# State of Giraffe 2025

7GCF

Giraffe Conservation Foundation Citation: Marneweck CJ, Brown MB, Ekandjo P, Fennessy S, Hoffman R, Kipchumba A, Muneza A, Otten F & Fennessy J (Eds). 2025. State of Giraffe 2025: An update from the Giraffe Africa Database (GAD). Giraffe Conservation Foundation, Windhoek, Namibia.

The designation of geographical entities in this book, and the presentation of the material, do not imply the expression of any opinion whatsoever on the part of any other entities concerning the legal status of any country, territory, or area, or of its authorities, or concerning the elimination of its frontiers or boundaries. The views expressed in this publication reflect those of the Giraffe Conservation Foundation.

Published by: Giraffe Conservation Foundation

Copyright: © 2025 Giraffe Conservation Foundation

Reproduction of this publication for educational or other non-commercial purposes is authorized without prior written permission from the copyright holder, provided the

source is fully acknowledged.

DOI: 10.5281/zenodo.15688798

Produced by: Giraffe Conservation Foundation, PO Box 86099, Windhoek, Namibia

info@giraffeconservation.org



# Acknowledgements

The information contained within the State of Giraffe 2025 derives from hundreds of sources, too many to thank by name. However, we would specifically like to thank giraffe range state governments and their relevant wildlife authorities (Angola, Botswana, Cameroon, Chad, Democratic Republic of Congo, Eswatini, Ethiopia, Kenya, Malawi, Namibia, Niger, Rwanda, South Africa, South Sudan, Tanzania, Uganda, Zambia, and Zimbabwe), as well private landowners, managers, academics, and conservationists throughout Africa who contributed their data through various platforms. Furthermore, we extend a thank you to the following that provided support towards the development of the State of Giraffe 2025: Beauval Zoo, Chester Zoo, Cleveland Metroparks Zoo, Cheyenne Mountain Zoo, Glenmorangie, Murray Haseler, Ivan Carter's Wildlife Conservation Alliance, Naples Zoo, San Diego Zoo Wildlife Alliance, Sophie la Girafe, and The Woodtiger Fund. We are grateful for everyone's commitment to conserving and managing all four giraffe species across their range in Africa.

### **Data contributors**

Katie Ahl (Giraffe Conservation Foundation/Natural Selection), Antony Alexander (Peace Parks Foundation, Joao Almeida (Mozambique Wildlife Alliance), Big Game Parks (Eswatini), Mariska Bijsterbosch (Wildlife Vets Namibia), Botswana Department of Wildlife and National Parks, Karolina Brandilova (Czech University of Life Sciences), Mike Chase (Elephants Without Borders), Jaime Dias (Wings for Conservation), Justin Didolanvi (Biodiversity, Environment & Sustainable Development), Ethiopian Wildlife Conservation Authority, Sara Ferguson (Giraffe Conservation Foundation), Chiara Fraticelli (Noé Parcs), Angela Gaylard (African Parks), David Hofmann (Botswana Predator Trust), Rhiannon Jones (African Parks), Serge Kamgang (Biodiversity, Environment & Sustainable Development), Herbert Kasozi (Makerere University), Kenya Wildlife Service, Kenyan Wildlife Research and Training Institute, Daphine Madhlamoto (ZimParks), Rose Mandisodza (ZimParks), Pedro Monterosso (African Parks), Namibian Association of CBNRM Support Organisations, Namibian Ministry of Environment, Forestry and Tourism, David Okon (Wildlife Conservation Society), Jaco Olivier (Giraffe Conservation Foundation/University of Stellenbosch), Dan Parker (University of Mpumalanga), Ian Parsons, Noe Pinto (Angolan National Institute for Biodiversity and Protected Areas), Thomas Rabeil (Wild Africa Conservation), Christine Radford (Giraffe Conservation Foundation), Jenna Stacy-Dawes (San Diego Zoo Wildlife Alliance), South African National Biodiversity Institute, South African National Parks, Tanzania Wildlife Research Institute, Craig Thomas (African Parks), Ulf Thubessing (Wildlife Vets Namibia), Uganda Wildlife Authority, Dan van de Vyver (African Parks), J.J. van Heerden (Gamecor Services Ltd), Martin van Rooyen (African Parks), Stefan van Wyk (Angola Unchartered), Mara Vukelic (Czech University of Life Sciences), Emma Wells (Giraffe Conservation Foundation/Natural Selection), Wildlife Producers Association of Zambia, Abdoul Razack Moussa Zabeirou (Giraffe Conservation Foundation/Sahara Conservation), Zambian Department of National Parks & Wildlife, Zimbabwe Parks & Wildlife Management Authority.



# **Table of Contents**

Executive Summary	1
Acronyms	
Introduction	
Taxonomic status of giraffe	
Historical population estimates	
International Agreements & Treaties	
Data and methods	
Masai giraffe Giraffa tippelskirchi	
Population	
IUCN Red List	
Range	
Overview	
Luangwa giraffe Giraffa tippelskirchi thornicrofti	
Population	
IUCN Red List	
Range	
Zambia	
Extralimital	
Masai giraffe Giraffa tippelskirchi tippelskirchi	
Population	
Range	
IUCN Red List	
Overview	
Kenya	
Rwanda	
Tanzania	
Extralimital	
Northern giraffe Giraffa camelopardalis	
Population	
Range	
IUCN Red List	
Overview	
Kordofan giraffe Giraffa camelopardalis antiquorum	
Population	
Range	
IUCN Red List	
Overview	
Cameroon	
Central African Republic	
Chad	
Democratic Republic of Congo	
South Sudan	
Extralimital	
Nubian giraffe Giraffa camelopardalis camelopardalis	
Population	
Range	13
IUCN Red List	14
Overview	14
Ethiopia	14
Kenya	14



Uganda	15
South Sudan	
Extralimital	
West African giraffe Giraffa camelopardalis peralta	
Population	
Range	
IUCN Red List	
Overview	
Mali	
Niger	16
Extralimital	
Reticulated giraffe Giraffa reticulata	17
Population	17
Range	
IUCN Red List	
Overview	17
Ethiopia	
Kenya	19
Somalia	
Extralimital	
Southern giraffe Giraffa giraffa	
Population	
IUCN Red List	
Range	
Overview	20
Angolan giraffe Giraffa giraffa angolensis	
Population	
IUCN Red List	
Range	22
Overview	22
Angola	22
Botswana	
Namibia	23
Extralimital	
South African giraffe Giraffa giraffa	24
Population	
IUCN Red List	
Range	24
Overview	
Angola	
Botswana	
Eswatini	
Malawi	
Mozambique	
Namibia	
South Africa	
Zambia	
Zimbabwe	
Extralimital	
References	



# **Executive Summary**

The State of Giraffe 2025 highlights a complex and dynamic picture of conservation progress, data advancement, and ongoing challenges for all giraffe species in the wild. The Giraffe Conservation Foundation (GCF) has collected, collated, and synthesized the latest data and insights from field surveys, expert reviews, and national monitoring efforts to provide a comprehensive overview of giraffe status by species. Our State of Giraffe 2025 estimates for each four species are: Masai giraffe (43,926), Northern giraffe (7,037), Reticulated giraffe (20,901), and Southern giraffe (68,837).

Significant progress has been made in recent years through improved data collection methods specific to giraffe, as well as an increase in the frequency of giraffe-specific surveys and strengthened collaborations for data sharing. These efforts have not only yielded more accurate population estimates but also enabled more strategic conservation actions and national planning. Progress toward the development of Park, National or Regional Giraffe Conservation Strategies and Action Plans in more than half of the giraffe range states has proven critical, with evidence suggesting that countries with such frameworks have seen improved giraffe conservation outcomes. GCF and our partners continue to support African range states with the development and implementation of such strategies and plans.

Targeted survey efforts have also led to revised range maps for each species, with some (sub)species showing expanded distributions due to improved detection, while we report range contractions for others due to habitat loss, insecurity, and/or limited dispersal ability due to high levels of habitat loss and fragmentation in anthropogenic landscapes.

While Masai giraffe populations are stable in Kenya, with improved estimates from intensified and regular surveys, recent data from Tanzania is lacking. However, the species is facing a shrinking range due to human development and poaching throughout their distribution. Northern giraffe populations have shown genuine signs of recovery, largely driven by natural population growth, conservation translocations, and implementation of national plans in Chad, Cameroon, Democratic Republic of Congo, Kenya, Niger, and Uganda. While this is encouraging, the species still faces major threats from political insecurity and limited survey capacity in parts of its range. Reticulated giraffe populations are increasing within Kenya, however, data for neighbouring populations in Ethiopia and Somalia are lacking due to regional insecurity. Southern giraffe populations are widespread and generally increasing, with key strongholds in Botswana, Namibia, South Africa, and Zimbabwe, and reintroduction success in Mozambique. It is important to highlight that the apparent growth is partially due to better survey coverage and the inclusion of additional private land data.

While giraffe conservation has gained momentum through improved survey methods, increased awareness, and collaborative national strategies and plans, ongoing threats like habitat loss and fragmentation, poaching, climate change, and insufficient data do persist. Prioritizing support for under-surveyed regions and the development and/or implementation of national conservation frameworks will be essential to sustain and scale these conservation gains.

The State of Giraffe 2025 marks the launch of GCF's Giraffe Africa Database (GAD), aimed at providing a single repository for the storage and dynamic collation of population data for all four species of giraffe throughout the continent, with systematic and repeatable summarization. We encourage stakeholders from all giraffe range states to submit or request relevant giraffe data by contacting us at gcf.spatial@giraffeconservation.org.



The State of Giraffe 2025 provides an overview of all four giraffe species, their population trends, and details pertaining to each subspecies and overviews per range country.



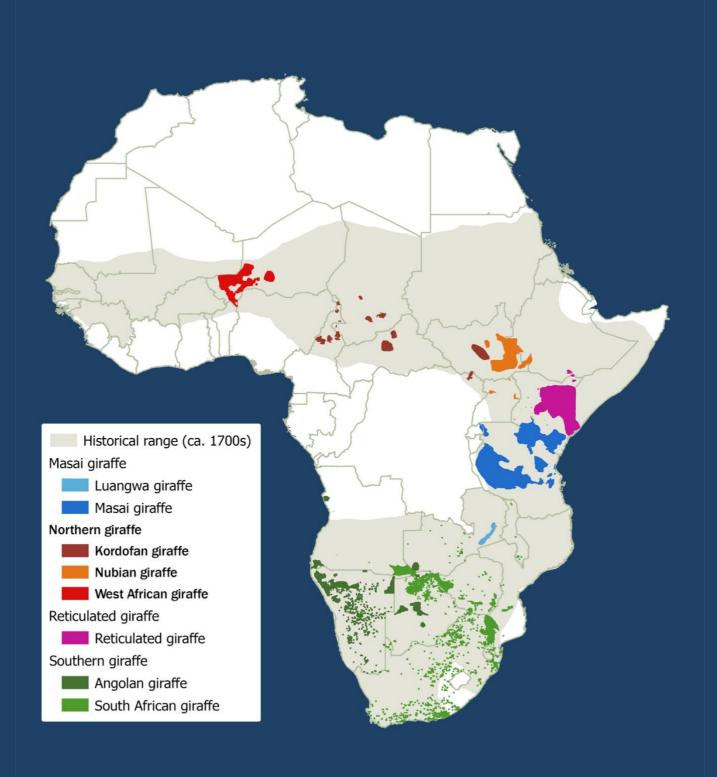
Figure 1. State of Giraffe 2025 summary.

