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

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Mombasa, Kenya
23-25 June 2008

THE STATUS OF AFRICA'S ELEPHANTS: EMERGING CHALLENGES AND OPPORTUNITIES FOR THEIR CONSERVATION AND MANAGEMENT

The working document attached was compiled by the IUCN/SSC African Elephant Specialist Group at the request of the CITES Secretariat.

WORKING DOCUMENT

IUCN SSC African Elephant Specialist Group
CITES African elephant range State Meeting
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THE STATUS OF AFRICA'S ELEPHANTS: EMERGING CHALLENGES AND OPPORTUNITIES FOR THEIR CONSERVATION AND MANAGEMENT

The conservation and management of Africa's elephants is of considerable importance to the long-term sustainability of many of Africa's habitats and subsequently the species that occupy them. The conservation of African elephants is at times highly politically and emotionally charged, however, it is important to note that from a management perspective some key conservation challenges and opportunities have emerged across the continent. Importantly, these challenges and opportunities are dynamic, requiring reaction and innovation rather than blueprints.

This Working Document elaborates on three of the emerging issues and opportunities of African elephant conservation and management across the continent: current population status and trends, Human-Elephant Conflict (HEC) and local overabundance of elephants, but is considered a *living document* rather than a blueprint. However, the importance and relevance of these varies considerably across regions and in and between countries. In general, the emerging challenges and opportunities for the conservation and management of the African elephant, although not exhaustive, include:

Improving knowledge of elephant populations, habitats and their management

- Assessing population numbers, trends and range estimates (distribution)
- Conducting repeated population surveys
- Assessing changes in habitat and range
- Researching and applying (new) survey methods for forest and savannah populations
- Re-introducing or enhancing depleted populations
- Managing locally overabundant populations, direct and indirect options
- Reducing human-elephant conflict
- Mitigating further habitat loss and fragmentation, including assessing the impact of climate change

Reducing illegal killing of elephants and trade in elephant products

- Understanding the nature of existing illegal killing for meat and ivory
- Reducing illegal killing and illegal trade in ivory and elephant products
- Reviewing and increasing implementation of appropriate law enforcement
- Developing or strengthening policies and supporting legislation at the international, sub-regional and national levels

Maintaining and/or restoring connectivity within and between elephant populations

- Managing transboundary/transfrontier populations
- Encouraging land-use planning approaches
- Developing or strengthening policies and supporting legislation

Enhancing range States understanding and cooperation

- Building and maintaining consensus at technical and political levels

In response to these key issues and additional threats facing African elephants , three of the four African sub-regions (Central, Southern and West Africa) have developed regional strategies for the conservation of their populations, whilst Eastern Africa have recently initiated efforts to develop a collaborative Strategy:

- Sebogo, L. and Barnes, R.F.W. 2005. *Strategy for the conservation of West African elephants. Revised.* IUCN/SSC African Elephant Specialist Group. Ouagadougou, Burkina Faso; Nairobi, Kenya.
- IUCN/SSC African Elephant Specialist Group. 2005. *Central African Elephant Conservation Strategy.* IUCN/SSC African Elephant Specialist Group. IUCN. Yaounde, Cameroon.
- 2007. Southern Africa Regional Elephant Conservation and Management Strategy.

Additionally, individual countries have also developed or are in the process of developing national strategies or plans. In particular, the majority of current national strategies or plans have been developed in West and Southern Africa, whilst importantly some countries have joined efforts to collaborate in their implementation i.e. transboundary/transfrontier initiatives.

The ECOPAS project in West Africa is a cross border collaboration between Burkina Faso, Benin and Niger to co-manage the regions connected resources, whilst between Ghana and Burkina Faso, a collaboration between the Ghana Northern Savanna Biodiversity Conservation project and its counterpart "Projet de Partenariat pour la Gestion des Ecosystèmes Naturels" (PAGEN), are collaborating to manage the transfrontier natural resources, including elephants and their corridors.

The policies appropriate for one range State are not necessarily applicable in other African range States. The appropriate management depends on both ecological factors (e.g. habitat condition and type, elephant density and range, presence and status of other species) and human factors (e.g. management objectives for an area, proximity to other land uses and the economic and technical capacity to undertake certain actions) – obtained through long-term research. Management of elephant populations that straddle international frontiers should ideally be coordinated and co-managed. Similarly, populations that move between private and public protected areas would benefit from being managed in an integrated and consistent way, but not necessarily identically in both tenures.

Illegal ivory and bush meat trade

Continued efforts to control the illegal ivory and bush meat trade across the continent continues with many governments and non-government stakeholders providing considerable time and resources towards its control and hopeful eradication. However, this has not always been successful and current reports from across the continent indicate that these illegal activities are still thriving.

Internationally, and specifically following decisions made at the 14th meeting of the Conference of the Parties (CoP14; The Hague, 2007), the Standing Committee was tasked to conduct ongoing comprehensive reviews of the status of the elephant, trade in its specimens and the impact of the legal trade, based on data from the CITES programme to Monitor the Illegal Killing of Elephants (MIKE), the Elephant Trade Information System (ETIS) and the implementation of the *Action plan for the control of trade in elephant ivory* and of the *African elephant action plan*.

With respect to the illegal bush meat trade, an initial assessment of the existing MIKE carcass database, pertaining to information collected between 2001 and 2006, indicates that the trade in elephant meat, especially in the Central African sub-region, may be an important factor underlying the illegal killing of elephants. Neither the dynamics, scale or impact of this trade are well understood and much more information is required, both to improve the information in MIKE and ETIS and to assist with the development of appropriate management solutions.

From the perspective of large-scale offtake of elephants for their ivory and meat, Central Africa appears to be an area requiring closer examination in the short- to medium-term. In the forested countries of this sub-region, a complex and interconnected variety of development activities are taking place such as timber harvest, mining, the building of supporting infrastructure and the presence of foreign nationals. These meet with little law enforcement capacity and weak or virtually absent governance structures. As a consequence, there is a very real, if indirect, threat to many local elephant populations. At present the primary factors and dynamics in the illegal killing of elephants in Central Africa and, in particular, the use (commercial or otherwise) of not only ivory but also meat, are assumed but not well understood. A better knowledge of the scale and extent of the killing and how the ivory and meat markets are interlinked is urgently needed. At the same time, there is a high likelihood that other species are also being lost as a part of this same dynamics, though the scale and extent of this bush meat trade has also not yet been fully assessed. Therefore, gaining greater understanding of these trade dynamics could help to ascertain the key drivers behind the loss of elephants and other species, including improving our understanding of the role of poor law enforcement capacity and weak governance processes. The ongoing interaction of political, social and economic factors, including rapid development, civil unrest and warfare in some countries, undoubtedly results in considerable ebb and flow in terms of the status of meat markets.

African elephant population status and trends

Continental Overview

African elephants occur in 37 range States in sub-Saharan Africa. Savanna elephants (*Loxodonta africana africana*) are predominantly found in Eastern and Southern Africa, while forest elephants (*Loxodonta africana cyclotis*) occur primarily in the Congo Basin of Central Africa. In West Africa, elephants live in both forests and savanna habitats, but their taxonomic status remains uncertain.

The status and distribution of elephants varies considerably across the sub-regions, from small, fragmented populations in West Africa to vast, virtually undisturbed tracts of elephant range in Central and Southern Africa. Southern Africa has the largest extent of elephant range of any sub-region, and accounts for 39% of the species' total range area. Central and Eastern Africa follow with 29% and 26% of the continental total respectively, while West Africa accounts for only 5%. Detailed knowledge of elephant distribution is scanty in many parts of the continent, however, particularly in Central Africa, and in countries emerging from armed conflict, such as Angola, Sudan, Liberia and Sierra Leone.

