



Country Profile

Republic of Kenya

Giraffe Conservation Status

November 2025

General Statistics

Size of country: 582,650 km²

Size of protected areas/percentage protected area coverage: 73,449 km² (~12%)

Species and subspecies

In August 2025, the International Union for the Conservation of Nature (IUCN) released a groundbreaking assessment, overturning the previous one species and nine subspecies classification of giraffe (*Giraffa* spp.) taxa (Muller *et al.* 2018) and officially recognising four distinct giraffe species (IUCN 2025). This updated classification of four giraffe species gained prominence in 2016 through genetic research done by the Giraffe Conservation Foundation (GCF) together with Senckenberg Biodiversity and Climate Research Centre (SBiK-F). Subsequently, comprehensive DNA sampling and analysis (genomic, nuclear and mitochondrial) of all major natural populations of giraffe throughout their range in Africa resulted in the most up-to-date review of giraffe taxonomy (Muneza *et al.* 2025). The DNA analysis revealed the existence of four giraffe species and seven subspecies (Fennessy *et al.* 2016; Winter *et al.* 2018; Coimbra *et al.* 2021; 2023): Masai giraffe (*G. tippelskirchi*), northern giraffe (*G. camelopardalis*), reticulated giraffe (*G. reticulata*) and southern giraffe (*G. giraffa*). The Masai giraffe exists as two subspecies: Masai giraffe (*G. t. tippelskirchi*) and Luangwa giraffe (*G. t. thornicrofti*), the northern giraffe has three subspecies: Nubian giraffe (*G. c. camelopardalis*), Kordofan giraffe (*G. c. antiquorum*), and West African giraffe (*G. c. peralta*), and the southern giraffe has two subspecies: Angolan giraffe (*G. g. angolensis*) and South African giraffe (*G. g. giraffa*).

In addition to genetic evidence, 3D geometric morphometric analyses of over 500 giraffe skulls exhibited clear morphological distinctions among the four recognised species. Statistically significant differences were found in the cranial shape across all four giraffe species, and in some cases between subspecies, especially variation found in ossicone structure, rostrum length, and cranial proportions. The results also identified distinct sexual dimorphism and divergent ontogenetic trajectories between the northern clade (*G. camelopardalis antiquorum*, *G. c. camelopardalis*, *G. c. peralta*, and *G. reticulata*) and the southern clade (*G. giraffa angolensis*, *G. g. giraffa*, *G. tippelskirchi tippelskirchi*, and *G. t. thornicrofti*), further supporting the separation of giraffe into four distinct species (Kargopoulos *et al.* 2024).

Genetic and morphological data showed that Rothschild's giraffe and Nubian giraffe are genetically similar and as such, Rothschild's giraffe were subsumed into Nubian giraffe as the latter was recognised first. Additionally, phylogenetic studies determined independently that the three giraffe species found in Kenya are separate and genetically distinct from each other (Coimbra *et al.* 2023). Northern and reticulated giraffe evolved within the northern phylogenetic clade, whereas Masai giraffe evolved within the southern clade (Winter *et al.* 2018).

The recognition of four giraffe species allows for a more nuanced understanding of the unique conservation threats and opportunities different taxa face, and in turn will letter to more targeted conservation actions.



The following species and subspecies of giraffe occur in Kenya:

- Species:** Masai giraffe (*Giraffa tippelskirchi*)
Reticulated giraffe (*Giraffa reticulata*)
Northern giraffe (*Giraffa camelopardalis*)
- Subspecies:** Nubian giraffe (*Giraffa camelopardalis camelopardalis*)

Conservation Status

IUCN Red List (IUCN 2018):

Giraffa camelopardalis (as a species) – Vulnerable (Muller *et al.* 2018); needs updating

Giraffa tippelskirchi – Endangered (Bolger *et al.* 2019); needs updating

Giraffa reticulata – Endangered (Muneza *et al.* 2018); needs updating

Giraffa c. camelopardalis – Critically Endangered (Wube *et al.* 2018)

In the Republic of Kenya:

In the Republic of Kenya (referred to as Kenya henceforth), Masai, reticulated and Nubian giraffe are accorded full protection under the Wildlife Conservation and Management Act, 2013 (No. 47) (KWS 2018). In the Sixth Schedule of the Wildlife Conservation and Management Act, 2013 section No. 47, Nubian giraffe are listed as 'Endangered' while the other two species are not categorised in any listing but the hunting or killing of any species of giraffe is illegal in the country. In addition, any person that commits an offence, for example poaching any endangered or threatened species will be penalised a fine not less than KSh. 20 million, life imprisonment, or both penalties. Kenya was among the countries that pushed for giraffe (as a single species) to be listed in the Convention on International Trade of Endangered Species (CITES), with giraffe now listed in *CITES Appendix II* (CITES 2019). Species listed in *CITES Appendix II* are protected from any form of uncontrolled international trade which could threaten their survival (CITES 2019). Additionally, giraffe (as a single species) are also protected by the Convention of Migratory Species (CMS) under *Appendix II* (KWS 2018). Species listed in *CMS Appendix II* are migratory species that move across international borders and require international agreements between the range states on their conservation and management. Kenya is actively involved in developing additional international agreements in conserving giraffe as agreed in *Appendix II*, participating in tri-annual Convention of Parties meetings, and financially supporting the CMS Secretariat (Hensz & Soberon 2018). However, it is important to recognise that with new taxonomy recognised, the listing of different giraffe species on both CITES and CMS needs to be reassessed.

Conservation Challenges

Of the four recognised giraffe species, Kenya is home to three, all of which vary in abundance and distribution, facing their own set of conservation challenges and threats. The distinct species lineages in Kenya appear to be maintained in the absence of historical barriers to gene flow. Several cryptic mechanisms for maintaining what appears to be a long history of reproductive isolation e.g. mountains and rivers, and artificial barriers such as fences preventing gene flow, have been suggested, however, this remains poorly understood (Thomassen *et al.* 2013). More recent studies have revealed very low level and historic gene flow between Nubian and Reticulated giraffe populations in some parts of northern Kenya, likely not occurring recently. The study observed similar though unsynchronized demographic trends, with population bottlenecks estimated at ~ 6.5-18 ka ago for Nubian giraffe and ~ 28-54 ka ago for reticulated giraffe (Coimbra *et al.* 2023).

Although many parts of East Africa remain unrivalled in diversity and abundance of wildlife, conservation efforts in the region face several challenges (Ogutu *et al.* 2011a). Kenya's human population has grown exponentially in recent decades, with an estimated population density of 101 people/km², which not only places intense



pressure on the land but also increases likelihood habitat encroachment and human-wildlife conflict (HWC) (Worldometer 2024; Kenya National Bureau of Statistics 2019; Mukenka *et al.* 2019). In addition, habitat fragmentation and degradation, illegal hunting, unsustainable land use practices, climate change, disease outbreaks, predation, and tourism market volatility all pose serious threats to the survival of all giraffe in Kenya (Muthiani 2001; Mizutani *et al.* 2003; Wanala 2005; Githiru *et al.* 2007; Fennessy & Brown 2008; Ogutu *et al.* 2011a). As the country tries to build infrastructure to support its growing population, this often comes at the expense of areas of rich biodiversity, including important wildlife habitat (AWF 2013). Of Kenya's total giraffe population, 70% is found outside of government-protected areas on communal grazing lands and/or group ranches (Wanjala 2005; Githiru *et al.* 2007; O'Connor *et al.* 2019). For context, most of Kenya's wildlife (65-70%) is found on communal and privately protected land, necessitating the need for people, livestock, and wildlife to co-exist and share the same natural resource (Wanjala 2005; Githiru *et al.* 2007; Ogutu *et al.* 2017).

