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

Nineteenth meeting of the Conference of the Parties
Panama City (Panama), 14 – 25 November 2022

THE STATUS OF AFRICA'S ELEPHANTS AND UPDATES ON ISSUES RELEVANT TO CITES

This document has been submitted by the Secretariat on behalf of the IUCN/SSC African Elephant Specialist Group (AfESG) in relation with CoP19 Proposals 4 & 5, CoP19 Doc 84.1 and CoP19 Inf. 4[*].

Highlights

- This document highlights relevant information about African forest (*L. cyclotis*) and savanna (*L. africana*) elephants. It explains why the AfESG recognized the two species in 2021 and current and foreseen implications of that decision such as the production of two separate status reports, the 2021 Red Listing of the two species separately and relevant policy and legislative changes.

- The status of *L. cyclotis* as of 2022 is presented with some explanations of the procedures AfESG's Data Review Working Group followed to categorize forest, savanna or hybrid elephants. Preliminary status of *L. africana* as of 2022 is also provided but with specific focus on populations of Botswana, Namibia, South Africa and Zimbabwe in CoP19 Proposals 4 and 5. Neither continental estimates nor regional or continental trends are presented as these will have to wait until 2023 when the *L. africana* status report be published.

- Some of the ongoing processes within AfESG such as the establishment of a Taxonomy Task Force and between AfESG and other parties including CITES for dealing with the implications of the two species on policies, legislation, conservation and management for these animals are highlighted.

- An update of the African Elephant Database (AED), the most authoritative CITES and IUCN mandated depository of information on African elephant numbers and distribution is given. Importantly the future for AED is summarised with a call for continued support from its users, providers of data and range states.

- A status of elephant population survey is provided in a map for CITES Parties and donors to appreciate the challenges faced in sourcing for data and be encouraged

---

[*] *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.*

support elephant surveys in places where surveys have not taken place in many years.

1.   **Status Reports on African forest and savanna elephants**

1.1 The IUCN SSC African Elephant Specialist Group (AfESG) will from 2022 be publishing African elephant status reports in two parts following the Groups' recognition of Africa elephants as two distinct species in 2021[1]: the African forest elephant (*Loxodonta cyclotis)* and the African savanna elephant (*Loxodonta africana*). In addition to the separate reports, the numbers of the two species will be combined to give a total elephant population at a country, region and continental level. This will facilitate assessing trends relative to previous status reports which reports the species combined.

1.2 AfESG's recognition of the two species concurs with Wilson & Reader (*Mammal Species of the World, 2005*[2]), the primary IUCN reference on mammalian taxonomy, Wittemyer (*in Handbook of the Mammals of the World, 2011*[3]), and Tassy & Shoshani (*in Mammals of Africa, 2013*[4]).

1.3 Genetic findings indicate that the two species separated millions of years ago[5,6]. Some observable phenotypic differences between the two species include: *L. cyclotis* are generally smaller than, and have smaller, rounded ears, than *L. africana*, their tusks point downwards, and their bodies are higher over their back legs[7,8]. Forest elephants' ear shape is particularly variable[9].

1.4 *L. cyclotis* live in smaller family groups, are slower to mature, have longer inter-calving intervals, later ages at first calving and a much longer generation time (31 years) than *L. africana* (24 years)[10]. The forest elephant's diet is dominated by fruit, but they can also eat grasses, foliage and tree bark, while savanna elephants graze on grasses and feed on a variety of trees, shrubs and fruits depending on availability.

1.5 Prior to the two-species recognition, it was challenging to assess the practical implications for their conservation. Accordingly, producing two separate Red List assessments[11, 12] and two separate status reports provide opportunities at national, regional and global levels to prioritise actions specific to each species and its unique circumstances. This distinct treatment will refocus and renew attention on the plight and conservation of each species.

[1]Hart, J., Gobush, K., Maisels, F., Wasser, S., Okita-Ouma, B., & Slotow, R. 2021. African forest and savanna elephants treated as separate species. *Oryx*, 55(2), 170-171.

[2]Wilson, D. E., & Reeder, D. M. (Eds.). 2005. *Mammal species of the world: a taxonomic and geographic reference* (Vol. 1). JHU press.

[3] Wittemyer, G. 2011. Family Elephantidae (elephants). In: D. E. Wilson and R. A. Mittermeier, editors. *Handbook of the Mammals of the World.* Lynx Edicions, Barcelona, Spain.

[4]Kingdon, J., D. Happold, M. Hoffman, T. Butynski, M. Happold, and K. J. 2013. Mammals of Africa Volume I: Introductory chapters and Afrotheria. Page 351 *in* J. Kingdon, Happold, D., Hoffman, M., Butynski, T., Happold, M. & Kalina J., editor. Mammals of Africa. Bloomsbury Publishing, London, New Delhi, New York, Sydney.

[5]Ishida, Y., Y. Demeke, P. J. v. C. de Groot, N. J. Georgiadis, K. E. A. Leggett, V. E. Fox, and A. L. Roca. 2011. Distinguishing forest and savanna African elephants using short nuclear DNA sequences. *Journal of Heredity* **102**:610-616.