**Table 1.** Summary of the latest population estimates and trends for each all four giraffe species and subspecies in June 2025.

	Total	Country		Popula	ation			Trend	Chan	ge (%)
			Estimate	Range	2020	2015	1995	5 years	5 years	30 years
Masai giraffe Giraffa tippelskirchi	43,926		43,926	42,874 – 55,269	45,402	35,420	72,290	Stable	-3	-39
Luangwa giraffe G. t. thornicrofti	764	Zambia	764	654 – 895	650	600	1,200	Increasing	18	-36
		Kenya	14,179	14,090 – 22,508	15,807	11,755	31,611	Stable	-10	-55
Masai giraffe G. t. tippelskirchi	43,162	Rwanda	163	136 – 190	95	79	20	Increasing	72	715
- · · · ·		Tanzania	28,820	27,994 – 31,676	28,850	22,986	39,459	Stable	0	-27
Northern giraffe Giraffa camelopardalis	7,037		7,037	5,324 – 9,011	5,919	4,813	23,771	Increasing	19	-70
		Cameroon	617	526 – 738	760	680	1,600	Decreasing	-19	-61
		CAF	10	8 – 12	50	170	1,757	Decreasing	-80	-99
Kordofan giraffe G. c. antiquorum	2,391	Chad	1,657	1,050 - 2,679	1,325	947	890	Increasing	25	86
		DRC	106	106 – 106	62	45	419	Increasing	71	-75
		South Sudan	1	1 – 1	100	100	3,429	Decreasing	-99	-100
		Ethiopia	475	79 – 871	171	200	200	Increasing	178	138
Nubian giraffa C. a gamalangrdalis	3,977	Kenya	1,281	1,034 – 1,509	709	488	200	Increasing	81	541
Nubian giraffe G. c. camelopardalis		Uganda	1,986	1,748 - 2,106	1,692	1,333	153	Increasing	17	1,198
		South Sudan	235	235 – 376	450	450	15,053	Decreasing	-48	-98
West African giraffe G. c. peralta	669	Niger	669	537 – 613	600	400	70	Increasing	12	856
Reticulated giraffe Giraffa reticulata	20,901		20,901	20,574 – 33,045	15,985	8,761	36,000	Increasing	31	-42
		Ethiopia	101	101 – 101	100	100	140	Stable	1	-28
		Kenya	20,746	20,446 - 32,863	15,785	8,561	35,860	Increasing	31	-42
		Somalia	54	27 – 81	100	100		Decreasing	-46	-46
Southern giraffe Giraffa giraffa	68,837		68,837	51,973 – 90,313	46,165	48,875	31,700	Increasing	49	117
		Angola	181	168 – 193	100	100	0	Increasing	81	81
Angolan giraffe G. g. angolensis	15,663	Botswana	1,587	367 – 2,913	2,129	1,450	1,200	Decreasing	-25	32
		Namibia	13,895	11,344 – 16,817	14,500	13,198	6,690	Stable	-4	108
		Angola	393	20 – 790	200	100		Increasing	97	293
		Botswana	11,477	9,118 - 14,230	8,200	8,000	10,500	Increasing	40	9
		Eswatini	416	416 – 416	250	250		Increasing	66	66
		Malawi	37	33 – 41	30	10	0	Increasing	23	270
South African giraffe G. g. giraffa	53,174	Mozambique	1,108	808 – 1,609	250	150	0	Increasing	343	639
		Namibia	200	200 - 320	250	100		Decreasing	-20	100
		South Africa	29,536	21,744 - 39,859	16,000	17,272	7,880	Increasing	85	275
		Zambia	806	238 – 1,374	350	260		Increasing	130	210
		Zimbabwe	9,201	7,517 – 11,751	4,060	7,985	5,430	Increasing	127	69

**Note:** Does not include extralimital populations; for details on the extralimital populations, see each subspecies section.





**Figure 2.** Current 2025 range map of all four giraffe species and their subspecies.

Note: Range shapefiles can be downloaded at

https://github.com/Giraffe-Conservation-Foundation/GiraffaRange2025

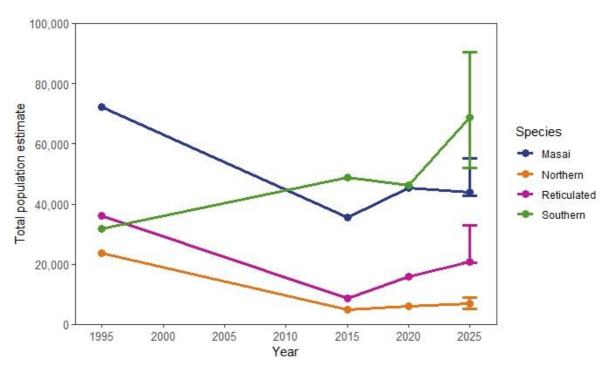


Figure 3. Population trend for each of the four giraffe species from 1995-2025.



# Acronyms

CITES Convention on International Trade in Endangered Species

CMS Convention on the Conservation of Migratory Species of Wild Animals

CoP Conference of Parties

GAD Giraffe Africa Database

GCF Giraffe Conservation Foundation

IQI Information Quality Index

IUCN International Union for the Conservation of Nature

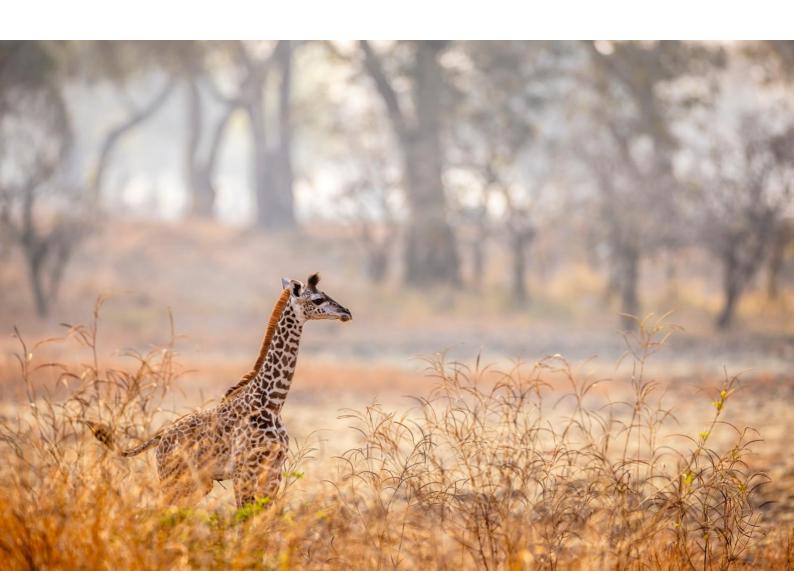
KAZA Kavango Zambezi

NP National Park

NR National Reserve

SSC Species Survival Commission

TFCA Transfrontier Conservation Area



# Introduction

# Taxonomic status of giraffe

Our understanding of giraffe taxonomy has undergone a series of nuanced scientific changes over the last few hundred years, ranging from the use of different species concepts to the collection of new data and its alternative interpretation, from pelage pattern to variations in cranial morphology, and geographical distribution to genomics (Ansell, 1968; Dagg, 1971; Groves and Grubb, 2011; Muneza et al., 2025). Broadly distributed throughout sub-Saharan Africa, *Giraffa* spp. exhibit significant genetic diversity and polymorphism due to evolutionary and biogeographic factors. Their taxonomic classification has been debated based on limited scientific assessments. In 2016, the existence of four monophyletic groups (species) was shown, and has since been further corroborated with molecular genetic evidence (Bertola et al., 2024; Coimbra et al., 2023, 2021; Fennessy et al., 2016; Winter et al., 2018), biogeography (Thomassen et al., 2013), and cranial morphology (Kargopoulos et al., 2024). As such, and supported by the Catalogue of Life and ASM Mammal Diversity Database, their taxonomic classification is as follows:

- Masai giraffe Giraffa tippelskirchi
  - O Luangwa giraffe G. t. tippelskirchi
  - O Masai giraffe G. t. thornicrofti
- Northern giraffe Giraffa camelopardalis
  - O Kordofan giraffe G. c. antiquorum
  - O Nubian giraffe G. c. camelopardalis
  - O West African giraffe G. c. peralta
- Reticulated giraffe Giraffa reticulata (reticulata)
- Southern giraffe Giraffa giraffa
  - O Angolan giraffe *G. g. angolensis*
  - O South African giraffe G. g. giraffa

# **Historical population estimates**

Several *Giraffa* spp. population estimates were carried out in the past, the first of which by East in the early 1990s (East, 1999). Since then, the IUCN SSC Giraffe & Okapi Specialist Group Red List assessment was conducted for giraffe as a single species (Muller et al., 2016) and eight subspecies assessments (Bercovitch et al., 2018; Bolger et al., 2019; Fennessy et al., 2017, 2018; Fennessy and Marais, 2018; Marais et al., 2018; Muneza et al., 2018; Wube et al., 2018). Due to the recent updates in giraffe taxonomy, we reassigned some of these subspecies' population estimates under their correct subspecies where appropriate. For example, the previously assessed Rothschild's giraffe was confirmed to be of the Nubian subspecies (Fennessy et al., 2016) and thus the two previous subspecies estimates from Fennessy et al. (2018) and Wube et al. (2018) were collated as one. We use information from East (1999) and the various Red List assessments to update and report the estimated populations for 1995 and 2015. We further use the review by Brown et al. (2021) as the estimate for 2020.

# **International Agreements & Treaties**

In October 2017, giraffe as a single species were listed on Appendix II of the Convention on the Conservation of Migratory Species of Wild Animals (CMS COP12, 2017). While giraffe are protected in



most of their range, protection under CMS aims to facilitate increased collaboration between conservation range states and improve awareness and management of their plight internationally. This convention obligates each partner state to conserve migratory species of wildlife throughout their migratory range. It requires range states to cooperate with others within the migratory range of wildlife resources found or migrating through each country.

In August 2019, the Conference of Parties (CoP) to the Convention on International Trade in Endangered Species (CITES) passed a resolution to place giraffe as a single species on Appendix II of CITES (CITES COP18, 2019). The Appendix II listing only enables international trade in giraffe and their body parts under restricted conditions. Except for South Sudan, all giraffe range states are parties to CITES, many since its ratification in 1974.

### **Data and methods**

Data for the State of Giraffe 2025 were gathered by GCF through a wide range of methods as well as people and organizations. Data collection included ground and aerial surveys conducted by governments, academics, NGOs, and the private sector, published in a variety ways including survey reports, peer-reviewed articles, extraction of third-party data from governments and stakeholders, and popular publications. Additionally, in areas with limited scientific assessment, data were collected through individual interviews and best guesstimates provided.