Kenya's rainfall follows a bimodal pattern with the 'long rains' occurring in March, April and May (MAM) and the 'short rains' occurring in October, November and December (OND) (Kenya Meteorological Department 2020). Significant fluctuations marked the 2024 drought in Kenya's Arid and Semi-Arid Lands (ASAL) counties, which cover over 80% of Kenya's land area and greatly overlap with the range of giraffe in the country. 2024 began with above-average long rains, leading to severe flooding across many parts of the country, but ended with a sharp deterioration following the poor performance of the short rains. Adding to the severe weather, 2024 was the warmest year on record in Kenya, mirroring the rise in global temperatures (World Meteorological Organization 2024). Although the Wildlife Training and Research Institute (WRTI) reported no wildlife deaths due to flooding in the country, a 2024-2025 National Wildlife Census was recently undertaken to assess any potential impacts of droughts and severe weather on wildlife. This assessment follows the unparalleled drought in 2022 caused by a sequence of four consecutive unsuccessful rainfall seasons that started in OND 2020 (Intergovernmental Authority on Development 2022). The drought resulted in wildlife mortalities across the country, though giraffe were not severely impacted (Mwiu *et al.* 2022).

Masai giraffe

Masai giraffe are the most abundant giraffe species in East Africa (Brown *et al.* 2021) and occur across several ecosystems in southern Kenya, as well as the Naivasha private ranches and around Hell's Gate National Park (NP), which are home to their northernmost population. However, the survival of the species in the southern parts of Kenya is threatened by wholesale changes in land use and tenure, particularly the introduction of crop farming, logging, charcoal burning, and development of urban centres that fragment habitats and disrupt wildlife movements, as well as illegal hunting for bushmeat (Ngene *et al.* 2011; KWS & TAWIRI 2010; Ogutu *et al.* 2011a).

In the Masai Mara Ecosystem, the decline of Masai giraffe has been attributed to habitat fragmentation and loss of wildlife dispersal areas, illegal hunting, as well as an increase of human settlements and land use changes (Hofer *et al.* 1996; Ottichilo *et al.* 2000; Ogutu *et al.* 2009, 2011a). The presence of livestock and increasing human activities have also negatively influenced their distribution within the ecosystem (de Leeuw *et al.* 2001). Competition between livestock and wildlife will continue to intensify due to the rising number and the expanding distribution of shoats (sheep and goats) in the Masai Mara conservancies (Ogutu *et al.* 2011a). Additionally, the expansion of pastoral settlements has depressed the birth rate of Masai giraffe (Ogutu *et al.* 2011b). An emerging cultural change within the Masai community and/or influx of immigrants into Masai land, has marked changes in historical practices e.g. fencing of grazing areas, and further excluded wildlife and disrupted their movement (KWS & TAWIRI 2010; Sakimba *et al.* 2016). Moreover, such barriers can lead to fence entanglements (Løvschal *et al.* 2017) and increased likelihood of subsequent fatalities. It is important to document the ongoing changes within Masai giraffe habitat range and help in policymaking for their future conservation and management.



Land use changes in the Athi-Kapiti Ecosystem have been accelerated by its proximity to the capital city of Nairobi and increased demand for residential and urban development areas (Obari 2008). Irrigated farmland rapidly encroaches into the wildlife dispersal areas of the Amboseli Ecosystem leading to habitat loss and fragmentation and associated HWC such as crop raiding by wildlife (KWS & TAWIRI 2010). Charcoal burning poses serious concerns as mature trees, which are key browse forage for Masai giraffe, are targeted, resulting in loss of browse species and habitat degradation (KWS & TAWIRI 2010). To mitigate these threats, local communities should be involved in conservation efforts and create awareness of conserving habitats.

Linear infrastructure is also an emerging concern, limiting connectivity for Masai giraffe. In 2017, Kenya completed the construction of the standard gauge railway (SGR) from Nairobi to Mombasa, with ~133 km of it bisecting the Tsavo Conservation Area. Wildlife crossing structures, bridges and culverts of varying dimensions, were also constructed to facilitate wildlife movement and mitigate train-wildlife collisions (Koskei *et al.* 2022). In a recent study, Lala *et al.* (2022) documented low propensity in usage of wildlife crossing structures by Masai giraffe, probably because they perceive bridges as obstacles, whilst the culverts (low heights of 3-4 m) were inaccessible. These two studies underpin the importance of understanding the factors that influence usage of wildlife crossing structures for different species, thereby informing their future design.

Giraffe Skin Disease (GSD), an emerging disease characterised by grey-scaly lesions on their limbs, neck, and shoulders, is another potential threat to Masai giraffe (Muneza *et al.* 2016). Whilst GSD appears more prevalent in Tanzania, a few cases have been reported in Kenya (Muneza *et al.* 2016). GCF's photographic mark-recapture study in the Masai Mara Ecosystem identified a few potential cases of GSD in Isaaten (4), Siana (8) and Olderkesi (6) conservancies. Severe forms of GSD could potentially lead to increased vulnerability to lion predation given that GSD lesions in Masai giraffe manifest on the forelimbs and may influence the movement of affected individuals (Muneza *et al.* 2017). As such, there is a need to monitor GSD to understand its long-term population effects.

Reticulated giraffe

Historically, reticulated giraffe were wide-ranging from north-central Kenya to southern Ethiopia and Somalia. Reticulated giraffe populations roam the country's northern and northeastern areas, extending east to communal areas in Lamu and Garissa Counties. However, they have faced a drastic decline in the past 35 years. A review of their history in East Africa reported that reticulated giraffe were killed for food during the Great War (Sidney 1965). Subsequently, they were intensely hunted by the local population and Dutch colonists for their hides (Sidney 1965; East 1999). Large parts of the reticulated giraffe range were virtually unprotected (East 1999), and armed conflicts have plagued northern Kenya for decades, with civil unrest and terrorist activities originating from southern Ethiopia and Somalia further adversely affecting them (Mizutani *et al.* 2003; Fennessy & Brown 2008). After the fall of Somalia in the early 1990s, there was a large influx of refugees into northern Kenya, which led to the loss of wildlife habitat, an upsurge of illegal hunting and bushmeat consumption, all exacerbated by the widespread availability of firearms (de Leeuw 2001; Githiru *et al.* 2007). Up until the late 1980s, wildlife hunting was a common subsistence activity in Turkana (de Leeuw 2001).

In 1998, Kenya Wildlife Services (KWS) suggested that the bushmeat industry intensified following an earlier rise in the price of domestic meat (de Leeuw 2001). Subsequently, reticulated giraffe populations outside of protected areas were under increasing pressure from illegal hunting, increased settlements/expanding farmlands, and other anthropogenic activities such as charcoal burning, wood cutting, and sand harvesting (Ottichilo *et al.* 2000; Mizutani *et al.* 2003; Dahiye 2005; Githiru *et al.* 2007; Wildlife Direct 2013). Moreover, human settlements in areas such as Laikipia County have blocked wildlife migratory corridors, leading to increased HWC (Litoroh *et al.* 2010; Kinnaird *et al.* 2012).



