CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES
OF WILD FAUNA AND FLORA

Seventeenth meeting of the Conference of the Parties
Johannesburg (South Africa), 24 September – 5 October 2016

CONSIDERATION OF PROPOSALS FOR AMENDMENT OF APPENDICES I AND II

A. Proposal

Zimbabwe seeks to amend the present Appendix II listing of its population of *Loxodonta africana* by removing the annotation (**Annex I**, page 19 of this proposal) in order to achieve an unqualified Appendix II listing. Effective and sustainable conservation of Zimbabwe's elephants is wholly dependent on establishing regular open market sales of elephant ivory to fund management and enforcement actions.

Zimbabwe is fully aware that the annotation affecting the Appendix II listing of *Loxodonta africana* contains the clause –

> "no further proposals to allow trade in elephant ivory from populations already in Appendix II shall be submitted to the Conference of the Parties for the period from CoP14 and ending nine years from the date of the single sale of ivory that is to take place in accordance with provisions in paragraphs g) i), g) ii), g) iii), g) vi) and g) vii)."

– however, Zimbabwe does not believe that an annotation can be used to contradict the right enshrined in Article XV Para 1(a) of the Treaty stating that "Any Party may propose an amendment to Appendix I or II for consideration at the next meeting [of the Conference of the Parties]."

B. Proponent

Namibia and Zimbabwe[*]:

C. Supporting statement

1. Taxonomy

1.1	Class:	Mammalia	
1.2	Order:	Proboscidea	
1.3	Family:	Elephantidae	
1.4	Genus, *Loxodonta*	species	*africana*
1.5	Scientific synonyms:	none	
1.6	Common names:	English: French: Spanish:	African savanna elephant

[*] *The geographical designations employed in this document do not imply the expression of any opinion whatsoever on the part of the CITES Secretariat (or the United Nations Environment Programme) concerning the legal status of any country, territory, or area, or concerning the delimitation of its frontiers or boundaries. The responsibility for the contents of the document rests exclusively with its author.*

1.7 Code numbers: CITES A-115.001.002.001, ISIS 5301415001002001001

2. Overview

Resolution Conf.11.21 (Rev.CoP16) makes the distinction between annotations for reference purposes and substantive annotations. The latter are generally used to qualify the permitted extent of trade in Appendix II species. An examination of Fauna listed on Appendix II suggests that most of the annotations are 'enabling' – that is, they permit trade (constrained by quotas) in situations where the remainder of range states' populations are listed on Appendix I (e.g. vicuna and crocodiles). The annotation for *Loxodonta africana* is entirely different. It is a long list of proscriptions constraining the trade in elephant specimens. These constraints are assessed in **Annex 2** (page 20).

Zimbabwe is fully aware that substantive annotations relating to species in Appendix I or II may be introduced, amended or deleted only by the Conference of the Parties in accordance with Article XV of the Convention (Conf.11.21 (Rev CoP 16) para c)).

The listing of the continental population of *Loxodonta africana* on Appendix I in 1989 was not justified by any scientific criteria and is probably still not justified – the Status Reports of the African Elephant Database do not show a decline in the global population over the past 19 years (section 4 page 6).

At CoP7 in 1989 the CITES Parties recognised that the elephant populations in several range states did not qualify for Appendix I listing and made provisions for them to be returned to Appendix II on submission of proposals. Eight years passed before the transfer to Appendix II took place and it took a further two years before the first ivory sale happened. Under the Articles of the Convention, Zimbabwe and the other range states named in the annotation were entitled to expect that normal Appendix II trade would resume after CoP10 in 1997. The annotation on the Appendix II listing has prevented this.

CITES Doc. 11.31.1 is titled "Experimental Trade in Ivory" and the title re-occurs on various other documents. Zimbabwe wonders exactly what is to be understood by the word 'experimental'. Certainly, the Appendix II countries did not see it as experimental. As an experiment it is scientifically flawed as there is no alternative trading system to compare it with and the trade is so constrained by the annotation that it does resemble any normal market-based trade. There have been only two 'one-off sales' (1999 and 2008)[1] and the Appendix II countries realised only a fraction of the value of their ivory at these sales (Martin *et al.* 2012).

The ivory trade ban has been a failure. CITES has had 27 years to evaluate the experiment and, far from the ban being part of the solution to illegal elephant killing in Africa, it must be seen as part of the problem (subsection 6.5 page 11). In the ITRG (1989) report and in their book, Barbier *et al.* (1990) drew attention to the need to provide incentives for elephant conservation if a ban was not to have negative impacts on elephants. The decisions that have been taken by the CITES Parties do not readily lend themselves to developing or providing incentives to conserve elephants.

The CITES Secretariat submitted a far-sighted document titled *Economic Incentives and Trade Policy* to CoP 12 in Santiago, Chile in 2002 (Doc.18). This document opened the prospect of cooperation with the CBD, UNEP, OECD, ICTSD, UNCTAD-BIOTRADE, TRAFFIC and, most importantly, with the WTO on economic incentives. In the preambular section the Secretariat noted (para 34) that there is a tension between WTO and CITES arising from the latter treaty's use of 'stricter domestic measures'[2]

The Secretariat's proposal for building greater synergy with other MEAs and with the WTO was rejected. Many of the CITES Parties displayed a knee-jerk reaction against the suggestion that economic incentives should be considered. They were more comfortable with 'stricter domestic measures' and trade bans. This is a major problem for those developing countries committed to land use based on wildlife.

---

1 *Stiles (2012) states – "The two 'one-off' sales have unfortunately led to a lot of unnecessary and irrelevant controversy. As long as a ban is in place, illegal trade is going to carry on regardless of whether there is legal ivory circulating in the system or not. There is no need to launder it – the illegal trade carries on as usual."*

2 *Wijnstekers (1990, Note 95) notes the conflicts between measures taken under CITES and measures taken under GATT where Parties are bound to "accord to the commerce of the other contracting Parties treatment no less favourable than that provided for in the appropriate schedule ....". Another provision of GATT (Article XI 1.) provides that "no contracting Party shall prohibit or restrict imports of products originating in other contracting Parties ...."*

The regulations that are available to CITES do not readily lend themselves to developing, or providing, incentives to conserve elephants. In part this is because bans and intermittent sales of stockpiled ivory, cannot, by their very nature, include the potential benefits from sustainable use (Martin *et al*. 2012).

In acceding to CITES in 1981, Zimbabwe ratified the Articles of the Convention. The present annotation pertaining to its elephant population on Appendix 2 has departed a long way from Article IV of the treaty. Zimbabwe views the annotation as *ultra vires*.

In 1992 at CoP 8 in Kyoto Zimbabwe proposed and the Parties adopted a resolution recognising the "Benefits of Trade" (Conf.8.3 (Rev CoP 13). An important feature of this resolution is that it is independent of the Appendix on which a species is listed. If trade is deemed beneficial for a species then there is no reason why it should not be applied in the case of an Appendix I species – no matter how endangered it is. However, so far CITES has been unable to implement the resolution.

A legal trade in ivory would be beneficial for the Zimbabwe elephant population. Without it, elephants are likely to become extinct in Zimbabwe. This trade would be conducted in the manner in which Zimbabwe sold ivory from 1977-1989 by open auction to all bidders from any country in the world. Zimbabwe knows that it works. As with crocodiles in Zimbabwe, the legal trade destroyed the illegal trade (Hutton & Webb, 2002), eliminated opportunities for corruption and provided transparency.

3. Species characteristics

Much of the following is not relevant to Zimbabwe's proposal: however it is included, firstly, to satisfy the requirements of Conf. 9.24 (Rev. CoP16) and, secondly, because there are some important general conclusions that can be drawn from the available data

3.1 Distribution

The species range in Africa was estimated by Blanc *et al.* (2013) at about 3.4 million km^2. Said *et al*. (1995) estimated it at 5.8 million km^2 (**Table 1** below and **Fig.1** p.22). Over the 28 years since 1995 the range has decreased by some 42% with largest decrease being in the Central Region (64%).

Table 1: Changes in African elephant numbers and range 1995-2013

	Elephant population			Elephant range (km²)		
Regions	1995	2013	Increase %	1995	2013	Decrease %
West	14,725	17,478	18.8	227,048	175,554	22.7
Central	225,219	148,921	-33.9	2,769,550	1,002,398	63.8
East	128,273	125,832	-1.9	1,075,362	872,758	18.8
Southern	229,682	354,312	54.3	1,725,798	1,312,311	24
TOTALS	**568,317**	**590,511**	**3.9**	**5,797,798**	**3,366,406**	**41.9**

The shrinkage in elephant range is not surprising given the increase in human populations on the continent (**Table 2**, below). The present human population in the countries making up the elephant range is some 855 million people of which 546 million live in the rural areas (World Bank, 2015). Elephants generally cannot co-exist with people when the human population density exceeds 20/km^2 (Parker & Graham, 1989). This density has been exceeded in 21 of the 37 countries in the range.[3]

[3] *In Zimbabwe the threshold density of 20 persons/km^2 was exceeded in 1995 and the rural population has now reached a density greater than 26 persons/km^2.*

Table 2: Regional human population numbers and densities 2013

Regions	Number of countries	Area of Region	NUMBERS			DENSITY	
			Total	Rural	Overall	Rural	Number of countries
	N	km^2	millions	millions	$/km^2$	$/km^2$	$D>20/km^2$
West	13	5,100,200	325	184	64	36	10
Central	7	5,365,100	114	73	21	14	1
East	8	4,299,500	265	205	62	48	6
Southern	9	5,950,500	151	84	25	14	4
TOTALS	**37**	**20,715,300**	**855**	**546**	**41**	**26**	**21**

The most recent range map of the African Elephant Database (Blanc *et al.* 2013) indicates that the continental elephant population is becoming increasingly fragmented. It has become "a group of islands in a sea of humans" (Parker & Amin, 1983). However, far from being alarmed at their present status, we should be pleasantly surprised at how well elephants are surviving amongst a burgeoning human population

3.2 Habitat

Elephants are generalist feeders able to occupy vegetation types ranging from open grassland savanna to closed canopy tropical forests.

3.3 Biological characteristics

The biological parameters that determine the population dynamics of elephants[4] are summarised below.

Longevity: Elephants are generally assumed to live to about 60 years old (Laws 1966). Moss (2001) recorded the death of an adult female whose age was over 60 years.

Gestation: The gestation period for elephants is well-established as 22 months (Smithers 1983). This together with the lactational anoestrus period which follows parturition determines the intercalving interval.

Seasonal breeding: Although elephants may produce calves in any month of the year, most populations have a distinct breeding peak during the rains.

Sex ratio: Sex ratio at birth is 1:1 with minor variations recorded in the literature, usually in small populations. The overall sex ratio in the population may vary slightly in favour of females depending on the history of management and illegal hunting. Moss (2001) recorded significantly higher mortalities for males (which included anthropogenic mortality) than for females over their entire lifetime.

The next four parameters are the main determinants of the rate of increase of elephant populations and they are typical of the large savanna populations in southern Africa.

Age at first parturition: A considerable range of values have been recorded in the scientific literature (8-20 years old). In the population simulation models referred to in the footnote below, 12 years is chosen as the typical age of first parturition for a population below carrying capacity. The lower end of the range for age at first parturition is about 10 years and the upper end is about 20 years.[5]

---

[4] *These parameters have been used in the population simulation models of Martin (2004), Martin (2006), Craig et al. (2011), Stiles (2015), Martin & Stiles (2016) and the model used for this proposal (Martin 2016).*

[5] *Laws et al. (1975) recorded conception being delayed until about 20 years of age in a high density population in Uganda (Murchison Falls Park South).*

Intercalving interval: Female elephants generally produce a calf every four years throughout their main breeding lifetime (i.e. a fecundity of 0.25 including calves of both sexes). Freeman *et al*. (2008) found considerable variation in this parameter (2.3-5.3 years) over the years 1976-1995 Kruger National Park.

The highest recorded mean calving interval is that of 9.1 years reported by Laws *et al*. (1970) for Murchison Falls Park North, Uganda. Fecundity declines in the last 10-20 years of life.[6]

Mortality: Both juvenile and adult mortality are 'open-ended' variables. There is no limit as to how high they can get. Because of this open-ended nature of mortality as a variable, it is capable of exerting a far greater influence on population growth than either fecundity or age at first conception.

Data on adult mortality are scant. Craig (1992) gives perhaps the most insightful analysis of the rôle of mortality in large increasing elephant populations (the Sebungwe region in Zimbabwe) and shows that it must be about 0.5% between 10 and 40 years of age.

Juvenile mortality refers to mortality in the first 9 years of life. A 'typical' value for the first year of life is 8% pa (Moss 2001) decreasing to 0.5% at 10 years old.

3.4 Morphological characteristics

The physical appearance of elephants is sufficiently well-known through media coverage that it is unnecessary to go into detail here. Smithers (1983) and MacDonald (2001) provide an excellent description.