All data summarized in this report are housed in GCF's Giraffe Africa Database (GAD). GAD is a dedicated repository established by GCF and housed on the ESRI platform to track their numbers and range. This resource helps to provide the most up-to-date information on the conservation status, numbers, and distribution of all four giraffe species in the wild. Copies of all reports, publications, and documents are housed in GCF's online Giraffe Resource Centre where they, as well as the summary data, are available on request, dependent on data ownership and agreements (raw data where permissions allow).

The African Antelope Database (East, 1999), IUCN SSC Giraffe & Okapi Specialist Group Red List assessments (Muller et al., 2016), and the review by Brown et al. (2021) are used as baselines for the approximate periods of 1995, 2015, and 2020, respectively. Any population marked as Extinct in the early 1990s and remaining Extinct today has not been included.

For consistency and comparability, we have based our data categorization on those used in the African Elephant Database (Thouless et al., 2016), where confidence in the population estimate is indicated by an Information Quality Index (IQI) based on the methodological details provided. For giraffe, aerial surveys consistently underestimate populations due to the difficulty in detection from above. As such, ground estimates are more accurate and reliable (Jachmann, 2002; Lamprey et al., 2020; Lee and Bond, 2016) and are thus ranked with higher confidence than aerial estimates (Table 3). In the original African Antelope Database, East (1999) acknowledged this by applying a correction factor of 1.3 (i.e., an increase of 30%) to aerial data to allow for the undercounting bias. In a more recent study, Lamprey et al. (2020) found that, during aerial total counts, rear-seat observers did not detect 58% of giraffe when compared to automated oblique cameras. Considering the biases and limitations of other methods (Buckland et al., 2001), we have calculated an upper estimate for all those with no reported standard error, coefficient of variation, or confidence interval. For aerial total counts, we used an upper estimate corrected by 1.6 (Lamprey et al., 2020). For ground total counts, we used an upper estimate corrected by 1.2 (Buckland et al., 2001). For guesstimates, we used an upper/lower estimate of ± 1.5. Consequently, all estimates in the database have an associated range except those from



populations that are monitored with all individuals known and monitored in platforms such as <u>GiraffeSpotter.org</u> (Wildbook for Giraffe; Berger-Wolf et al., 2017). Therefore, ranges shown do not convey a specific statistics measure, but are our best way to convey confidence when dealing with estimates from a wide range of methods. This range gives the reader a much better understanding of the quality and reliability of the estimate and is much more likely to reflect environmental complexity.

Within the GAD, each site is recorded structurally within a subregion and a region within each country (i.e., country > region > subregion > site). To ensure that only the best available population estimate is retained for each location, we applied a structured selection procedure that prioritizes data quality, spatial scale, and recency. Each record is assigned three component scores:

- 1. Data quality (IQI): a qualitative index from 1 (highest quality) to 5 (lowest quality), based on the survey method used (see Table 3).
- 2. Spatial scale: based on the administrative resolution of the data where lower scores represent broader-scale estimates (country = 1, region = 2, subregion = 3, site = 4.
- 3. Recency score: calculated as the current year survey year (e.g., 2020 = 5), where more recent data receives a lower score.

These three scores were then combined into a composite rank score using a weighted formula:

Rank score =  $(3 \times IQI) + (2 \times scale) + (1 \times recency)$ 

This scoring system gives priority to recent estimates that are broad-scale and high-quality. Within each grouping of species, subspecies, and country, only the record with the lowest rank score was retained. To prevent double-counting, any lower-level spatial resolutions (e.g., subregion and site) were excluded when a higher-level estimate (e.g., region) was selected. This approach ensures that only the most reliable, recent, and appropriate estimates are used for each population, maintaining consistency and comparability across the continent while avoiding duplication. The R code for the selection and subsequent RShiny display is available open source on GitHub

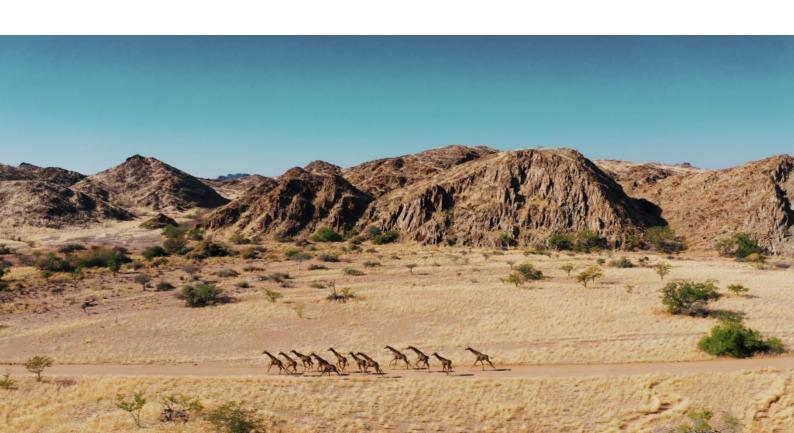
https://github.com/Giraffe-Conservation-Foundation/GAD RShiny

When considering population changes from previous estimates, a population is considered stable if the estimate changed by  $\leq$ 10%, otherwise it is noted as increasing/decreasing as appropriate.



**Table 2.** Data reliability categorization (Information Quality Index) of giraffe species' abundance data.

IQI	Survey type	Categorization
1	Individual registration	Entire population is known from regular, high-level population monitoring. Downgraded to an informed guess of reliability 2 if a range of estimates is given, or other information suggesting the individual registration estimate does not include the entire population.
	Ground sample count	Well-designed and implemented; downgraded to reliability 2 if there are concerns about whether the survey was well designed or implemented, or if there are no confidence intervals or other measure of precision provided.
2	Aerial sample count	Well-designed and implemented; downgraded to reliability 3 if there are concerns about whether the survey was well designed or implemented, or if there are no confidence intervals or other measure of precision provided.
3	Ground total count	Well-designed and implemented; downgraded to reliability 4 if there are concerns about whether the count was well designed or implemented or if a range of estimates is provided.
	Aerial total count	Well-designed and implemented; downgraded to reliability 4 if there are concerns about whether the count was well designed or implemented or if a range of estimates is provided.
4	Informed guess	Information and guesses that are based on a clearly explained logic for extrapolating from observations.
5	Degraded data	Any estimate that is at least ten years old. For this report this includes any estimates from 2005 or earlier.



# Masai giraffe Giraffa tippelskirchi

# **Population**

1995: 72,290 Masai giraffe (Bolger et al., 2019; East, 1999)

2015: 35,420 Masai giraffe (Bercovitch et al., 2018; Bolger et al., 2019); Decreasing

2020: 45,402 Masai giraffe (Brown et al., 2021); Increasing

2025: 43,926 (42,874 – 55,269) Masai giraffe; Stable (-3% in 5 years, -39% in 30 years)



### **IUCN Red List**

Endangered (Bolger et al., 2019), assessed as a subspecies of G. camelopardalis.

Based on the State of Giraffe 2025, the Masai giraffe as a single species is recommended to be downlisted to Vulnerable on the IUCN Red List (criterion A2b; population size reductions >30% over three generations).

# Range

Natural: Kenya, Rwanda, Tanzania, Zambia

# Overview

The Masai giraffe population appears to be stable across its range. In Kenya, increased survey efforts have contributed to improved population estimates and revealed stable or increasing numbers in key ecosystems including Amboseli, Masai Mara and Tsavo. In Tanzania, which is the historical stronghold, limited systematic surveys were conducted in the past five years, resulting in a significant data gap. However, overall Masai giraffe numbers in Tanzania are presumed to be stable. Throughout their range, the Masai giraffe distribution is decreasing due to habitat loss and fragmentation in areas



undergoing rapid anthropogenic development. This is coupled with increasing mortality from illegal hunting (poaching) and human-wildlife conflict. The Luangwa giraffe in eastern Zambia was recently confirmed to occupy a wider range than previously assumed. This small, isolated population appears stable (although marginally increased) but requires coordinated monitoring across public, private, and communal lands. Ongoing efforts to fill data gaps, manage threats, and monitor populations are essential for the long-term conservation of Masai giraffe across their declining range.

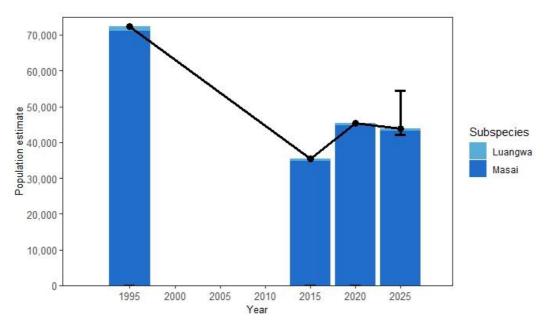
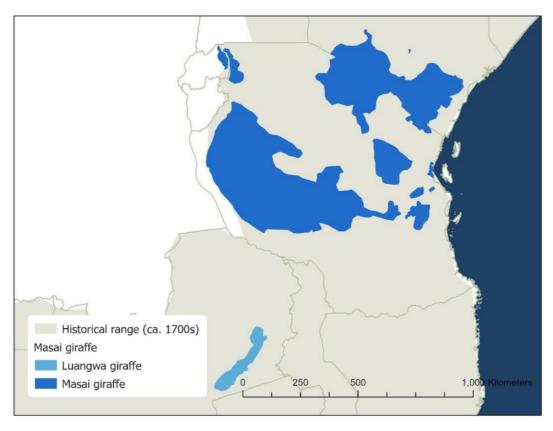


Figure 4. Masai giraffe including the Luangwa and Masai subspecies population trend from 1995-2025.



**Figure 5.** Current and historical distribution of the Masai giraffe including the Luangwa and Masai subspecies in East and Southern Africa.



# Luangwa giraffe Giraffa tippelskirchi thornicrofti

# **Population**

1995: 1,200 Luangwa giraffe

2015: 600 Luangwa giraffe (Bercovitch et al., 2018); Stable

2020: 650 Luangwa giraffe (Brown et al., 2021); Increasing

2025: 764 (654 – 895) Luangwa giraffe; Increasing (+18% in 5 years, -36% in 30 years)

### **IUCN Red List**

Vulnerable (Bercovitch et al., 2018), assessed as a subspecies of G. camelopardalis.

Based on the State of Giraffe 2025, the Luangwa giraffe as a subspecies of the Masai giraffe is recommended to retain its listing as Vulnerable on the IUCN Red List (criterion A2b; population size reductions >30% over three generations).

### Range

Natural: Zambia

### Zambia

1995: 1,200 Luangwa giraffe; Stable (East, 1999)Bercovitch et al., 2018; Brown et al., 2021; (East,

1999)

2015: 600 Luangwa giraffe; Stable (Bercovitch et al., 2018)

2020: 650 Luangwa giraffe; Increasing (Brown et al., 2021)

2025: 764 (654 – 895) Luangwa giraffe; Increasing (+18% in 5 years, -36% in 30 years)

The isolated Luangwa giraffe population was reviewed with a systematic survey in 2023 which increased their known range southward by 120 km. The population persists across a range of public, private, and communal game management areas, thus requiring coordination from all stakeholders to monitor. The population appears stable with a steady increase over time.

