

# CHAPTER 3

## The War on Elephants

*This chapter provides insight into the current crisis concerning African elephants and the various issues threatening their very existence. A comparison study between elephants in the wild and those in captivity, as well as reviewing elephant handling regulations, will be conducted to further inform the design.*

*A keeper at the Phoenix Zoo noticed Ruby, a nine-year-old Asian elephant, would use a stick or grasses to make patterns in the sand. The keeper gave Ruby big rods of coloured chalk and paper to see what she would do. Ruby seemed to love it. In her big trunk she carefully held the chalk – she chose the colours – and drew on the paper. She was careful to keep the paper from moving by gently placing her foot on the corner. If the paper ripped, she'd smooth it down with her trunk.*

*To have an elephant draw may not be exactly what a zoo is about, but it shows that keepers can be perceptive and provide the animals with new experiences. This kind of activity also helps to educate the zoo visitors, making them more interested and appreciative of the animals' abilities. – Koebner, 1994.*



*Figure 3.2 Ruby the painting elephant, Phoenix Zoo*

## The War on Elephants

‘A bleak future for our living dinosaurs’

### *Significance of Elephants*

Elephants are some of the most intelligent animals, with the capability of experiencing a range of complex emotions and consciousnesses. For centuries they have demanded respect from humans and other creatures who occupy the same African landscape, instilling their cultural significance. They are also keystone species who play a vital role in maintaining the biodiversity of the ecosystems in which they live.

They are able to survive during dry seasons and droughts by digging for water with their tusks, furthermore providing water for other animals living in similar harsh predicaments (Save the Elephants, 2016).

### *Introduction: The Ivory Trade*

Research conducted by Save the Elephant (STE) predicted that during the period of 2010 and 2012, nearly

100 000 elephants in Africa were slaughtered for their ivory. The ivory trade is driving organised crime and poor security as tusks are illegally smuggled through the same networks as other high profile illegal goods. This trade is unfortunately driven by demand for ivory, mostly from consumer countries in the East, where possession is considered an investment and symbol of status (Save the Elephants, 2016).

Approximately 30 000 to 40 000 African elephants are poached every year leaving only around 400 000 elephants remaining on the continent. Taking new-borns into account as well, this current rate of killing questions whether these creatures will still be around in the next fifteen to twenty years – especially as human populations are constantly increasing in Africa thus reducing their habitat space (Leithead, 2016).

Organised crime runs the ivory industry. Esmond Bradley Martin, having spent decades interviewing

traders and traffickers and investigating smuggling routes across the world, states that “corruption is probably the biggest cause of the increase in elephant poaching”. The majority of the poached ivory exits Africa through Dar es Salaam and Mombasa, establishing corruption in those parts. From there, the corruption continues as the ivory is shipped to Asia, most commonly China and Vietnam (Leithead, 2016).

The Kenya Wildlife Service (KWS) headquarters in Nairobi contains a basement strong-room housing mountainous heaps of tusks reaching the ceiling. This stockpile confirms the success of the Kenyan government’s attempts in prohibiting the illegal ivory trade. Each individual tusk has been labelled and registered, accompanied by a team of armed rangers to be destroyed at the biggest single ivory burn in history (Leithead, 2016).

*“Slaughtered for their ivory, the elephants are left to rot, their carcasses dotting the dry riverbed; in just two days, we counted the remains of more than 20 elephants in a small area.”*

- David McKenzie, CNN.



*Figure 3.3 Burning of illegal ivory stockpile*

## *Great Elephant Census (GEC)*

### *The latest tally*

#### *African Savannah Elephants*

The GEC is a project devoted to taking count of all savannah elephants living in the wild throughout Africa, via survey planes. Together with EWB (Elephants Without Borders), a team tracks the movements of elephants in Africa using satellite collars with transmit real-time data (McKenzie & Formanek, 2016).

Before this project, calculating elephant population numbers was left mostly to speculation. However, during the last two years of this project, 286 crew members with 90 scientists have flown over 18 African countries to tally all remaining elephants.

Scientists estimate that Africa was home to as many as 20 million elephants at the start of the 20th Century. This total dropped to 1.3 million by 1979. A recent census reveals a devastating number of only 352, 271 African elephants remaining – a number far lower and more disturbing than previous estimations (McKenzie & Formanek, 2016). In a span of seven years, between 2007 and 2014, elephant numbers dropped by approximately 30 % - or 144, 000 elephants to be exact.