3.5 Role of the species in its ecosystem

When elephant densities exceed 0.5 per km^2, savanna woodlands are generally converted to shrublands or grasslands. Craig (1989) examined the relationship between elephant densities and canopy tree cover using data from several studies in Zimbabwe's protected areas. He found that at elephant densities exceeding 0.5/km^2 canopy cover is reduced to less than 50%. Craig concluded that the results imply "... that the habitats concerned developed in the presence of elephants, though at lower densities than the present ones. ... This helps to allay the fear that by reducing elephant densities to retain the original woodlands we are trying to do the impossible, because elephants are just incompatible with these habitats. It is rather that elephants played a formative role in the development of these ecosystems (Owen-Smith 1987)."

Cumming *et al.* (1997) examined species richness of woody plants, birds, bats, mantises and ants in Zambezi Valley reserves where elephants had destroyed the miombo woodland and in adjacent but intact miombo woodlands outside the reserves. They found the species richness was significantly lower where elephants had removed the tree canopy.

"Preserving large populations of elephants while maintaining biodiversity in national parks and protected areas in East and southern Africa is becoming increasingly problematic. The problem is further compounded by international public pressures against reducing elephant densities within game reserves while, outside these protected areas, savanna woodlands and their associated faunas are being lost to agriculture. Where then will refugia for habitat-sensitive species exist if not within the region's largest protected areas? In southern Africa human and elephant populations are growing at rates of about 3% and 5% per annum respectively and in some areas wildland is being converted to subsistence agriculture at similar rates. The results are further reductions in elephant range, increased density of elephants within protected areas and human expansion into marginal lands. Together these processes are leading to the deforestation of large areas of savanna woodland of high biodiversity but low agricultural productivity. Besides affecting biodiversity, deforestation, particularly of upland woodlands, is likely to affect seasonal patterns of water storage, discharge and stream flow from otherwise protected landscapes."

If this proposal is successful it will provide the necessary funding to manage Zimbabwe's elephant population to avoid densities exceeding 0.5/km^2.

---

6 *Over the last 20 years of a female's lifetime the population simulation model reduces fecundity from 0.25 to 0.01.*

4. Status and trends

There were more elephants in Africa in 2013 than there were in 1995 (**Table 1** page 3). The population of the Central Region has decreased by about one-third since 1995 but the deficit has been made up by the doubling of the Southern Africa population.

This calls into question the fundamental functioning of CITES. If the global population of a species is not threatened with extinction, it should be listed on Appendix II. The present trend is that if the status of any national population gives rise to concern then the global population is listed on Appendix I. Logically, the nation concerned should use its own legislation and law enforcement to prohibit trade and protect the species without requiring the species populations of other countries to be listed on Appendix I.

4.1 Habitat trends

Zimbabwe has four main elephant subpopulations located in the regions shown in **Fig.2** (page 23). The habitats in all of these regions fall in the category of semi-arid savannas (White 1983) and, as such, are vulnerable to the impact of elephants described on the previous page. Despite significant illegal hunting in the Sebungwe and Zambezi Valley regions in recent years, elephant densities in 3 of the 4 regions exceeds 0.5 animals/km^2 (**Table 3** below).

Table 3. Elephant regional populations and densities in Zimbabwe[7]

ZIMBABWE REGIONS

	Matebeleland North	**Zambezi Valley**	**Sebungwe**	**Gonarezhou**	**TOTALS**
Area (km²)	24,959	17,003	15,527	5,339	62,828
Elephant Numbers 2014	53,991	11,657	3,407	11,452	80,507
Elephant Density (/km²)	**2.2**	**0.7**	**0.2**	**2.1**	**1.3**

The impact of elephants on the vegetation in these regions has been severe since the 1970s and is described in Martin *et al*. (2015, Appendices, p54-55).

4.2 Population size

The estimated numbers of elephants in the four regions are shown in **Table 3** above and **Fig.3** (page 24). Including Save Conservancy and various small populations outside the survey areas, the total number for Zimbabwe rises to 84,512 elephants.

4.3 Population structure

All of the subpopulations are depleted in the upper age classes to a variable extent dependent on the past history of illegal hunting, problem animal control, legal harvesting and trophy hunting. Some indications of these offtakes are given in the captions to the figures listed in the next subsection.

4.4 Population trends

A population simulation model (Footnote 3) has been used to approximate and explain the trends in the four regions over the period 2001-2014 (**Figs. 4, 5, 6, 7**). In each region the population has been split into two parts – the "Parks population" which is not subject to trophy hunting and the "Hunted population" where trophy hunting is permitted. The key results from this simulation are that (a) the Hunted part of the Sebungwe population will go extinct this year and the Parks part will go extinct next year, and (b) the Hunted part of the Zambezi Valley population will go extinct in 2021 and the Parks part will go extinct a few years later.

Far from these alarming projections being arguments for increased law enforcement effort and renewed efforts to enforce the ivory trade ban, the opposite is true. Unless the ivory trade ban is lifted,

7 *These are the figures for the surveyed areas. The figures for Gonarezhou do not include Save Conservancy.*

these populations almost certainly will go extinct (Stiles 2014). At face value, the seemingly extinction projected by the simulation model has resulted in increased calls for law enforcement and ivory trade bans as possible solutions. It is actually the lifting of the ivory trade bans that will assist in halting the population decline. Lifting the trade ban will give Parties an opportunity to explore and manage a well-regulated trade in elephant and elephant products. In addition, ivory trade will certainly generate revenue for rural communities thereby providing further incentives for elephant conservation.

4.5 Geographic trends

In the narrow context of Zimbabwe, this subsection is irrelevant.

5. Threats

Illegal hunting is by far the biggest proximate threat to elephants in the Sebungwe and Zambezi Valley but, in the longer term, the high densities in Matableleland North and the Gonarezhou ultimately pose an equally serious threat. The overabundance of elephants could result in whole-scale population die-offs[8] and, at the same time, the destruction of habitats will jeopardise the survival of other species.

6. Utilization and trade

6.1 National utilization

The population simulation model referred to on page 6 has been used to predict the expected offtakes from Zimbabwe's four regional populations in 2015.

Table 4: Deaths predicted in the Zimbabwe elephant population in 2015

NM = Natural Mortality, **PAC** = Problem Animal Control, **LH** = Legal harvesting, **IH** = Illegal hunting, **TH** = Trophy hunting

	Population	NM	PAC	LH	IH	TH	Total deaths
MATEBELELAND NORTH							
Parks	48,041	738	228	240	86		**1,292**
Hunted Area	8,426	127	45	42	0	57	**271**
Subtotals….	**56,467**	**865**	**273**	**282**	**86**	**57**	**1,563**
ZAMBEZI VALLEY							
Parks	2,911	44	6	15	224		**289**
Hunted Area	7,522	96	50	38	1,437	38	**1,659**
Subtotals….	**10,433**	**140**	**56**	**53**	**1,661**	**38**	**1,948**
SEBUNGWE							
Parks	839	11	30	4	640		**685**
Hunted Area	845	11	48	4	1,212	0	**1,275**
Subtotals….	**1,684**	**22**	**78**	**8**	**1,852**	**0**	**1,960**
GONAREZHOU							
Parks and Hunted Area	**11,787**	**185**	**13**	**19**	**0**	**13**	**230**
TOTALS	**80,371**	**1,212**	**420**	**362**	**3,599**	**108**	**5,701**
% of population		1.5	0.5	0.5	4.5	0.1	7.1
% of deaths		21.3	7.4	6.4	63.1	1.9	100

The "Parks" areas include all the National Parks within the region and it is assumed that there is no trophy hunting in them. The "Hunted Area" includes all State Safari Areas in the region and some Forest Land and Communal Land where hunting occurs.

8 *In Hwange National Park small-scale die-offs occurred in 2005 and 2012.*

The data are not yet available to confirm these predictions. The correct data for the number of elephants killed illegally (the largest part of the deaths) and the numbers dying naturally may never be available.

With the pressures on these four regional elephant populations, the national ivory production is less than would be expected from an unexploited population. Using the population simulation model referred to on the page 6, the legal ivory production in 2015 is estimated as slightly over 6 tonnes with a value of about US$3 million. The illegal production is nearly double this amount (11.5 tonnes) but its value is not much greater (about US$3.2 million).[9] The price of ivory has risen since the ban on international trade came into place in 1989 and Bradley-Martin & Vigne (2014) noted that it had increased three-fold in China since 2010.[10] The prices assumed for this proposal are shown in **Fig. 8** (page 29).

Zimbabwe presently holds about 70 tonnes of raw ivory in the government ivory store estimated to be worth about US$35 million if it were sold on open auctions in the manner done by Zimbabwe from 1977 to 1989. The merits of this method of sale are described by Child (1995) and it is Zimbabwe's chosen way of disposing of raw ivory.[11]

6.2 Legal trade

The UNEP WCMC CITES Trade database (CITES cfm 2016) has been used to examine all elephant exports from Zimbabwe over the period 1980-2014 (data for the year 2014 are incomplete). The total record of exports including all parts and derivatives amounts to 8,556 entries in the database. The largest importer is the United States which is responsible for 1,451 of the data entries.

The number of whole tusks exported from 1980-2014 was 1,624 of which of 499 were exported before the trade ban in 1990 and 1,125 were exported after 1990. These figures include most but not all of the hunting trophy exports during the given period. There is a separate category for trophy exports in the database and the trophy exports not appearing in the 'tusks' category have been added to the overall totals.[12]

The total quantity of ivory exported from 1980-2014 is estimated as 365 tonnes of which 156 tonnes was exported from 1980-1989 and 209 tonnes were exported after the trade ban from 1990-2014 (**Fig.9** page 30). These numbers include the two exports of ivory in 'one-off' sales in 1999 (19.963 tonnes) and 2008 (3.764 tonnes). Martin *et al*. (2012) concluded that the range states lost between 66-75% of the value of this ivory that might have been expected under normal trading conditions.

The current annotation affecting the export of whole tusks from Zimbabwe is such that, apart from the raw ivory exported in one-off sales it might be expected that all exports from 1990 onwards would fall into the category of hunting trophies. This is not the case. For example in 2003 the database reports 43 exports from Zimbabwe: 9 of these were hunting trophies ("H"), 29 were for primarily commercial purposes ("T") and 5 were personal possessions ('P").[13]

---

9 *Because the ivory is coming mainly from two regions where the populations are rapidly approaching extinction, the mean tusk weight is low and, hence, the ivory value is low.*

10 *The prices given by Bradley-Martin & Vigne (2014) are end-market prices for raw ivory and it cannot be expected that the price realised at the point of export from Africa would be as high. Although Zimbabwe managed to realise export prices before the ivory trade ban in1989 that were close to the end-market price, this was generally not the case for most African range states exporting ivory. We have assumed that the export price from Africa (if there were a legal market) would be half of the price reported by Bradley-Martin & Vigne (2014).*

11 *For the period 1979-1987 Princen (2003) observes: "Of the ivory-producing countries, only Zimbabwe brought in a level of revenue ($63-$76/kg) close to the value of raw ivory earned in Japan ($85-$99kg). For other producer states, the revenues ranged from $6-$15/kg. Zimbabwe, unlike the other states, had actively managed elephants during the 1980s, marketing ivory in such a manner to gain the largest proportion of rents possible."*

12 *This increases the overall number of exports by about 9%: 1980-1989 – 522 exports; 1990-2014 – 1,248 exports; total 1980-2014 – 1,770 exports.*

13 *This situation had changed markedly by 2013: the database reported 42 exports from Zimbabwe of which 37 were hunting trophies ("H"), 1 was for primarily commercial purposes ("T") and 4 were personal possessions ('P").*

There is very poor correspondence between the exports reported by Zimbabwe and the imports reported by the importing countries (**Fig.10** page 31). The importing countries are shown in **Table 5** (below). This situation would change radically with a trade conducted by open auctions.

Table 5. Countries importing raw ivory from Zimbabwe 1990-2014

No of imports	> 100	50-99	20-49	10-19	5-9	2-4	1
% of imports	10.9	24.1	31.6	14.0	9.9	6.6	2.1
Importing Countries	United States of America *121*	South Africa *81* Austria *63* Spain *63* Germany *62*	Canada *47* Great Britain *46* Mexico *45* France *45* Italy *43* Denmark *29* Portugal *27* China *26* Belgium *23* Switzerland *21*	Poland *19* Argentina *18* Australia *17* Brazil *15* Russia *15* Slovakia *14* Romania *13* Namibia *12* Norway *11* Indonesia *11* Sweden *11* Finland *10*	Japan Hungary Czech Rep. New Zealand Botswana Greece Luxembourg Egypt Emirates Netherlands Ukraine Saudi Arabia Iran Bulgaria Pakistan Slovenia	Cyprus Zambia Monaco Croatia Uruguay Lithuania Kenya Swaziland India Mauritius Malaysia Serbia Hong Kong Singapore Lebanon Chile Qatar Mozambique Tanzania Kuwait Dominican R Ireland Israel Estonia Unspecified	Algeria Bahrain Bangladesh Cameroun Colombia Grenada Guautemala Jamaica Korea DPR Korea Rep. Lesotho Libya Macao Macedonia Palau Philippines Samoa Sri Lanka Taiwan Thailand Turkey Venezuela Zimbabwe

The annotation provides for Zimbabwe (and Botswana) to export live elephants to acceptable destinations (Annex 1 para b). From 1980-2012[14] Zimbabwe exported 1,219 elephants to the regions shown in **Table 6** below. South Africa (ZA) recorded the highest number of elephant imports (381) most of which went into establishing new elephant populations.