The total area of elephant range at the continental level is currently estimated at over 3.3 million km^2. This is nearly 1.6 km^2, or 32%, less than the range estimated in 2002. This change in the estimated range is primarily due to the updating and improvement of previously unreliable information on elephant distribution, particularly in Central Africa, and should not be construed as a rapid reduction in actual elephant range in recent years.

Southern Africa is home to the majority of the continents DEFINITE and PROBABLE elephant numbers - 320,904 (58%) (Table 1) (See African Elephant Status Report (AESR) 2007, for description of all categories described), followed by Eastern Africa with 166,528 (30%), Central Africa with 59,319 (10.7%) - POSSIBLE and SPECULATIVE numbers are large in comparison, and West Africa with only 8,222 (1.5%).

In Southern and Eastern Africa, which account for 88% (487,432) of the DEFINITE and PROBABLE elephant numbers, comparable data was available enabling a valid analysis of change in the two regions between the publishing of the AESR 2002 and AESR 2007. The results indicate that there has been an increase of 66,302 elephants in the combined estimates for the comparable populations. This significant increase translates into an estimated annual rate of increase of 4% in the comparable populations over this period. A significant increase of combined elephant numbers for Southern and Eastern Africa, 70,792, was also reported between the African Elephant Database 1998 and the AESR 2002. However, it is important to note that data is insufficient to

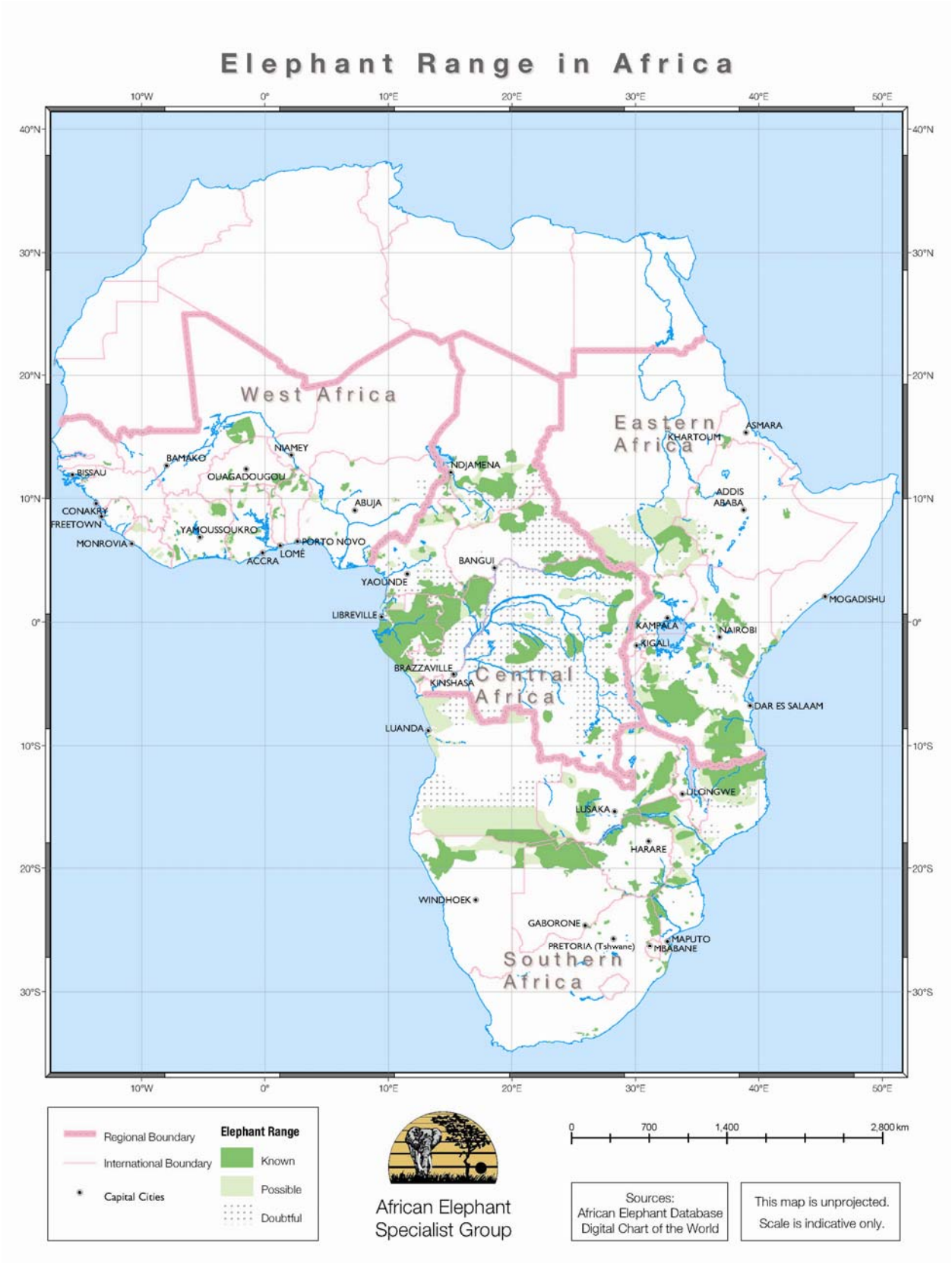
make valid analysis of changes at all site levels, and similarly the results do not imply a uniform increase across all sites, but merely an increase on average. Important to note are the changes observed in the two sub-regions described above do not adequately reflect the same changes in elephant numbers at a continental level, in particular as comparative time series data for West and Central Africa are limited or unavailable.

With respect to the status of the African elephant, prior to the 2004 IUCN Red List Assessment the species was listed as Endangered (EN A1b) under the IUCN Categories and Criteria Version 2.3. In the 2004 IUCN Red List it was changed to Vulnerable (VU A2a). This change in status reflected the recent and ongoing population increases in major populations in Southern and Eastern Africa. The 2008 IUCN Red List Assessment of the African elephant, which has been prepared and due for release in late 2008, indicates that the status of African elephants varies considerably across the species' range and to better reflect this variation in status, regional-level listings for the four African regions in which elephants occur have been proposed. Importantly, the current African elephant population trend is increasing, although populations may at present be declining in parts of their range, ongoing increases in major populations in Eastern and Southern Africa, account for the large majority of known elephants on the continent. Therefore, it is likely that based on the large continental population increases a change in the Red List status is possible.

Table 1: Continental and Sub-Regional Totals

REGION	Elephant Numbers				Range Area (km^2)	% of Continental Range
	Definite	Probable	Possible	Speculative		
Central Africa	10,383	48,936	43,098	34,129	975,079	29
Eastern Africa	137,485	29,043	35,124	3,543	880,063	26
Southern Africa	297,718	23,186	24,734	9,753	1,305,140	39
West Africa	7,487	735	1,129	2,939	154,545	5
TOTAL	472,269	82,704	84,334	50,364	3,335,827	100

Source: African Elephant Status Report 2007 www.iucn.org/afesg


Elephant Range in Africa
10°W
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10°E
20°E
30°E
40°E
50°E
40°N
30°N
20°N
10°N
0°
10°S
20°S
30°S
West Africa
Eastern Africa
Central Africa
Southern Africa
BISSAU
BAMAKO
NIAMEY
OUAGADOUGOU
NDJAMENA
ASMARA
KHARTOUM
ADDIS ABABA
CONAKRY
FREETOWN
ABUJA
YAMOUSSOUKRO
MONROVIA
PORTO NOVO
LOMÉ
ACCRA
BANGUI
YAOUNDE
LIBREVILLE
MOGADISHU
KAMPALA
NAIROBI
KIGALI
BRAZZAVILLE
KINSHASA
DAR ES SALAAM
LUANDA
LILONGWE
LUSAKA
HARARE
WINDHOEK
GABORONE
PRETORIA (Tshwane)
MAPUTO
MBABANE
Regional Boundary
International Boundary
Capital Cities
Elephant Range
Known
Possible
Doubtful
African Elephant Specialist Group
0
700
1,400
2,800 km
Sources:
African Elephant Database
Digital Chart of the World
This map is unprojected.
Scale is indicative only.