A recent survey in specific cases including the Niassa Reserve in Mozambique and the Selous Game Reserve in Tanzania, revealed that elephant population numbers dropped by more than 75% in the last decade alone due to poachers attacking family herds (McKenzie & Formanek, 2016).

*“When you think of how many elephants occurred in areas 10 or 20 years ago, it is incredibly disheartening”* – Mike Chase, Elephant ecologist and founder of Elephants Without Borders (EWB) and lead scientist of the Great Elephant Census (GEC).

The present rate of elephant population decline is 8%, which could result in the current census halving to 160, 000 elephants in 9 years. If poaching continues at this alarming rate, extinction of African elephants is almost definite. Elephants have reached a critical tipping point, where more are killed than are born (McKenzie & Formanek, 2016).

#### *African forest elephants*

African forest elephants, the smaller of the two subspecies of African elephants, have experienced a 65% drop since 2002 due to illegal poaching and habitat

loss. These species take longer to recover and repopulate after poaching due to a much slower birth rate, a result of challenging living conditions in forests – where new plant growth and high canopies are inaccessible to these ground-dwelling species (Pandey, 2016).

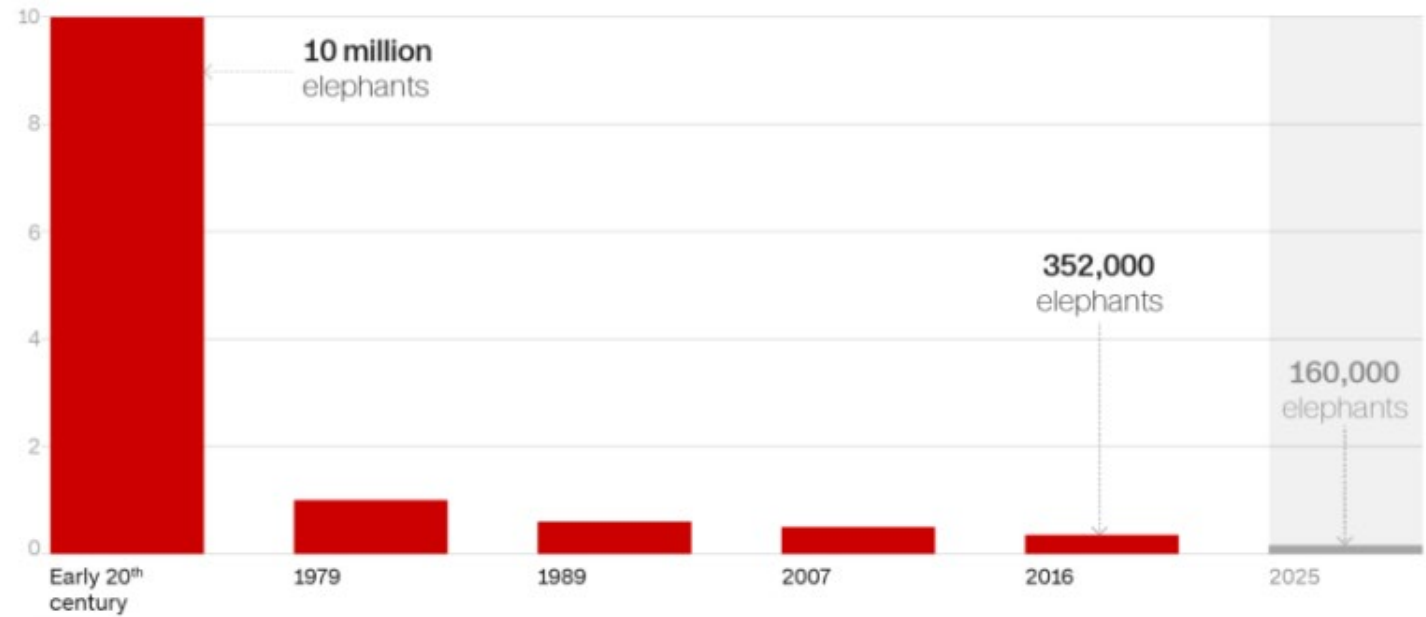
A recent study was published in the Journal of Applied Ecology on 31 August 2016, titled ‘Slow intrinsic growth rate in forest elephants indicates recovery from poaching will require decades’, by authors Andrea K. Turkalo, Peter H. Wrege and George Wittemyer. This study discusses scientists’ prediction that forest elephants will require at least 90 years to regain previous population levels, due to the extreme loss in numbers from the high ivory demand fuelling poaching. This estimate is primarily because of their significant low birth rates (Pandey, 2016). In contrast to savannah, or bush elephants normally start breeding from ages of 12, forest elephants only begin to breed at ages of 23 – a relatively late maturity age in comparison to other mammals. Female forest elephants only produce calves once every five to six years, whereas savannah elephants are able to give birth every three to four years (Pandey, 2016).