### **Extralimital**

None

# Masai giraffe Giraffa tippelskirchi tippelskirchi

### **Population**

1995: 71,090 Masai giraffe (Bolger et al., 2019; East, 1999)

2015: 34,820 Masai giraffe (Bolger et al., 2019); Decreasing

2020: 44,752 Masai giraffe (Brown et al., 2021); Increasing

2025: 43,162 (42,220 – 54,374) Masai giraffe; Stable (-4% in 5 years, -39% in 30 years)

### Range

Natural: Kenya, Rwanda, Tanzania



### **IUCN Red List**

Endangered (Bolger et al., 2019), assessed as a subspecies of G. camelopardalis.

Based on the State of Giraffe 2025, the Masai giraffe as a subspecies of the Masai giraffe is recommended to be downlisted to Vulnerable on the IUCN Red List (criterion A2b; population size reductions >30% over three generations).

### Overview

The majority of Masai giraffe occur in Kenya and Tanzania, with a small, reintroduced population in Rwanda. Kenya holds several key Masai giraffe populations distributed across major ecosystems. Tanzania is a historical stronghold of the Masai giraffe and appears to have a stable population. However, a significant data gap exists with estimates relying on data from almost 10 years ago. Targeted efforts to fill data gaps on Masai giraffe are required, as well as continued monitoring throughout their range, considering the rapid anthropogenic development across the region and their occurrence across a range of land use types.

# Kenya

1995: 31,611 Masai giraffe (Bolger et al., 2019; East, 1999)

2015: 11,755 Masai giraffe (Bolger et al., 2019); Decreasing

2020: 15,807 Masai giraffe (Brown et al., 2021); Increasing

2025: 14,179 (14,090 – 22,508) Masai giraffe; Stable (-10% in 5 years, -55% in 30 years)

Stable in Kenya, the largest Masai giraffe populations are located across several ecosystems in southern Kenya (Amboseli-Magadi, Greater Masai Mara, and Tsavo-Mkomazi). This wide area encompasses a range of public and communal game management areas.

### Rwanda

1995: 20 Masai giraffe (Bolger et al., 2019; East, 1999)

2015: 79 Masai giraffe (Bolger et al., 2019); Increasing

2020: 95 Masai giraffe (Brown et al., 2021); Increasing

2025: 163 (136 – 190) Masai giraffe; Decreasing (+72% in 5 years, +715% in 30 years)

Masai giraffe in Rwanda occur only in Akagera NP, where this population was introduced from Kenya. Historical records suggest the Masai giraffe likely naturally occurred in this region with close populations in neighbouring Tanzania. The population has been steadily increasing.

### **Tanzania**

1995: 39,459 Masai giraffe (Bolger et al., 2019; East, 1999)

2015: 22,986 Masai giraffe (Bolger et al., 2019); Decreasing

2020: 28,850 Masai giraffe (Brown et al., 2021); Increasing

2025: 28,820 (27,994 – 31,676) Masai giraffe; Stable (+0% in 5 years, -27% in 30 years)

Masai giraffe occur across a range of public and communal areas in Tanzania. The largest part of the population lives within the Serengeti Ecosystem (12,000 individuals in 2016; 42%), however, little recent data is available due to a lack of available data. There is a limited understanding of the recent



population status nationwide and consequently, while the population appears stable, more up-to-date data are required to confirm this trend.

### **Extralimital**

None

# Northern giraffe Giraffa camelopardalis

### **Population**

1995: 23,771 Northern giraffe (East, 1999; Fennessy et al., 2017, 2018; Fennessy and Marais, 2018;

Wube et al., 2018)

2015: 4,813 Northern giraffe (Muller et al., 2016); Decreasing

2020: 5,919 Northern giraffe (Brown et al., 2021); Increasing

2025: 7,037 Northern giraffe (5,324 – 9,012); Increasing (+19% in 5 years, -73% in 30 years)



# Range

Natural: Cameroon, Central African Republic, Chad, Democratic Republic of Congo, Ethiopia, Kenya, Niger, South Sudan, Uganda

Extralimital: Burkina Faso, Nigeria

# **IUCN Red List**

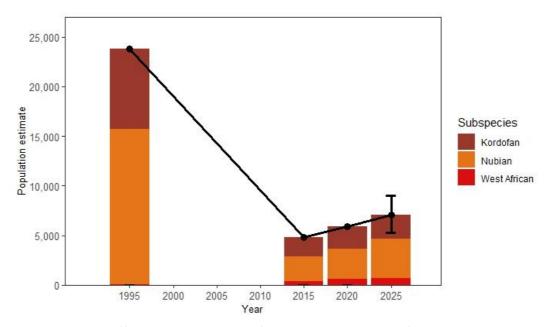
Not previously assessed as a species.

Based on the State of Giraffe 2025, the Northern giraffe as a single species is recommended to be listed as Endangered on the IUCN Red List (criterion A1; population size reductions >70% over three generations).

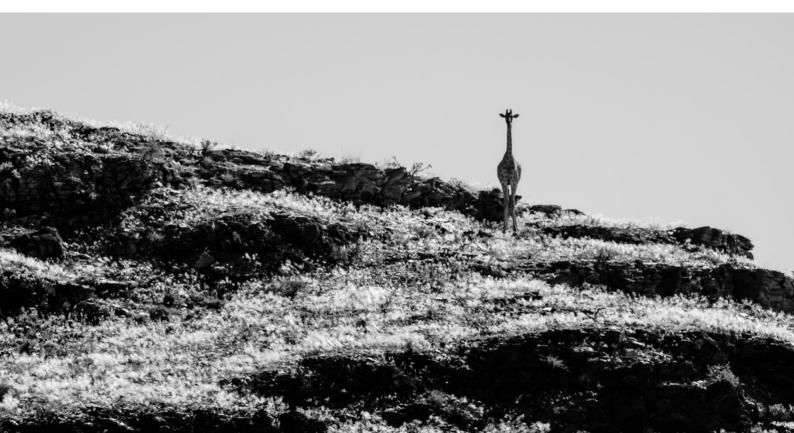


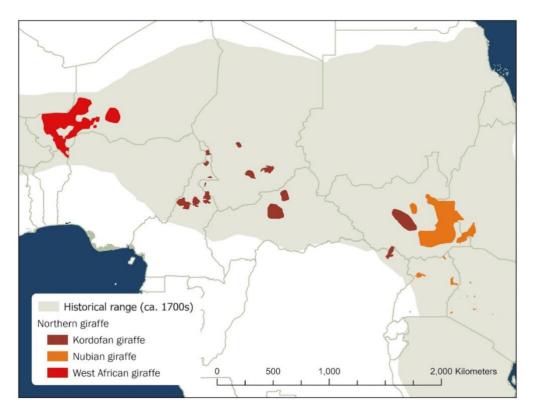
### Overview

Collectively, the Northern giraffe population has shown positive signs of recovery in recent years with a steadily increasing trend. This progress is largely due to natural population growth, focused conservation efforts, conservation translocations, and the development and implementation of Park or National Giraffe Conservation Strategies and Action Plans in Chad, Cameroon, Democratic Republic of Congo, Kenya, Niger and Uganda. Chad remains a stronghold for the Kordofan giraffe, while Kenya and Uganda host most of the Nubian giraffe population, while the West African giraffe population is limited to Niger. Despite these positive trends, the Northern giraffe remains under significant threat. Limited dispersal potential, generally low numbers, outdated or missing data, and persistent insecurity in regions such as the Central African Republic and South Sudan continue to hinder conservation progress. The species urgently requires enhanced and sustained conservation support across its range.



**Figure 6.** Northern giraffe including the Kordofan, Nubian and West African subspecies population trend from 1995-2025.





**Figure 7.** Current and historical distribution of the Northern giraffe including the Kordofan, Nubian and West African subspecies across Central, East, and West Africa.

# Kordofan giraffe Giraffa camelopardalis antiquorum

# **Population**

1995: 8,095 Kordofan giraffe (East, 1999; Fennessy and Marais, 2018)

2015: 1,942 Kordofan giraffe (Fennessy and Marais, 2018); Decreasing

2020: 2,297 Kordofan giraffe (Brown et al., 2021); Increasing

2025: 2,391 (1,691 – 3,536) Kordofan giraffe; Stable (+4% in 5 years, -70% in 30 years)

# Range

Natural: Cameroon, Central African Republic, Chad, Democratic Republic of Congo, South Sudan

# **IUCN Red List**

Critically Endangered (Fennessy and Marais, 2018), assessed as a subspecies of G. camelopardalis.

Based on the State of Giraffe 2025, the Kordofan giraffe as a subspecies of the Northern giraffe is recommended to be downlisted to Endangered on the IUCN Red List (criterion A1; population size reduction >70% over three generations). This change in status is a result of the same numbers previously included for both Kordofan and Nubian giraffe in South Sudan in 2018, and now appropriately assigned to Nubian giraffe.



### Overview

Kordofan giraffe population surveys improved across several Central African countries, resulting in more accurate estimates. Chad remains the stronghold as the home of 69% of the entire Kordofan giraffe population. Limited knowledge of the populations in the Central African Republic and South Sudan exists due to security and accessibility challenges. Despite this, conservation progress for Kordofan giraffe throughout their range is evident with the development of the first-ever National Giraffe Conservation Strategies and Action Plans in Chad (République du Tchad, 2024) and Cameroon (République du Cameroun, 2025), as well as a Strategy for giraffe conservation in Garamba NP in the Democratic Republic of Congo (Garamba National Park, 2018). Continued efforts are needed to support the population recovery of this subspecies and fill critical knowledge gaps, especially in insecure regions.

### Cameroon

1995: 1,600 Kordofan giraffe (East, 1999; Fennessy and Marais, 2018)

2015: 680 Kordofan giraffe (Marais et al., 2019); Decreasing

2020: 760 Kordofan giraffe (Brown et al., 2021); Increasing

2025: 617 (526 – 738) Kordofan giraffe; Decreasing (-19% in 5 years, -61% in 30 years)

In 2023, the first survey of Waza NP in decades was undertaken, providing valuable data and highlighting that most of the country's giraffe population persists here (358 individuals; 58%). Additionally, a new small population was reported in the communal land south of Waza NP. Improved assessments and associated conservation management in the Bouba Ndjida-Sena Oura-Benoue-Faro landscape resulted in small increases, with populations persisting in Bouba Ndjida NP, Benoue NP, and the surrounding Hunting Zones. However, overall, the new estimates for Waza NP suggest a decline of the Kordofan giraffe population.

# **Central African Republic**

1995: 1,757 Kordofan giraffe (East, 1999; Fennessy and Marais, 2018)

2015: 170 Kordofan giraffe (Fennessy and Marais, 2018); Decreasing

2020: 50 Kordofan giraffe (Brown et al., 2021); Decreasing

2025: 0 (8 – 12) Kordofan giraffe; Decreasing (-80% in 5 years, -99% in 30 years)

While no recent surveys were conducted in the country, there are assumed to be approximately 10 individuals remaining in the Chari Basin protected area complex. Increased efforts are required to better understand their status and secure their protection, but insecurity in the country remains a major threat.