Further, military exercises in northern Kenya are a niche concern for reticulated giraffe. The Kenya Defence Forces has a running cooperative relationship with the Defence Forces of the United Kingdom, with a primary focus on field-based training and exchange visits (Departmental Committee on Defence Intelligence and Foreign Relations, 2023). Playing a significant role in this partnership is the British Army Training Unit Kenya primarily stationed in Nanyuki. Their military exercises and training areas located in northern Kenya, specifically in Laikipia and extending to Samburu County (Awuor 2012), coincidentally fall within the range of reticulated giraffe. Notably, Awuor (2012) highlighted that during these exercises, many wildlife species get displaced from the areas as they prepare and conduct their training.

Nubian giraffe

Nubian giraffe have largely been diminished and pushed out of their natural range by a combination of illegal hunting, agricultural development, human encroachment, and habitat destruction and fragmentation (Sidney 1965; Brenneman *et al.* 2009; Muller 2019). This resulted in the eradication of almost all known wild natural populations of Nubian giraffe in Kenya (Fennessy & Brenneman 2010; Muller 2011; GCF 2019; Muneza *et al.* 2024). Since 1970, Nubian giraffe have been gradually (re-)introduced to parts of their natural and extralimital range in Kenya. Most of these introductions were into private fenced wildlife areas (Brenneman *et al.* 2009). Introduction into confined areas has resulted in habitat-specific threats common for small, isolated populations which could result in further population decline (Brenneman *et al.* 2009). Specifically, in Lake Nakuru NP, dietary complications from their confinement in the fenced area resulted in overconsumption and declining numbers of preferred forage (Brenneman *et al.* 2009). This in turn resulted in highly concentrated tannin levels occurring in the remaining forage, which subsequently compromised their nutrition, causing them to be weakened and potentially making them easier prey for the park's lion population (Brenneman *et al.* 2009). To compound this, in the wake of the recent rising of water levels in Rift Valley's lakes (Government of Kenya & United Nations Development Program 2021), their habitat in Lake Nakuru NP is further under threat (Osio *et al.* 2020). Another concern for any small population in a confined area is genetic inbreeding and/or reduced genetic diversity (Brenneman *et al.* 2009), though this has not been recorded in any population. Another factor contributing to their decline is disease outbreaks, with an anthrax outbreak occurring at Mwea National Reserve (NR) in 2011, resulting in the loss of at least 11 giraffe; ~25% of the population (Kaitho *et al.* 2013).

Estimate population abundance and trends

Historic

Masai giraffe

Masai giraffe formerly occurred widely in southern Kenya along the border of Tanzania (Dagg 1962). In 1958, there were an estimated 750 Masai giraffe on the Mara Plains and in the surrounding hills (Darling 1960). In the late 1970s, they numbered more than 6,500 individuals in the Greater Masai Mara Ecosystem (including the Masai Mara NR and adjoining conservancies) (Ottichilo *et al.* 2000). However, by 1994, numbers reportedly declined to an estimated 340 Masai giraffe in the Masai Mara NR and 1,370 individuals on the adjoining conservancies (East 1999). Giraffe numbers in the Masai Mara Ecosystem declined by 79% in the 20 years between 1977 and 1997 (Ottichilo *et al.* 2000), and in 1999, including the central portion of the reserve, the western part of Koyiaki Group Ranch, the western part of Lemek Group Ranch and the south-western half of Ol Chorro Oirowua (Reid *et al.* 2003), estimating 583 giraffe, including 384 on the group ranches, and 199 in the reserve (Reid *et al.* 2003). In 2002, the survey was expanded to include the Mara Triangle, the entire Koyiaki Group Ranch, the western corner of Siana Group Ranch, the south-western of Ol Kinyei Group Ranch, and the entire reserve except for the densely vegetated south-eastern corner (Reid *et al.* 2003). A total of 880 Masai giraffe were recorded for the entire study area, including 566 on the group ranches and 314 in the reserve (Reid *et al.* 2003). When only comparing the overlapping area for the 1999 and 2002 counts, a slight increase – possibly



from local migration – was observed (Reid *et al.* 2003). However, by 2003 the Masai giraffe numbers dropped by more than 50% in the Greater Masai Mara Ecosystem, attributed to the reduced rainfall and rising temperature resulting in inadequate forage (Ogutu *et al.* 2008). Interestingly, Masai giraffe remained more abundant on the adjoining pastoral ranches than inside the reserve (Reid *et al.* 2003; Ogutu *et al.* 2011a).

Game census estimates of Masai giraffe in the Nairobi NP between 1960-1963 ranged from 66 to 124, with a mean of 83 (Foster 1966). From 1965 to 1968, 250 individuals were individually identified in the park (Foster & Dagg 1972). However, as the southern boundary of Nairobi NP is unfenced and open to the Kitengela Conservation Area and the Athi-Kapiti Plains, between 70-125 individuals were only observed at any given period (Foster and Dagg 1972). By 1994, an estimated 100 Masai giraffe were estimated in the park (Foster & Dagg 1972; East 1999).

Road strip and aerial sample counts estimated 750 Masai giraffe in the Tsavo East NP in the early 1970s (Leuthold & Leuthold 1978). Between 1991-1994, aerial surveys and field observations covering an extensive area between Shimba Hills NR and the surrounding coastal rangelands, estimated 1,930 Masai giraffe (East 1999). Combined, the Masai giraffe population in Kenya was estimated at ~32,000 countrywide in 1977 (Bolger *et al.* 2018), declining marginally to 31,611 between 1977-1980 (Bolger *et al.* 2018). In 1999, Masai giraffe still occurred widely in protected areas and unprotected rangelands across southern and eastern Kenya, dropping further to an estimated 17,330 individuals (East 1999). Of these, an estimated 2,530 individuals occurred in and 14,800 outside of protected areas (East 1999).

Reticulated giraffe

Reticulated giraffe occur across northern and eastern Kenya, including large swathes of arid areas (Dagg 1962). Aerial surveys of the Ewaso Nyiro Basin in Laikipia County estimated ~6,398 reticulated giraffe in 1977 (Muchoki 2000). Laikipia County comprises an array of private wildlife conservancies, commercial cattle ranches, and traditional pastoralist communities, and forms part of the Greater Ewaso Ecosystem (Kinnaird *et al.* 2012). By 1990, the reticulated giraffe population declined to an estimated 5,410 individuals and further down to 2,118 individuals in 1994 (Muchoki 2009; Shorrocks & Croft 2009). However, in 1997, the population increased to 2,903 individuals (Muchoki 2000). Over the 20 years between 1977-1997, the population declined by > 50% (Muchoki 2009; Shorrocks & Croft 2009). In Laikipia County, an estimated 1,856 individuals were reported in 1998, declining to 1,498 in 1999 (Georgiadias 2007b). Population numbers remained relatively stable at ~1,543 reticulated giraffe in Laikipia County in 2000 and an estimated 1,433 in 2001 (Georgiadias *et al.* 2007b; Kinnaird *et al.* 2012).

In 1991, some 30 reticulated giraffe found a refuge along the Tana River, close to the town of Garissa in Garissa County (Githiru *et al.* 2007). The Garissa Community Giraffe Sanctuary, also known as Bour Algi Giraffe Sanctuary, was established in 1999 to protect the area's reticulated giraffe (Dahiye 2005). As security improved in Garissa County, increased reticulated giraffe immigrated into the sanctuary from other parts of the county where illegal hunting was rampant (Githiru *et al.* 2007; Hussein 2009). By 2003, the population had increased to over 300 individuals (Dahiye 2005; Wildlife Direct 2013).

In 1995, more than 300 reticulated giraffe were estimated to occur in Marsabit NP in Marsabit County in northern Kenya (East 1999), whilst Meru NP, together with the adjacent Kora NP and Rahole and Bisanadi NRs, were home to an estimated 200 reticulated giraffe during the same period (East 1999).