## A bleak future for Africa's elephants

New research shows the shocking decline of elephants over the past 100 years – and a worrying trend for the future.



Source: IUCN/WWF, Great Elephant Census

\*All figures are rough estimates except for 1979 and 2016.

Figure 3.4 & 3.5 Above: Survey planes used for counting elephants for the GEC.

Figure 3.6 Right: Data revealed after the latest elephant census in 2016.

## ***“An extraordinary intelligence”***

*“Their corpses rot in the dry river grass down below.  
One bull’s trunk had been hacked off and placed nearby  
– the poacher’s signature.”*

The work of the GEC and EWB have revealed proof of the extraordinary intelligence of elephants, including their awareness of human conflict and threats, and will travel across country borders to flee any conflict. Northern Botswana is a renowned elephant corridor for migrating herds moving between the forests and savannahs of Angola and Zambia, and Botswana’s Central Kalahari (McKenzie & Formanek, 2016).

Elephants avoided travelling to Angola during the country’s prolonged civil war. When the country declared peace, the elephants travelled back. Now, however, with the peak in poaching and the ivory trade market demand, the elephants are avoiding the country again. In fear of poaching, the elephants no longer journey across eastern Namibia into Angola and Zambia. This has led to their home ranges being severely limited to the safety of Northern Botswana (McKenzie & Formanek, 2016).

*“An unconventional war”*

One of the few strongholds remaining of savannah elephants is Botswana. Together with Zimbabwe and

South Africa, Botswana is accredited for over 60% of all the elephants that were tallied in the Great Elephant Census. Elephants are faced with incalculable odds. Besides poaching threatening their existence, habitat loss and destruction, human-elephant conflict and climate change are all issues representative of their continued struggle for existence (McKenzie & Formanek, 2016).

### *Elephant Empathy*

The grief of losing a member of their herd is an indication of these social creatures’ remarkable, extraordinary intelligence and empathy.

With scientists having only recently commenced examination of the neural architecture in an elephant’s cranium, unique characteristics have already been revealed. Professor Paul Manger from the School of Anatomical Sciences at Wits, relocated from the United States to South Africa in 2002 with the sole purpose of studying the elephant brain. In an article published in Scientific American on the 23 February 2014, he stated that elephants have neural networks

which are highly specialised for their extraordinary senses and unique kinetic movements and abilities (Dugmore, 2015).

## *Elephants in Captivity*

It is well known that animals in captivity often display abnormal behaviour patterns in comparison to their wild counterparts, largely due to their restriction of space. Other factors such as lack of physical and mental stimulation, hunting and foraging for their own food, needing to survive, protecting their territories and raising their young, also contribute to these abnormal behaviours. In the wild, animals are confronted with these problems and needs on a daily basis whereas captive animals have their food, shelter and mates provided. Zoo keepers and designers therefore need to provide activities and enriching environments that can provide such stimulation, especially for highly intelligent and social animals such as elephants and chimpanzees (Koebner 1994:88).

Respectable, successful zoos today ought to implement social enrichment programmes; social animals for example should live in groups, as should herd animals live in herds. Elephants especially are social beings who need to live with the same members of their species. It is crucial for calves to have role models as they grow and learn skills from their mothers and aunts, such as what to eat, how to care for their own young and behaving with other dominant animals. Without learning from their elders, they may not become successful members of their species (Koebner

1994:90).

The vast difference in space available in the wild and that offered in captivity is indeed substantial and supports the argument against zoos. It validates the concern of large animals which suffer a significantly bigger space restriction in captivity than they would in the wild in comparison to other smaller animals.

Elephants in particular, being the largest land mammals on earth, have incredibly complex needs and requirements that no zoo, circus or other public-focused attraction can really offer. Due to their size and needs, they are also the most appropriate example of animals in captivity which suffer the most and exhibit more welfare problems when living in captivity. Studies of elephants kept in captivity conducted in 2002 by Clubb & Mason, have shown that many of the welfare problems elephants experience in captivity include abnormal behaviour, low breeding, high mortality and numerous illnesses. The authors conclude that the primary reason for these problems are caused from the restriction of space for captive elephants (Casamitjana, 2005).