Table 6: Exports of live elephants to various regions

AFRICA	EUROPE	USA	ASIA	RUSSIA
418	406	361	22	6
ZA - 381, ZM - 26, KE - 9, NE - 2	DE - 253, BE - 71, GB - 31, ES - 18, IT - 12, NL - 11, FR - 4, CZ - 3, SE - 2, PT - 1		JP - 10, CN - 8, IN - 4	

China (CN) has come under considerable criticism in the last two years for importing live elephants but their imports are minor compared to those of Africa, Europe and the USA.

6.3 Parts and derivatives in trade

Exports of ivory pieces and ivory carvings after 1989 are shown in **Table 7** below. Of the 13 transactions involving commercial trade in ivory pieces, Zimbabwe reported 9 and the other

[14] *The CITES Trade Database has no records beyond 2012 at present.*

4 were reported by importing countries. Under the annotation affecting Zimbabwe's trade in ivory, ivory pieces are to be included in "oneoff sales" (Annex 1, para g). Only one of the exports (Japan reported receiving ivory pieces weighing 1,207kg from Zimbabwe in 2009) fits within this category.

Of the 845 records of exports of ivory carvings in the CITES Trade Database, 757 were reported by Zimbabwe and the remainder were reported by the importing countries. Of these records, 210 record the export as being for primarily commercial purposes. In *sensu stricto*, according to the annotation (Annex 1 para f) Zimbabwe is not permitted to export worked ivory for commercial purposes. It is worth observing that this is yet one more instance that demonstrates the unworkability of the annotation.[15]

Table 7: Other trade in ivory

			NUMBER OF EXPORTS			
	Exports 1989-2014	Numbers exported	Hunting trophies	Personal effects	Commercial Trade	Purpose not given
Ivory pieces	50	1,739	4	16 13		17
Ivory carvings	845	36,879	17	277 210		337

The trade in "parts and derivatives" (CITES cfm 2015) is shown in **Table 8** below. The annotation provides for the unrestricted export of hair and skins (Annex 1 paragraphs c & d) but is silent on most of the other items in the table. A restriction is placed on the export of elephant leather goods from Zimbabwe (but not from Botswana and Namibia) that such exports should be for non-commercial purposes (Annex 1 paragraph e). As for ivory carvings, the constraint on leather goods in the annotation is unworkable.

Table 8: Trade in other elephant products

			NUMBER OF EXPORTS			
	Exports 1989-2014	Numbers exported	Hunting trophies	Personal effects	Commercial Trade	Purpose not given
Body Parts						
Bodies	6	11	2	1	1	2
Ears	342	3,652	147	56	41	98
Feet	456	12,893	160	106	47	142
Hair	56	3,686	14	17	20	4
Hair Products	62	2,713	3	15	13	31
Tails	330	1,859	143	56	37	94
Bones						
Bone carvings	30	63	8	15	3	4
Bones and Bone pieces	138	963	58	29	20	31
Skulls	126	348	69	6	16	35
Teeth	138	1,031	64	18	11	45
Skin and Leather						
Skins	403	65,703	90	49	157	102
Skin pieces	461	68,853	167	68	127	98
Leather products	668	18,827	104	210	148	204

[15] *All of the ivory carvings would have been sold by private manufacturers in Zimbabwe – for commercial purposes. However, the permits should have shown the exports as personal effects if the carvings were bought by tourists.*

6.4 Illegal trade

The average mortality due to illegal hunting is 4.5% of the Zimbabwe elephant population (**Table 4** page 7). However, this average is misleading. The populations in two regions are increasing and in the other two they are declining rapidly towards extinction (Fig.3 page 29). The most recent estimates of ivory production and value for Africa for the years 2002-2014 (Stiles 2016) are presented in **Table 9**, together with the estimates for Zimbabwe for the same period (Martin 2016). The ivory from trophy hunting is included in the legal ivory production and listed separately below it.

Table 9: National and Continental Legal and Illegal Trade in Ivory

	LEGAL		ILLEGAL		TOTAL	
	Tonnes	% of Total	Tonnes	% of Total	Tonnes	% of Africa
ALL AFRICA						
Ivory Production	1,139	29.3	2,748	70.7	3,887	100.0
Trophy Hunting	548	48.1	–	–	548	14.1
Ivory Value US$m	1,056	42.2	1,446	57.8	2,502	100.0
ZIMBABWE						
Ivory Production	180	29.1	439	70.9	619	15.9
Trophy Hunting	74	41.1	–	–	74	13.5
Ivory Value US$m	102	31.1	226	68.9	328	13.1

6.5 Actual or potential trade impacts

From 2002-2014 Zimbabwe is estimated to have lost 439 tonnes of ivory worth US$226 million to illegal hunting. Zimbabwe views this as a direct result of the ivory trade ban. The ban[16] and the absence of any regular trade has removed the incentives for local communities to conserve elephants. Many parks are now surrounded by hostile rural people who are trying to recover their wasted investment in elephants. An open trade might reverse the situation and address the corruption that the ban has spawned.

7. Legal instruments

7.1 National

The Parks and Wild Life Act of 1996 as amended in 2001 (Chapter 20:14), together with the Parks and Wild Life (Import and Export) (Wild Life) Regulations 1998[17] and Statutory Instrument 92 of 2009[18] are the most recent legislation currently affecting elephants in Zimbabwe.

Zimbabwe's current legislation underpinned by the above mentioned pieces of legislation grants ownership of wildlife and user rights to landowners (communal and private). Landowners, as custodians of wildlife on their properties are therefore entitled to benefit through sustainable utilisation of these resources. As a result of conferment of user rights to landowners, people see their wildlife

16 *The ban on trophy imports to the USA is another contributory factor to the disenchantment of local communities.*

17 *These regulations include the Appendices of CITES and align import and export conditions to Articles III & IV.*

18 *This SI introduced jail sentences exceeding 10 years and a penalty of US$20,000 for illegal killing of an elephant.*

resources as an asset to be nurtured, thus ensuring their benefits continue into the future. However, this beneficial arrangement is now under severe threat as a result of the ivory trade ban.

Elephants are not listed as a Specially Protected Species in the Sixth Schedule of the Act. The Research Division of PWMA reviewed the list of Specially Protected Species in 1993 and concluded that no species that was on the list had improved in status since listing – in contrast to all the species not listed that had doubled or trebled their numbers since 1975.

7.2 International

CITES is the main international instrument relating to the conservation of elephants although the species is listed on Appendix II of the Convention on Migratory Species. CITES is mistakenly seen as a protective device – but it does not, in fact, protect species. That can only be done by the range states (leaving aside marine species). The limited tool at its disposal is the prohibition of legal international trade between its Parties. If Western importing nations were requested by range states to assist in prohibiting or limiting trade in certain species, the Treaty would be fulfilling its original purpose. But if the importing states decide unilaterally that trade is undesirable, this exceeds the reasons for coming together to form a treaty. There is ample evidence from the stricter domestic legislation being invoked by importing countries to suggest that the Treaty is not working. It is unsatisfactory to quote the "Precautionary Principle" as an antidote to the above statement, because it cannot be critically tested. i.e. to argue that a species, if removed from Appendix II and so denied the "protection" of CITES, might become threatened is to use "Catch 22". If the hypothesis cannot be tested, it cannot be falsified.

8. Species management

8.1 Management measures

Zimbabwe adopts an adaptive management approach towards its elephants. This approach is experimental rather than programmatic in the manner expressed in the rubric of Conf.9.24 subsection 8.1. Zimbabwe's success in raising its elephant population from some 5,000 elephants in 1900 to more than 84,000 today came about by not following an inflexible programme of "planned harvest rates, planned population sizes, procedures for establishing quotas ... etc". Elephants, people and ecosystems are complex systems (Holling 2001) and, as such, are not amenable to 'command-and-control' management approaches (Holling & Meffe 1996).

Under its radical devolutionary policy, Zimbabwe has allowed its primary stakeholders (those with wildlife on their land) to experiment with elephant management. This approach was responsible for the explosion of wildlife as a land use in Zimbabwe from 1975 onwards. Where the rubric for this subsection asks for "... details of any mechanisms used to ensure a return from utilization of the species in question to conservation and/or management programmes ...", the 'cardinal input' is devolution (Murphree 1991).

In State Protected Areas (SPAs) the main management agenda for the PWMA[19] is (1) to reduce the high level of illegal hunting in the Sebungwe and the Zambezi Valley; (2) to prevent elephants becoming overabundant to the extent that they are damaging habitats, threatening their own survival and that of other species ; (3) to promote activities (e.g. trophy hunting and non-hunting tourism) that allow a high financial return from SPAs to provide the budget for their management, protection and maintenance (see 8.6 below) and (4) to establish partnerships of a symmetrical status with their rural community neighbours.

All of these activities will be achieved through adaptive management. In applying adaptive management to elephants a critical factor is the long response time of elephant populations to any change in their management regime. Martin *et al*. (2015 Appendix 10) gives a method of quota setting for elephants based on monitoring the mean tusk weight of trophies which takes into account this response time.

[19] *Parks and Wildlife Management Authority*

8.2 Population monitoring

In a recent workshop (PWMA 2014) it was resolved that each of the four regional subpopulations would be surveyed by air at least once every three years.[20] The methodology for these surveys is given by Dunham (2015). Given its limited operational budget, the PWMA may have difficulty meeting this cost (see subsection 8.6). Trophy hunting is the main legal offtake from the wild. The annual quotas for trophy hunting are small (less than 1% of the population) and the main objective of monitoring is not biological sustainability but the maintenance of a high mean tusk weight of trophy tusks (last paragraph previous page). 8.3 Control measures

1) International: CITES controls on movements of elephant specimens across international borders is only as good as the performance of national customs agencies which, from the analysis of data in the CITES Trade Database presented in this proposal, is not outstanding. Zimbabwe abides by the CITES marking system for elephant tusks regardless of whether a tusk is to be exported.

2) Domestic: see 8.2 above. "... Information on education, compliance and enforcement activities ..." has little relevance to Zimbabwe's major problem of illegal hunting. This dwarfs all legal offtakes from the elephant population and CITES measures are not effective in reducing the problem

8.4 Captive breeding and artificial propagation

A small amount of captive breeding is taking place amongst the domesticated elephants in Zimbabwe (about 100) but the progeny of such breeding remain within the herds and become domesticated elephants. There is no significant trade in captive-bred elephants: indeed, most owners of domesticated elephants are seeking to add to their herds rather than reduce them.

8.5 Habitat conservation

The areas and numbers of elephants in state protected areas (SPAs) in the four regions with the main subpopulations in Zimbabwe are shown in **Table 10** opposite. The elephant densities in these regions are given in Table 3 (page 6) and the implications of these densities is discussed in subsection 3.5 (page 5).

In these Protected Areas, the habitats, far from being conserved, are being devastated by elephants – with the exception of the Sebungwe where the habitats outside the SPAs are being replaced by agriculture and cattle in a high density human population.

Table 10: State Protected Wildlife Areas

	Area km²	Elephants
MATEBELELAND		
Hwange NP	14,651	45,846
Zambezi NP	560	52
Kazuma Pan NP	313	83
Safari Areas	3,465	4,708
Subtotals…..	**18,989**	**50,689**
ZAMBEZI VALLEY		

[20] *If the 4 regions are all surveyed in the same year every three years this amounts to a national survey every 3 years.*

	Area km²	Elephants
Mana Pools NP	2,196	2,984
Safari Areas	10,624	6,768
Subtotals…..	**12,820**	**9,752**
SEBUNGWE		
Chizarira NP	1,910	747
Matusadona NP	1,407	669
Safari Areas	3,021	1,478
Subtotals…..	**6,338**	**2894**
GONAREZHOU		
Gonarezhou NP	5,053	11,120
Safaria Areas	154	0
Subtotals…..	**5,207**	**11,120**
TOTALS….	**43,354**	**74,455**

8.6 Safeguards

The proposed amendment is unlikely to lead to an increase in trade in ivory, but it is likely to reduce the present illegal trade in Zimbabwe and replace it with a sustainable legal trade.

Missing from the detailed list of requirements in Section 8 is any consideration of the budgets required for elephant protection in SPAs and on surrounding land. An additional subsection has been inserted to rectify the omission.

8.7 Operational costs to protect elephants

Martin *et al*. (2015) estimated that the minimum budget required to protect the wildlife in the Parks Estate is some US$17 million. The costs of air surveys (US$500,000 every three years – Dunham *pers.comm*.) needs to be added this amount. Without a legal trade in ivory this recurrent expenditure will not be forthcoming. The same principle can be applied to elephants on land outside the Parks Estate.

9. Information on similar species

All mammals produce ivory although the term traditionally applied to tusks of elephants (Espinoza & Mann 1991). In the context of this proposal, it is the distinction between ivory from African and Asian elephants that matters.