Central Africa Overview

Central Africa is home to the second lowest population of elephants of the four sub-regions with 59,319 (10.7%) (DEFINITE and PROBABLE) - POSSIBLE and SPECULATIVE elephant numbers are large in comparison (Table 2).

Most of the continent's tropical forests are found in Central Africa, with forest originally occupying much of the current known and possible range estimates of nearly 1 million km^2. The majority of this range is inhabited by forest elephants, with savanna elephants occurring in northern Cameroon, northern Central African Republic and Chad. Areas of potential hybridization between forest and savanna elephants exist in northern and eastern Democratic Republic of Congo, and possibly in southern Central African Republic.

Central Africa ranks second amongst the sub-regions in terms of range extent, accounting for 29%, or 975,079 km^2, of the continental total – less than half reported previously. Improved and updated information of the species range throughout much of the region (Cameroon, Central African Republic, Chad, Congo and the Democratic Republic of Congo) indicates that much of the historically assumed possible ranges are now doubtful. It is important to note that this is not necessarily an indication of a recent reduction in the extent of actual elephant range.

Knowledge of elephant distribution remains unreliable in many parts of the region. Democratic Republic of Congo and Gabon account for nearly half of the regional range estimates, whilst most of the remaining half is distributed equally between Cameroon, Congo and Chad, with the Central African Republic and Equatorial Guinea accounting for 8% and 2% respectively. Although a third of the estimated range lies within designated protected areas, many parks and reserves lack any form of management or effective protection.

Increased survey activity has occurred in Central Africa, largely as a result of initiatives such as the CITES MIKE Programme and Congo Basin Forest Partnership, however few surveys have provided reliable estimates of absolute elephant abundance. Estimates of elephant abundance are only available for just over half a million km^2, or 52% of the total regional elephant range. Reliable estimates are only available for 13% of assessed land, while guesses still account for 73%.

In Central Africa it is impossible to make valid comparisons of elephant numbers over time due to the lack of quality and consistent survey data. At a country level, the quality of available information is currently lowest in Equatorial Guinea, followed by Cameroon, which still holds elephant populations of potential continental significance. Chad, Congo and the Democratic Republic of Congo all have comparably low levels of data quality, while Gabon and the Central African Republic have the highest overall levels in the region.

Elephant movements may occur between Central and Eastern Africa, across the borders of the Democratic Republic of Congo with Sudan and Uganda. In addition, movements occur between Central and West Africa, across the borders of Cameroon and Nigeria.

There have been widespread reports in recent years of intense illegal killing for ivory and meat throughout much of Central Africa, and the region is believed to be the main source of ivory currently supplying the world's illegal trade. Illegal killing is exacerbated by new roads for logging operations and mineral and oil extraction, which provide both access to deep forest and routes for the transport of ivory and meat. For example, reports of 250 elephants were illegally killed in 2006 in the Garamba National Park, north-eastern Democratic Republic of Congo. The prevalence of illegal killing is in theory facilitated by the free movement of light firearms and the porous border crossing between Democratic Republic of Congo, Sudan and Uganda. Further speculation suggests that UN peacekeepers have also been involved.

A widespread lack of institutional capacity and resources, coupled with difficulties associated with monitoring in forests, result in a general lack of reliable information on the status of elephants populations in the sub-region. While it is therefore difficult to ascertain the impact that the above

threats may be having on elephant populations, it is feared that elephant numbers may be declining in Central Africa as a whole.

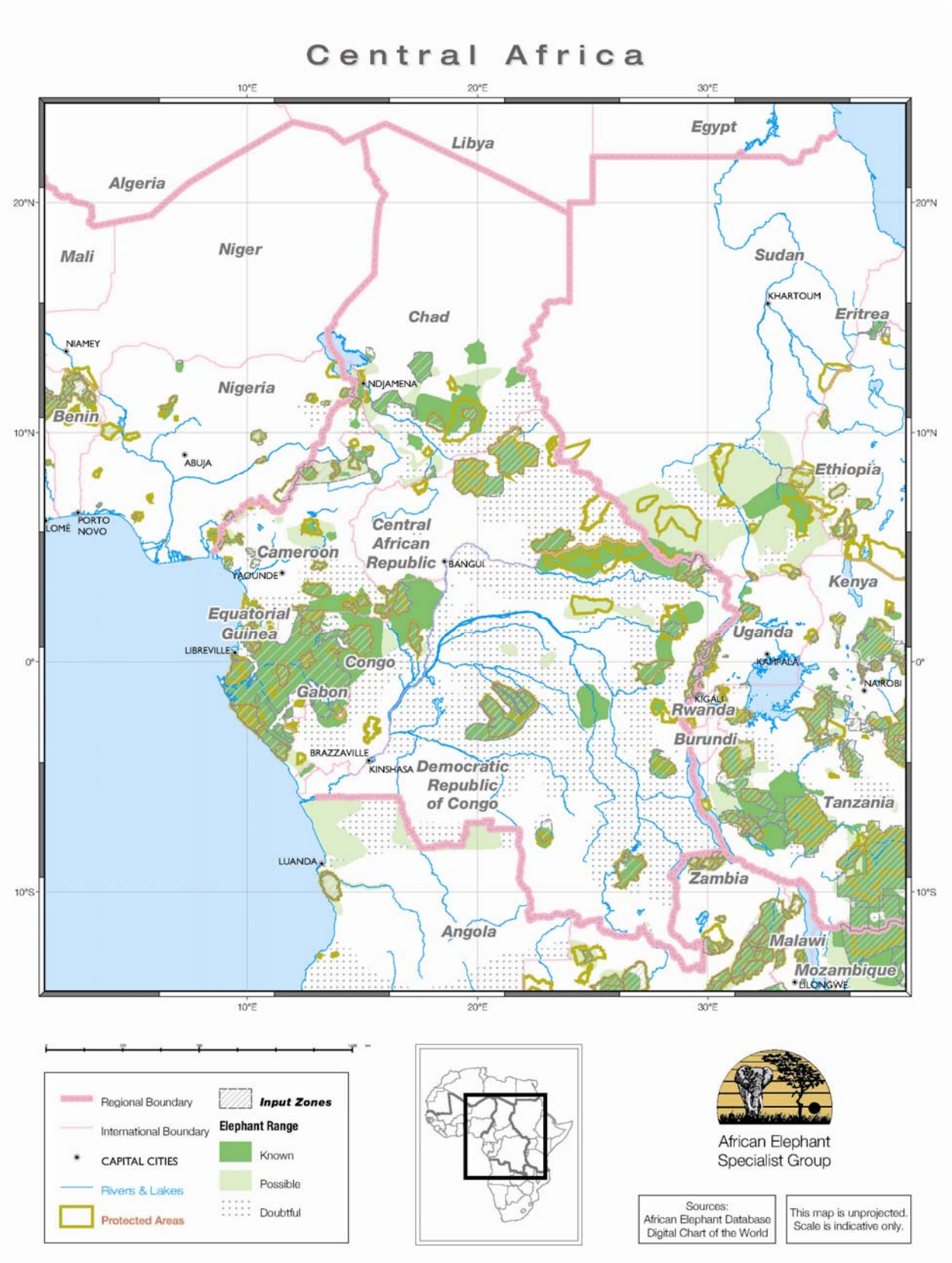
The Congo Basin Forest Partnership, established in 2002 under the aegis of the Council of Ministers in charge of the Forests of Central Africa (COMIFAC), received substantial funding over the 2003-2005 period. Funds were largely focused on 11 priority landscapes, all of which are in elephants range, and were aimed at improving capacity, regional cooperation and law enforcement efforts. At a recent follow up meeting, the key actors in implementing the priority activities in the COMIFAC countries during the 2008-2009 period discussed the "major themes" to be addressed with the management of protected area and biodiversity conservation one of them. The commitment of the COMIFAC countries is encouraging and whilst internal communication is increasing, increased collaboration internally across the themes is required to help further conservation in the subregion.