### *Enclosure sizes and requirements*

Elephants in the wild roam considerably vast distances, the minimum being between 60 and 100 times larger than EAZA (European Association of Zoos and Aquaria) recommended enclosure sizes. Their results proved that enclosure sizes in the UK were in fact an average of 1000 times smaller as opposed to the recommended size (Casamitjana, 2005). The EAZA outdoor enclosure size recommendation is 400m<sup>2</sup> for three elephants, with an additional 100m<sup>2</sup> for any new elephant introduced into the zoo. In contrast to this, 167.2m<sup>2</sup> is recommended by the AZA per elephant, with an additional 83.6m<sup>2</sup> for each newly added elephant. These recommendations are not based on any proven results or hard data, but rather from the standpoint of providing optimal welfare and what is physically feasible in zoos (Casamitjana, 2005).



## *Elephant social systems*

The social groupings and environments of elephants in captivity affect their welfare considerably. Reviewing naturally formed social structures of both sexes in the wild can provide insight into correcting social groups forced upon them in zoos. Factors needed to be taken into consideration include elephant size, age and sex ratio of groups, as well as the degree of relatedness between members. Secondary factors such as movement and transfer of elephants between zoos and facilities also impact upon the formation of social groups (Clubb & Mason, 2002).

The degree of sociality differs between female and male elephants. Female elephants tend to be more sociable than males, and have proven to have the largest social network of any mammal studied, other than humans. Adult females and their off-spring live in close, family groups with social bonds ‘extending from mother-offspring bonds to families, bond groups and clans’. Families are the basic social group in which females stay throughout their lives, if undisturbed. Therefore, these families typically contain an older, experienced female known as the matriarch. The Matriarch is responsible for leading the group, her own offspring, and other adult daughters raising their own immature offspring – including prepubescent male elephants before they separate from the group. Family

units usually include between four to twelve members in African savanna herds (Clubb & Mason, 2002).

Female elephants therefore remain in their family unit throughout their lifetimes and form extremely strong and long-lasting social bonds, between family and bond group members. These bonds usually manifest in the group’s efforts to protect their young for example, defend against predators, frequent social interactions and allomothering behaviour.

Female elephants, known as ‘aunts’, have also been found to show nurturing, affectionate mother-like behaviour to calves that are not their own and may assist them during times of distress. This behaviour is known as allomothering. Similarly, female elephants in captivity have adopted unrelated, orphaned calves and are capable of forming similar special bonds and relationships with other non-relatives (Clubb & Mason, 2002).

### *Group sizes in Captivity*

*“Animals of social species should normally be maintained in compatible social groups. They should only be kept isolated for the benefit of conservation and*

*welfare needs of the group, and where this is not detrimental to the individual specimen.” – Secretary of State’s Standards of Modern Zoo Practice (DETR 2000).*

The AZA suggests zoos and other facilities should contain a minimum of three female elephants whenever possible, and stipulate that any new elephant enclosures built adhere to this. Roocroft & Zoll (1994) recommend that elephant herd sizes of at least six females is necessary to meet the social requirements of elephants. On the contrary, the AZA accept that male elephants may need to be separated and housed singly if displaying signs of aggression or conflict towards other members. However, they should still be allowed to hear, smell and see other elephants if kept isolated (Clubb & Mason, 2002).



### ***The Giant Panda: no longer an endangered species***

*The World Wildlife Fund (WWF) announced at the start of September this year that the Giant Panda is no longer an endangered species (Gajanan, 2016).*

*With a 17% rise in their population numbers in the last ten years, the giant pandas have officially been demoted to being 'vulnerable'.*

*"The successful recovery of the panda shows that when science, political will and engagement of local communities come together, we can save wildlife and also improve biodiversity," – Marco Lambertini, WWF Director General. September 2016.*

*While these pandas still remain under threat, this achievement calls for celebration. The WWF has been developing reserves to help recover panda populations for several decades. They have succeeded in establishing sustainable livelihoods with local communities and reducing impacts on forests, the pandas' natural habitats, previously due to ill-conceived infrastructure projects. To date, there are 67 panda reserves devoted to protecting approximately two-thirds of all 1,864 pandas living in the wild (Gajanan, 2016).*