In 2001, a wildlife survey of the Greater Ewaso Ecosystem, bounded by the Rift Valley in the west, Mount Kenya, and the Aberdare Highlands in the south, and comprises Laikipia County, a large part of Samburu County, and a small portion of Isiolo County, estimated the reticulated giraffe population at 966 individuals (Kinnaird *et al.*



2010). However, this was an undercount as the Laikipia County and the Lewa and Lorogi areas were excluded (Kinnaird *et al.* 2010).

Several total counts in the privately owned Lewa Wildlife Sanctuary (also known as Lewa Downs) in northern Kenya have been conducted since the 1970s. In 1977, 190 reticulated giraffe were estimated, while annual counts conducted between 1990-1999 showed the population fluctuating between 186 and 588 individuals, although an overall decline was noted (Fig 2).

By the late 1990s, reticulated giraffe still occurred widely across northern Kenya, north of the Tana River and east of the Rift Valley (East 1999). Most of the country's population of 27,540 reticulated giraffe occurred on unprotected rangeland, particularly in the Garissa, Marsabit, and Wajir Counties, with relatively small numbers occurring in protected areas (East 1999). More than 575 reticulated giraffe occurred in protected areas, while an estimated 26,970 individuals occurred outside of protected areas (East 1999).

Between 1977-2000, the country's reticulated giraffe population declined from an estimated 40,910 individuals to 26,206 in 1990, and 28,115 by 2000 (Ogutu *et al.* 2016; Muneza *et al.* 2018). The large-scale population decrease was likely a result of illegal hunting and habitat loss (Ogutu *et al.* 2016).

Nubian giraffe

Nubian giraffe are one of the most imperilled extant giraffe subspecies (Fennessy & Brenneman 2010). Nubian giraffe inhabited the Rift Valley of west-central Kenya across Uganda to the Nile River and northward into current day South Sudan (Dagg & Foster 1976; Lydekker 1903). Their numbers declined so drastically that only a few hundred individuals remained by the 1960s (Fennessy & Brenneman 2010). The subspecies was effectively saved from extinction in Kenya through several conservation translocation efforts in the 1970s, which resulted in the establishment of new populations in enclosed, protected areas (Fennessy & Brenneman 2010). In Kenya between the mid-1970s and 1990s, Nubian giraffe were introduced into Lake Nakuru NP (n=17), Ruma NP (n=27), Yodder Farm (n=6), Soysambu Conservancy (n=2), and Giraffe Centre (n=2) (Giraffe Centre and KWS pers. comm. 2019; Fennessy & Brenneman, 2010). Additionally, they were re-introduced into Mount Elgon NP (n=21), Kitale Farm (n=12), Nasalot NR (n~10), Sergoit Kruger Farm (n=10), and Ruko Conservancy (n=8).

In the late 1980s, the 17 Nubian giraffe translocated from Soi Ranch to Lake Nakuru NP (Awange *et al.* 2004) had increased to 153 individuals by 1994 (Brenneman *et al.* 2009). It subsequently declined to 62 individuals in 2002, as a result of poor survival of offspring over the years (Brenneman *et al.* 2009). This decline could have been integrally linked to the 1994 El Nino drought and as mentioned diet complications due to overbrowsing and high concentration of tannin levels, leading to low forage browse (Brenneman *et al.* 2009).

In the 1980s, six giraffe were translocated to Yodder Farm in Embu County from Soi Ranch and by mid-1990s, the population increased to 24 individuals (Giraffe Centre and KWS pers. comm 2019.). In 1983, 27 Nubian giraffe were translocated from Soi Ranch in Kenya's Rift Valley to Ruma NP, increasing to 69 individuals by 1999 (Awange *et al.* 2004).

In summary, the countrywide Nubian giraffe population was estimated at 130 in the 1970s and only found in Soi Ranch (Fennessy & Brenneman 2010). Due to land fragmentation and the conversion of giraffe habitat to human settlements, Nubian giraffe from Soi Ranch were translocated successfully to different habitats across the country.

Current

Masai giraffe

The Masai giraffe population in the Masai Mara Ecosystem in 2007 was estimated at 961 individuals, increasing to 1,619 by 2010 and then to 2,607 by 2017 (KWS 2018). During the 2017 KWS census, most of the giraffe population was in the community conservancies and dispersal areas: 1,682 (64.5%) and 490 (18.8%) respectively



(KWS 2017), with the Masai Mara NR and Mara Triangle having the smallest population, 292 (11.2%) and 143 (5.4%) respectively (KWS 2017). A photographic mark-recapture survey conducted by GCF in the Greater Masai Mara Ecosystem between 2019 and 2021 estimated the Masai giraffe population at ~3,290 individuals (Waweru *et al.* 2021). These findings further support previous studies showing that aerial surveys tend to undercount giraffe (Lamprey *et al.* 2020).

Annual counts of Masai giraffe in Nairobi NP conducted between 2000-2008 showed population fluctuations between 58 and 104 individuals, and as such assumed relatively stable (Obari 2008). These oscillatory changes were likely a result of movements between the park and the communal ranches south in the Athi-Kapiti Ecosystem (Obari 2008). In 2012, Friends of Nairobi National Park (FoNNaP) estimated the Masai giraffe population at 80 individuals (FONNAP 2013). While little data on their numbers across this ecosystem are available, some 300 Masai giraffe reportedly occurred in the Machakos Ranches (KWS 2018). In 2018, 112 were estimated in the park whereas 350 were recorded in the Athi-Kapiti and Machakos Ranches (KWS 2018). In 2020, an aerial survey of the Machakos Ranches and Athi-Kapiti Plain in Machakos and Kajiado counties respectively observed 317 Masai giraffe (Mukeka *et al.* 2021) but more recently, a June 2025 count by the Athi-Kapiti Wildlife Conservancies Association recorded 535 Masai giraffe across all the ranches and conservancies.

Cross-border aerial total counts of the Amboseli NP and Namanga-Magadi areas (including Kimana/Tikondo, Olgulului/Olararashi, Selengei, Mbirikani, and Kuku Group Ranches) in southern Kenya (and West Kilimanjaro and Natron landscape in northern Tanzania), were conducted in 2010 (KWS & TAWIRI 2010). An estimated 4,164 Masai giraffe occurred in the entire area, of which 3,063 were observed in Kenya (KWS & TAWIRI 2010). It is important to note wildlife does move within the entire area and transboundary depending on seasonality and forage availability (KWS & TAWIRI 2010). A previous total aerial count of large mammals of the Amboseli Ecosystem, conducted in 2007 reported the occurrence of 1,458 individuals (Ngoru & Mwangi 2007; KWS & TAWIRI 2010). In comparison to this, 1,991 Masai giraffe were counted in the same area during the 2010 count (KWS & TAWIRI 2010). In 2013, KWS counted 1,577 individuals in the Namanga-Magadi Ecosystems and 3,470 in the Amboseli Ecosystem (KWS 2018). In 2018, an aerial survey study reported that the population of Masai giraffe in Amboseli had increased to 3,784, while in the Namanga-Magadi Ecosystem, the population had declined to 1,329 (Muteti *et al.* 2018). In 2021, population estimates for the broader Amboseli-Magadi Ecosystem was estimated to have increased to ~6,425 individuals (Waweru *et al.* 2021).