It is relatively easy to distinguish mammoth ivory from that of living elephants (Espinoza & Mann 1991) based on the angles of the Schreger lines in an ivory cross section but the CITES Identification Manual does not give a method to differentiate between the ivory of *Loxodonta africana* and *Elephas maximus* based on Schreger lines. Harris (2014) states –

“There are ways, short of DNA testing, to distinguish African from Asian ivory. Asian ivory tends to have a pinkish tint that is absent in African ivory. In addition, the cross hatching grain marks (Schreger angles) in

Asian ivory have sharper peaks, but are not as pronounced as those in African ivory and tend to zigzag. Like differentiating ivory from bone, experts get it right nearly all the time."

10. Consultations

Zimbabwe is circulating this proposal to other African range states and will submit comments received to the CITES Secretariat.

11. Additional remarks

In the course of preparing this proposal, considerable time has been spent extracting and analysing the data contained in the UNEP WCMC CITES Trade Database. It is necessary to remark that there are major shortcomings in this database. This may be as much due to the reporting of the Parties, including Zimbabwe, as it is due to data capture at WCMC.

Whilst being critical of decisions made by CITES Parties in this proposal, Zimbabwe wishes to make it clear that none of this criticism is aimed at the CITES Secretariat – for whom we have a very high respect.

Zimbabwe remains despondent about the general approach to conservation enshrined in CITES (and the United States Endangered Species Act). Zimbabwe's experience with recovery of declining species populations is that in all cases it has been successfully achieved by removing perverse incentives (such as restrictive legislation), devolving authority to local people and promoting a high value for wildlife products.

In the Overview to this proposal Zimbabwe queried what the Parties understand by the term "Experimental Trade". The entire edifice of constraints contained in the annotation appears to be antiexperimental – which is not good science. This could be addressed by allowing Zimbabwe the opportunity to trade in the manner proposed and, hence, provide an experimental control for the present system that is not working.

12. References

Barbier, EB, JC Burgess, TM Swanson & DW Pearce (1990). **Elephants, Economics and Ivory**. Earthscan Publications Ltd., London.

Barnes RFW, GC Craig, HT Dublin, G Overton, W Simons & CR Thouless (1999). **African Elephant Database 1998**. Occasional Paper No.22 of the Species Survival Commission, IUCN, Gland, Switzerland. x+250pp

Blanc JJ, CR Thouless, JA Hart, HT Dublin, I Douglas-Hamilton, GC Craig & RFW Barnes (2003). **African Elephant Status Report 2002: an update from the African Elephant Database**. IUCN/SSC African Elephant Specialist Group, IUCN, Gland, Switzerland, Occasional Paper No.29. VI+304pp

Blanc JJ, RFW Barnes, GC Craig, HT Dublin, CR Thouless, I Douglas-Hamilton & JA Hart (2007). **African Elephant Status Report 2007: an update from the African Elephant Database**. IUCN/SSC African Elephant Specialist Group, IUCN, Gland, Switzerland, Occasional Paper No.33. VI+276pp

Blanc J.J., Thouless, C.R., Hart, J.A., Dublin, H.T., Douglas-Hamilton, I., Craig, G.C. & Barnes, R.F.W. (2013) **African Elephant Status Report 2013 (provisional)**. Occasional Paper Series of the IUCN Species Survival Commission, IUCN/SSC African Elephant Specialist Group. IUCN, Gland, Switzerland and Cambridge, UK.

Bradley-Martin E & L Vigne (2014). **Price of Ivory in China Triples in Four Years, with Grave Implications for Elephants in Africa.** Press Release, July 2nd, 2014, Save the Elephants, Nairobi, Kenya.

Child, G (1995). **Wildlife and People: the Zimbabwean Success**. WISDOM Foundation, Harare and New York. 267pp

Craig GC (1989). **A simple model of tree/elephant equilibrium**. In: EMZ (1989, Appendix 10: 77-82)

Craig GC (1992). **Population dynamics of elephants**. Appendix 8 in *Elephant management in Zimbabwe*. Eds R.B.

Martin, G.C. Craig, V.R. Booth and A.M.G. Conybeare. Department of National Parks and Wild Life Management, Zimbabwe. 124pp

Craig GC, RB Martin & DA Peake (2011). **The Elephants of Northern Botswana**: **Trophy Hunting, Population Dynamics and Future Management.** Study funded by the Conservation Trust Fund (CTF) of the Ministry of Environment, Wildlife and Tourism, Botswana.

Cumming DHM, MB Fenton, IL Rautenbach, RD Taylor, GS Cumming, MS Cumming, JM Dunlop, AG Ford, MD Hovorka, DS Johnston, MC Kalcounis, Z Mahlanga & CVR Portfors (1997). **Elephants, woodlands and biodiversity in southern Africa**. *South African Journal of Science* 93: 231-236.

Dunham KM & CS Mackie (2002). **National summary of aerial census results for elephant in Zimbabwe: 2001**. Occasional Paper 1, WWF-SARPO, Harare. 38pp

Dunham KM (2002a). **Aerial census of elephants and other large herbivores in Gonarezhou National Park and some bordering lands, Zimbabwe 2001**. Occasional Paper 4, WWF-SARPO, Harare. 46pp

Dunham KM (2002b). **Aerial census of elephants and other large herbivores in north-west Matabeleland, Zimbabwe: 2001**. Occasional Paper 6, WWF-SARPO, Harare. 79pp

Dunham KM (2002c). **Aerial census of elephants and other large herbivores in the Save Conservancy, Zimbabwe: 2001**. Occasional Paper 5, WWF-SARPO, Harare. 53pp

Dunham KM (2004). **Aerial survey of elephants and other large herbivores in the Zambezi Heartland (Zimbabwe, Mozambique and Zambia): 2003**. A report for African Wildlife Foundation, May 2004. 46pp

Dunham KM, CS Mackie, OC Musemburi, DM Chipesi, NC Chiweshe, RD Taylor, T Chimuti, C Zhuwau, & MH

Brightman (2007). **Aerial survey of elephants and other large herbivores in the Sebungwe Region, Zimbabwe 2006**. Occasional Paper 12, WWF-SARPO, Harare. 90pp

Dunham KM, CS Mackie, OC Musemburi, C Zhuwau, GH Nyaguse, RD Taylor & T Chimuti (2007). **Aerial survey of elephants and other large herbivores in Gonarezhou National Park, Zimbabwe 2007**. Occasional Paper 18, WWF-SARPO, Harare. 49pp

Dunham KM, CS Mackie, OC Musemburi, C Zhuwau, TG Mtare, RD Taylor & T Chimuti (2007). **Aerial survey of elephants and other large herbivores in north-west Matabeleland, Zimbabwe 2007**. Occasional Paper 19, WWF-SARPO, Harare. 86pp

Dunham KM, E van der Westhuizen, HF van der Westhuizen, & E Gandiwa (2009). **Aerial survey of elephants and other large herbivores in Gonarezhou National Park (Zimbabwe), Zinave National Park (Mozambique) and surrounds: 2009**. Frankfurt Zoological Society, Gonarezhou Conservation Project, Chiredzi. 140pp

Dunham KM, E van der Westhuizen, HF van der Westhuizen, & H Ndaimani (2013). **Aerial survey of elephants and other large herbivores in Gonarezhou National Park (Zimbabwe), Zinave National Park (Mozambique) and surrounding areas: 2013**. Frankfurt Zoological Society, Gonarezhou Conservation Project, Chiredzi. 113pp

Dunham KM (2015). **National summary of aerial survey results for elephant in Zimbabwe: 2014**. Great Elephant Census (A Paul G. Allen Project). 117pp

Dunham KM, CS Mackie & GH Nyaguse (2015). **Aerial survey of elephants and other large herbivores in the Zambezi Valley (Zimbabwe): 2014**. Great Elephant Census (A Paul G. Allen Project). 117pp

Dunham KM, CS Mackie, GH Nyaguse & C Zhuwau (2015). **Aerial survey of elephants and other large herbivores in the Sebungwe (Zimbabwe): 2014**. Great Elephant Census (A Paul G. Allen Project). 110pp

Dunham KM, CS Mackie, GH Nyaguse & C Zhuwau (2015). **Aerial survey of elephants and other large herbivores in north-west Matabeleland (Zimbabwe): 2014**. Great Elephant Census (A Paul G. Allen Project). 124pp

Dunham KM & HF van der Westhuizen (2015). **Aerial survey of elephants and other large herbivores in Gonarezhou National Park and Save Valley Conservancy (Zimbabwe): 2014**. Frankfurt Zoological Society, Gonarezhou Conservation Project, Chiredzi, in partnership with the Zimbabwe Parks and Wild Life Management Authority and jointly funded under the Great Elephant Census (A Paul G Allen project). 114pp

EMZ (1989). **Elephant Management in Zimbabwe** (1st Edition). Eds: Martin RB, GC Craig & VR Booth, Department of National Parks and Wildlife Management, Harare. 126pp

Espinoza EO & M-J Mann (1991). **Identification Guide for Ivory and Ivory Substitutes**. CITES Identification Manual 1999. Published originally by World Wildlife Fund and the Conservation Foundation. 38pp

Freeman EW, I Whyte & JL Brown (2008). **Reproductive evaluation of elephants culled in Kruger National Park, South Africa, between 1975 and 1995**. African Journal of Ecology **47**:192-201

Harris G (2014). **The Difference between African and Asian Ivory**. Publication of the Ivory Education Institute, the Americas Group, Los Angeles.

Holling CS (2001). **Understanding the Complexity of Economic, Ecological and Social Systems**. Ecosystems 4: 390-405

Holling CS & GK Meffe (1996). **Command and Control and the Pathology of Natural Resource Management.** *Conservation Biology* 10(2); pp328-337

Hutton J & G Webb (2002) **Legal Trade Snaps Back: Using the Experience of Crocodilians to Draw Lessons on Regulation of the Wildlife Trade.** pp. 1-10. *In*: Crocodiles. Proceedings of the 16th Working Meeting of the Crocodile Specialist Group, IUCN – The World Conservation Union, Gland, Switzerland and Cambridge UK.

ITRG (1989). **The Ivory Trade and the Future of the African Elephant**. Eds. S.Cobb & D. Western. Report of the Ivory Trade Review Group to the CITES Secretariat and the African Elephant Working Group, July 1989.

Laws RM (1966). **Age criteria for the African elephant, *Loxodonta africana***. E. Afr. Wildl. J. 4:1-37

Laws RM, ISC Parker & RCB Johnstone (1975). **Elephants and their habitats: the ecology of elephants in North Bunyoro, Uganda**. Clarendon Press, Oxford.

MacDonald D (2001) Ed. **The New Encyclopedia of Mammals**. Oxford University Press, Oxford. 930pp

Mackie CS (2002a). Aerial census of elephants and other large herbivores in the Zambezi Valley, Zimbabwe: 2001. Occasional Paper 2, WWF-SARPO, Harare. 71pp

Mackie CS (2002b). **Aerial census of elephants and other large herbivores in the Sebungwe Region, Zimbabwe: 2001**. Occasional Paper 3, WWF-SARPO, Harare. 111pp

Martin RB (2004). **Species Report and Management Plan for Elephants**. Project conducted under *the Transboundary Mammal Project* of the Ministry of Environment and Tourism, Namibia and facilitated by The Namibia Nature Foundation. 104pp

Martin RB (2006). **Savé Valley Conservancy: Management of the Elephant Population**. Consultancy for the members of the Savé Valley Conservancy, funded by the US Fish and Wildlife Service. 73pp

Martin RB, DHM Cumming, GC Craig & DA Peake (2012). **Decision-making mechanism for a process of trade in ivory**. Consultancy for the CITES Secretariat, November 2011 – May 2012. Results presented at the 62nd Meeting of the CITES Standing Committee in Geneva, July 2012.

Martin RB, O Mufute, S Chibaya, TN Gotosa, I Tendaupenyu & PT Kuvawoga (2015). **Elephant Management Plan for Zimbabwe** (Draft). Parks and Wildlife Management Authority, Zimbabwe. Plan 35pp + Appendices 95pp

Martin RB (2016). **Population Simulation Model for the Zimbabwe Elephant Population** (developed after the national elephant census in 2014). To be published.

Martin R & D Stiles (2016). **Illicit Financial Flows in the wildlife sector of Southern Africa**. Study for Trust Africa and OSISA (Open Society Initiative of Southern Africa). In progress.

Moss CJ (2001). **The demography of an African elephant** (*Loxodonta africana*) **population in Amboseli, Kenya**. Journal of Zoology (2001), 255: 145-156

Murphree MW (1991). **Communities as Institutions for Resource Management.** Paper presented to the *National Conference on Environment & Development*, Maputo, Mozambique, 7-11 October, 1991 and re-published in 1993 under the Gatekeeper Series N. SA36, IIED Publications, London. 13pp

Owen-Smith RN (1987). **Pleistocene extinctions – the pivotal role of megaherbivores**. *Paleobiology* 13(3): 351-362

Parker ISC & M Amin (1983). **Ivory Crisis**. Chatto & Windus, London. 184pp

Parker ISC & AD Graham (1989). **Men, elephants and competition**. Symp. Zool. Soc. Lond. 61: 241-252

Princen T (2003). **The Ivory Trade Ban.** Ivory Teaching Case (4/20/03), School of Natural Resources and Environment, University of Michigan.