### Chad

1995: 890 Kordofan giraffe (East, 1999; Fennessy and Marais, 2018)

2015: 947 Kordofan giraffe (Fennessy and Marais, 2018); Decreasing

2020: 1,325 Kordofan giraffe (Brown et al., 2021); Increasing

2025: 1,657 (1,050 – 2,679) Kordofan giraffe; increasing (+25% in 5 years, +86% in 30 years)

Chad remains a stronghold for Kordofan giraffe, with a steadily increasing population since comanagement agreements have been established between the government and African Parks. While the majority of Kordofan giraffe are within Zakouma NP (1,380 individuals; 83%), smaller populations exist in Siniaka-Minia NP, Zah Soo NP, the Greater Zakouma wildlife corridors, and the Kondjorou area (not formally protected). Continued good conservation management should support an ongoing upward trend of these smaller populations despite an increasing poaching threat.

### **Democratic Republic of Congo**

1995: 419 Kordofan giraffe (East, 1999; Fennessy and Marais, 2018)

2015: 45 Kordofan giraffe (Fennessy and Marais, 2018); decreasing

2020: 62 Kordofan giraffe (Brown et al., 2021); increasing

2025: 106 Kordofan giraffe; increasing (+71% in 5 years, -75% in 30 years)

Limited to one population in the northeast of the country, there are an estimated 106 Kordofan giraffe in Garamba NP and surrounding Hunting Areas. Despite the historical decline, the recent recovery is positive. Ongoing systematic surveys are recommended to enable accurate monitoring information to inform further conservation management.

### **South Sudan**

1995: 3,429 Kordofan giraffe (East, 1999; Fennessy and Marais, 2018)

2015: 100 Kordofan giraffe (Fennessy and Marais, 2018); Decreasing

2020: 100 Kordofan giraffe (Brown et al., 2021); Stable

2025: Kordofan giraffe present; Decreasing (-99% in 5 years, -100% in 30 years)

There was an observation of a single Kordofan giraffe in 2017, with no systematic surveys undertaken since. If remaining, the population is assumed to be very low and limited to Shambe NP. Increased efforts are required to better understand their status, but insecurity in the country remains a major threat.

### **Extralimital**

None

# Nubian giraffe Giraffa camelopardalis camelopardalis

### **Population**

1995: 15,606 Nubian giraffe (East, 1999; Marais et al., 2017; Wube et al., 2018)

2015: 2,471 Nubian giraffe (Fennessy et al., 2018; Wube et al., 2018); Increasing

2020: 3,022 Nubian giraffe (Brown et al., 2021); Increasing

2025: 3,977 (3,096 – 4,862) Nubian giraffe; Increasing (+32% in five years, -75% in 30 years)

# Range

Natural: Ethiopia, Kenya, South Sudan, Uganda



### **IUCN Red List**

Critically Endangered (Wube et al., 2018), assessed as a subspecies of G. camelopardalis.

Based on the State of Giraffe 2025, the Nubian giraffe as a subspecies of the Northern giraffe is recommended to be downlisted to Endangered on the IUCN Red List (criterion A1b; population size reductions >70% over three generations).

### Overview

Recent assessments show a continued steady increase in Nubian giraffe populations across much of their range, driven by natural population growth and improved conservation actions such as conservation translocations. Uganda holds the largest portion of the Nubian giraffe population (1,986 individuals; 50%), mostly residing in Murchison Falls NP (North). This population served as the source for several conservation translocations to re-establish three new populations and augment one another in Uganda. Over 30% of the Nubian giraffe occur in Kenya, where the largest population is in Ruma NP. Numerous other sites in Kenya were strengthened through conservation translocations, although they remain highly fragmented and fenced. While Ethiopia shows a positive trend, available data are outdated and recent, accurate estimates are required to confirm numbers. South Sudan estimates remain uncertain, and obtaining new information is difficult due to remoteness and security issues. National Giraffe Conservation Strategies and Action Plans were developed for several countries, including Ethiopia (Ethiopian Wildlife Conservation Authority, 2023), Kenya (Kenya Wildlife Service, 2023, 2018), and Uganda (Uganda Wildlife Authority, 2020), highlighting growing conservation support across their range. While the population is increasing overall, there is little or no potential for dispersal between sites with limited capacity for expansion, consequently continued management is required where feasible.

# **Ethiopia**

1995: 200 Nubian giraffe (East, 1999; Wube et al., 2018)

2015: 200 Nubian giraffe (Wube et al., 2018); Increasing

2020: 171 Nubian giraffe (Brown et al., 2021); Decreasing

2025: 475 (79 – 871) Nubian giraffe; Increasing (+178% in 5 years, +138% in 30 years)

The large majority of the country's population reside in Gambella NP (447 individuals; 94%). However, this assessment is outdated (from 2015), and there are no recent population assessments for Nubian giraffe in either Gambella NP or the Omo-Tama Ecosystem. Incidental reports suggest that their habitat is declining due to conversion of land to agriculture, so accurate surveys are needed to effectively inform conservation management.

# Kenya

1995: 200 Nubian giraffe (East, 1999; Fennessy et al., 2018)

2015: 488 Nubian giraffe (Fennessy et al., 2018); Increasing

2020: 709 Nubian giraffe (Brown et al., 2021); Increasing

2025: 1,281 (1,034 – 1,509) Nubian giraffe; Increasing (+81% in 5 years, +541% in 30 years)

Several Nubian giraffe populations exist in Kenya, with steadily increasing numbers. Ruma NP is currently the stronghold (762 individuals; 59%), with a few other key sites, including Lake Nakuru NP

and Soysambu Wildlife Conservancy, spread across a mix of public and private fenced land. Numerous conservation translocations occurred between populations (e.g. Giraffe Manor, Mwea NP, Rimoi National Reserve (NR), Soysambu Wildlife Conservancy) to support population growth, although future additional areas may be limited.

### Uganda

1995: 153 Nubian giraffe (East, 1999; Marais et al., 2017)

2015: 1,333 Nubian giraffe (Fennessy et al., 2018); Increasing

2020: 1,692 Nubian giraffe (Brown et al., 2021); Increasing

2025: 1,986 (1,748 – 2,106) Nubian giraffe; Increasing (+17% in 5 years, +1,198% in 30 years)

There has been a steady increase in Nubian giraffe populations across Uganda. Murchison Falls NP (North) remains the stronghold (1,736 individuals; 87%) and has served as the source for establishing and augmenting the four other populations in the country through conservation translocations: Kidepo Valley NP, Lake Mburo NP, Murchison Falls NP (South), and Pian Upe Wildlife Reserve.

### **South Sudan**

1995: 15,053 Nubian giraffe (East, 1999; Wube et al., 2018)

2015: 450 Nubian giraffe (Wube et al., 2018); Decreasing

2020: 450 Nubian giraffe (Brown et al., 2021); Stable

2025: 235 (235 – 376) Nubian giraffe; Decreasing (-48% in 5 years, -98% in 30 years)

The largest population of Nubian giraffe reside within the Badingilo NP (120 individuals; 51%), but a few other small populations persist in the larger Boma-Badingilo-Jonglei landscape. Future efforts should be directed at better understanding their abundance and distribution across this important landscape. While we report that the population is decreasing, it is likely that the population is stable, but limited data exists.

# **Extralimital**

None

# West African giraffe Giraffa camelopardalis peralta

### **Population**

1995: 70 West African giraffe (East, 1999; Fennessy et al., 2017)

2015: 400 West African giraffe (Fennessy et al., 2017); Increasing

2020: 600 West African giraffe (Brown et al., 2021); Increasing

2025: 669 (537 – 613) West African giraffe; Increasing (+12% in 5 years, +856% in 30 years)

# Range

Natural: Niger

Extralimital: Burkina Faso, Nigeria



### **IUCN Red List**

Vulnerable (Fennessy et al., 2017), assessed as a subspecies of G. camelopardalis.

Based on the State of Giraffe 2025, the West African giraffe as a subspecies of the Northern giraffe is recommended to retain its listing as Vulnerable on the IUCN Red List (criterion D1; number of mature individuals <1,000).

### Overview

The small West African population is almost exclusively limited to one location in south-eastern Niger (Giraffe Zone, 656 individuals; 97%), which is currently facing insecurity and threats from civil unrest. Between 2018–2022, a second, small population was established in Gadabedji Biosphere Reserve to expand their limited current range to known historic areas. There has been a steady population increase; however, considerable systematic survey methods and analytical limitations have been reported. With almost all West African giraffe living in communal land, targeted long-term conservation and management is critical for their survival.

### Mali

1995: 10 West African giraffe (East, 1999; Fennessy et al., 2017)

2015: Extinct (Fennessy et al., 2017)

2020: Extinct (Brown et al., 2021)

2025: Extinct

### Niger

1995: 70 West African giraffe (East, 1999; Fennessy et al., 2017)

2015: 400 West African giraffe (Fennessy et al., 2017); Increasing

2020: 600 West African giraffe (Brown et al., 2021); Increasing

2025: 669 (537 – 613) West African giraffe; Increasing (+12% in 5 years, +856% in 30 years)

The majority of West African giraffe occur in the Giraffe Zone (656 individuals; 98%), with a small, reestablished subpopulation in the Gadabedji Biosphere Reserve. The Giraffe Zone population estimate is outdated (2019), but ongoing insecurity in the country makes accurate reassessment infeasible. As the only stronghold of West African giraffe, continued conservation in Niger is crucial.

### **Extralimital**

There are reportedly five West African giraffe in semi-captive facilities in Burkina Faso and Nigeria.



# Reticulated giraffe Giraffa reticulata

# **Population**

1995: 36,000 Reticulated giraffe (East, 1999; Muneza et al., 2018)

2015: 8,761 Reticulated giraffe (Muneza et al., 2018); Decreasing

2020: 15,985 Reticulated giraffe (Brown et al., 2021); Increasing

2025: 20,901 (20,574 – 33,045) Reticulated giraffe; Increasing (+31% in 5 years, -42% in 30 years)



### Range

Natural: Ethiopia, Kenya, Somalia

# **IUCN Red List**

Endangered (Muneza et al., 2018), assessed as a subspecies of G. camelopardalis.

Based on the State of Giraffe 2025, the Reticulated giraffe as a single species is recommended to be retained as Endangered on the IUCN Red List (criterion A2; population size reductions >50% over three generations).

### Overview

The Reticulated giraffe population appears to be increasing across Kenya, with three stronghold populations in the northeast, persisting across a range of public, private, and communal areas. There are likely small populations remaining in southern Ethiopia and south-western Somalia, but reliable data are lacking, and insecurity makes systematic surveys infeasible. Threats to the population in Kenya include habitat loss and fragmentation, as well as illegal hunting (poaching).



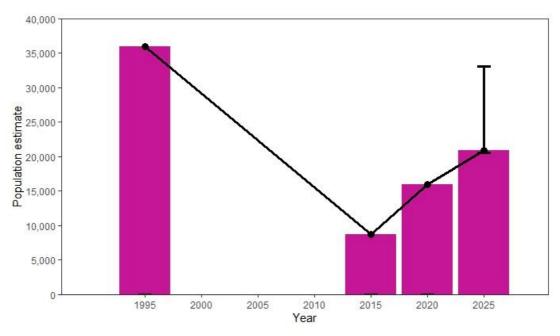


Figure 8. Reticulated giraffe population trend from 1995-2025.