Total aerial counts of the Tsavo Ecosystem, comprising of Kenya's Tsavo East, Tsavo West and Chyulu Hills NPs and surrounding private ranches (as well as the Mkomazi NP in Tanzania), were conducted in 2005 (Omondi & Bitok 2005). A total of 1,584 Masai giraffe were counted, of which 1,522 occurred in Kenya (Omondi & Bitok 2005). Of these, 542 were in Tsavo East NP, 568 in Tsavo West NP, 153 in Galana, 148 in Taita, and 111 in other blocks (Omondi & Bitok 2005). In 2008, total aerial counts of the same area were conducted and estimated ~2,450 Masai giraffe, of which 2,379 occurred in Kenya (Omondi *et al.* 2008). Of these, 681 were in Tsavo East NP, 678 in Tsavo West NP, 534 in Chyulu Hills NP, 95 in Galana, 193 in Taita, and 150 in other blocks (Omondi *et al.* 2008). In 2011, total aerial counts in the Tsavo Ecosystem were conducted, estimating 2,055 Masai giraffe of which 1,935 occurred in Kenya (Ngene *et al.* 2011). Of these, 392 were in Tsavo East NP, 691 in Tsavo West NP, 292 in Chyulu Hills NP, six in South Kitui NR, 93 in Galana, 282 in Taita, and 179 in other blocks (Ngene *et al.* 2011). Compared to data from previous aerial counts, the larger ecosystem's Masai giraffe population increased by 55% from ~1,148 animals in 1999 to 2,055 in 2011 (Ngene *et al.* 2011). In 2017, KWS estimated 4,323 individuals in the Tsavo Ecosystem with a total of 4,068 individuals in Kenya. More recently, a marked increase in the same population was noted at 4,314 individuals on the Kenyan side (KWS 2018; Waweru *et al.* 2021).

An estimated 620 Masai giraffe resided across Nakuru County in 2013: 40 in Nakuru Wildlife Conservancy, 225 in Oserian Wildlife Conservancy, 61 in Hell's Gate NP, and the remaining 294 on surrounding private ranches



(KWS 2018). In 2017, the population in the Nakuru-Naivasha Ecosystem declined slightly to ~529 (KWS 2018), and as of 2022, the population was estimated at 447 individuals, reflecting a continued decline (KWS 2023).

Since the launch of the first Recovery and Action Plan for Giraffe 2018-2022, and subsequent Range Committee meetings, data from KWS and WRTI indicate that Masai giraffe are locally extinct in Shimba Hills NR.

These fluctuating figures in Kenya are reflected in broader national estimates showing similar declines for all giraffe across the country. In the second Recovery and Action Plan for Giraffe in Kenya (2023 – 2027), ~15,158 Masai giraffe were estimated in Kenya with the majority occurring in the Amboseli (including Magadi) (n=6,425) and Tsavo (n=4,314) Ecosystems (KWS 2023). More recent estimates checked for data quality suggest there's ~14,122 Masai giraffe (Marneweck *et al.* 2025). In comparison to the population estimates in 1978-80 (n=31,331), there has been an overall decrease of 54.9% despite recent intercensal increases reported.

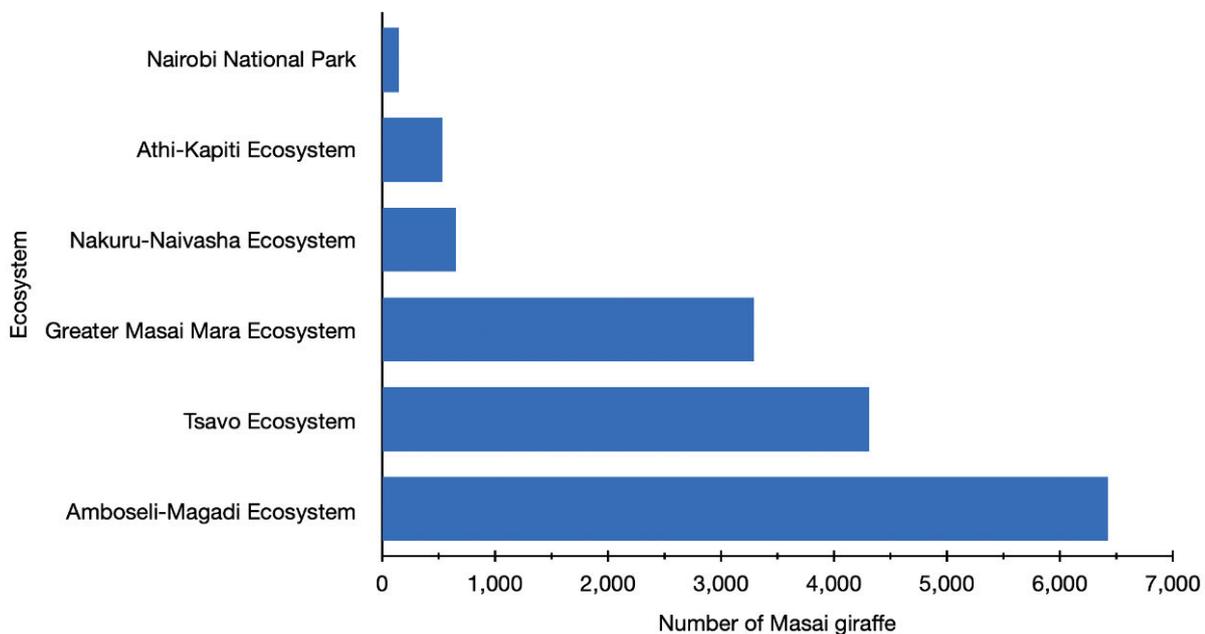


Fig. 1. Estimated population numbers of Masai giraffe in Kenya’s major ecosystems

Reticulated giraffe

The current range of reticulated giraffe extends northwards from central Kenya into Ethiopia and Somalia (Shorrocks & Croft 2009; Marneweck *et al.* 2025). An estimated 1,720 individuals occurred in Laikipia County in 2002, declining to 1,597 in 2003 (Georgiadis *et al.* 2007b). In 2008, aerial counts estimated Laikipia’s reticulated giraffe population at 1,931 individuals (Kinnaird & Ojwang’ 2008), and at ~2,366 in 2010 across the Greater Ewaso Ecosystem (Kinnaird *et al.* 2010). Of the latter, 1,432 occurred in Laikipia County (Kinnaird *et al.* 2010). Although three times smaller in area, Laikipia holds a larger population of reticulated giraffe than the rest of the Greater Ewaso Ecosystem. During a 2012 aerial count, the population in Laikipia County was estimated at 1,105 individuals, a population decline of 36% from 2001 (Kinnaird *et al.* 2012). More recently, the 2021 population of reticulated giraffe in the greater Laikipia-Samburu-Marsabit-Meru Ecosystem was estimated to be 4,531 individuals, a marked increase (Waweru *et al.* 2021), and likely a result of increased targeted surveys. A first-ever photographic survey conducted by GCF in Meru NP and Kinna Community Conservancy in 2025 found 343 giraffe though 46 were not photographed and thus included in the online database (GCF 2025).

In 2002, 150 reticulated giraffe were recorded in the former Sweetwaters Game Reserve, now Ol Pejeta Conservancy (Birkett 2002). Between 2005 and 2011, estimated aerial survey numbers in Ol Pejeta ranged between 132 to 178 giraffe, increasing to 277 giraffe in 2017, before declining to 232 giraffe in 2024. (Ol Pejeta



Conservancy pers. comm. 2019; Ol Pejeta Conservancy pers. comm. 2025). In Lewa Wildlife Conservancy annual total counts conducted in 2013 estimated the reticulated population at 204 individuals, but in 2025, about 92 giraffe remained in Lewa (Lewa Wildlife Conservancy pers. comm. 2025).