[6]Roca, A. L., Georgiadis, N., Pecon-Slattery, J., & O'Brien, S. J. 2001. Genetic evidence for two species of

[7] Bonnald, J., Cornette, R., Pichard, M., Asalu, E., & Krief, S. 2022. Phenotypical characterization of African savannah and forest elephants, with special emphasis on hybrids: The case of Kibale National Park, Uganda. Oryx, 1-8. doi:10.1017/S0030605321001605

[8] Turkalo, A., & Barnes, R. 2013. *Loxodonta cyclotis* Forest elephant Pages 195-200 in Jonathan Kingdon, David Happold, Michael Hoffman, Thomas Butynski, Meredith Happold, and J. Kalina, editors. The Mammals of Africa Vol I: Introductory Chapters and Afrotheria. Bloomsbury Publishing, (2013) 351 pp. ISBN London, New Delhi, New York, Sydney.

[9] Lister, A.M. et al. (in prep.). A morphometric perspective on African elephant taxonomy.

[10] Turkalo, A. K., Wrege, P.H., & Wittemyer, G. 2018. Demography of a forest elephant population. PLoS One 13:e0192777.

[11]Gobush, K.S., Edwards, C.T.T, Maisels, F., Wittemyer, G., Balfour, D. & Taylor, R.D. 2021. *Loxodonta cyclotis* (errata version published in 2021). The IUCN Red List of Threatened Species 2021: e.T181007989A204404464. https://dx.doi.org/10.2305/IUCN.UK.2021-1.RLTS.T181007989A204404464.en. Accessed on 25 September 2022.

[12]Gobush, K.S., Edwards, C.T.T, Balfour, D., Wittemyer, G., Maisels, F. & Taylor, R.D. 2021. *Loxodonta africana* (amended version of 2021 assessment). The IUCN Red List of Threatened Species 2021: e.T181008073A204401095. https://dx.doi.org/10.2305/IUCN.UK.2021-2.RLTS.T181008073A204401095.en. Accessed on 25 September 2022.

1.6 AfESG initiated discussions on the implications of the two-species recognition by engaging IUCN SSC leadership (convened by the Chair of SSC), CITES Nomenclature, Convention on Migratory Species (CMS), Monitoring the Illegal Killing of Elephants Central Coordination Unit (MIKE CCU), Red List Authority and Global Species Programme (GSP) on 24 February 2021.

1.7 CMS entered the two species separately on its Appendix II in 1979 which covers migratory species that have concerning conservation status, and require international agreements for their conservation and management, as well as those that have a conservation threatened status, and which would benefit significantly from international cooperation through an international agreement.

1.8 AfESG, as a body of experts with 95 members, functions as the world authority on the two species and proactively seeks to assist range states and other Parties in understanding the differences between the two species, why it is biologically and ecologically important to do so and the implications this has for the conservation and management of each species at local, national, regional and continental scale.

1.9 AfESG established a Taxonomy Task Force to, amongst other functions, provide expert input to range states and other parties on any aspects that treating the two species separately may have including to the ongoing revision of the African Elephant Action Plan.

2. **IUCN Red List status of the African forest and savanna elephants (2021)**

2.1 AfESG established a Red List Authority (RLA) team of six assessors with experience from across the continent to produce global assessments of the African forest elephant (*L. cyclotis*) and African savanna elephant (*L. africana*) as two distinct species. This was the first time the two species were assessed separately for the IUCN Red List of Threatened Species™. Prior assessments for "African elephants" were based on treating the two species as a single taxon.

2.2 The two assessments, assessed in 2020 and published in 2021[13,14] were conducted according to the IUCN Red List Categories and Criteria v3.1 and associated Guidelines v15.1 using data to the end of 2015, as reported in the AESR 2016[15]. Forest elephants are categorised as Critically Endangered (A2abd) and savanna elephants are categorised as Endangered (A2bd)[16], due to an estimated 86% and 60% decline in each species, respectively.

2.3 As in past elephant assessments, criterion A2 was applied and involved estimating continental population reduction over a time period of 3 generations specific to each species (93 years for forest elephants and 75 years for savanna elephants). Data from over 1000 surveys covering >300 sites from 1965 to 2015 across the species' ranges were, for the first time, fit to a Bayesian random-effects hierarchical model to estimate density change in elephants over time. The majority of these records are housed in the African Elephant Database (AED) that is curated and quality-assured by the AfESG's Data Review Working Group. Assumptions were required to handle data sparsity issues for the earliest time period of both assessments.

[13]Gobush, K. S., Edwards, C.T.T., Maisels, F., Wittemyer, G., Balfour, D., & Taylor, R. D. 2021. African forest elephant, *Loxodonta cyclotis*. The IUCN red list of threatened species. Version 2021-1; e.T181007989A181019888 (species assessed 2020 Nov 13; page accessed 2021 Mar 30). doi:10.2305/IUCN.UK.2021-1.RLTS.T181007989A181019888.en.

[14]Gobush, K. S., Edwards, C.T.T., Balfour, D., Wittemyer, G., Maisels, F., & Taylor, R.D. 2021. African savanna elephant, *Loxodonta africana*. The IUCN red list of threatened species. Version 2021-1; e.T181008073A181022663 (species assessed 2020 Nov 13; page accessed 2021 Mar 30). doi:10.2305/IUCN.UK.2021-1.RLTS.T181008073A181022663.en.

[15]Thouless, C.R., Dublin, H.T., Blanc, J.J., Skinner, D.P., Daniel, T.E., Taylor, R.D., Maisels, F., Frederick, H.L., & Bouché, P. 2016. African Elephant Status Report 2016: an update from the African Elephant Database. Occasional Paper Series of the IUCN Species Survival Commission, No. 60 IUCN / SSC African Elephant Specialist Group. IUCN, Gland, Switzerland. vi + 309pp.