PWMA (2014). **Elephant Conservation Policy and Management Plan Workshop.** Proceedings of a workshop hosted by the Zimbabwe Parks and Wildlife Management Authority at Hwange Safari Lodge, 2-4 December 2014 facilitated by DHM Cumming and funded by Conservation Force, USA. 48pp

Said MY, RN Chunge, GC Craig, CR Thouless, RFW Barnes & HT Dublin (1995). **African Elephant Database**. Occasional Paper No.11 of the Species Survival Commission, IUCN, Gland, Switzerland. 225pp

Smithers, RHN (1983). **The Mammals of the Southern African Subregion**. University of Pretoria, Pretoria, RSA. 736pp

Stiles, D (2012). Comments submitted to the authors of Martin *et al.* (2012) in March 2012.

Stiles D (2014). **Can elephants survive a continued ivory trade ban?** *National Geographic – SAVING ELEPHANTS*: A Forum for Discussion, September 15, 2014

Stiles D (2016) with contributions from R Martin, W Ji & B Moyle. **Analysis of Ivory Demand Drivers** (Final Draft). Research study for the Wildlife Conservation Society, New York. 61pp

CITES cfm (2016). CITES Trade Database. http://www.unep-wcmc-apps.org/citestrade/trade.cfm

White F (1983). **Vegetation of Africa - a descriptive memoir to accompany the Unesco/AETFAT/UNSO vegetation map of Africa; Natural Resources Research Report XX**. U. N. Educational, Scientific and Cultural Organization; 7 Place de Fontenoy, 75700 Paris, France; 356 pages

Winjstekers W (1990). **The Evolution of CITES**. A reference to the Convention on International Trade in Endangered Species of Wild Fauna and Flora. Published by The CITES Secretariat, Lausanne, Switzerland. 284pp

World Bank (2015), **World Development Indicators.** http://databank.worldbank.org/data/reports.aspx?source =health-nutrition-and-population-statistics:-population-estimates-and-projections

Annotation on the CITES Appendices applying to the elephant populations of Botswana, Namibia, South Africa and Zimbabwe (listed in Appendix II)

"For the exclusive purpose of allowing:

a) trade in hunting trophies for non-commercial purposes;

b) trade in live animals to appropriate and acceptable destinations, as defined in Resolution Conf. 11.20, for Botswana and Zimbabwe and for *in situ* conservation programmes for Namibia and South Africa; c) trade in hides;

d) trade in hair;

e) trade in leather goods for commercial or non-commercial purposes for Botswana, Namibia and South Africa and for non-commercial purposes for Zimbabwe;

f) trade in individually marked and certified ekipas incorporated in finished jewellery for non-commercial purposes for Namibia and ivory carvings for non-commercial purposes for Zimbabwe;

g) trade in registered raw ivory (for Botswana, Namibia, South Africa and Zimbabwe, whole tusks and pieces) subject to the following:

   i) only registered government-owned stocks, originating in the State (excluding seized ivory and ivory of unknown origin);

   ii) only to trading partners that have been verified by the Secretariat, in consultation with the Standing Committee, to have sufficient national legislation and domestic trade controls to ensure that the imported ivory will not be re-exported and will be managed in accordance with all requirements of Resolution Conf. 10.10 (Rev. CoP16) concerning domestic manufacturing and trade;

   iii) not before the Secretariat has verified the prospective importing countries and the registered government-owned stocks;

   iv) raw ivory pursuant to the conditional sale of registered government-owned ivory stocks agreed at CoP12, which are 20,000 kg (Botswana), 10,000 kg (Namibia) and 30,000 kg (South Africa);

   v) in addition to the quantities agreed at CoP12, government-owned ivory from Botswana, Namibia, South Africa and Zimbabwe registered by 31 January 2007 and verified by the Secretariat may be traded and despatched, with the ivory in paragraph g) iv) above, in a single sale per destination under strict supervision of the Secretariat;

   vi) the proceeds of the trade are used exclusively for elephant conservation and community conservation and development programmes within or adjacent to the elephant range; and

   vii) the additional quantities specified in paragraph g) v) above shall be traded only after the Standing Committee has agreed that the above conditions have been met; and

h) no further proposals to allow trade in elephant ivory from populations already in Appendix II shall be submitted to the Conference of the Parties for the period from CoP14 and ending nine years from the date of the single sale of ivory that is to take place in accordance with provisions in paragraphs g) i), g) ii), g) iii), g) vi) and g) vii). In addition such further proposals shall be dealt with in accordance with Decisions 14.77 and 14.78 (Rev. CoP15).

On a proposal from the Secretariat, the Standing Committee can decide to cause this trade to cease partially or completely in the event of non-compliance by exporting or importing countries, or in the case of proven detrimental impacts of the trade on other elephant populations.

All other specimens shall be deemed to be specimens of species included in Appendix I and the trade in them shall be regulated accordingly."

CoP14 Inf.61

Review of the Annotation

Zimbabwe has difficulties with this annotation. The provisions for trade in ivory are too infrequent (para h) and too limiting (para g) to provide a basis for any financial planning. They act against conserving elephants.

g) "trade in registered raw ivory (for Botswana, Namibia, South Africa and Zimbabwe, whole tusks and pieces) subject to the following:

i) only registered government-owned stocks, originating in the State (excluding seized ivory and ivory of unknown origin);"

There are no sound reasons why confiscated ivory cannot be sold. Customs agencies world-wide sell confiscated goods to defray the costs of their operations. In this case, the Zimbabwe government has spent money on law enforcement to seize ivory and has every right to recover the costs.

ii) "only to trading partners that have been verified by the Secretariat, in consultation with the Standing Committee, to have sufficient national legislation and domestic trade controls to ensure that the imported ivory will not be re-exported and will be managed in accordance with all requirements of Resolution Conf. 10.10 (Rev. CoP16) concerning domestic manufacturing and trade;" iii) not before the Secretariat has verified the prospective importing countries and the registered government-owned stocks; ..."

Restricting one-off sales to two Parties has resulted in substantial losses to Zimbabwe and, because the supply of legal ivory is irregular and uncertain (para h) below), it provides no incentives to ivory traders to confine their trade to legally available ivory (Martin *et al*. 2012).

vi) "the proceeds of the trade are used exclusively for elephant conservation and community conservation and development programmes within or adjacent to the elephant range;"

Admirable as this sounds, it is 'putting the cart before the horse'. It cannot be an *a priori* requirement of international trade. Zimbabwe has learnt that the fewer restrictions there are on use of the income generated from wildlife, the more likely it is that wildlife agencies and local communities will invest in elephant conservation. In fact 'conservation' becomes the secondary 'spin-off' from sound socio-economic practice.

h) "no further proposals to allow trade in elephant ivory from populations already in Appendix II shall be submitted to the Conference of the Parties for the period from CoP14 and ending nine years from the date of the single sale of ivory that is to take place in accordance with provisions in paragraphs g) i), g) ii), g) iii), g) vi) and g) vii). In addition such further proposals shall be dealt with in accordance with Decisions 14.77 and 14.78 (Rev. CoP15)."

This paragraph violates Article XV 1. (a) Of the Convention. It also goes well beyond the provisions of Article IV under which any Party whose population of elephants is listed on Appendix II should be able to trade in wildlife specimens constrained only by the requirement that the Party issues an export certificate.

"On a proposal from the Secretariat, the Standing Committee can decide to cause this trade to cease partially or completely in the event of non-compliance by exporting or importing countries, or in the case of proven detrimental impacts of the trade on other elephant populations."

At CoP10, the Secretariat pointed out in Decision 10.1 para g) footnote 2 that the above condition was in contravention of the text of the Convention (Article XV).

Interpretations of the term 'primarily commercial purposes' (Article III 3(c)) in the annotation defy reason. Zimbabwe is well aware that the intention of this phrase as it appears in the Articles of the Treaty is to facilitate exports of specimens that become 'personal effects' on importation to another country. However, it should be clearly understood that exports of elephant trophies, worked ivory, elephant skin and processed leather <u>are</u> primarily for commercial purposes in the exporting country, e.g. –

Whilst providing for trade in elephant hides (para c)), Zimbabwe is not permitted to trade in leather goods for commercial purposes (para e)). This is nonsense: it states that it is alright for Zimbabwe to export raw hides to other countries but not alright for Zimbabwe to beneficiate the product by processing it into leather before export.

Zimbabwe is unable to trade in worked ivory for commercial purposes (para f)). It may allow domestic carving industries to produce worked ivory products but these businesses must sell the products individually to tourists visiting Zimbabwe. They may not export any bulk shipments of the products they produce. This seriously affects any attempts to sustain a domestic ivory carving industry.

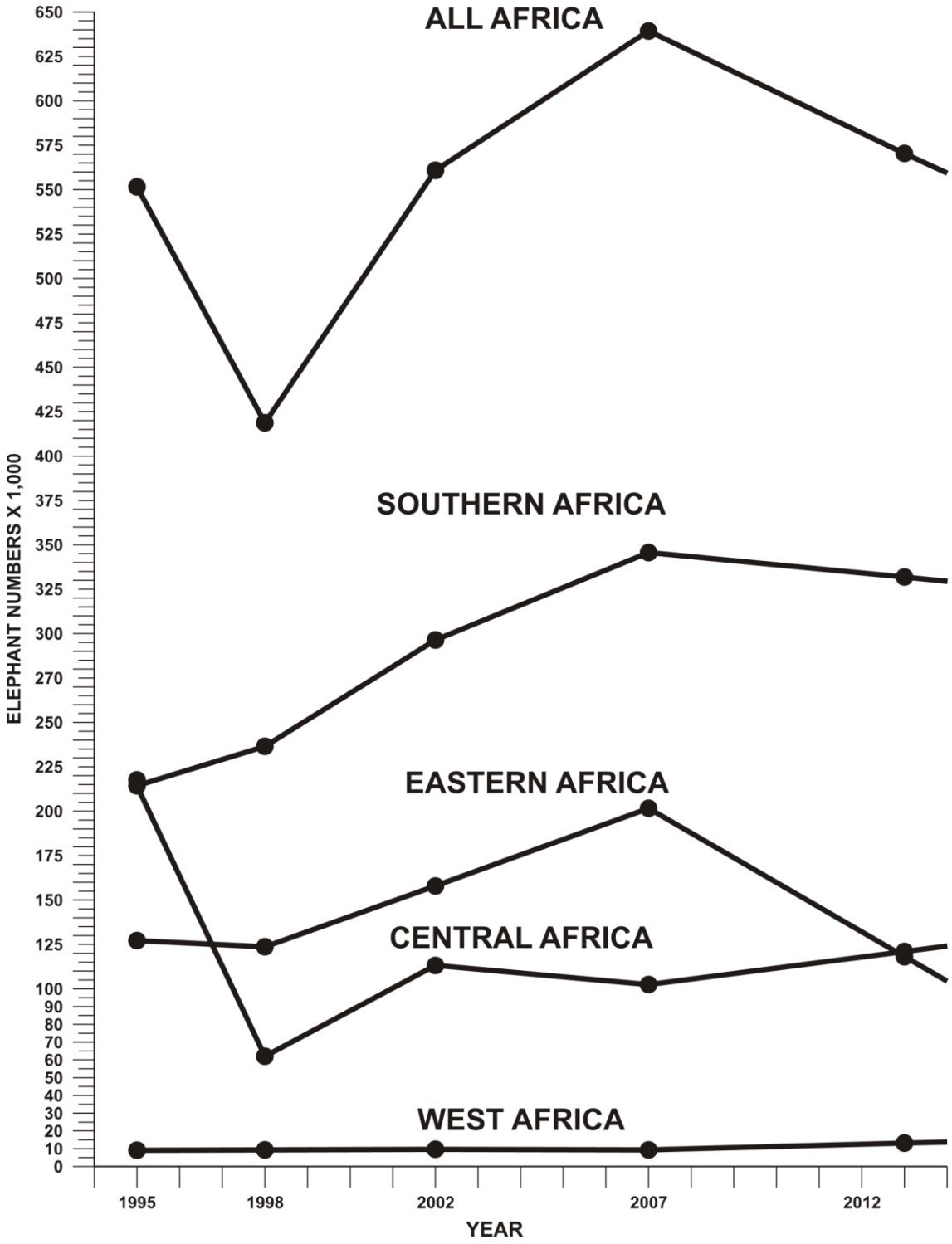

Figure 1: AFRICAN ELEPHANT: CONTINENTAL AND REGIONAL POPULATIONS

The figure is constructed from the African Elephant Status Reports of the African Elephant Database over the period from 1995-2013. 1995 – Said *et al*. (1995); 1998 – Barnes *et al*. (1999); 2002 – Blanc *et al*. (2003); 2007 – Blanc *et al.* (2007); 2013 – Blanc *et al*. (2013)