In 2011, aerial total counts of Ijara and parts of Fafi, Garissa, and Lamu Counties in Kenya’s Northeastern Province, estimated 1,666 reticulated giraffe in the area (King *et al.* 2011). Of these, an estimated 400 resided in the Garissa Community Giraffe Sanctuary (Hussein 2009; Wildlife Direct 2013). In 2015, the number increased to 1,974 in Lamu, and in 2016 up to 4,356 individuals in Garissa (KWS 2018). In 2021, 6,120 reticulated giraffe were recorded in Wajir County, while only 91 giraffe were found in Mandera Country in the same year (Waweru *et al.* 2021), a significant decrease from the estimated 400 or less in 2013 (KWS 2018). However, according to stakeholders in the Reticulated Giraffe Range Committee, the 2021 National Wildlife Census did not include many parts of Mandera County that have giraffe.

Aerial total counts in the southeastern part of Samburu County were conducted in 2005, comprising Buffalo Springs, Samburu, and Shaba NRs among other adjacent communal areas (Ihwagi & Douglas-Hamilton 2005). A total of 317 reticulated giraffe were recorded, 44 in Buffalo Springs NR, 40 in Samburu NR, 33 in Shaba NR, and 108 in the Namunyak Community Wildlife Conservancy. The remainder were scattered throughout Kalama, Kipsing, Lekuruki, Sera, and Westgate community wildlife conservancies (Ihwagi & Douglas-Hamilton 2005). In 2024, photographic road-based surveys estimated 193 in Buffalo Springs, 73 in Chololo, 39 in Nakuprat-Gotu, 193 in Samburu NR, 83 in Sera Community Conservancy, and 149 in Shaba NR (GCF 2024).

Total aerial counts of the Samburu-Laikipia Ecosystem and parts of the Marsabit County were conducted in 2008, comprising the Imenti, Isiolo, Laikipia, Meru North and Samburu Counties, as well as Buffalo Springs, Samburu, and Shaba NRs, and several adjacent community conservation areas (Il Ngwesi, Kalama, Meibae, & Namunyak), government-owned trust land, forest reserves, private ranches and sanctuaries, and agricultural settlements (Litoroh *et al.* 2010). A total of 2,557 reticulated giraffe were estimated (Litoroh *et al.* 2010).

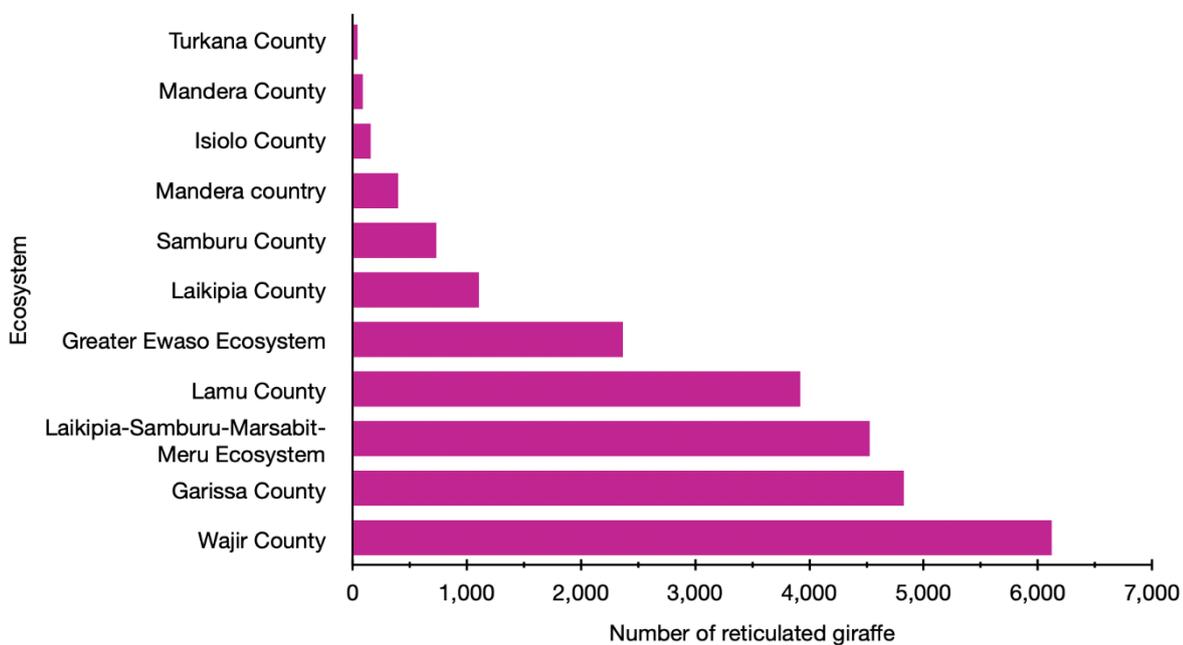


Fig. 2. Estimated population numbers for reticulated giraffe in the major ecosystems in Kenya

In 2011, ~5,528 reticulated giraffe were estimated in Kenya, increasing to 6,500 by 2013, and 8,561 in 2015 (KWS 2018; Muneza *et al.* 2018). In the 2021 Kenyan National Wildlife Census, the estimated total population of reticulated giraffe was ~19,740, mostly in Garissa, Lamu, and Wajir Counties (Waweru *et al.* 2021). The



population has since been estimated at ~20,901 reticulated giraffe (Marneweck *et al.* 2025). The recent increase is attributed to better/increased surveys, monitoring, as well as previous undercounts. Additionally, increased awareness, communication and conservation actions amongst key stakeholders in their range has likely also contributed to increased numbers. Despite this recent increase, the reticulated giraffe population has overall declined from 44,345 in 1978 to current estimates (20,901), representing a decrease of 52.9%. The general population decrease over the years has been attributed to habitat loss, fragmentation and degradation due to changes in land use in the giraffe range, and illegal killings (Muneza *et al.* 2018).

Nubian giraffe

In Ruma NP, 75 Nubian giraffe were estimated in 2002, increasing to 130 individuals in 2011 (Awange *et al.* 2004; Muller 2011). A KWS road count estimated 176 individuals in 2016 (Muneza & Muruana 2017), although in 2018 a GCF-led photographic mark-recapture survey estimated a sharp increase to 275 individuals (Muneza *et al.* 2017a). The population appears to only be increasing, 550 Nubian giraffe were estimated during a KWS aerial survey in 2021 (KWS 2023), and in 2024, 762 individuals were estimated (WRTI pers. comm. 2024).

In 2000, 24 Nubian giraffe were translocated from Yodder Farm to Mwea NR as it could not sustain its growing population (KWS pers. comm. 2019). In 2004, due to the increasing HWC with the adjacent community, Yodder Farm the remaining six individuals were translocated to Mwea NR (Giraffe Centre & KWS pers. comm. 2019). By 2011, the population in Mwea NR was estimated at 44 individuals until an anthrax outbreak resulted in the deaths of 11 Nubian giraffe (Kaitho *et al.* 2013). The outbreak was controlled by rapidly incinerating all carcasses and 20 of the remaining 33 giraffe were vaccinated against anthrax and black quarter (clostridial infection) to prevent further losses and provide adequate herd immunity (Kaitho *et al.* 2013). By 2017, the population had increased to 51 individuals following a photographic mark-recapture survey led by GCF (Muneza *et al.* 2017a). The population has since grown to 70 individuals which includes recent translocations from Nairobi's Giraffe Centre (Giraffe Centre pers. comms. 2019). Most recently, 79 giraffe were observed in Mwea NR (KWS 2023).