Additionally, in 2005, Central African Governments collaborated in the development of a Regional Elephant Conservation Strategy. The Strategy aims to: reduce the illegal killing of elephants; prevent the fragmentation of elephant populations; improve knowledge on the status of populations and their habitats; and, to change the negative perceptions of the wider public in the region with respect to elephants. Unfortunately, funding efforts to support its implementation have been difficult to muster despite the critical need.

Table 1: Central Africa Regional Totals

REGION	Elephant Numbers				Range Area (km^2)	% of Regional Range
	Definite	Probable	Possible	Speculative		
Cameroon	179	726	4,965	9,517	118,571	12
Central African Republic	109	1,689	1,036	500	73,453	8
Chad	3,885	0	2,000	550	1149,443	15
Congo	402	16,947	4,024	729	135,918	14
Democratic Republic of Congo	2,447	7,995	8,855	4,457	263,700	27
Equatorial Guinea	0	0	700	630	15,008	2
Gabon	1,523	23,457	27,911	17,746	218,985	22
TOTAL	10,383	48,936	43,098	34,129	975,079	29

Source: African Elephant Status Report 2007 www.iucn.org/afesg


Central Africa
10°E
20°E
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Egypt
Libya
Algeria
Mali
Niger
Sudan
KHARTOUM
Eritrea
Chad
NIAMEY
Nigeria
NDJAMENA
Benin
ABUJA
Ethiopia
LOMÉ
PORTO NOVO
Central African Republic
BANGUI
Cameroon
YAOUNDE
Kenya
Equatorial Guinea
LIBREVILLE
Uganda
Congo
KAMPALA
NAIROBI
Gabon
KIGALI
Rwanda
Burundi
BRAZZAVILLE
KINSHASA
Democratic Republic of Congo
Tanzania
LUANDA
Zambia
Angola
Malawi
Mozambique
ELONGWE
Regional Boundary
International Boundary
CAPITAL CITIES
Rivers & Lakes
Protected Areas
Input Zones
Elephant Range
Known
Possible
Doubtful
African Elephant Specialist Group
Sources:
African Elephant Database
Digital Chart of the World
This map is unprojected.
Scale is indicative only.

Eastern Africa Overview

Eastern Africa is home to the second largest population of elephants of the four sub-regions with 166,528 (30%) (DEFINITE and PROBABLE numbers) (Table 3).

As elephant populations recover from the poaching episodes of the 1970s and 1980s, human population growth and the concomitant loss and fragmentation of habitats are now the chief threats facing elephants in the region. The resulting high levels of human-elephant conflict prevalent in many areas, coupled with generalized lack of economic incentives for those sharing their resources with wildlife, highlight the need for sound land use planning policies and incentive systems to ensure the long-term viability of Eastern Africa's elephant populations. The viability of some populations, including those in Eritrea, Ethiopia, Rwanda, Somalia and certain parts of Uganda is already uncertain, while the status of elephants in Sudan is only recently being evaluated (see below).

Savanna elephants are found in the grasslands and woodlands that dominate the Eastern African landscape, as well as in the coastal and montane forest area. Remnants of Central African forest, along the western edge of the region, may hold forest elephants or hybrids.

Elephant range in Eastern Africa is currently estimated to span over 880,000 km^2, and accounts for 26% of continental range. The sub-region ranks third in terms of range extent, behind Southern and Central Africa, whilst approximately 30% of total range lies within designated protected areas.

Eastern Africa's largest known populations are found in Tanzania, Kenya and Uganda, with Tanzania alone holding 80% of the sub-regional population. Elephant population estimates are only available for 45% of the estimated range area (approx. 394,000 km^2), but of those the majority (86%) are considered reliable.

Sudan accounts for a sizeable proportion of the regional and continental range, although considerable uncertainty around the remaining range and numbers exist. Recent surveys undertaken in Southern Sudan indicate that a minimum of 6,850 elephants occur across 4 areas – Jonglei (Zeraf and Shambe G.R's), Boma N.P, Lotilla area and Southern N.P. However, it is likely that those numbers may be at least double for the region with increased surveys currently being undertaken.

Recently published findings on the genetic structure of savannah elephants in Kenya indicate that the country consists of three broad regional genetic (mtDNA) groups. The observed population genetic differentiations, as well as connectivity patterns, between populations are important factors to address when planning future management activities such as translocations. These findings highlight the need to understand more about current elephant populations throughout the continent to assist in the species ongoing conservation and management.

While Tanzania is also the only country in the region to have developed and implemented a national elephant management policy, Kenya is in the final stages of developing its own. Ongoing development of the transboundary conservation area between Selous N.P, southern Tanzania, and Niassa, northern Mozambique, roughly 154,000 km^2, would culminate in one of the largest in Africa and provide a contiguous corridor for the regions large numbers of elephants and other species to migrate. Cross-border populations of elephants occur along the western border of the sub-region with Central Africa (Democratic Republic of Congo) and between its southern border with Mozambique, Southern Africa.

Estimates from methodologically comparable, systematic surveys have resulted in the number of DEFINITE elephants in the sub-region to increase by approximately 19,770. Elephant numbers in the PROBABLE and POSSIBLE categories have increased by approximately 11,340 and 12,610 respectively, resulting from new estimates from repeated surveys and from surveys undertaken using different techniques or covering different areas. Estimates from new guesses and from

surveys conducted using different techniques are largely responsible for the decrease of nearly 2,200 in the SPECULATIVE category.

