preference/avoidance; displacement movements; vocal/postural signals of affective (emotional) state; startle/vigilance; apathy; salivary and urinary epinephrine; female acyclity; infant mortality rates; skin/foot infections; cardio-vascular disease; and premature adult death.	Georgia J. Mason et al, 2009. How Should the Psychological Well-Being of Zoo Elephants be Objectively Investigated?
	Serious health problems and often a decreased life span in captive-held elephants are well documented.	Captive elephants are also subject to infectious diseases. A highly fatal haemorrhagic disease, the Endotheliotropic Elephant Herpesvirus (EEHV) occurs in both Asian and African elephants in captive situations, with some cases found among Asian elephants in their natural range countries. The disease particularly devastates neonatal and weaning-age elephants in captivity	Clubb R., Rowcliffe M., Lee P., Mar K.U., Moss C. & Mason G.J. 2008. Compromised survivorship in zoo elephants. Science, 322:1649. Reid C.E., Hildebrandt T.B., Marx N., Hunt M., Thy N., Reynes J.M., Schaftenaar W. & Fickel J. 2006. Endotheliotropic elephant herpes virus (EEHV) infection. Veterinary Quarterly, 28(2):61-64.

	Captive elephants may suffer arthritis, osteoarthritis, hernia (Hernia perinealis), swelling of the knee joints (Bursitis praepatellaris), skin calluses (Tyloma olecrani), and abscesses.	Musculoskeletal impairments are one of the major health issues in captive-held elephants, including degenerative joint disease and low bone density	Kuntze A. 1989: Arbeitsbedingte Krankheitsbilder: Hernia perinealis, Bursitis praepatellaris und Tyloma olecrani bei Zirkuselefantinnen. Verh. Ber. Erkrg. Zootiere, 31:185.
	Blackleg (bacterial inflammation with necrosis) and foot problems, such as pathological lesions in the pads and nails, split nails, abscesses, torsion, ulcerations, and overgrown cuticles, are common in captive-held elephants because of inactivity and lack of access to natural substrate to keep foot pads and nails supple and naturally trimmed.		Wendler P. 2019. Foot health of Asian elephants (Elephas maximus) in European zoos. Dissertation Vetsuisse faculty, University of Zürich Saddiq H. M. U., Ali R. H., Amjad M. T., Jaleel S., Ali S. M., Fatima N & Ullah S. 2020. Post-mortem examination of a female elephant suspected of having Degenerative Joint Disease: A case report. Advances in Animal Veterinary Science, 8(10): 1009-1012. http://dx.doi.org/10.17582/journal.aavs/2020/8.10.1009.1012

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