In 2017, 80-90 Nubian giraffe were estimated in 2017, 113 in 2019, and 109 in 2019, the latter a photographic mark-recapture survey led by GCF in Lake Nakuru NP (Fig 3; Muruana *et al.* 2019), and KWS aerial surveys in 2021 confirmed ~109 individuals (KWS 2021). Adjacent to Lake Nakuru NP, the Soysambu Wildlife Conservancy is home to one of the largest Nubian giraffe populations in Kenya, and the largest on private land. A 2009 total census counted 63 individuals (Soysambu Conservancy 2009), increasing to 70 individuals in 2010 (Soysambu Conservancy 2010), 80 in 2012 (Soysambu Conservancy 2012), 109 by 2015 (Fennessy *et al.* 2016), 141 individuals in 2020 (Soysambu pers. comm. 2020), and 162 in 2022 (KWS 2023). As of 2025, the population has increased to 197 individuals in Soysambu Conservancy (Soysambu pers. comm. 2025).

In Ruko Community Conservancy, Baringo County, eight Nubian giraffe were reintroduced in 2011 after an absence of over 40 years. These individuals were translocated from Soysambu Conservancy and the population initially remained stable after rising water levels of the lake trapped them on a small island (Soysambu Conservancy 2011; The Wildlife Researcher 2012; KWS 2018). However, after the Nubian giraffe were translocated onto the mainland in December 2020, the population has since increased to 14 individuals in 2022, and more recently to 30 individuals in 2025 (Ruko Conservancy 2022; KWS 2023; Sebei pers. comm. 2025).

In 2011, an estimated 32 Nubian giraffe resided in the Kigio Wildlife Conservancy, and less than 20 each at Giraffe Manor/Centre, Mt. Elgon NP, Murgor Farm, and Sergoit-Kruger Farm (Muller 2011). Additionally, less than ten individuals were estimated on Kitale Area Farm and Nasalot Reserve (Muller 2011). By 2020, the Kigio Wildlife Conservancy had increased marginally to 34 Nubian giraffe, only 10 individuals at the Giraffe Centre following some translocations, and two individuals in Mt. Elgon NP. However, recent data suggest that giraffe are now locally extinct in Mt. Elgon NP and Murgor Farm, but increases have been recorded in Kigio Wildlife Conservancy



(n=46; J. Mochoge pers. comm. 2024). The population at Giraffe Centre is now at 12 giraffe, following an extralimital move of two Nubian giraffe to Solio Ranch in northern Kenya in October 2025.

Two Nubian giraffe were translocated to Tindress Farm in Nakuru County from Soysambu Wildlife Conservancy in 2020, increasing the population to seven individuals (KWS & Soysambu pers. comm. 2020). By 2022, the population in Tindress Farm had increased to 12 individuals (KWS 2023). Sergoit Farm, which had 14 individuals in 2018 (Muneza *et al.* 2024), translocated most of their Nubian giraffe out, to focus on farming activities and in 2025, only two remain (A. Chemwa pers. comm. 2025), with some of the giraffe being moved to Ruko Conservancy and others to Rimoi NR.

In 2018, Rimoi NR had 8 giraffe (KWS 2018), increasing to 12 individuals in 2022 following conservation translocations from the Giraffe Centre, three in 2021 and two in 2022 (E. Ngumbi pers. comm. 2022; Muneza *et al.* 2024). Anecdotal information from KWS and WRTI indicate that there are potentially 10 giraffe in Nasalot NR but sightings remain elusive, and more information is required.

Both Haller Park and Nguuni Nature Sanctuary at the Kenyan coast maintain small, enclosed populations of Nubian giraffe. Haller Park held eight individuals in 2022 (KWS 2023) but has since dropped to six, all female, after two died of old age (K. Nyinge pers. comm. 2023). Nguuni Nature Sanctuary held seven individuals in 2018 (KWS 2018), increasing to 11 giraffe in 2023 (Nguuni Nature Sanctuary pers. comm. 2023).

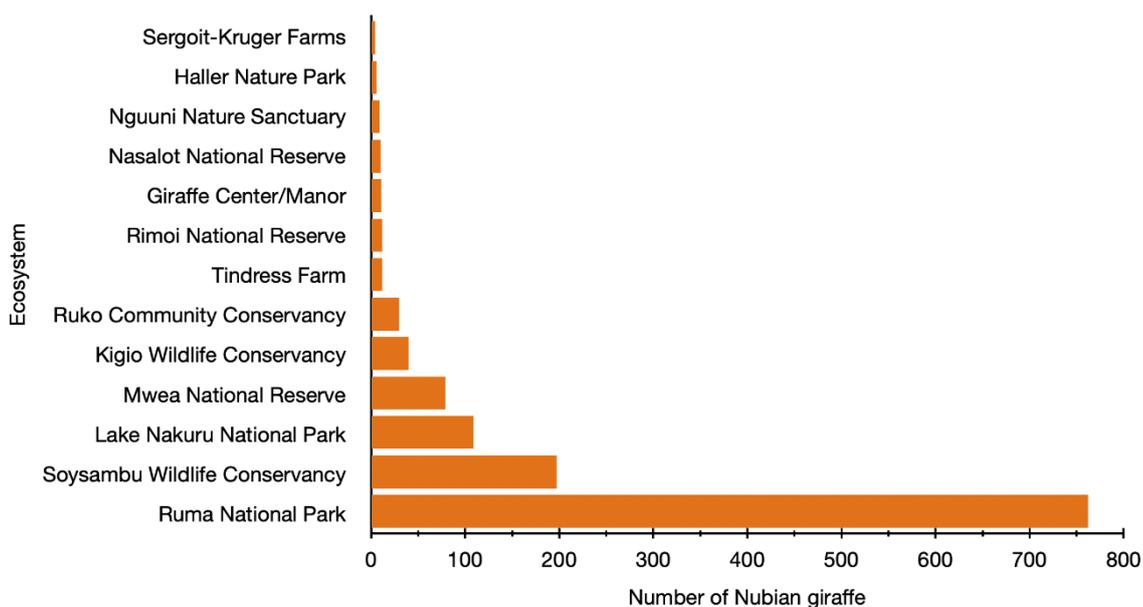


Fig. 3. Estimated population numbers for Nubian giraffe by major ecosystems in Kenya

The largest population of Nubian giraffe in Kenya occurs in Ruma NP (59.4%, n=762), followed by Soysambu Wildlife Conservancy and Lake Nakuru NP, respectively. The total Nubian giraffe population in Kenya was estimated in the 2021 national wildlife census at 970 individuals (Waweru *et al.* 2021), increasing to ~1,281 individuals in 2025 (Marneweck *et al.* 2025). Compared to the population in the 1970s (n=~130), this represents an 885% increase. The increase is a result of improved conservation management efforts including conservation translocations in enclosed areas and targeted photographic mark-recapture surveys resulting in better population estimates.

In summary, drawing on population estimates from various sources – including data from GCF, KWS, WRTI and conservancies – the combined Kenyan giraffe population is estimated at 36,206 individuals including 14,122 Masai giraffe, 20,901 reticulated giraffe, and 1,281 giraffe (Marneweck *et al.* 2025). The total giraffe population



across Kenya accounts for approximately 25.8% of all giraffe across Africa. The Kenyan Masai giraffe population accounts for 32.1% of their total population on the continent, whereas Nubian giraffe account for 18.2% of the total Northern Giraffe population. Majority of reticulated giraffe are found in Kenya with very few individuals remaining in Ethiopia and Somalia. Although there has been an overall decline in Kenya's giraffe population since 1998, recent upwards trends in 2021 (34,240 individuals; 24% decline) and 2025 (36,206 individuals; 20% decline) are positive, indicating successful steps being taken in giraffe conservation across the country.