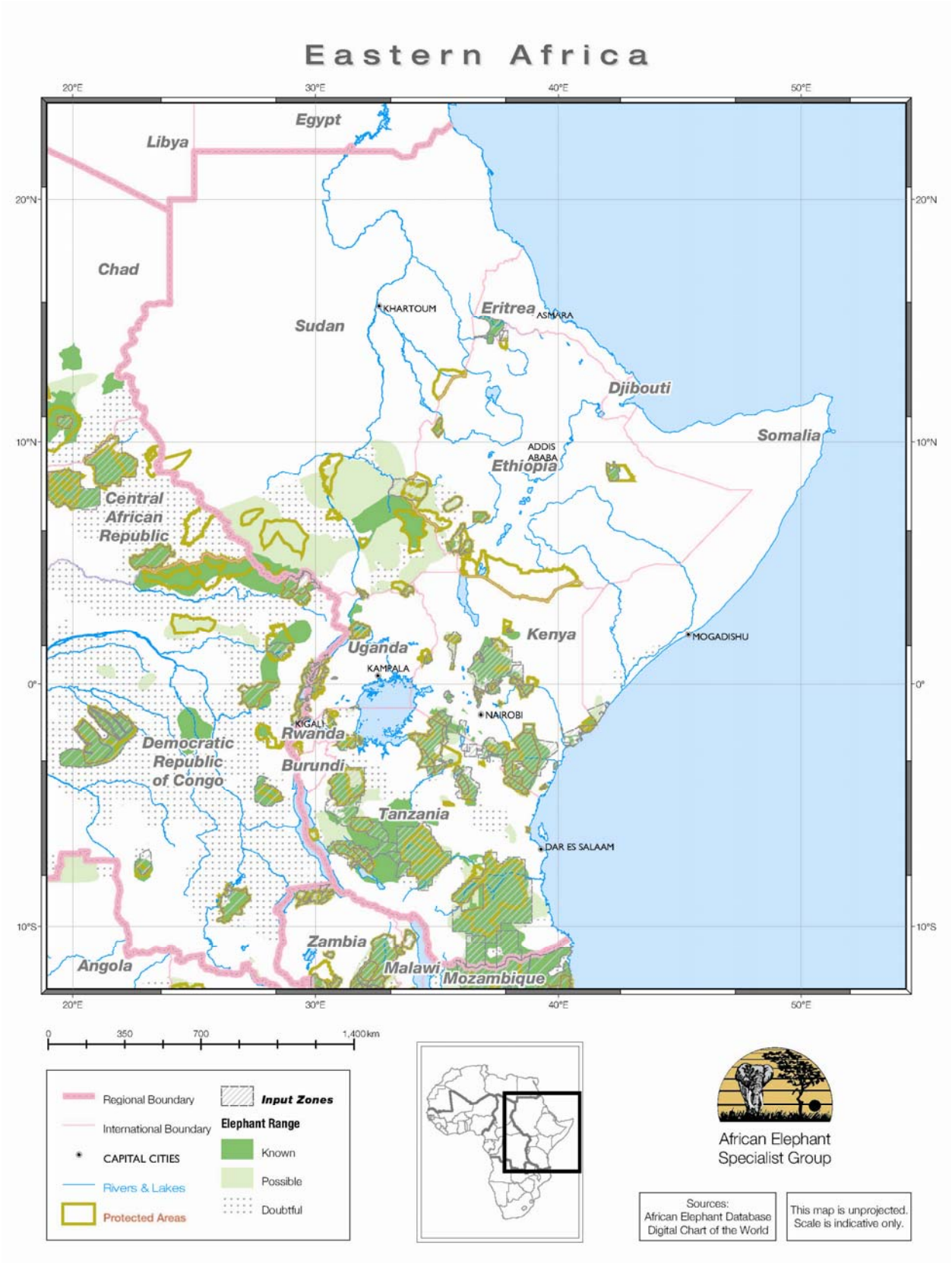
The combined estimate from methodologically comparable surveys, which accounts for 78% of the regional DEFINITE plus PROBABLE estimates, has increased by 18% when compared with the previous report. However, the actual difference of 19,948 ± 32,356 in the methodologically comparable estimates for Eastern Africa is not statistically significant.

Table 3: Eastern Africa Regional Totals

REGION	Elephant Numbers				Range Area (km^2)	% of Regional Range
	Definite	Probable	Possible	Speculative		
Eritrea	96	0	8	0	5,293	1
Ethiopia	634	0	920	206	38,365	4
Kenya	23,353	1,316	4,946	2,021	107,113	12
Rwanda	34	0	37	46	1,014	0
Somalia	0	0	0	70	4,526	1
Sudan*	20	0	280	0	318,239	36
Tanzania	108,816	27,937	29,350	900	390,366	44
Uganda	2,337	1,985	1,937	300	15,418	2
TOTAL	137,485	29,403	35,124	3,543	880,063	26

Source: African Elephant Status Report 2007 www.iucn.org/afesg

*Sudan: please note that this figure does not include recent survey data published by Fay *et al*. 2007 of an estimated minimum of 6,850 in Southern Sudan, although possibly double exist.


Eastern Africa
20°E
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Egypt
Libya
Chad
Sudan
KHARTOUM
Eritrea
ASMARA
Djibouti
Somalia
ADDIS ABABA
Ethiopia
Central African Republic
Kenya
MOGADISHU
Uganda
KAMPALA
NAIROBI
KIGALI
Rwanda
Democratic Republic of Congo
Burundi
Tanzania
DAR ES SALAAM
Zambia
Angola
Malawi
Mozambique
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1,400 km
Regional Boundary
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CAPITAL CITIES
Rivers & Lakes
Protected Areas
Input Zones
Elephant Range
Known
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Doubtful
African Elephant Specialist Group
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Southern African Overview

Southern Africa is home to the majority of the continent's DEFINITE and PROBABLE elephant numbers at 320,904 (58%) (Table 4). Over three-quarters of the population in southern Africa occur in just two countries, namely Botswana and Zimbabwe. These two countries together also account for nearly half (47%) of the continental population (DEFINITE and PROBABLE categories).

Savanna elephants predominate throughout the region, although small populations of forest elephants are found in the Angolan enclave of Cabinda and perhaps also in north-western Angola. With an estimated total elephant range spanning over 1.3 million km^2, Southern Africa is the sub-region with the largest elephant range area, and accounts for 39% of the continental total. Interestingly, Southern Africa is also the sub-region with the smallest proportion of elephant range in protected areas (28%).

Elephant range is expanding in Botswana and spreading into neighbouring countries such as Angola and Namibia, however the overall range may decline in future as more detailed information is obtained, particularly from Angola and Mozambique, where range data are least reliable, but which together account for 57% of the regional range estimates.

Southern Africa has the highest overall quality of elephant information, however, there is wide variation amongst the countries, with nearly perfect information available for Swaziland, South Africa, Zimbabwe and Botswana, but virtually no reliable information for Angola.

Overall, elephant population estimates are available for approx. 690,000 km^2, or 53% of estimated population range in Southern Africa, with estimates from systematic surveys covering two-thirds of that area. South Africa, Botswana and Zimbabwe have complete coverage, in contrast with Angola, where estimates are only available for 5% of estimated elephant range.

Movements of elephants are known to occur between Mozambique and Tanzania (Eastern Africa). The only other area in Southern Africa where cross-border movement may take place is between northern Angola and the southwest of the Democratic Republic of Congo, but there are no reliable reports of such movements.

Holding the largest elephant populations on the continent, many of the management challenges associated with high elephant densities in large populations are common to a number of the countries in Southern Africa. As elephant numbers continue to increase in the region's largest populations, the debate on the need for specific management actions has continued in a number of countries, particularly Zimbabwe and South Africa.

In 2007, the Southern African range States drafted a Regional Elephant Conservation and Management Strategy indicating that they would share experiences and lessons learned (management techniques, HEC mitigation, community based natural resource management, and indigenous knowledge), as well as foster appropriate coordination at a transboundary level (land-use planning, HEC mitigation, law enforcement and trophy hunting). This Strategy aims to foster regional cooperation in elephant management and monitoring, calling for coordinated surveys across borders.

In 2007, South Africa published their national Norms and Standards guideline as well as the Assessment of South African Elephant Management 2007: Summary for Policymakers. Both publications resulted from extensive expert input and will help guide the conservation and management of the species at all levels.

Four countries in the sub-region, namely Botswana, Namibia, South Africa and Zambia have recently developed or updated their respective national elephant management policies. It is noteworthy that only three countries in Africa fund their regular survey programmes out of their national budgets, and all threes – Botswana, Namibia and South Africa – are in Southern Africa. Every other African elephant range depends on external aid for elephant survey work.

The development of transfrontier conservation areas (TFCA) has continued in Southern Africa. A number of TFCAs have been established, including the Greater Limpopo and the Kavango-Zambezi Transfrontier Conservation Area (KAZA TFCA). The KAZA TFCA holds nearly half of the continental elephant population and spans some of the most important populations in Angola, Botswana, Namibia, Zambia and Zimbabwe.

During CoP14, an amendment to proposals 4, 5 and 6 was submitted by Zambia and Chad, and subsequently adopted by consensus. This consisted of:

- a one-off sale for Botswana, Namibia, South Africa and Zimbabwe of all legally-acquired, government owned ivory stocks from 2002 to 31 January 2007 to any approved consumer country and, thereafter, a 9-year period of no further proposals to allow trade in elephant ivory from these Appendix-II listed populations of African elephants.