[16]This assessment was petitioned in November 2021 and a ruling made in October 2022. The category of EN is maintained with subcriterion "a" removed and a statement included about a range of categories (EN-VU) being possible due to data uncertainties, see: https://www.iucnredlist.org/resources/petitions

2.4 Combined, these two assessments provide a picture of the elephants' status, highlighting the striking, broad scale decadal decline in numbers across the continent. Both species have suffered sharp declines due to poaching for ivory and loss of habitat.

2.5 Despite these downward trends, the assessments also highlight the impact of successful conservation efforts, such as anti-poaching measures, supportive legislation, land-use planning and coexistence programmes in well-managed areas where populations have been increasing. Such bright spots and strongholds, along with their science-led management and conservation actions, represent the potential for a positive future for Africa's elephants.

2.6 In accordance with the IUCN policies and procedures, the IUCN AfESG plans to produce the Red List assessments for African elephants once every 10 years and if possible once every 5 years in order to deliver comprehensive trend analyses across long temporal scales (e.g., equal to or greater than 75 years depending on species) at the continental, and species level. A status report for the species is also periodically produced by the IUCN AfESG to compile updated population estimates at smaller scales so that comparisons can be drawn in shorter time scales (e.g. since the last status report) as needed. Both the Red List assessments and the African Elephant Status Reports rely on robust population estimates compiled and technically vetted in the AED.

3. **African forest elephant status 2022**

3.1 The population of *L. cyclotis* has recently (September 2022) been assessed by the AfESG. All population survey reports since 2015 have been collated, and the population metrics entered into the AED, which in turn has resulted in a draft of the African Forest Elephant Status Report, with the final version to be published later in 2022. The last AESR was published in 2016 and treated all African elephants as one species; previous AESRs were published in 1995, 1998, 2002, 2007 and 2013.

3.2 **Range Countries for African forest elephant –** Twenty two range countries are known: West Africa (Benin, Burkina Faso, Côte d'Ivoire, Ghana, Guinea, Guinea Bissau, Liberia, Niger, Nigeria, Senegal, Sierra Leone and Togo); Central Africa (Cameroon, Central African Republic, Congo, Democratic Republic of Congo, Equatorial Guinea and Gabon); Southern Africa (Angola); and Eastern Africa (Rwanda, South Sudan and Uganda).

3.3 **Population -** The estimated total population of forest elephants, from systematic surveys in thirteen countries, is about 133,300 (95% c.i. 97,000 - 169,890) animals. There are additional guesses which total between 15,000 and 28,250 individuals from all but two of the same thirteen countries, plus an additional nine countries where no systematic survey had been carried out. The entire forest elephant population (Estimates plus Guesses)*, using the extremes of these two metrics, may therefore number between 112,000 and 198,000 animals. *(An Estimate is where there has been a systematic survey; A Guess is where there has either been a less comprehensive survey OR where a knowledgeable person has made a guess based on on-site knowledge OR where a previous Estimate is over ten years old).

3.4 **Changes since 2015 -** The total number of Estimates + Guesses in Africa for forest elephants was about 13% higher in 2022 than in 2015 (around 134,000 in 2016 as compared to around 154,000 today), as reported in the African Elephant Status Report (AESR) 2016[17], largely due to a new survey-based technique that was carried out in Gabon to estimate the nation's population across more than 250,000 km^2 of

---

[17]Thouless, C.R., Dublin, H.T., Blanc, J.J., Skinner, D.P., Daniel, T.E., Taylor, R.D., Maisels, F., Frederick, H.L., & Bouché, P. 2016. African Elephant Status Report 2016: an update from the African Elephant Database. Occasional Paper Series of the IUCN Species Survival Commission, No. 60 IUCN / SSC Africa Elephant Specialist Group. IUCN, Gland, Switzerland. vi + 309pp.

habitat[18]. This method – spatial DNA capture-recapture –allowed a much more accurate estimate of elephant numbers than before. It should be emphasised that these higher figures do not imply or indicate any increase in the population size but are the result of a change in methodology.

3.5 In 2022, 86% of the elephant population was classified as Estimates, and the rest Guesses. Some of the Guesses in the AESR 2016 are now considered as Estimates. Those Guesses were from systematic dung counts where there was no on-site dung decay study carried out at the same time as the survey, where a long decay time had been "borrowed" from elsewhere. Dung decay time is an important parameter required to estimate population density and size. The longer the assumed decay time, the smaller the estimated population is. The algorithm in the AED has now been adjusted to take this into account, by moving some of those Guesses into Estimates.

3.6 **Distribution -** Just over 94% of the continent's forest elephants are found in Central Africa - an Estimated 128,770 elephants (95% c.i. 92,470 - 165,325) plus Guesses of between 10,920 - 23,210 animals. A further 5% are found in West Africa (an Estimated 4,510 (95% 3,238 - 5,795) plus Guesses of between 3,150 - 3,930; and about 0.7% in Eastern and Southern Africa (just over 1,000 elephants altogether).

3.7 The area covered by DNA surveys in Gabon, plus other systematic surveys conducted since 2015, meant that almost 30% of Gabon's elephant range was systematically surveyed – about three times higher than in the 2016 AESR. Estimates from surveys totalled around 95,100 (95% c.i. 59,000 - 131,364) and additional Guesses of around 1,000 (range 719 - 1,155) brings the total up to around 96,000 animals, making the country by far the stronghold for this species, holding about 72% of all forest elephants.

3.8 The second most important stronghold for forest elephants is the Republic of Congo, which holds another 27% of Africa's forest elephants (again, an Estimated population of 23,100 (95% c.i. 21,120 - 27,420), and additional Guesses of between 7,210 and 17,500, giving a total of between roughly 30,300 - 40,600 animals (using the mean of 23,100 and the two extremes of the Guesses).