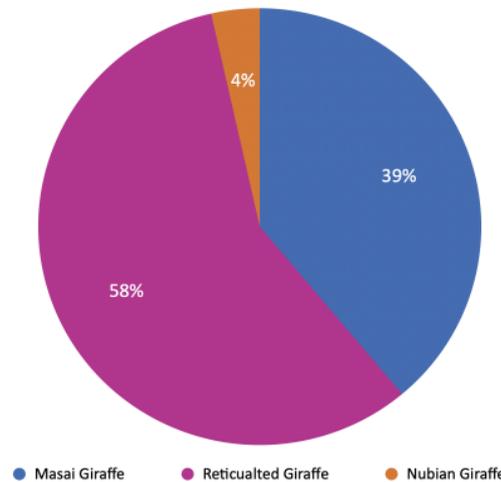


Fig. 4. Proportions of the population sizes of the three giraffe species in Kenya

Future Conservation Management

Kenya National Recovery and Action Plan for Giraffe

In November 2018, KWS launched the National Recovery and Action Plan for Giraffe in Kenya 2018 – 2022, the first ever in the country. The objective was to ensure a sustainable future for the giraffe, structured around a common vision and six goals. The six goals were developed following the core thematic areas of enhancing protection of giraffe populations, reversing the documented decline of giraffe populations, ensuring effective management of enclosed populations, coordinating research on giraffe populations, enhancing community involvement and finally, ensuring infrastructural developments in giraffe ranges are compatible with their conservation. The first edition of the Recovery and Action Plan established three Range Committees one for each giraffe species in Kenya, to coordinate the implementation of the National Recovery and Action Plan and to centralise information and data relating to their conservation.

A review of the Recovery and Action Plan for Giraffe in Kenya (2018 – 2022) in 2023 resulted in 64.2% of the conservation actions being considered completed or ongoing, and 35.8% not implemented at all. Participants noted that all the activities listed in Strategic Objective 6 required the participation and buy-in of other government stakeholders that were not involved in the implementation of the first edition of the Recovery and Action Plan. Additionally, the proposed activities were difficult or expensive to implement if the focus remained on a single group of species.

The workshop also revised the second edition of the Recovery and Action Plan for Giraffe in Kenya (2023 – 2027) to better reflect the current conservation status of all giraffe species in the country, as well as to address limitations and challenges from the first plan. The revised vision seeks to have genetically viable populations of the three species in suitable and secure habitats for posterity and accruing benefits to Kenyans, recognising Kenya's unique heritage. The overall goal is to mitigate the threats and maintain a self-sustaining giraffe population through a multi-stakeholder's approach to achieve a net positive population growth by 2027.

This is to be accomplished through several goals:



1. Enhancing the protection of giraffe to mitigate current and emerging threats.
2. Securing and improving giraffe habitats to ensure long-term survival of populations.
3. Ensuring effective management of closed populations to secure their long-term survival of populations.
4. Ensuring effective management of enclosed populations to secure their long-term conservation.
5. Ensuring coordinated research and monitoring of giraffe populations; enhancing community and stakeholder involvement in giraffe conservation to facilitate information exchange, education, and public awareness.
6. Ensuring infrastructural developments in giraffe ranges are friendly and compatible with their conservation.

Acknowledgements

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Map

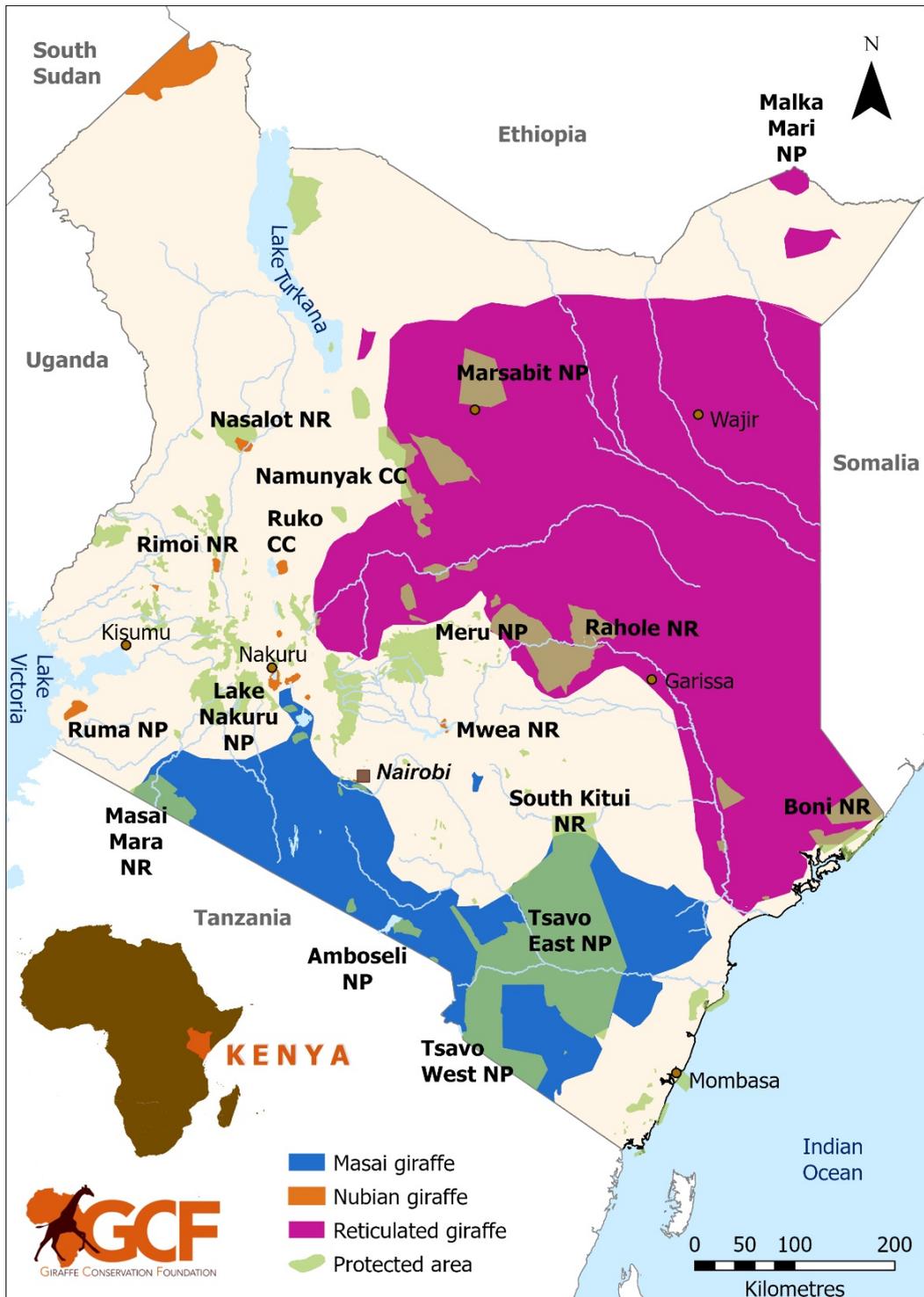


Fig 5. Current distribution of giraffe populations across Kenya.