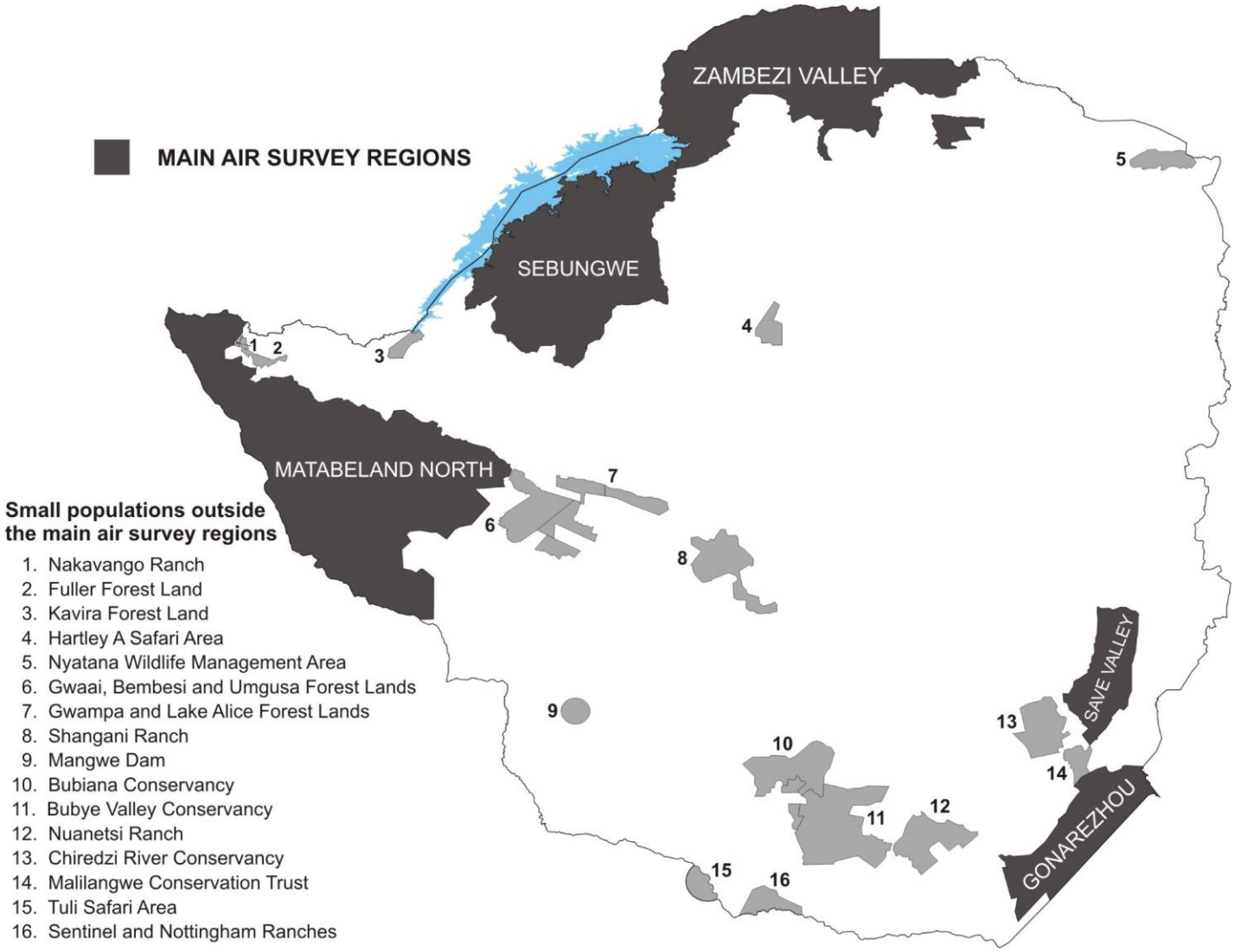

Figure 2: ZIMBABWE: REGIONAL POPULATIONS

The map shows the four national aerial survey regions and the smaller populations outside the survey areas based on Map 6 in Dunham (2015)

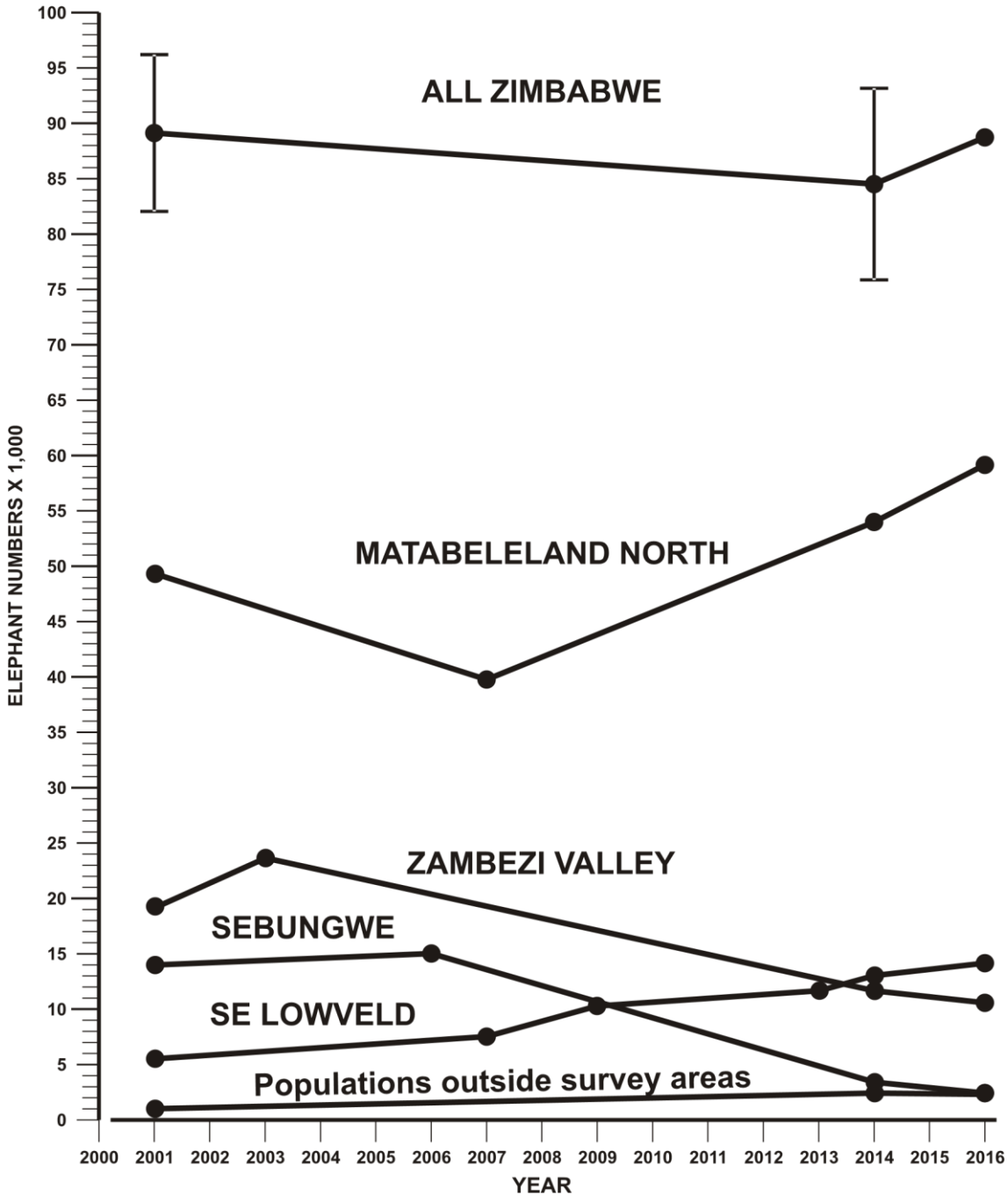

Figure 3: ZIMBABWE ELEPHANTS: TOTAL POPULATION AND REGIONAL POPULATIONS

The figure is constructed from Zimbabwe survey data over the period from 2001-2014. These are: 2001 – (Dunham 2002a, 2002b, 2002c), Dunham & Mackie (2002), Mackie (2002a, 2002b); 2003 – Dunham (2004); 2006 – Dunham *et al*. (2007); 2007 – Dunham *et al*. (2007); 2009 – Dunham *et al*. (2009); 2013 – Dunham *et al*. (2013); 2014 – Dunham *et al*. (2015), Dunham & van der Westhuizen (2015).

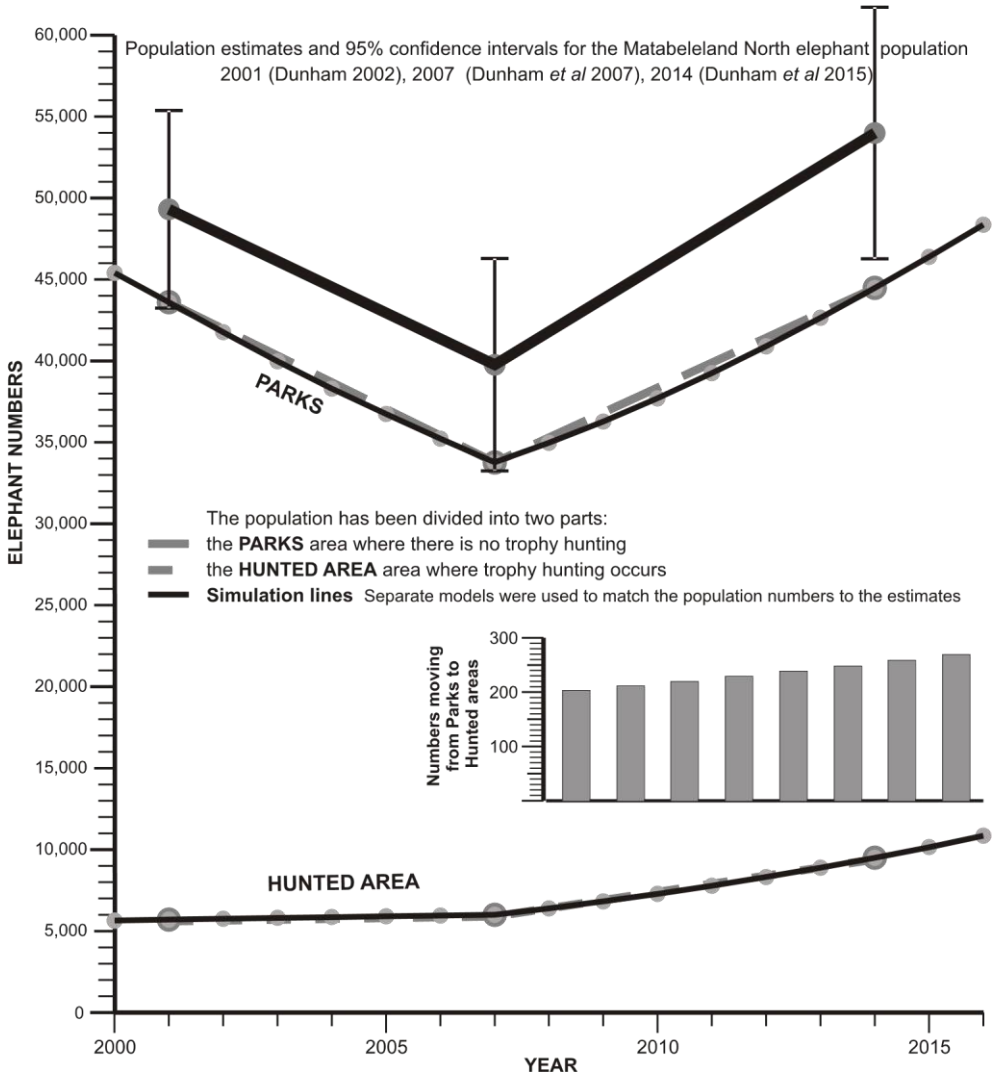

Figure 4: MATABELELAND NORTH ELEPHANT POPULATION (Population simulation)

PAC was fixed at 30 animals (24 males and 6 females) for the entire simulation period from 2001-2014. The Trophy Hunting quota was set at 0.5% of the Hunted population over the same period.

During the period 2000-2007 the Parks population declined at about 4% pa and the hunted population increased at about 1% pa. Estimates from the simulation model indicate that this would have resulted from 7.9% illegal hunting in the Parks area and 3.2% in the Hunted area during this period.

From 2007 onwards, illegal hunting was set at 0.5% of the Hunted population. Between 2008 and 2014 the Parks population increased to about 44,500 animals which required that the illegal hunting remained below 1.36% for the period concerned. The Hunted population, however, increased from 6,000 animals to 9,500 animals which required a rate of increase well in excess of normal growth rates. It is assumed some animals must have moved from the Parks population to the Hunted area during this period. The immigration needed to achieve the increase in the Hunted population is about 0.6% pa of the Parks population (bars in figure). After providing the immigration required to enable the Hunted area population to reach 9,500 animals in 2014, the Parks population required the illegal hunting to be set at 0.8% of the population to achieve the match with the population estimate.