3.9 Cameroon holds a further 6%, DRC 3%, and Equatorial Guinea just 0.7% of the continental total of the species. A total of about 1,000 other individual animals can be found in northern Angola, South Sudan, Rwanda, and Uganda.

3.10 **Range** - Forest elephants' known and possible range is about 3.1 million km^2. About a quarter of the entire range was surveyed between 2016 and 2022.

3.11 Future surveys should prioritise West Africa in particular and areas with small elephant population, as many areas have so few elephants that Guesses were made as opposed to Estimates. These small populations may be very important from a species conservation perspective. There have been some areas where known range has increased, thanks to better information from the field, particularly in the Chinko area of the Central African Republic, much of Gabon outside the protected areas, and south-eastern Cameroon.

4. Status of the African savanna elephants

4.1 The 2016 IUCN African Elephant Status Report provides the most recent reliable assessment of the continental population of the two species combined, at around 415,000 elephants across Africa plus a potential 117,000 as additional animals categorised as Guesses.

4.2 The 2016 Status Report is currently being updated by publishing forest and savanna elephant status separately. The African Forest Elephant Status Report 2022 is

[18] Laguardia, A., S. Bourgeois, S. Strindberg, K. S. Gobush, G. Abitsi, H. G. Bikang Bi Ateme, F. Ebouta, J. M. Fay, A. M. Gopalaswamy, F. Maisels, E. L. F. Simira Banga Daouda, L. J. T. White, and E. J. Stokes. 2021. Nationwide abundance and distribution of African forest elephants across Gabon using non-invasive SNP genotyping. Global Ecology and Conservation 32:e01894.

nearing completion whereas survey reports for the African Savanna Elephant Status Report are under review for publication in 2023.

4.3 African savanna elephant populations are distributed across 24 African countries: Eastern Africa (Eritrea, Ethiopia, Kenya, Rwanda, Somalia, United Republic of Tanzania, Uganda); southern Africa (Angola, Botswana, Eswatini, Malawi, Mozambique, Namibia, South Africa, South Sudan, Zambia and Zimbabwe); Central Africa (Cameroon, Central African Republic, Chad, Democratic Republic of Congo); and in West Africa (Burkina Faso, Mali, Nigeria).

4.4 Here AfESG provides estimates for some savanna elephant populations that it anticipates will be of immediate interest to Parties to CITES at CoP 19 given the mentioning of those populations in Proposals 4 and 5. It should be noted that these estimates for four southern African countries are based on preliminary assessments of some of the survey reports since the 2016 AESR was published and on expert opinions.

4.5 A complete status report for African savanna elephants in 2023 will include Kavango Zambezi Transfrontier Conservation Area (KAZA) elephant numbers whose survey is currently underway. A combined KAZA (Angola, Botswana, Namibia, Zambia and Zimbabwe) transboundary population is estimated at 220,000 animals. The following country estimates (Table 1) are therefore subject to change once the KAZA survey is completed and results are reported.

4.6 **Botswana:** The total elephant population stands at 128,362 (95% c.i. 119,029 – 137,695). The northern population represents the vast majority of elephants in the country with an estimate of 126,114 (95%% c.i. 116,191 – 136,037 (Chase *et al*. 2018[19]; Republic of Botswana 2018[20]). Up to 2006 the total elephant population was increasing exponentially, However, from 2010 onward the estimates have been close to stable. An outbreak of illegal hunting was noted in 2018 (Chase *et al*. 2018).

4.7 **Namibia:** The total elephant population is estimated at 24,634 (95% c.i. 20,380 – 28,888). The north-eastern area (Nyae Nyae–Tsumkwe-Khaudum and the Zambezi Region) contains most of Namibia's elephants at 20,007 (95% c.i. 16,016 – 23,998) (Craig and Gibson 2019a[21]; Craig and Gibson 2019b[22]). The 2019 estimate in the Zambezi region was 12,008 (95% c.i. 9,410 – 14,606) (Craig and Gibson 2019a) which is slightly less than the previous one in 2015, though not significantly so. The north-western Namibia estimate of 1,716 (95% c.i. 417 – 3,015) elephants (Craig and Gibson 2016[23]) increased between 2010 and 2016, but the change is not statistically significant (the extremely low density makes it difficult to obtain a precise estimate). The exponential growth rate in Namibia 1995-2006 was 5.5%, with the rate slowing by 2015 and levelling off in 2019.

4.8 **South Africa:** The total wild population is estimated at approximately 44,326 (43,884 – 44,775) elephants. The Kruger National Park (KNP) elephant population was estimated at 31,527 (95% c.i: 31,085 - 31,976[24]) individuals in 2020[25]. It is part of the Greater Limpopo Transfrontier Park where elephants move freely across borders and between countries leading to population fluctuations (e.g., 27,992, 95% c.i. 26,401 – 29,584 in KNP during 2021). The AESR figures for South Africa 1995 to 2006

---

[19]Chase M., Schlossberg, S., Sutcliffe, R., & Seonyatseng, E. 2018. Dry Season Aerial Survey of Elephants and Wildlife in Northern Botswana July-October 2018. Government of Botswana. December 2018.

[20]Department of Wildlife & National Parks 2018. Botswana Wildlife Aerial Survey Dry Season 2018. Department of Wildlife & National Parks. Republic of Botswana.