- a decision-making mechanism to be developed by the Standing Committee, with assistance from the CITES Secretariat, for a process of trade in ivory under the auspices of the Conference of the Parties, and which should be proposed for approval by the 16th meeting of the Conference of the Parties at the latest, i.e. a process to ensure that further commercial ivory trade from countries whose elephant populations are in Appendix II will be carried out through a Standing Committee process under the auspices of the CoP.

- a number of agreed points on other non-commercial ivory products and other elephant by-products.

Estimates from methodologically comparable, systematic surveys have resulted in the number of DEFINITE elephants in the region to increase by approximately 51,126. Elephant numbers in the PROBABLE and POSSIBLE categories have subsequently decreased by approximately 536 and 1,364 respectively, resulting from new estimates from repeated surveys and from surveys undertaken using different techniques or covering different areas. Estimates from new guesses are largely responsible for the slight increase of nearly 2,250 in the SPECULATIVE category – predominantly from Mozambique and Malawi.

The combined estimate from methodogically comparable surveys, which accounts for 76% of the regional DEFINITE plus PROBABLE estimate, has increased by approximately 24% compared with the previous report. The actual difference of 46,354 ± 30,588 in the methodogically comparable estimates for Southern Africa is statistically significant.

Table 4: Southern African Regional Totals

REGION	Elephant Numbers				Range Area (km^2)	% of Regional Range
	Definite	Probable	Possible	Speculative		
Angola	818	801	851	60	406,946	31
Botswana	133,829	20,829	20,829	0	100,265	8
Malawi	185	323	632	1,587	7,538	1
Mozambique	14,079	2,396	2,633	6,980	334,786	26
Namibia	12,531	3,276	3,296	0	146,921	11
South Africa	17,847	0	638	22	30,455	2
Swaziland	31	0	0	0	50	0
Zambia	16,562	5,948	5,908	813	201,247	15
Zimbabwe	84,416	7,033	7,367	291	76,931	6
TOTAL	297,718	23,186	24,734	9,753	1,305,140	39

Source: African Elephant Status Report 2007 www.iucn.org/afesg


Southern Africa
20°E
30°E
40°E
10°S
20°S
30°S
Congo
Tanzania
DAR ES SALAAM
LUANDA
Democratic Republic of Congo
Zambia
LILONGWE
Malawi
Mozambique
Angola
LUSAKA
HARARE
Zimbabwe
Namibia
WINDHOEK
Botswana
GABORONE
PRETORIA (Tshwane)
MAPUTO
South Africa
MBABANE
Swaziland
Lesotho
0
300
600
1,200 km
Regional Boundary
International Boundary
CAPITAL CITIES
Rivers & Lakes
Protected Areas
Input Zones
Elephant Range
Known
Possible
Doubtful
African Elephant Specialist Group
Sources:
African Elephant Database
Digital Chart of the World
This map is unprojected.
Scale is indicative only.

West Africa Overview

West Africa is home to the lowest population of elephants of the four sub-regions with only 8,222 (1.5%) (DEFINITE and PROBABLE categories) (Table 5).

Elephant range in West Africa is found in small fragments scattered across the sub-region, in forest, savanna and other habitats. It is the only region outside Central Africa where a sizeable proportion of elephant range occurs in tropical forests. While it was traditionally believed that both forest elephants and savanna elephants occurred in West Africa, recent genetic evidence suggests that a single form, whose taxonomic status remains to be ascertained, is found in the region.

Elephant is less extensive in West Africa than in any other sub-region, covering approximately 175,500 km^2, or 5% of the continental range estimate. In several areas, mainly in Nigeria, Benin and Chad, where human population is estimated to exceed 15 persons per km^2, the presence of elephants is unlikely.

Although the known range of elephants in West Africa equates to 71% of the total regional range, the current occurrence of elephants in many areas, particularly in Liberia, Sierra Leone and small habitat fragments in Nigeria and Côte d'Ivoire, remains uncertain.

Nearly three-quarters of the total range area (132,000 km^2) is distributed among five countries, namely Côte d'Ivoire, Mali, Ghana, Nigeria and Burkina Faso, although aside from the latter, none of these countries have population greater than 1,500 individuals (see Table 5). With respect to movements between the sub-regions, these are limited but may take place between West and Central Africa, specifically between Nigeria, Cameroon and Chad.

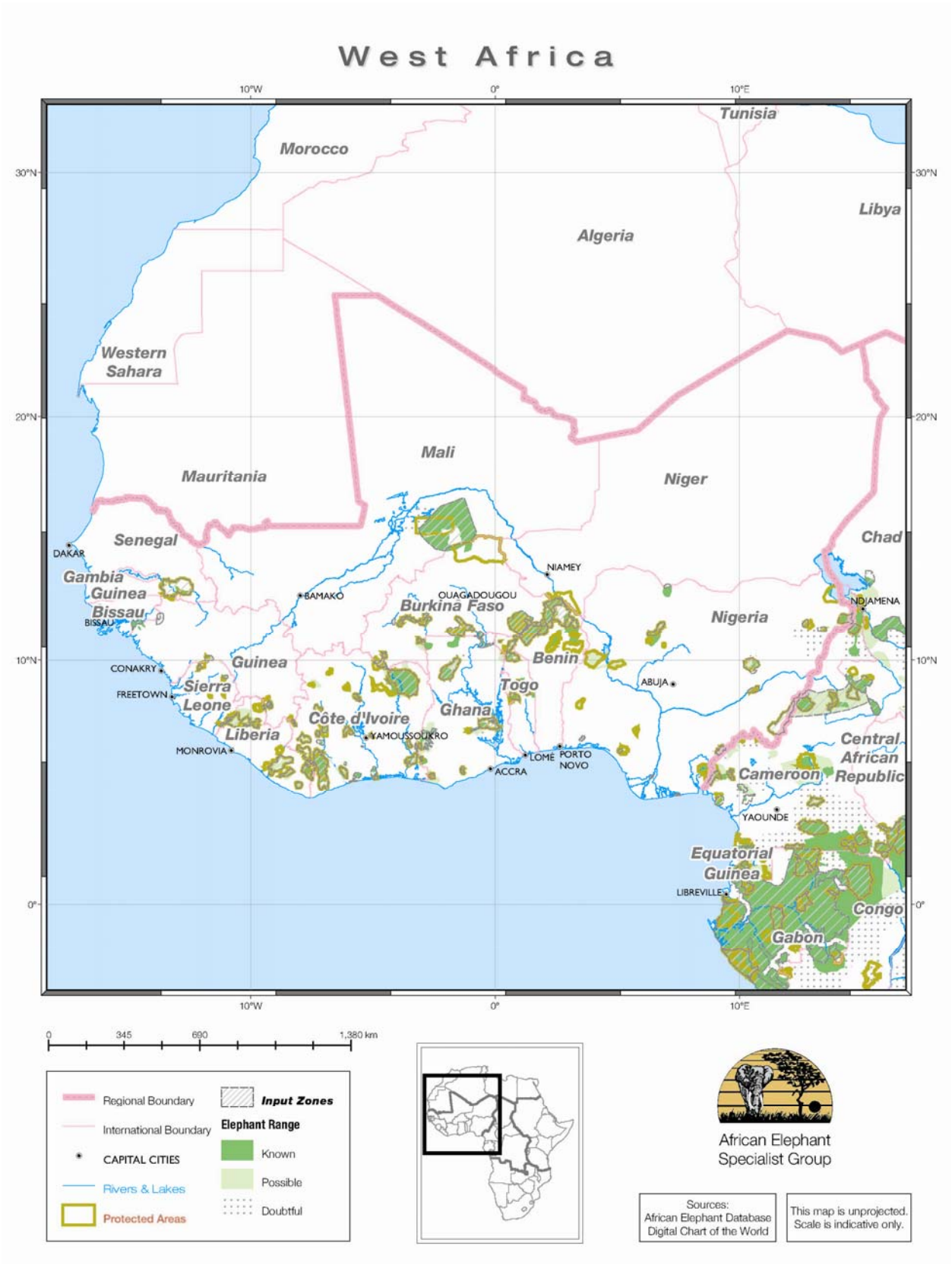
Although the number of DEFINITE and PROBABLE elephant numbers for West Africa appeared to increase markedly since the AESR 2002, by almost 2,000 individuals, this is actually a result of more reliable estimates undertaken, particularly in the "WAPOK" ("W"-Arly-Pendjari-Oti-Madori-Kéran) complex, and correspondingly decreased POSSIBLE and SPECULATIVE numbers.