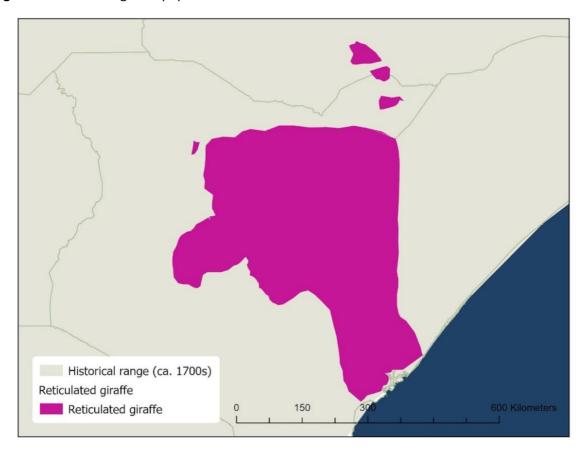


Figure 9. Current and historical distribution of the Reticulated giraffe across East Africa.

### **Ethiopia**

1995: 140 Reticulated giraffe (East, 1999; Muneza et al., 2018)

2015: 100 Reticulated giraffe (Muneza et al., 2018); Unknown

2020: 100 Reticulated giraffe (Brown et al., 2021); Unknown

2025: 101 Reticulated giraffe; Unknown (1% in 5 years, -28% in 30 years)

Data on the Reticulated giraffe in Ethiopia is lacking and severely outdated, dating back over two decades. It is estimated that approximately 100 individuals remain in Oromia, and presence is confirmed in Geralle NP. A transboundary population with the Malka Mari NP in Kenya was reported. Small populations likely remain, but no systematic surveys were conducted in recent years, and thus, more conservation efforts are needed.

### Kenva

1995: 35,860 Reticulated giraffe (East, 1999; Muneza et al., 2018)

2015: 8,561 Reticulated giraffe (Muneza et al., 2018); Decreasing

2020: 15,785 Reticulated giraffe (Brown et al., 2021); Increasing

2025: 20,746 (20,446 – 32,863) Reticulated giraffe; Increasing (+31% in 5 years, -42% in 30 years)

Three key populations of Reticulated giraffe occur in eastern and northeastern Kenya in the Garissa (4,830 individuals; 31%) and Wajir (6,120 individuals; 39%) Counties and the Laikipia-Samburu-Marsabit-Meru Ecosystem (4,531 individuals; 29%). Together, these areas hold 98% of the country's population. National aerial surveys remain a critical source of information, and regular updates.

### Somalia

1995: Unknown Reticulated giraffe (East, 1999; Muneza et al., 2018)

2015: 100 Reticulated giraffe (Muneza et al., 2018); Unknown

2020: 100 Reticulated giraffe (Brown et al., 2021); Unknown

2025: 54 (27 – 81) Reticulated giraffe; Decreasing (-46% in 5 years)

There is a lack of any systematic surveys or reliable information for Somalia. There are reportedly 34 individuals in the Yaaq-Barawai Region, and a 2014 record suggested their presence in the Juba Region.

# **Extralimital**

None



# Southern giraffe Giraffa giraffa

# **Population**

1995: 31,700 Southern giraffe (East, 1999; Marais et al., 2018; Muller et al., 2018)

2015: 48,875 Southern giraffe (Marais et al., 2018; Muller et al., 2018); Increasing

2020: 46,165 Southern giraffe (Brown et al., 2021); Stable

1,851 extralimital Southern giraffe

2025: 68,837 (51,973 – 90,313) Southern giraffe; Increasing (+49% in 5 years, +117% in 30 years)

221 (115 – 327) extralimital Southern giraffe



### **IUCN Red List**

Not assessed as a species.

Based on the State of Giraffe 2025, the Southern giraffe as a single species is recommended to be listed as Least Concern on the IUCN Red List.

# Range

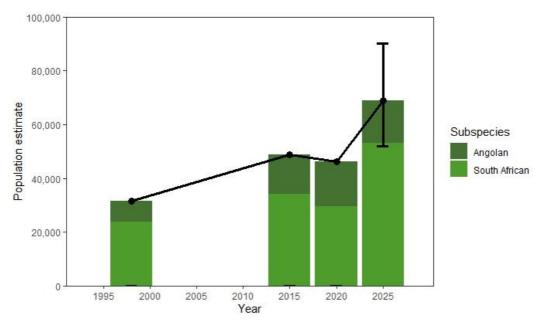
Natural: Angola, Botswana, Eswatini, Malawi, Mozambique, Namibia, South Africa, Zambia, Zimbabwe Extralimital: Democratic Republic of Congo, Mali, Nigeria, Senegal

### Overview

The Southern giraffe is the most abundant giraffe species, occurring on public, private, and communal land across its range. There are several strongholds in each of Botswana, Namibia, South Africa, and Zimbabwe, with growing populations in Mozambique due to reintroductions and conservation efforts. Smaller natural populations also exist in Angola, Eswatini, Malawi, and Zambia. While overall numbers



are increasing, this trend is influenced by improved survey methods and the inclusion of populations residing on private land that were excluded from previous assessments. However, the estimate is still conservative as many private lands were not counted despite the inclusion of South Africa's Eastern and Western Cape as natural range. Taxonomic assessment remains important, particularly in areas with a history of translocations, to maintain the biodiversity integrity of the two subspecies across their range.



**Figure 10.** Southern giraffe including the Angolan and South African subspecies population trend from 1995-2025.



**Figure 11.** Current and historical distribution of the Southern giraffe including the Angolan and South African across Southern Africa.

# Angolan giraffe Giraffa giraffa angolensis

# **Population**

1995: 7,890 Angolan giraffe (East, 1999; Marais et al., 2018)

2015: 14,748 Angolan giraffe (Marais et al., 2018); Increasing

2020: 16,729 Angolan giraffe (Brown et al., 2021); Increasing

3,463 extralimital Angolan giraffe

2025: 15,663 (11,879 – 19,923) Angolan giraffe; Stable (-6% in 5 years, +99% in 30 years)

107 (90 - 124) extralimital Angolan giraffe

### **IUCN Red List**

Least Concern (Marais et al., 2018), assessed as a subspecies of G. camelopardalis.

Based on the State of Giraffe 2025, the Angolan giraffe as a subspecies of the Southern giraffe is recommended to be retained as Least Concern on the IUCN Red List.

### Range

Natural: Angola, Botswana, Namibia

Extralimital: Democratic Republic of Congo, Nigeria, South Africa, Zambia

### Overview

The majority of Angolan giraffe exist in Namibia (13,895 individuals, 88%). The subspecies population has continuously increased, despite the lower estimate now reported as the population in Zimbabwe are now known to be South African giraffe. The overall population estimate is likely conservative due to remaining gaps in the data with many smaller, private sites holding Angolan giraffe in Namibia. Ongoing taxonomic assessments continue to assess the extent of their natural and introduced range following historic translocations throughout Southern Africa.

# **Angola**

1995: Extinct (East, 1999; Marais et al., 2018)

2015: 100 Angolan giraffe (Marais et al., 2018); Increasing

2020: 100 Angolan giraffe (Brown et al., 2021); Increasing

2025: 81 (168 – 193) Angolan giraffe; Increasing (+81% in 5 years, +262% in 10 years)

The majority of Angolan giraffe are in the Huila Region (143 individuals; 79%). Additionally, the Iona NP currently hosts 20 individuals after two re-introductions from Namibia in 2023 and 2024 following an absence of >100 years. Small re-introduced Angolan giraffe populations from Namibia exist in Cuatir NR, Quibala, and Quicama NP. There are likely additional small populations; however, limited data are available.

### **Botswana**

1995: 1,200 Angolan giraffe (East, 1999; Marais et al., 2018)

2015: 1,450 Angolan giraffe (Marais et al., 2018); Increasing

2020: 2,129 Angolan giraffe (Brown et al., 2021); Increasing



2025: 1,587 (367 – 2,913) Angolan giraffe; Decreasing (-25% in 5 years, +32% in 30 years)

There are several private and public lands in the Ghanzi and Kgalagadi Districts with Angolan giraffe, notably the Central Kalahari GR (1,222 individuals; 77%). Several other small private lands are possible, but their taxonomic status is unknown and limited reliable data is available.

### Namibia

1995: 6,690 Angolan giraffe (East, 1999; Marais et al., 2018)

2015: 13,198 Angolan giraffe (Marais et al., 2018); Increasing

2020: 14,500 Angolan giraffe (Brown et al., 2021); Increasing

2025: 13,895 (11,344 – 16,817) Angolan giraffe; Stable (-4% in 5 years, +108% in 30 years)

The largest Angolan giraffe populations reside in Etosha NP (2,858 individuals; 21%) and on communal land throughout Namibia's northwest (Kunene Region, 2,261 individuals; 16%). Additionally, there are many smaller, private and public lands that collectively make up a considerable number of Angolan giraffe in the country.

### **Extralimital**

## Democratic Republic of Congo

1995: O Angolan giraffe (Marais et al., 2018)

2015: O Angolan giraffe (Marais et al., 2018)

2020: 1 Angolan giraffe (Brown et al., 2021); Increasing

2025: 8 Angolan giraffe; Increasing

Almost all the extralimital Angolan giraffe reside in the Mikembo Sanctuary (7 individuals; 88%), introduced from Namibia.

### Nigeria

1995: O Angolan giraffe (Marais et al., 2018)

2015: 10 Angolan giraffe (Marais et al., 2018); Increasing

2020: 30 Angolan giraffe (Brown et al., 2021); Increasing

2025: 53 Angolan giraffe; Increasing

The majority of extralimital Angolan giraffe in Nigeria are within the Sumu Wildlife Park (48 individuals; 91%), introduced from Namibia. An additional five individuals occur in small captive facilities after translocations from the Sumu source population.

# South Africa

1995: Unknown (Marais et al., 2018)

2015: Unknown (Marais et al., 2018)

2020: 1,500 Angolan giraffe (Brown et al., 2021); Unknown

2025: Unknown Angolan giraffe

In the 1970-80s, numerous Angolan giraffe were translocated from Namibia to central South Africa. Exact numbers and distribution are unknown and little information is available on how many were further distributed throughout the country from these founder populations (Van Niekerk et al., 2019). A recent genetic assessment of many populations in central South Africa showed that they were of Angolan giraffe lineage (Van Niekerk et al., 2019). Brown et al. (2021) estimated 1,500 Angolan giraffe to persist in South Africa, however, as wildlife trade between private lands is common and combined with a lack of records, it is not possible to estimate these numbers or the extent of potential hybrids. A detailed taxonomic assessment throughout the country is critical to understand their status.

### Zambia

1995: O Angolan giraffe (Marais et al., 2018)

2015: 17 Angolan giraffe (Marais et al., 2018)

2020: 35 Angolan giraffe (Brown et al., 2021); Increasing

2025: 46 (28 – 64) Angolan giraffe; Increasing

There are records of Angolan giraffe in three sites in Zambia, although others may exist due to limited information; Simalaha Community Conservancy (35 individuals; 76%), Kyindu Ranch (6 individuals; 13%), and Kalumbila Farm (5 individuals; 11%).