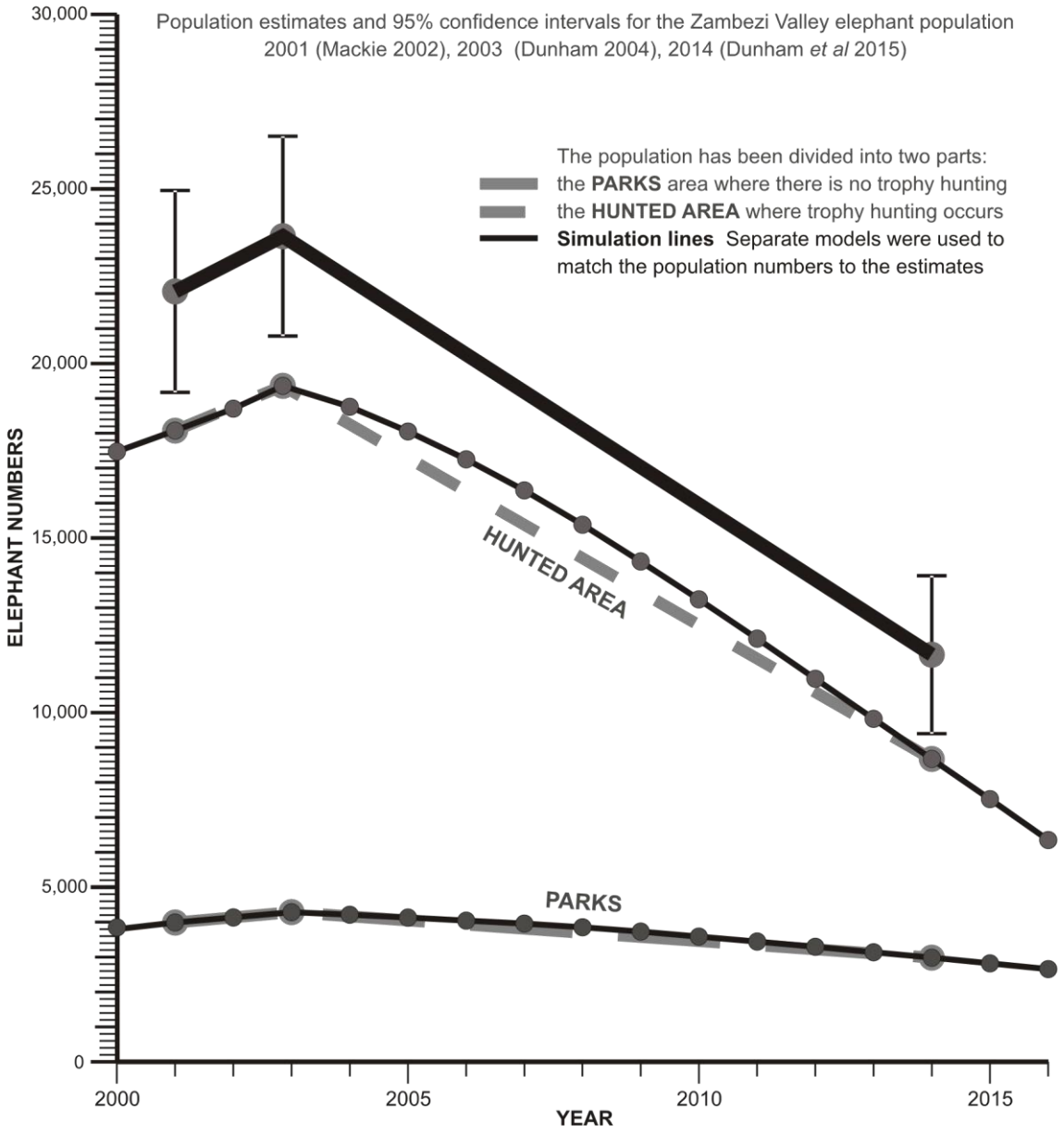

Figure 5: ZAMBEZI VALLEY ELEPHANT POPULATION (Population simulation)

PAC was set at 25 animals/year for the Parks population and 50 animals/year for the hunted population from 2001-2014. The Trophy Hunting quota was set at 0.5% of the Hunted population over the same period.

Between 2001 and 2003 both the Parks population and the Hunted population increased at a rate exceeding normal growth rates. The 2001 estimates were increased slightly (remaining well within the confidence intervals) to enable a match to be achieved using normal growth rates during this period.

From 2004-2014 both the Parks population and the Hunted population declined significantly, the decline in the Hunted population being the more severe (from 15,700 to 8,700 animals). A fixed population offtake was used to simulate the decline during this period and in the Hunted Area the annual offtake that achieves a match with the population estimates is about 1,500 animals per year. At this rate the population will be extinct in 2021

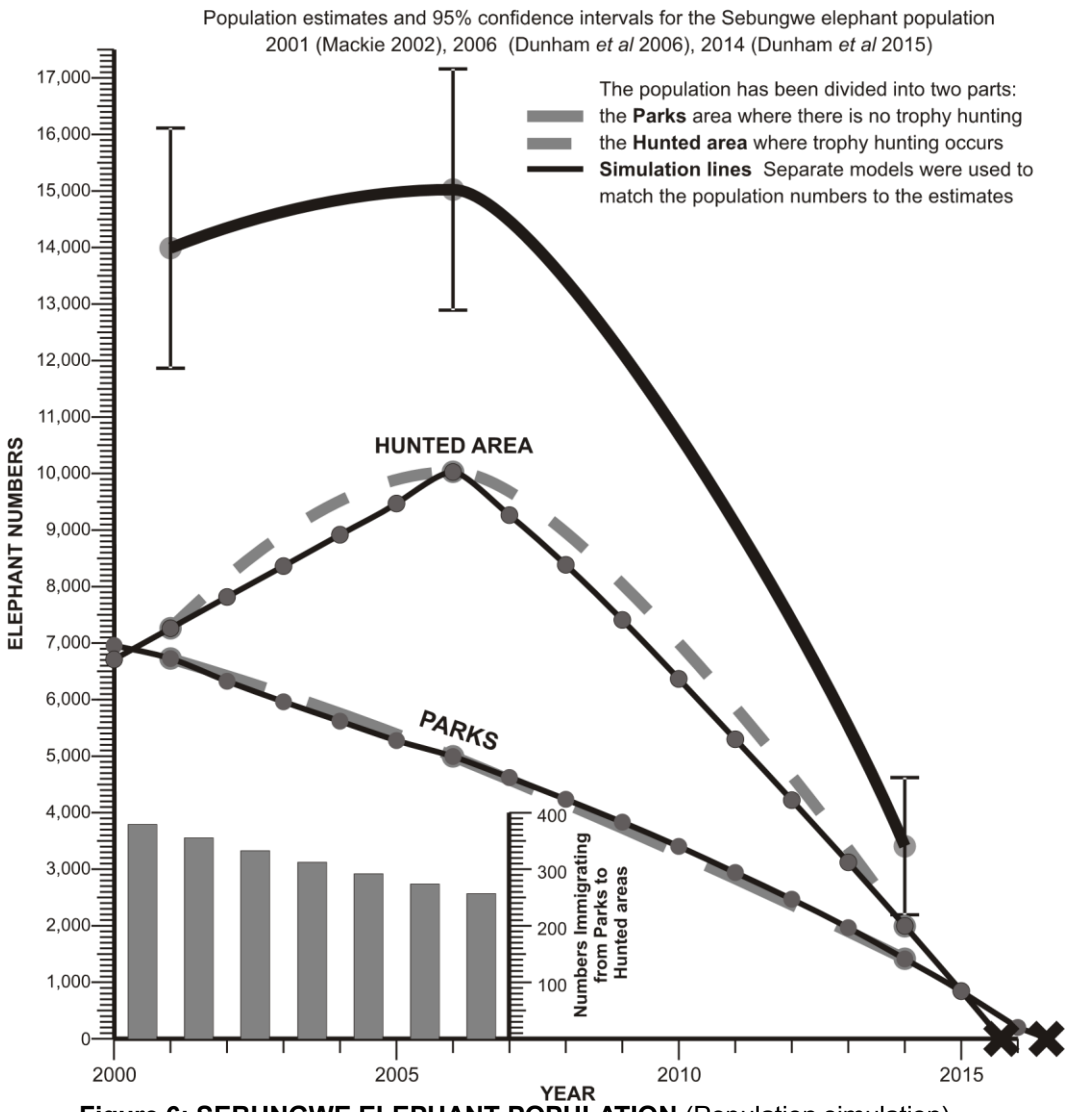

Figure 6: SEBUNGWE ELEPHANT POPULATION (Population simulation)

Illegal hunting is set at 1% pa for both the Parks population and the Hunted population from 2000-2006. PAC is fixed at 40 males and 8 females (about 0.5% of the total population in 2001) and the Trophy Hunting quota is set at 0.5% of the Hunted population throughout the simulation period from 2000-2016.

During the period 2000-2006 the Parks population declined at about 6% pa and the hunted population increased at about 6-8% pa – which exceeds any normal rate of population increase. It is assumed that animals moved from the Parks population to the Hunted area during this period. The immigration needed to achieve the increase in the hunted population amounts to 5.34%pa of the Parks population (bars at the bottom of the figure).

From 2006 onwards, illegal hunting is assumed to be a constant annual harvest. In the Parks areas this harvest is 660 animals per year which reduces the population to 1,413 elephants in 2014 and results in extinction in 2017. In the Hunted Areas the harvest is 1,216 animals per year which reduces the population to 1,998 elephants in 2014 and results in extinction in 2016.

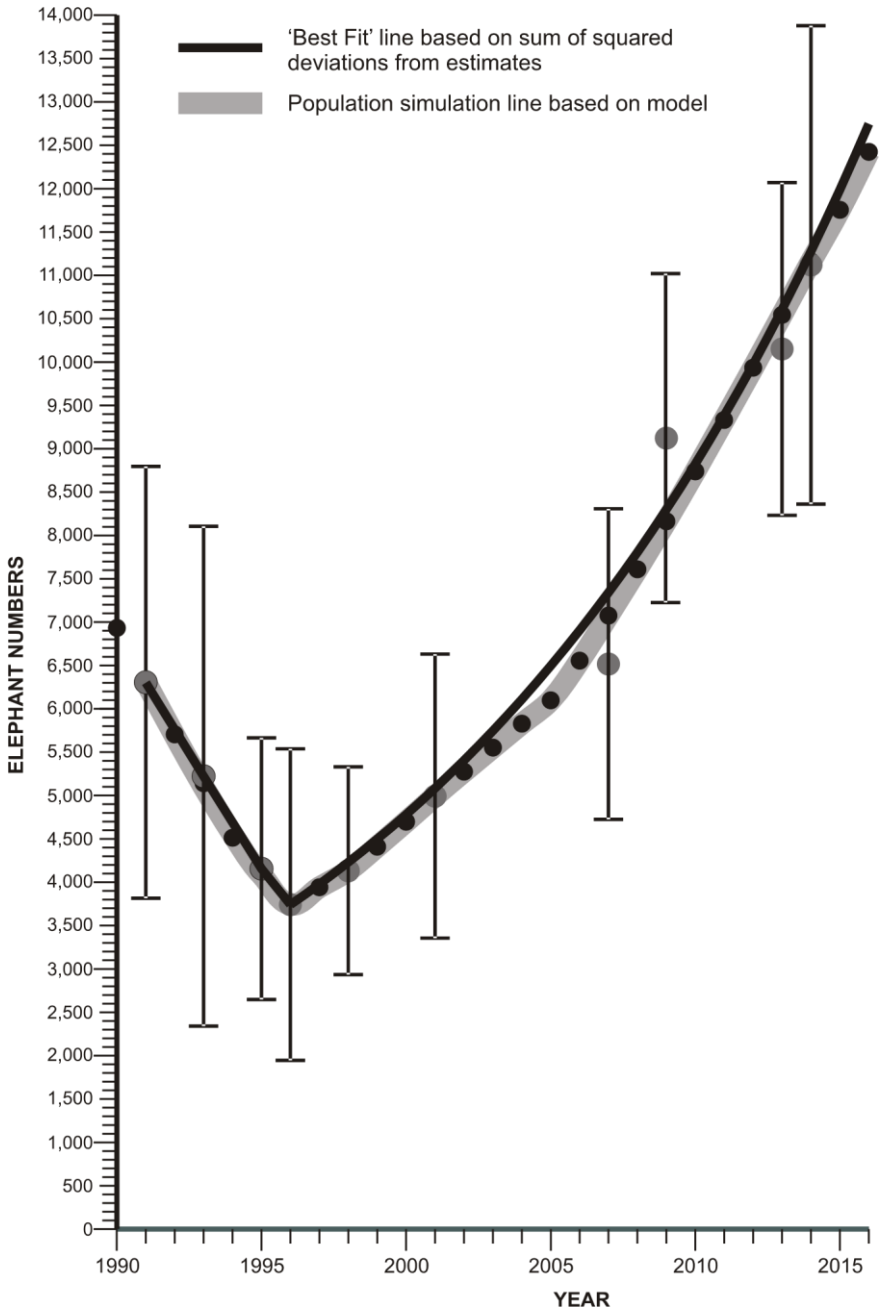

Figure 7: GONAREZHOU ELEPHANT POPULATION

Population estimates and 95% confidence intervals for the Gonarezhou NP elephant population –

1991-1998: data contained in Dunham (2012); 2001 – Dunham (2002); 2007 – Dunham *et al*. (2007); 2009 – Dunham *et al.* (2009); 2013 – Dunham *et al*. (2013); 2014 – Dunham & van der Westhuizen (2015).