Many populations in the region are probably not viable because they are genetically isolated, their numbers are small, and their sex ratios and age structures have been distorted by hunting. The single largest population is that of the "WAPOK" complex, which straddles the borders between Benin, Burkina Faso, Niger and Togo. This population alone holds more than half of the region's known elephants (6,798 individuals or 55% of all elephants in the sub-region) and is covered by good quality systematic services.

Table 5: West African Regional Totals

REGION	Elephant Numbers				Range Area (km^2)	% of Regional Range
	Definite	Probable	Possible	Speculative		
Benin	1,223	0	0	0	13,673	8
Burkina Faso	4,154	320	520	0	19,872	11
Côte d'Ivoire	188	152	119	506	33,985	19
Ghana	789	387	241	12	23,301	13
Guinea	135	79	79	57	1,524	1
Guinea Bissau	0	0	7	13	1,346	1
Liberia	0	0	0	1,676	15,977	9
Mali	357	0	141	156	31,878	18
Niger	85	0	17	0	2,683	2
Nigeria	348	0	105	375	22,968	13
Senegal	1	0	0	9	1,090	1
Sierra Leone	0	0	80	135	1,804	1
Togo	4	0	61	0	5,444	3
TOTAL	7,487	735	1,129	2,939	175,545	5

Source: African Elephant Status Report 2007 www.iucn.org/afesg


West Africa
10°W
0°
10°E
30°N
20°N
10°N
0°
Tunisia
Morocco
Libya
Algeria
Western Sahara
Mali
Mauritania
Niger
Chad
Senegal
DAKAR
Gambia
Guinea Bissau
BISSAU
BAMAKO
NIAMEY
OUAGADOUGOU
Burkina Faso
NDJAMENA
Nigeria
Guinea
Benin
CONAKRY
Sierra Leone
FREETOWN
Togo
ABUJA
Ghana
Côte d'Ivoire
YAMOUSSOUKRO
Liberia
MONROVIA
LOMÉ
PORTO NOVO
ACCRA
Central African Republic
Cameroon
YAOUNDE
Equatorial Guinea
LIBREVILLE
Congo
Gabon
0
345
690
1,380 km
Regional Boundary
International Boundary
CAPITAL CITIES
Rivers & Lakes
Protected Areas
Input Zones
Elephant Range
Known
Possible
Doubtful
African Elephant Specialist Group
Sources:
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Digital Chart of the World
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Current issues in Human-Elephant Conflict Management in Africa: a way forward

Human-elephant conflict (HEC) is a complex problem that threatens the livelihoods of many individual and local communities in Africa, as well as the survival of African elephants and their habitats. In recent years, greater democracy and better communications have allowed the issue to become increasingly politicized locally. However, to date, efforts to tackle HEC have focused mainly on short-term, field-based mitigation measures which have had limited success. For long-term management of this problem, mutually beneficial strategies for people and elephants, coordinated at national, local and site levels need to be developed and implemented. This requires consideration of numerous technical, institutional, socio-political and economic issues at all levels, strong political will, and the necessary expertise.

Past and present efforts to combat HEC and key lessons learned

Given the negative repercussions of HEC to people and wildlife, it is not surprising that a great deal of time and effort has been expended in recent years to find solutions to this problem. The majority of past efforts to mitigate HEC have concentrated almost exclusively on short-term deterrence methods at the conflict site and these have often been applied in an *ad hoc,* uncoordinated manner, and have subsequently achieved little long-term success at alleviating the problem. Very few efforts have been directed at getting to the root causes of conflict such as incompatible land use practices, rural poverty, lack of land tenure, lack of ownership rights to wildlife, etc. It has been noted that addressing such underlying causes is not only necessary to reduce the damage caused by HEC in the long-term, but also offers great potential for developing strategies that maximize benefits and minimize costs of elephants to local communities.

Synthesizing the lessons learned from recent HEC activities and research across the continent, the following conclusions are important to managing the situations long-term:

- Single interventions alone e.g. patrolling fields at night, throwing spears and stones, experimental repellents, physical barriers, etc., appear to be inadequate with respect to managing long-term HEC. Therefore, a combination of very different measures may have to be employed simultaneously. An integrated package of measures produces 'synergy' and is generally more effective than the sum of its individual constituent parts. Different combinations of methods may need to be tried for each situation until a fairly successful combination is found which suits the local conditions.

- Management authorities and practitioners on the ground should always aim to reduce the problem to tolerable levels rather than expect to eliminate the problem altogether.

- Effective HEC management requires a strategic approach that addresses the underlying causes of crop raiding as opposed to a purely tactical approach that only tackles the symptoms.

- Rather than viewing elephant problems in isolation, they should be seen in the context of the many other social and farming problems associated with survival in rural Africa.

- Integrated national land-use policy and planning that includes considerations for both people and elephants can go a long way towards reducing HEC. Relatively high densities of elephants and people can co-exist if land transformation is not too widespread, and if elephants are not subjected to high levels of deliberate disturbance.

- Problem elephant management must have strong local participation and preferably integrated with other elephant management activities.

- Successful long-term management of HEC requires solid support, clear policies and legal frameworks from all levels of government, strong commitment on the part of wildlife management authorities, the development and implementation of integrated land-use

plans, informed use of available tools and methods, and a climate of trust between the diversity of negotiating parties on the ground – the vertical integration approach.

Removing barriers to progress

A coordinated approach at multiple scales by a broad spectrum of stakeholders to produce mutually beneficial outcomes for elephants and people is the key to managing HEC. Effective long-term management of HEC needs to take a holistic approach that involves a diverse set of actors at all levels from the affected community up to the relevant policy-makers at local and national government levels. Appropriate actions at each of these levels are necessary, and must be coordinated to ameliorate HEC. Such actions must take into account, not just the immediate symptoms of the problem, but also the root causes.

However, there are a number of technical, institutional, socio-political and economic barriers at each level that block progress towards sustainable management of the HEC problem and these must be tackled together in a coordinated manner.

Conflict site/village level

- As an immediate priority, affected communities must be given appropriate and locally adapted tools to defend their crops and infrastructure against elephants. In the long-term they may also need to be given more authority to decide on how elephants should be managed to balance the costs of living with them. This, in turn, will need a supportive legislative and policy framework requiring the involvement of relevant local and national-level authorities.

- Enlisting the help of local and international non-governmental organizations, agricultural extension agencies, church groups and community-based organizations can bring a very positive contribution to alleviating HEC e.g. by helping affected farmers develop alternative livelihood strategies that reduce dependence on crops damaged by elephants, or by introducing new varieties of crops that are less vulnerable to elephant damage. However, such strategies will usually require the involvement of the private sector to help find buyers for the produce e.g. by taking advantage of the growing international market niche for organic crops.

- New promising approaches to conflict mitigation, such as the use of conflict-resolution committees and village-based self-insurance schemes that entail a greater degree of sharing of responsibility for dealing with HEC, do not require large infusions of external assistance and are thus inherently more sustainable, should be encouraged.

District/local wildlife authority level

- In most African elephant range States, much of the burden of dealing with complaints from villagers regarding HEC falls on the shoulders of the wildlife authority's district or provincial-level sub-offices. Yet these sub-offices often receive insufficient budget allocations to be able to provide the vehicles, equipment, supplies and staff to the various field offices in the conflict zones.