[21]Craig G.C. & Gibson, D. St.C. 2019a. Aerial Survey of North-East Namibia - Elephants and other wildlife in Zambezi Region September/October 2019. KfW. Ministry of Environment & Tourism, Windhoek, Namibia.

[22]Craig G.C. & Gibson, D. St.C. 2019b. Aerial Survey of North-East Namibia - Elephants and other wildlife in Khaudum National Park & Neighbouring Areas, September 2019. KfW. Ministry of Environment & Tourism, Windhoek, Namibia.

[23]Craig G.C. & Gibson, D. St.C. 2016. Aerial Survey of Elephants and other Animals in North West Namibia September/October 2016. Ministry of Environment & Tourism, Namibia.

[24]Special Note: Numbers provided by South African authorities SANParks, AfESG have not reviewed methods used to derive the numbers.

[25]The population was estimated using a sample-based approach.

suggest an exponential growth rate of about 5.2%, with a small increase in 2006-2015.

4.9 **Zimbabwe:** The estimated number of elephants in areas surveyed is 74,932 (95% c.i. 66,528 – 83,336). The major populations in Zimbabwe are located in north-western Matabeleland estimated at 53,991 (95% c.i. 46,270 – 61,712) (Dunham et al. 2015a[26]), mid-Zambezi Valley: 8,319 (95% c.i 7,123 – 9,515) (Dunham and Nyaguse 2021[27]), Gonarezhou National Park with the south-eastern Lowveld: 9,215 (95% c.i. 6,857± 11,573) (Dunham *et al*. 2022[28]) and Sebungwe: 3,407 (95% c.i. 2,192 – 4,622) (Dunham *et al*. 2015b[29]). Smaller populations, totalling 3,386, were not recently surveyed. The AESR figures for Zimbabwe 1995 to 2006 suggest an exponential growth rate of about 3%, with a drop in 2006-2015.

[26]Dunham K.M., C.S. Mackie, G. Nyaguse & C. Zhuwau 2015a. Aerial Survey of Elephants and other Large Herbivores in north-west Matabeleland (Zimbabwe): 2014. Great Elephant Census, Vulcan Inc., Zimbabwe Parks & Wild Life Management Authority.

[27]Dunham K.M. & Nyaguse, G. 2021. *Aerial Survey for Elephants and Other Large Herbivores in the Zambezi Valley (Zimbabwe): 2021* L07292-211031-01_UNDP.

[28]Dunham K.M., van der Westhuizan. H.F. & Mandinenya, B. 2022. Aerial Survey of Elephants and other Large Herbivores in Gonarezhou National Park (Zimbabwe) and some adjacent areas:2021. Gonarezhou Conservation Trust, Gonarezhou National Park, Chiredzi, Zimbabwe.

[29]Dunham K.M., Mackie, C. S., Nyaguse, G. & Zhuwau, C. 2015b. Aerial Survey of Elephants and other Large Herbivores in the Sebungwe (Zimbabwe): 2014. Great Elephant Census, Vulcan Inc., Zimbabwe Parks & Wild Life Management Authority.

Table 1: Summary of recent savanna population survey estimates in Botswana, Namibia, South Africa and Zimbabwe

Botswana

Area	Year	Estimated number	Precision	Source
Northern Botswana	2018	126114	± 9923	Chase et al. 2018[30]; Department of Wildlife & National Parks[31]
Ghanzi	2015	797	± 437	Thouless *et al*. 2016[32]
Tuli Block	2014	890	-	

Namibia

Area	Year	Estimated number	Precision	Source
Khaudum/Tsumkwe	2019	7999	± 3029	Craig and Gibson 2019a[33]
Zambezi Region	2019	12008	± 2598	Craig and Gibson 2019b[34]
Etosha NP	2015	2911	± 697	Kilan 2015[35]
NW Namibia	2016	1716	± 1299	Craig and Gibson 2016[36]

Zimbabwe

Area	Year	Estimated number	Precision	Source
Gonarezhou	2022	9215	± 2358	Dunham et al. 2022[37]
NW Matabeleland	2014	53991	± 7721	Dunham et al. 2015a[38]
Sebungwe	2014	3407	± 1215	Dunham et al. 2015b[39]
Zambezi Valley	2021	9215	± 1996	Dunham et al. 2021[40]

South Africa

Area	Year	Estimated number	

[30] Chase M., Schlossberg, S., Sutcliffe, R., & Seonyatseng, E. 2018. *Dry Season Aerial Survey of Elephants and Wildlife in Northern Botswana July-October 2018.* Government of Botswana. December 2018

[31] Botswana Wildlife Aerial Survey Dry Season 2018. Department of Wildlife & National Parks. Republic of Botswana

[32] Thouless C.R., H.T. Dublin, J.J. Blanc, D.P. Skinner, T.E. Daniel, R.D. Taylor, F. Maisels, H.L. Frederick & P. Bouche 2016. *African Elephant Status Report 2016.* IUCN. Species Survival Commission. African Elephant Specialist Group+

[33] Craig G.C. & D. St.C. Gibson 2019a. Aerial *Survey of North-East Namibia - Elephants and other wildlife in Khaudum National Park & Neighbouring Areas, September 2019.* KfW. Ministry of Environment & Tourism, Windhoek, Namibia

[34] Craig G.C. & D. St.C. Gibson 2019b. Aerial *Survey of North-East Namibia - Elephants and other wildlife in Zambezi Region September/October 2019. KfW. Ministry of Environment & Tourism, Windhoek, Namibia*

[35] Kilian J.W. 2015. *Aerial Survey of Etosha National Park.* Internal Report to the Ministry of Environment & Tourism September 2015

[36] Craig G.C. & D. St.C. Gibson 2016. *Aerial Survey of Elephants and other Animals in North West Namibia September/October 2016.* Ministry of Environment & Tourism, Namibia

[37] Dunham K.M., van der Westhuizan. H.F. & Mandinenya, B. 2022. *Aerial Survey of Elephants and other Large Herbivores in Gonarezhou National Park (Zimbabwe) and some adjacent areas: 2021.* Gonarezhou Conservation Trust, Gonarezhou National Park, Chiredzi, Zimbabwe.