# South African giraffe Giraffa giraffa

### **Population**

1995: 23,810 South African giraffe; Increasing (East, 1999; Muller et al., 2018)

2015: 34,127 South African giraffe; Increasing (Muller et al., 2018)

2020: 29,590 South African giraffe; Decreasing (Brown et al., 2021)

2025: 53,174 (40,094 – 70,390) South African giraffe; Increasing (+80% in 5 years, +123% in 30 years)

114 (25 – 203) extralimital South African giraffe

# **IUCN Red List**

Not assessed as a subspecies.

Based on the State of Giraffe 2025, the South African giraffe as a subspecies of the southern giraffe is recommended to be listed as Least Concern on the IUCN Red List.

### Range

Natural: Angola, Botswana, Eswatini, Malawi, Mozambique, Namibia, South Africa, Zambia, Zimbabwe

Extralimital: Democratic Republic of Congo, Mali, Senegal

### Overview

The South African giraffe is widely distributed throughout Southern Africa, with the largest and most stable populations in Botswana, South Africa, and Zimbabwe. South Africa alone holds over 50% of the population (29,536 individuals; 56%), particularly in Kruger NP and on some private reserves. Botswana supports another major population (11,477 individuals; 22%), especially within the Kavango Zambezi Transfrontier Conservation Area (KAZA TFCA). In Zambia and Zimbabwe, numbers are



increasing, partly due to previous assumption that some giraffe populations in Zimbabwe were Angolan giraffe, and largely due to improved surveys and the inclusion of additional private lands. The latter reasons are true for South African giraffe throughout their range. Mozambique has seen a strong recovery following reintroductions after the civil war, while Angola, Namibia, Malawi, and Eswatini maintain smaller populations. Across their range, improved monitoring and protected area management have contributed to the overall population increase. Genetic integrity and hybridization remain a concern in some areas.

### **Angola**

1995: Unknown South African giraffe (East, 1999; Muller et al., 2018)

2015: 100 South African giraffe (Muller et al., 2018); Unknown

2020: 200 South African giraffe (Brown et al., 2021); Increasing

2025: 393 (20 – 790) South African giraffe; Increasing (+97% in 5 years, +293% in 10 years)

The only confirmed South African giraffe in Angola are within the Luengue-Luiana NP of the KAZA TFCA. However, it is possible that there is a mix of Angolan and South African giraffe populations occurring in the country. Quiçama NP previously held an extralimital population, but they were since extirpated and replaced with Angolan giraffe.

### **Botswana**

1995: 10,500 South African giraffe (East, 1999; Muller et al., 2018)

2015: 8,000 South African giraffe (Muller et al., 2018); Decreasing

2020: 8,200 South African giraffe (Brown et al., 2021); Stable

2025: 11,477 (9,118 – 14,230) South African giraffe; Increasing (+40% in 5 years, +9% in 30 years)

The largest population of South African giraffe occurs in the KAZA TFCA (9,512 individuals; 83%), with another notable population in Northern Tuli GR (669 individuals; 6%). Like other Southern African countries, small South African giraffe populations on small public and private properties account for the remainder of the numbers.

### Eswatini

1995: Unknown South African giraffe (East, 1999; Muller et al., 2018)

2015: 250 South African giraffe (Muller et al., 2018); Unknown

2020: 250 South African giraffe (Brown et al., 2021); Stable

2025: 416 South African giraffe; Increasing (+66% in 5 years, +66% in 10 years)

Giraffe were likely extirpated from Eswatini by the early 20<sup>th</sup> century, possibly due to a combination of overhunting and disease. While there is some debate about whether they were ever naturally present, the reintroduction of South African and Angolan giraffe dates to the 1960s. Angolan giraffe did not persist, but the South African giraffe population has been increasing since the initial introductions. The largest population is in Hlane Royal NP (160 individuals; 38%), with a few smaller additional sites in the country.



### Malawi

1995: 0 South African giraffe (East, 1999; Muller et al., 2018)

2015: 10 South African giraffe (Muller et al., 2018); Increasing

2020: 30 South African giraffe (Brown et al., 2021); Increasing

2025: 37 (33 – 41) South African giraffe; Increasing (+23% in 5 years, +270% in 10 years)

The historical presence of giraffe in Malawi is unclear, with limited evidence suggesting they may have occurred naturally or only as transient visitors. Through a series of reintroductions in the early 1990s, South African giraffe are present in several sites in Malawi, with most of the population occurring in Majete WR (29 individuals; 78%).

# Mozambique

1995: O South African giraffe (East, 1999; Muller et al., 2018)

2015: 150 South African giraffe (Muller et al., 2018); Increasing

2020: 250 South African giraffe (Brown et al., 2021); Increasing

2025: 1,108 (808 – 1,609) South African giraffe; Increasing (+343% in 5 years, +639% in 10 years)

Severely impacted by the civil war (1977–1992), South African giraffe became locally extinct in Mozambique in the early 1990s. Subsequent targeted reintroductions re-established the population in several sites, and the population continues to slowly increase. The largest population occurs in the Limpopo NP of the Greater Limpopo TFCA (324 individuals; 29%), where there is also some natural migration between South Africa's Kruger NP and the TFCA. Other notable populations are in Maputo NP (245 individuals; 22%) and Karingani GR (189 individuals; 17%).

# Namibia

1995: Unknown South African giraffe (Muller et al., 2018)

2015: 100 South African giraffe (Muller et al., 2018); Unknown

2020: 250 South African giraffe (Brown et al., 2021); Increasing

2025: 200 (200 – 320) South African giraffe; Decreasing (-20% in 5 years, +100% in 10 years)

The only South African giraffe in Namibia are limited to Bwabwata NP in the KAZA TFCA. The exact number is unconfirmed due to limitations with the survey methodology. Considering the connectivity of this landscape and proximity to Angolan giraffe, the true taxonomy is uncertain, but a genetic assessment is ongoing to confirm the extent of potential hybridisation.

### **South Africa**

1995: 7,880 South African giraffe (East, 1999; Muller et al., 2018)

2015: 17,272 South African giraffe (Muller et al., 2018); Increasing

2020: 16,000 South African giraffe (Brown et al., 2021); Stable

2025: 29,536 (21,744 – 39,859) South African giraffe; Increasing (+85% in 5 years, +275% in 30 years)

South African giraffe exist across a myriad of public and private sites of varying size throughout South Africa. The most notable population occurs in Kruger NP (12,270 individuals; 42%), whereas most

other sites hold small populations, however, the large number of sites accounts for the large overall number of giraffe. Their habitat is highly fragmented, but management and the sale of game allow for active translocation of giraffe between sites across the country. As some Angolan giraffe were introduced to South Africa in the 1970-80s through translocations, some of these smaller populations may host hybrids or Angolan giraffe (Van Niekerk et al., 2019). Ongoing genetic assessments are exploring the extent of this nationwide. While this count includes almost 50% of the giraffe occurring on private sites and this represents the best available data, it is likely that the overall number of giraffe is still greater as even this assessment is not fully comprehensive. As a result, the increase in South African giraffe numbers is likely an artefact of more accurate population estimates based on the inclusion of small, private sites, rather than a true increase.

### Zambia

1995: Unknown South African giraffe (East, 1999; Muller et al., 2018)

2015: 260 South African giraffe (Muller et al., 2018); Unknown

2020: 350 South African giraffe (Brown et al., 2021); Increasing

2025: 806 (238 – 1,374) South African giraffe; Increasing (+130% in 5 years, +210% in 10 years)

Mostly residing in the Sioma Ngwezi NP (542 individuals; 67%), South African giraffe in Zambia are increasing due to the number of private sites holding this subspecies. As with other countries across the South African giraffe range, the apparent increase may be an artefact of more accurate population estimates and the inclusion of private sites rather than a true increase.

### **Zimbabwe**

1995: 5,430 South African giraffe (East, 1999; Muller et al., 2018)

2015: 7,985 South African giraffe (Muller et al., 2018); Increasing

2020: 4,060 South African giraffe (Brown et al., 2021); Decreasing

2025: 9,201 (7,517 – 11,751) South African giraffe; Increasing (+127% in 5 years, +69% in 30 years)

Increasing in number throughout Zimbabwe, South African giraffe are present at numerous smaller sites, and the three largest populations occur in the Nuanetsi (2,408 individuals; 26%) and Bubye Valley Conservancies (1,140 individuals; 12%), and across the KAZA TFCA (1,501 individuals; 16%). As with other countries across the South African giraffe range, the apparent increase may be an artefact of more accurate population estimates rather than a true increase.

# **Extralimital**

# Democratic Republic of Congo

1995: 0 South African giraffe (Muller et al., 2018)

2015: 10 South African giraffe (Muller et al., 2018)

2020: 35 South African giraffe (Brown et al., 2021); Increasing

2025: 34 (25 – 43) South African giraffe; Stable

South African giraffe are present in three sites in the Haut-Katanga region: Muyambo Park (13 individuals), Parc de Kashamata (18 individuals), and Society Birginia (3 individuals).



### Mali

1995: 0 South African giraffe (Muller et al., 2018)

2015: 10 South African giraffe (Muller et al., 2018)

2020: 50 South African giraffe (Brown et al., 2021); Increasing

2025: 5 South African giraffe; Decreasing

Five captive South African giraffe persist in the Tienfala Animal Park, originally translocated from Bandia Reserve in Senegal.

# Senegal

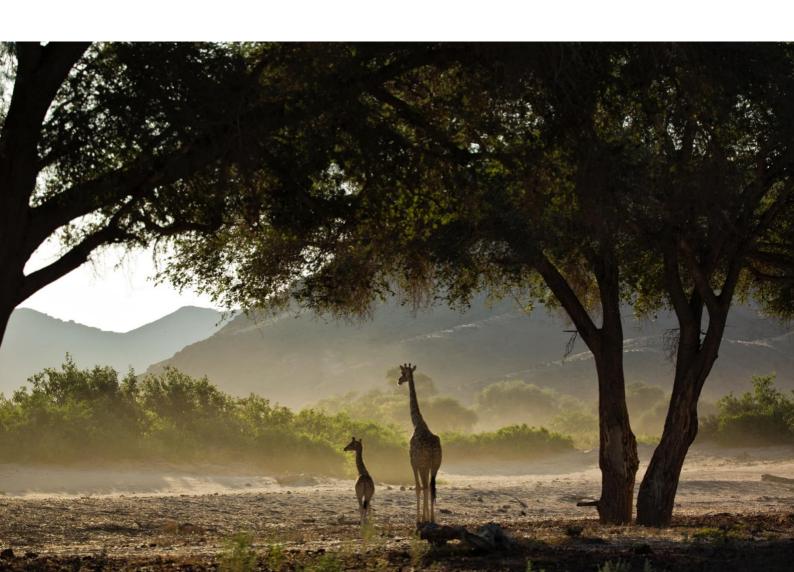
1995: 0 South African giraffe (Muller et al., 2018)

2015: 10 South African giraffe (Muller et al., 2018)

2020: 50 South African giraffe (Brown et al., 2021); Increasing

2025: 75 (1 – 155) South African giraffe; Increasing

Recent records suggest that there are 70 individuals in Reserve de Bandia all originating from the founder populations that were brought in from South Africa in the 1990s. This population was also the source population for the five individuals in Fathala Wildlife Reserve.