- In most HEC situations in Africa the extent of the HEC problem has not been monitored systematically or measured quantitatively. Therefore, judgment of conflict intensity has often had to rely on a simple barometer of tolerance to elephants by affected local communities i.e. the attitudes of people. This has often made it impossible for wildlife management officers to understand the spatial and temporal dynamics of the conflict situations, or to distinguish serious incidents from minor ones. Furthermore, the management authorities may not have sufficient knowledge about the numbers or movements of the elephants involved in the HEC. Therefore, the need to initiate

systematic collection of such information is often the first step in addressing the problem.

- HEC resolution necessarily has a large component of dealing with people and can be very difficult for a wildlife manager who may not have appropriate training or adequate skills for dealing with local communities. This makes it difficult for some managers to develop the strong partnerships with the local stakeholders that are the cornerstone of any HEC strategy.

National level

- The structure of decision-making in the government wildlife authority is often very hierarchical and suffers from inadequate communication and consultation between different people at different levels. For example, while it may be possible, at the site level, to effectively enhance cooperation and sharing of responsibility for HEC management between the relevant stakeholders (local officials, protected area managers, villagers, researchers, etc), these efforts can be undermined by decisions taken at higher levels that are often merely passed down in the form of instructions. In fact, a number of decisions are taken by different parties at different levels of the decision-making hierarchy that can either enable, or constrain, effective HEC management at the site level. For example, the government may make political decisions on such issues as wildlife utilization or killing of problem animals without adequate consultation of those dealing with the problem on the ground

- Many potential conflict "hot spots" could be avoided altogether through appropriate land-use planning. Again, this requires close coordination between local authorities, policy-makers and national wildlife authorities. However, in many countries proper land-use plans are often non-existent or badly out of date.

International level

- There are even barriers at the international level to sustainable HEC management. For example, many donor agencies continue to fund agricultural development and poverty alleviation strategies separately from efforts to conserve wildlife species, such as elephants. Some of these efforts can directly increase HEC. For example, development of irrigation schemes for agriculture or cash crop plantations can create new conditions and opportunities for conflict between humans and wildlife. There is therefore a need to work with international donor and development agencies to help identify opportunities for integrated approaches that can simultaneously improve human livelihoods while helping conserve elephants

- Many important elephant populations straddle international borders. However, HEC management policies and related legislation may differ greatly in the different countries in question e.g. wildlife utilization polices in one country may allow hunting of problem elephants, while hunting is banned in the other. In such cases, management of problem elephants would greatly benefit from closer cross-border collaboration.

Therefore, it is only through the **synergy of the combined efforts of diverse actors at many different levels**, that durable long-term management of HEC will become possible. As so many important linkages exist between the different levels, a comprehensive national HEC system needs to develop activities at all the levels and to tackle all the relevant technical, institutional, socio-political and economic issues at each level.

Locally Overabundant Elephant Populations: a Guideline

There are many widely distributed populations of elephants in Africa. These range in size from fewer than 50 to more than 100,000 individuals and experience varying levels of cohesion and

isolation. Where elephant populations are growing through natural recruitment or compression caused by expanding use of the surrounding landscape by humans, and where there is limited opportunity for natural dispersion or concomitant range expansion, local elephant densities commonly increase. Where this is happening, the impact of elephants on their habitats and other species may also increase.

As such, there is an increasing alarm over the adverse effect of increasing densities of elephants. This local overpopulation or overabundance of elephants is today regarded as a major conservation and management challenge in many African elephant range States. Concerns over the adverse ecological effect of high densities have also been reported elsewhere in Africa, especially in areas known for their high plant diversity.

There is no unique density of elephants that can serve as a definition of 'overabundance' for any particular area. It depends instead on whether the impact that elephants have on their own environment is acceptable. The relationship between elephant density and the ecological impact of elephants is complex and variable, and our understanding of these processes is still developing. Decisions as to whether to intervene to reduce elephant densities therefore have to be made with less than perfect scientific knowledge. When faced with such uncertainty, the ***precautionary principle*** is often advocated. This management principle states: *when there are threats of serious or irreversible damage to the environment the lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent such damage.* However, when dealing with the issue of whether elephant densities or numbers should be reduced to prevent feared losses in biodiversity, the principle may be applied in two contrasting ways: (1) to keep elephant numbers generally low in the hope of preventing losses in biodiversity components; (2) to avoid killing elephants until it has been clearly established that a larger population would indeed lead to losses in biodiversity before stabilizing at some resource-limited level.

Efforts to address the problem of local overabundance of elephants have typically focused on reducing elephant numbers to levels where their impact is considered not detrimental to vegetation or other species. Artificial control to keep elephant numbers static may be managerially tempting but because of the complexity of ecological processes may not be successful. It contradicts a view that conservation should maintain heterogeneity, and it has been suggested that attempts to stabilize elephant numbers at a certain level could in the long run compromise habitat heterogeneity and resilience and ultimately reduce species richness. In view of this, it has been suggested that it may be more appropriate to manage different areas differently to establish the consequences of different elephant densities, and to *allow changes to progress towards extremes to ascertain just where the thresholds beyond which no recovery takes place lie*.

There can be no prior knowledge of what size the elephant population should be in order to bring impact to an acceptable level, and there is no way of planning how much management is necessary in advance. Such uncertainties suggest that it is wise to follow an ***adaptive management*** approach when managing elephant densities. This entails the regular evaluation of elephant impact through monitoring followed by appropriate readjustment of management activities, repeated until the management objective is reached. In other words, continued monitoring should be undertaken to indicate whether the management activity has been sufficient to maintain the habitat within the acceptable limits, or whether further intervention is necessary.

Whether elephant impacts will be tolerated will ultimately determine their acceptability within the policy framework for the area in question. The absolute elephant density deemed to constitute overabundance might vary substantially among different areas, due to differences in management objectives as well as biological differences. For example, it was shownthat the productivity of mopane woodlands in Botswana could support many more elephants than other areas where at similar densities the woodland was being converted to scrub. Under one possible set of values and objectives, the elephant density would therefore be perceived as falling far short of overabundance, while under a set that valued the persistence of large trees, the elephants would be labelled as overabundant.

Some believe that the entire focus on elephant densities is wrong and tantamount to addressing the symptoms rather than causes of the problem. They see range expansion that enables metapopulation dynamics to regulate elephant numbers as the solution to all elephant overabundance. However, large-scale expansion of protected area coverage is fraught with many difficulties and may not represent a real possibility for any but a few occasions.

In short, overabundance of elephants occurs when the agreed values or objectives for an area are not being met due to elephant activity. Overabundance can therefore only be defined in terms of land-use objectives (e.g. tourism, biodiversity conservation, etc.) set for a particular area and/or a set of defined human (e.g. economic, aesthetic, cultural) values. Making a judgement on whether the ecological impacts of elephants are negative and whether or when this problem should trigger some form of intervention to reduce such impact is best made by the management authorities in consultation with all relevant stakeholders.

Therefore, before considering options, one must assume that *as a prerequisite for taking any management action,* the management authorities will have set clear conservation and management objectives for the area in question, and have established a clear decision-making process to guide their actions.

Information about attempts to control wild populations of African elephants is generally not readily accessible to the relevant managers and conservation authorities in Africa, much of it being scattered in diverse reports and scientific papers or as part of the body of unwritten expert knowledge. A new publication of the IUCN/SSC African Elephant Specialist Group – Review of Options for Managing the Impacts of Locally Overabundant Elephants (www.iucn.org/afesg), makes available lessons learned from the past and ongoing efforts to manage the negative ecological impact of African elephants, and to provide a summary of the main technical considerations and pros and cons of the different management options available.

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