[38] Dunham K.M., C.S. Mackie, G. Nyaguse & C. Zhuwau 2015a. *Aerial Survey of Elephants and other Large Herbivores in north-west Matabeleland (Zimbabwe): 2014.* Great Elephant Census, Vulcan Inc., Zimbabwe Parks & Wild Life Management Authority.

[39] Dunham K.M., C.S. Mackie, G. Nyaguse & C. Zhuwau 2015. Aerial Survey of Elephants and other Large Herbivores in the Sebungwe (Zimbabwe): 2014. Great Elephant Census, Vulcan Inc., Zimbabwe Parks & Wild Life Management Authority.

[40] Dunham K.M. & G. Nyaguse, 2021. *Aerial Survey for Elephants and Other Large Herbivores in the Zambezi Valley (Zimbabwe): 2021* L07292-211031-01_UNDP

Kruger National Park	2020	31527	Minister of Forestry Fisheries & the Environment 2022[41,42]
Mapungubwe TFCA	2017	1940	Selier, 2021
Sabie Sands/ Mala Mala	2021	1600	Selier, 2022
Madikwe	2021	1455	Selier, 2022
Timbavati, Klaserie, Thorneybush, Balule and Associated Private Nature Reserves, (APNR)	2021	3144	Selier, 2022
Hluhluwe Imfolozi GR	2021	1050	Selier, 2021
Addo National Park	2019	651	Selier, 2022
Manyeleti	2019	521	Selier, 2021

Note: Latest estimates (populations larger than 500 animals) - (Selier, 2021[43])

5 Dealing with hybrid populations

5.1 AfESG commissioned a genetic study targeting key populations where there may be some uncertainty as to the species present, or whether they are hybridising (Kim and Wasser 2019[44],[45]). This study found hybridization between the two species to be restricted. Hybridization was evident at only 14 of the more than 100 localities examined across the vast forest-savanna ecotone. There was only one exception, this being the hybrid hotspot identified along the Democratic Republic of the Congo and Uganda border, thought to be a consequence of human pressure having pushed forest elephants into the range of savanna elephants (e.g., Mondol et al. 2015)[46]

5.2 Because AfESG is conducting separate status reports for the two species, the question comes up as to how hybrid individuals or populations should be dealt with in creating overall population estimates. A further challenge is that there may be pure individuals from one of the species present in some populations with hybrids. In addition, although AfESG has robust genetic data for some of these uncertain populations, for others data are sparse or non-existent. The Data Review Working Group of AfESG therefore developed criteria as to how to resolve the species status of a given population (input zone), and which of the two reports to include that population into (Table 2).

---

[41] Minister of Forestry Fisheries & the Environment 2022. Reply to freedom of information request 11/3/22. Department of Forestry Fisheries and the environment Republic of South Africa

[42] Sample-based systematic aerial survey. Personnel communication Sam Ferreira.

[43] Selier, J., *pers. comm.*, 2021. Spreadsheet. SANBI, South Africa.

[44] Kim, H.J., Wasser, S.K., 2019. *Loxodonta africana* subspecies distribution across African Elephant Database Input Zones.

[45] iucn.org/sites/dev/files/content/documents/2019-03-15-final- taxanomy_report-african-elephant-sg.pdf

[46] Mondol S, Moltke I, Hart J, Keigwin M, Brown L, Stephens M, and Wasser SK. 2015. New evidence for hybrid zones of forest and savanna elephants in Central and West Africa. *Molecular ecology*, **24**(24), 6134-6147. https://doi.org/10.1111/mec.13472

Table 2. Guidelines to decide which species volume to assign elephants to, according to genetic criteria, and, where DNA information is missing, other parameters.

Category	DNA n>20	DNA n≤20	No DNA – expert opinion	Contribution to regional / continental number
Forest	No hybrids	No hybrids	Morphologically forest, not close to known hybrid populations	Forest
Forest with hybrid	< 50% hybrid	Hybrids present (5-95%)	No morphological savanna, but some with hybrid characteristics and/or close to hybrid populations	Treat as Forest
Savanna	No hybrids	No hybrids	Morphologically savanna, not close to known hybrid populations	Savanna
Savanna with hybrid	< 50% hybrid	Hybrids present (5-95%)	No morphological forest, but some with hybrid characteristics and/or close to hybrid populations	Treat as Savanna
Hybrid	≥ 50% hybrid	All hybrid	All appear to be fully intermediate and/or close to hybrid majority populations.	'Other'
Unknown	n/a	n/a	No information & in area where hybrids are possible	'Other'

Note: The second and third columns are where the genetic dataset has more than 20 or fewer than 20 individuals in the sample. The reference to "50%" or "5-95%" is the percent of animals that are hybrids of the samples analysed.

5.3 For any sites where there were both forest and savanna elephants, they were handled outside of the Table 1 rules. Similarly, for any site that has all three (Savanna, Forest and Hybrid). These few populations were reviewed on a site-by-site basis according to the following rules:

5.3.1 If information is known whereby a majority population can be determined, we categorise according to the majority species, as savanna, forest or 'other', and counted accordingly.