# References

- Ansell, W., 1968. Artiodactyla (excluding the Genus Gazella), in: Preliminary Identification Manual for African Mammals, Meester JA (Ed). Smithsonian Institution, Washington DC, USA, pp. 152–160.
- Bercovitch, Carter, K., Fennessy, J., Tutchings, A., 2018. *Giraffa camelopardalis ssp. thornicrofti* (No. e. T88421020A88421024). The IUCN Red List of Threatened Species. https://doi.org/10.2305/IUCN.UK.2018-2.RLTS.T88421020A88421024.en
- Berger-Wolf, T.Y., Rubenstein, D.I., Stewart, C.V., Holmberg, J.A., Parham, J., Menon, S., Crall, J., Van Oast, J., Kiciman, E., Joppa, L., 2017. Wildbook: Crowdsourcing, computer vision, and data science for conservation.
- Bertola, L.D., Quinn, L., Hanghøj, K., Garcia-Erill, G., Rasmussen, M.S., Balboa, R.F., Meisner, J., Bøggild, T., Wang, X., Lin, L., Nursyifa, C., Liu, X., Li, Z., Chege, M., Moodley, Y., Brüniche-Olsen, A., Kuja, J., Schubert, M., Agaba, M., Santander, C.G., Sinding, M.-H.S., Muwanika, V., Masembe, C., Siegismund, H.R., Moltke, I., Albrechtsen, A., Heller, R., 2024. Giraffe lineages are shaped by major ancient admixture events. Curr. Biol. 34, 1576-1586.e5. https://doi.org/10.1016/j.cub.2024.02.051
- Bolger, D., Ogutu, J., Strauss, M., Lee, D., Muneza, A., Fennessy, J., Brown, D., 2019. *Giraffa camelopardalis ssp. tippelskirchi* (No. e. T88421036A88421121). The IUCN Red List of Threatened Species.
- Brown, M.B., Kulkarni, T., Ferguson, S., Fennessy, S., Muneza, A., Stabach, J.A., Fennessy, J., 2021. Conservation status of giraffe: evaluating contemporary distribution and abundance with evolving taxonomic perspectives, in: Imperiled: The Encyclopedia of Conservation. Elsevier, Amsterdam, Netherlands, pp. 471–487. https://doi.org/10.1016/B978-0-12-821139-7.00139-2
- Buckland, S., Rexstad, E., Marques, T., Oedekoven, C., 2001. Distance Sampling: Methods and Applications, Methods in Statistical Ecology. Oxford University Press.
- CITES COP18, 2019. Supplemental information supporting the CITES COP18 proposal to list *Giraffa camelopardalis* on Appendix II, as submitted by the Central African Republic, Chad, Kenya, Mali, Niger and Senegal. Presented at the Eighteenth meeting of the Conference of the Parties Colombo (Sri Lanka), 23 May 3 June 2019, Colombo, Sri Lanka.
- CMS COP12, 2017. Proposal for the inclusion of the giraffe (*Giraffa camelopardalis*) on Appendix Ii of the Convention. Presented at the 12th Meeting of the Conference of the Parties, Manila, Philippines.
- Coimbra, R.T.F., Winter, S., Kumar, V., Koepfli, K.-P., Gooley, R.M., Dobrynin, P., Fennessy, J., Janke, A., 2021. Whole-genome analysis of giraffe supports four distinct species. Curr. Biol. 31, 2929-2938.e5. https://doi.org/10.1016/j.cub.2021.04.033
- Coimbra, R.T.F., Winter, S., Muneza, A., Fennessy, S., Otiende, M., Mijele, D., Masiaine, S., Stacy-Dawes, J., Fennessy, J., Janke, A., 2023. Genomic analysis reveals limited hybridization among three giraffe species in Kenya. BMC Biol. 21, 215. https://doi.org/10.1186/s12915-023-01722-y
- Dagg, A.I., 1971. Giraffa camelopardalis. Mamm. Species 1. https://doi.org/10.2307/3503830 East, R., 1999. African antelope database 1998. IUCN/SSC Antelope Specialist Group, IUCN, Gland,

- Switzerland and Cambridge, UK.
- Ethiopian Wildlife Conservation Authority, 2023. Ethiopian giraffe conservation action plan 2023-2027. Ethiopian Wildlife Conservation Authority (EWCA), Addis Ababa, Ethiopia.
- Fennessy, J., Bidon, T., Reuss, F., Kumar, V., Elkan, P., Nilsson, M.A., Vamberger, M., Fritz, U., Janke, A., 2016. Multi-locus analyses reveal four giraffe species instead of one. Curr. Biol. 26, 2543–2549. https://doi.org/10.1016/j.cub.2016.07.036
- Fennessy, J., Marais, A., 2018. *Giraffa camelopardalis ssp. antiquorum*. The IUCN Red List of Threatened Species.
- Fennessy, J., Marais, A., Tutchings, A., 2017. *Giraffa camelopardalis ssp. peralta* (No. e. T136913A51140803). The IUCN Red List of Threatened Species. https://doi.org/10.2305/IUCN.UK.2018-2.RLTS.T136913A51140803.en
- Fennessy, S., Fennessy, J., Muller, Z., Brown, M.B., Marais, A., 2018. *Giraffa camelopardalis ssp. rothschildi* (No. e. T174469A51140829). The IUCN Red List of Threatened Species. https://doi.org/10.2305/IUCN.UK.2018-2.RLTS.T174469A51140829.en
- Garamba National Park, 2018. National Giraffe Conservation Strategy and Action Plan of the Democratic Republic of Congo (2018-2020). African Parks and Institut Congolais pour la Conservation de la Nature, Nagero, DRC.
- Groves, C., Grubb, P., 2011. Artiodactyla, in: Ungulate Taxonomy. Johns Hopkins University Press, Baltimore, Maryland, pp. 245–246.
- Jachmann, H., 2002. Comparison of aerial counts with ground counts for large African herbivores. J. Appl. Ecol. 841–852.
- Kargopoulos, N., Marugán-Lobón, J., Chinsamy, A., Agwanda, B.R., Brown, M.B., Fennessy, S., Ferguson, S., Hoffman, R., Lala, F., Muneza, A., Mwebi, O., Otiende, M., Petzold, A., Winter, S., Zabeirou, A.R.M., Fennessy, J., 2024. Heads up four *Giraffa* species have distinct cranial morphology. PLOS One 19, e0315043. https://doi.org/10.1371/journal.pone.0315043
- Kenya Wildlife Service, 2023. National Recovery and Action Plan for Giraffe in Kenya (2023-2027), Second Edition. Kenya Wildlife Service, Nairobi, Kenya.
- Kenya Wildlife Service, 2018. National Recovery and Action Plan for Giraffe (*Giraffa camelopardalis*) in Kenya (2018-2022). Kenya Wildlife Service, Nairobi, Kenya.
- Lamprey, R., Pope, F., Ngene, S., Norton-Griffiths, M., Frederick, H., Okita-Ouma, B., Douglas-Hamilton, I., 2020. Comparing an automated high-definition oblique camera system to rearseat-observers in a wildlife survey in Tsavo, Kenya: Taking multi-species aerial counts to the next level. Biol. Conserv. 241, 108243. https://doi.org/10.1016/j.biocon.2019.108243
- Lee, D.E., Bond, M.L., 2016. Precision, accuracy, and costs of survey methods for giraffe *Giraffa* camelopardalis. J. Mammal. 97, 940–948. https://doi.org/10.1093/jmammal/gyw025
- Marais, A., Fennessy, J., Fennessy, S., Brand, R., Carter, K., 2018. *Giraffa camelopardalis ssp. angolensis*. The IUCN Red List of Threatened Species.
- Marais, A.J., Fennessy, S., Brown, M.B., Fennessy, J., 2017. Country Profile: A rapid assessment of the giraffe conservation status in the Republic of Uganda. Giraffe Conservation Foundation, Windhoek, Namibia.
- Marais, A.J., Fennessy, S., Ferguson, S., Fennessy, J., 2019. Country Profile: A rapid assessment of the giraffe conservation status in Cameroon. Giraffe Conservation Foundation, Windhoek,



Namibia.

- Muller, Z., Bercovitch, F., Brand, R., Brown, D., Brown, M., Bolger, D., Carter, K., Deacon, F., Doherty, J., Fennessy, J., Fennessy, S., Hussein, A., Lee, D., Marais, A., Strauss, M., Tutchings, A., Wube, T., 2016. *Giraffa camelopardalis*. The IUCN Red List of Threatened Species.
- Muller, Z., Bercovitch, F., Brand, R., Brown, D., Brown, M.B., Bolger, D., Carter, K., Deacon, F., Doherty, J., Fennessy, J., Fennessy, S., Hussein, A.A., Lee, D., Marais, A., Strauss, M., Tutchings, A., Wube, T., 2018. *Giraffa camelopardalis* (amended version of 2016 assessment) (No. e. T9194A136266699). The IUCN Red List of Threatened Species. https://doi.org/10.2305/IUCN.UK.2016-3.RLTS.T9194A136266699.en
- Muneza, A., Brown, M., Fennessy, S., Ferguson, S., Hoffman, R., Janke, A., Kargopoulos, N., Kipchumba, A., Koepfli, K.-P., Marneweck, C., Petzold, A., Stabach, J., Winter, S., Fennessy, J., 2025. Effective conservation and management of giraffe require adopting recent advances of their taxonomy. Biodivers. Conserv. https://doi.org/10.1007/s10531-025-03021-0
- Muneza, A., Doherty, J.B., Hussein, A.A., Fennessy, J., Marais, A., O'Connor, D., Wube, T., 2018. *Giraffa camelopardalis ssp. reticulata*. The IUCN Red List of Threatened Species.
- République du Cameroun, 2025. Stratégie nationale de conservation de la girafe (*Giraffe camelopardalis antiquorum*) au Cameroun 2025 2035.
- Thomassen, H.A., Freedman, A.H., Brown, D.M., Buermann, W., Jacobs, D.K., 2013. Regional differences in seasonal timing of rainfall discriminate between genetically distinct East African giraffe taxa. PLOS One 8, e77191. https://doi.org/10.1371/journal.pone.0077191
- Thouless, C., Dublin, H., Blanc, J., Skinner, D., Daniel, T., Taylor, R., Maisels, R., Frederick, H., 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. Gland, Switzerland, IUCN / SSC Africa Elephant Specialist Group.
- Uganda Wildlife Authority, 2020. National Giraffe Conservation Strategy and Action Plan for Uganda (2020-2030). Uganda Wildlife Authority (UWA), Kampala, Uganda.
- Van Niekerk, M.E., Deacon, F., Grobler, P.J., 2019. The genetic status of the introduced giraffe population in Central South Africa. Koedoe 61. https://doi.org/10.4102/koedoe.v61i1.1570
- Winter, S., Fennessy, J., Janke, A., 2018. Limited introgression supports division of giraffe into four species. Ecol. Evol. 8, 10156–10165. https://doi.org/10.1002/ece3.4490
- Wube, T., Doherty, J., Fennessy, J., Marais, A., 2018. Giraffa camelopardalis ssp. camelopardalis (No. e. T88420707A88420710). The IUCN Red List of Threatened Species. https://doi.org/10.2305/IUCN.UK.2018-2.RLTS.T88420707A88420710.en