The population simulation model is based on a decline from 1991 to 1996 caused by drought mortality and illegal hunting at 12.89% of the population followed by a rapid increase after 1996 caused by an age structure depleted in animals younger than 10 years combined with a reduction in intercalving interval (45 months) and age at first parturition (10 years). After 1996 the model includes Problem Animal Control (~0.5%), trophy hunting (0.1%) and illegal hunting (0.1%).

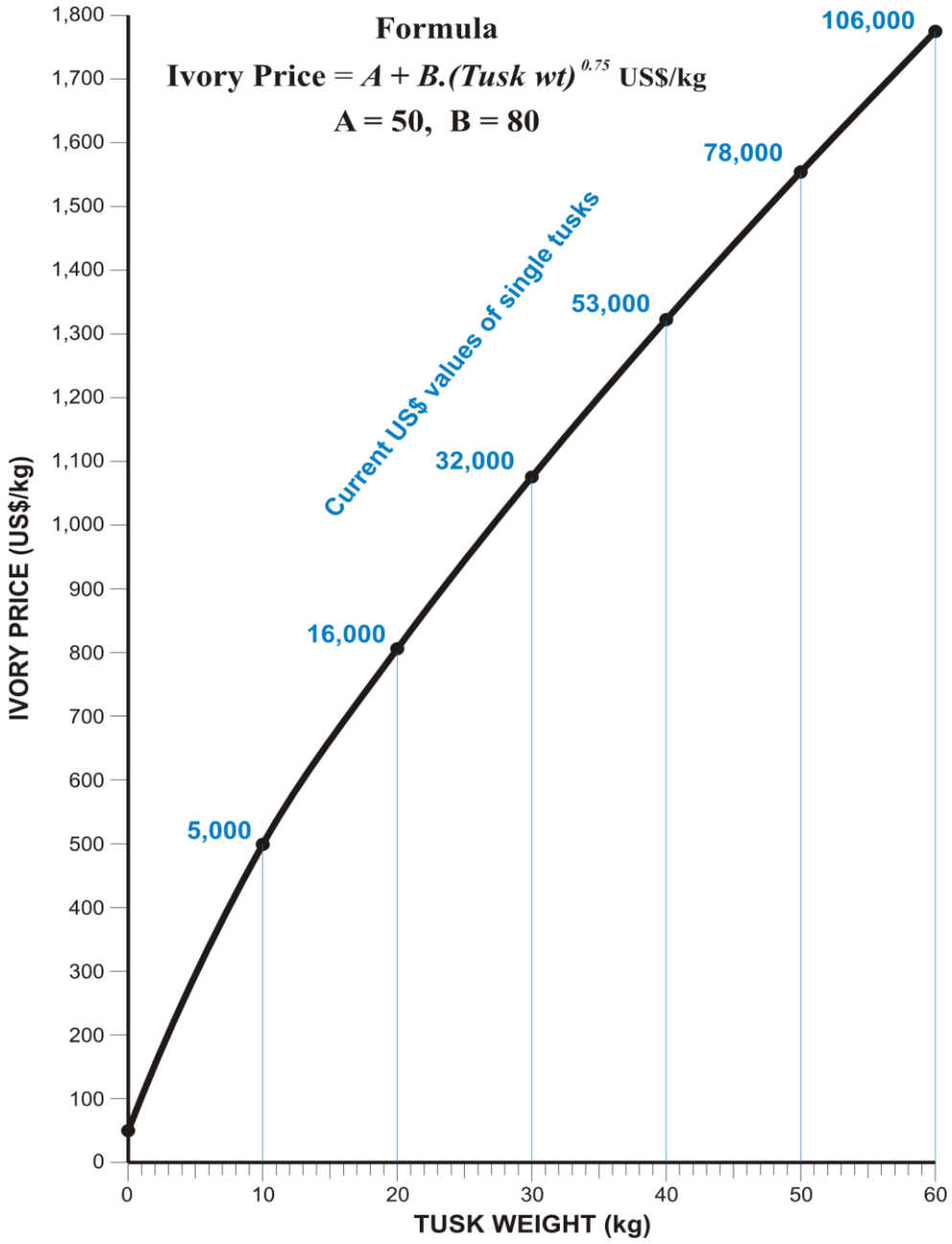

Figure 8: EXPECTED IVORY PRICES AT OPEN AUCTIONS IN ZIMBABWE 2016

The formula used for the ivory price is –

Price (US$/kg) = A + B. (Tusk weight) $^{0.75}$

Where ***A*** and ***B*** are constants taking the values ***A*** = 50, ***B*** = 80

These are the prices being used by Martin & Stiles (2016)

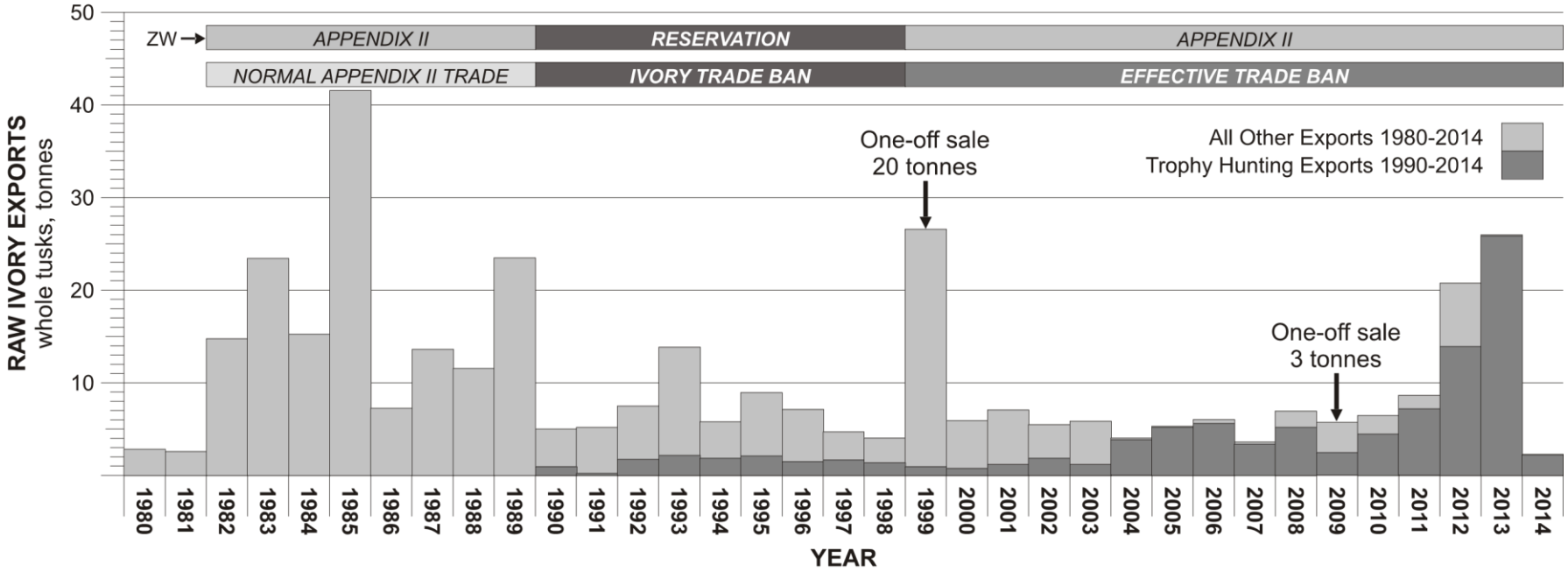

Figure 9: Estimated Ivory Exports from Zimbabwe 1980-2014
Whole tusk data from the UNEP WCMC CITES Trade Database

The database contains some entries for whole tusks specified in kg and some entries specified as the number of tusks. In the latter case, a mean tusk weight of 10kg has been used to estimate the total weight of ivory.

There are numerous anomalies in the database, e.g. in a few instances the units are specified in kg yet the total export is only 1kg which, in the case of a hunting trophy, is most unlikely.

There is a column in the database where the purpose of the export is designated by a code letter, e.g. H = hunting trophy, T = commercial export and P = personal (non-commercial purpose). The export of a whole tusk in category P would contravene the present Appendix II annotation. In many years more than half of the entries supposed to be in this column have been left blank.

The quantity of ivory exported may appear in two columns in the database depending on whether the export was reported by the exporting country and/or the importing country. There are very few instances where the export is reported by both the exporting country and the importing country and, where this does occur, the numbers seldom match. This may not be an error in the compilation of the database.

Data for 2014 are not for the complete year.

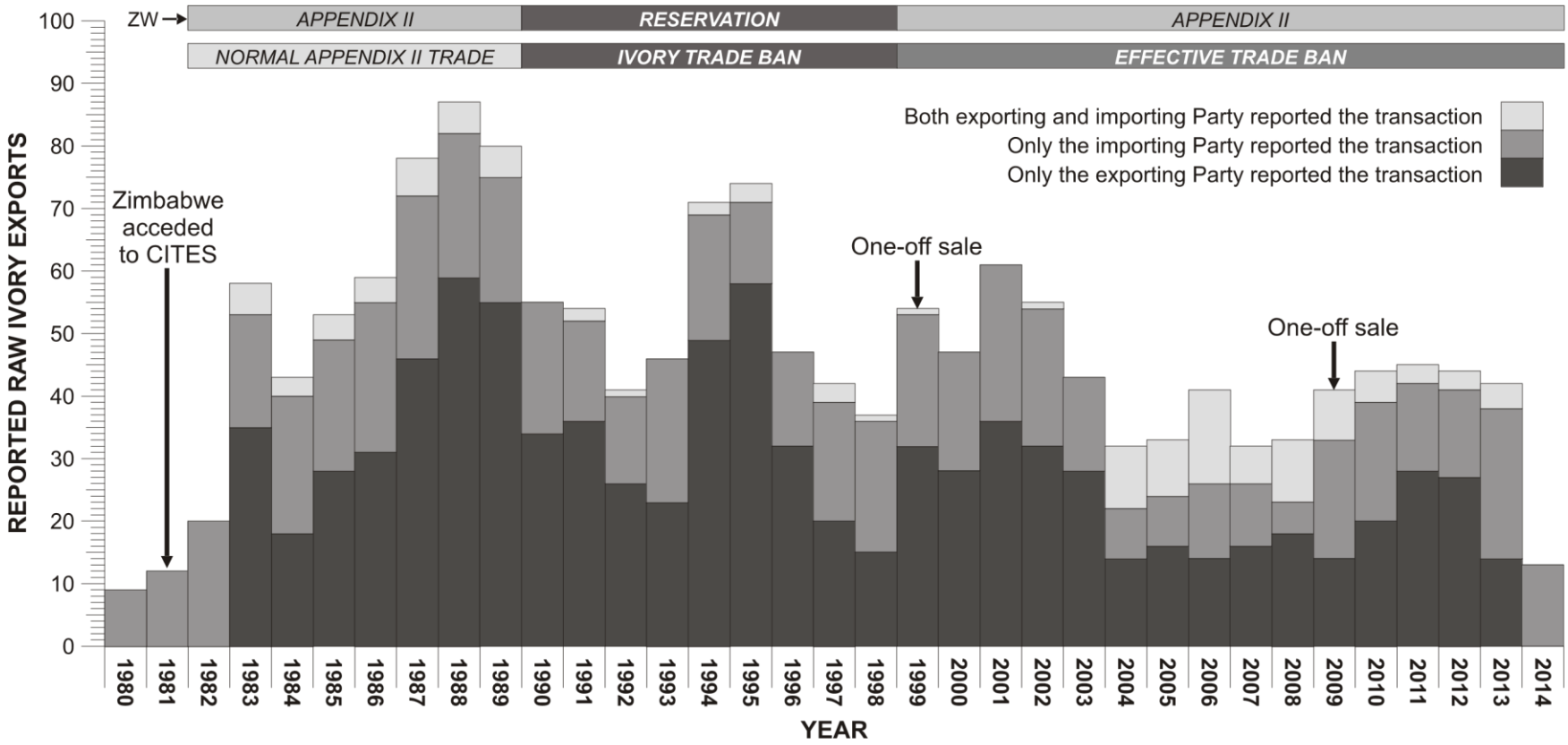

Figure 10: Reported Ivory Exports from Zimbabwe 1980-2014
Whole tusk data from the UNEP WCMC CITES Trade Database

The quantity of ivory exported may appear in two columns in the database depending on whether the export was reported by the exporting country and/or the importing country. In a perfect world, the figure would consist entirely of pale grey bars, i.e. both the exporting country (Zimbabwe) and the importing country would report each transaction. The majority of exports are reported by Zimbabwe but a significant number are reported only by the importing country. Very few are reported by both the exporter and the importer although a marked improvement occurred from 2004-2009.

Zimbabwe did not report exports of raw ivory to CITES before it acceded to the Treaty in 1981. Data for 2014 are not for the complete year.