5.3.2 When there is no knowledge of the population composition, but it is known that both species are present, then that population is noted as a forest population, with number less than the input zone estimate, and is also noted as a savanna population with number less than the input zone estimate. Depending on the estimate type, a level of certainty or uncertainty is also assigned in the same manner as for populations where only one species is present.

6. Two species and implications: policy, legislation, conservation & management

6.1 At present, CITES has deferred decisions incorporating changes in their standard nomenclature for African elephants, until the 20th Meeting of the Conference of the Parties. In the interim, during CoP 19 leading up to CoP 20, CITES will seek the perspectives of the Parties and other stakeholders on the potential effects on CITES decisions of recognizing *L. cyclotis* and *L. africana* as separate species. This will include a review of the taxonomic-nomenclatural history of African elephants in CITES and accepted use in biological literature (CITES 2021[47]).

6.2 Draft decisions by Animals Committee 31 held in 2021 in the context of progressive scientific acceptance of listing the two African elephant species in CITES for consideration at CoP 19 are contained in CITES CoP 19 Doc 84.1[48] (19 AN4, 19 AN5 & 19 AN6)

6.3 To support this task, and further the management of the two species, range states are urged to evaluate the taxonomic status of their elephants and incorporate these findings into their legislation. This will be especially important for range states harbouring populations of both *L. cyclotis* and *L. africana*, and in cases where management and conservation policy reflects species-specific concerns, such as large-scale or cross-boundary movements, or economic activities, such as logging that occur in occupied range.

6.4 All range states should encourage research, including genetic studies that will permit a better characterization of the taxonomic status of their populations. Taxonomic designations by range states of their elephants will facilitate and clarify treatment of elephant issues by the Parties to CITES.

6.5 Range states with both species will probably need to take a common approach to many aspects of elephant management, and to the threats that are shared between the two species. A challenge will be to ensure recognition of the special conservation needs of *L. cyclotis*, given their Critically Endangered status.

6.6 Currently all African elephant population are listed in CITES Appendix I except for populations of Botswana, Namibia, South Africa and Zimbabwe which are listed in Appendix II. These four range states do not have forest elephants implying that all *L. cyclotis* populations are technically in Appendix I of CITES. The separation of the species will therefore have no affect at present unless any change in Appendix I listing is ever sought.

6.7 As stated in Paragraph 1.9, AfESG through its Taxonomy Task Force stands ready to provide technical support within its capacity in dealing with the two species separately.

7. African Elephant Database and update on population surveys across Africa

---

[47] CITES 2021 Thirty-first meeting of the Animals Committee Online, 31 May, 1, 4, 21 and 22 June 2021 (https://cites.org/sites/default/files/eng/com/ac/31/com/E-AC31-Com-04.pdf).
[48] https://cites.org/sites/default/files/documents/COP/19/agenda/E-CoP19-84-01_0.pdf.

7.1 The AfESG maintains fundamental elephant management tools. The African Elephant Database (AED) is the most authoritative, CITES-mandated source of information on elephant numbers and distribution, from the local sites, scaled up to national, regional, and continental levels.

7.2 Since the *African Elephant Status Report 2007*, the African Elephant Database has moved to an online, web-based platform at africanelephantdatabase.org.

7.3 This online resource, which was launched initially in 2012 and has been substantially redesigned, not only offers a platform for displaying data between the published status reports, but also provides new ways to view the data from all the status reports, and access more detailed information on new surveys than are presented in this report.

7.4 Future AED design will include assessing the savanna and forest elephant populations, and will build visualisation, analysis, query/search and output tools (maps and graphs) on elephant status and trends at national, regional and continental levels.

7.5 Further development will be linking elephant numbers and distribution to environmental and anthropogenic data and linking work of the AfESG Human Elephant Co-existence (HEC), Taxonomy, and African Elephant Action Plan Task Forces to add value to the database.

7.6 AfESG is currently building an AED consortium that would commit financial, technical and in-kind support for the sustainability and resilience of the AED. The consortium will provide support for the requirements of a revamped AED such as data collection, data storage and analytical outputs, methodological and analytical improvements, survey designs and strategic advice. Collaborative working in such a consortium where the members' strengths, capabilities, and resources are harnessed and shared will facilitate for example the development of innovative technical solutions to challenges facing the AED. The intent is to create a deeper understanding and appreciation for the AED and engage stakeholders on an ongoing basis. A consortium will also help to combine different sources of sustainable funding for the AED and the AESRs.

8. Update of elephant population surveys across Africa

8.1 This status of the AED as of 30 September 2022 indicates that 490 out of 783 are new or updated estimates for elephant populations across Africa, with 428 of these arising from systematic surveys (Table 3 and Figure 1).

8.2 Table 3 gives a breakdown of region updates of the AED. The focus of 2022 data updates is to produce the first African Forest Elephant Report. The updates of savanna elephants in the AED will be a key focus after the publication of that report, including the results of the KAZA survey once they are available.

Table 3: Summary of the updates of the AED, September 2022

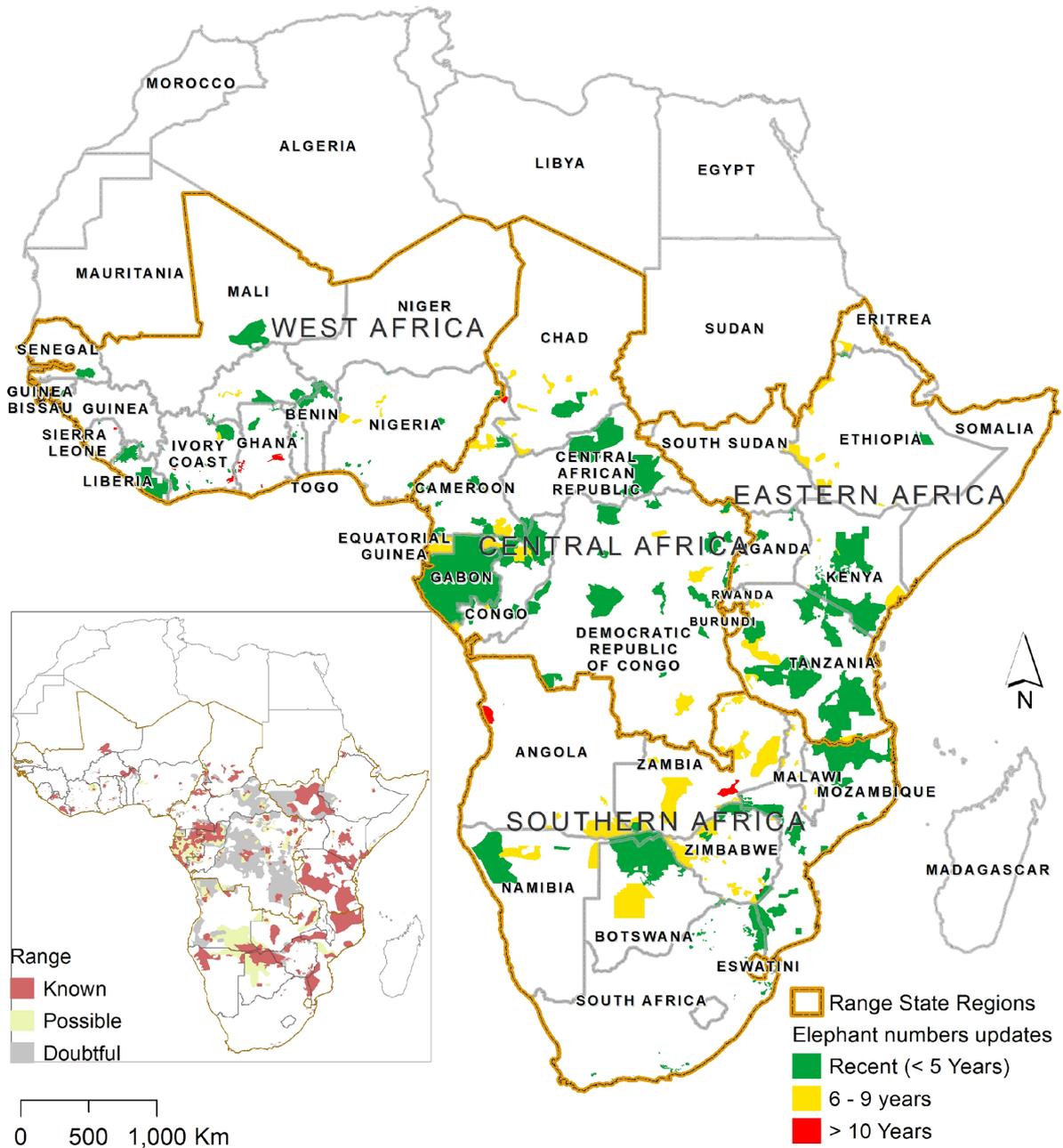| Region	New information (>2016)	Old information (<2016)	Population lost	Grand total	Systematic Surveys
Central Africa	134	54	3	191	117
Eastern Africa	51	53	1	105	50
Southern Africa	236	143	0	379	233
West Africa	69	20	19	108	28
Grand Total	490	270	23	783	428

Figure 1: Map of Africa showing the status of AED updates, September 2022. The green shaded areas are elephant input zones updated in the last 5 years; yellow shaded areas are elephant input zones updated 6 to 9 years ago; and red shaded areas are input zones updated 10 years ago or more. The inset is the distribution range of both forest and savanna African elephants.

8.3 Where there have been no updates in the last 10 years, the rigorous process of the AfESG, as undertaken through the Data Review Working Group (DRWG), means that such counts are downgraded from Estimates to Guesses.

8.4 There has been an overall increase in dung counts in Central Africa. Most of Southern Africa and Eastern Africa are covered by aerial sample and aerial total counts.

8.5 Among the 490 systematic counts, 202 surveys are aerial sample counts, 89 surveys are aerial total counts, 86 surveys are dung counts, 25 surveys are faecal DNA, 14 observations are individual recognition, and 62 observations are other guesses.

8.6 However, for a number of countries in West Africa (Côte d'Ivoire, Ghana, Liberia, Nigeria, Senegal and Sierra Leone), and Central Africa (Cameroon, Chad and Equatorial Guinea), there is a need for concerted effort to increase the frequency of conducting elephant counts by employing the appropriate census techniques to ensure reliable estimates.

8.7 The AfESG and its partners intend to invest in training, designing, implementing, analysing and reporting on elephant surveys in a consistent way in countries that have not undertaken a census of any kind in the last 10 years.

9. Conclusions

- Parties are urged to take note of this document
- Range states are encouraged to support AfESG in its work particularly in sharing elephant surveys information for continued refinement of population numbers and range distribution
- Donors are encouraged to support elephant surveys especially in areas where no surveys have taken place in a long time.

10. Acknowledgments