

Country Profile

Republic of Niger



Giraffe Conservation Status Report

October 2020

General statistics

Size of country: 1,267,000 km²

Size of protected areas / percentage protected area coverage: 177,380 km/14%

Species and subspecies

In 2016, the International Union for the Conservation of Nature (IUCN) completed the first detailed assessment of the conservation status of giraffe, revealing that their numbers are in peril. This was further emphasised when the majority of the IUCN recognised subspecies were assessed in 2018 – some as *Critically Endangered*. While this update further confirms the real threat to one of Africa's most charismatic megafauna, it also highlights a rather confusing aspect of giraffe conservation: how many species/subspecies of giraffe are there? The IUCN currently recognises one species (*Giraffa camelopardalis*) and nine subspecies of giraffe (Muller *et al.* 2018) historically based on outdated assessments of their morphological features and geographic ranges. The subspecies are thus divided: Angolan giraffe (*G. c. angolensis*), Kordofan giraffe (*G. c. antiquorum*), Masai giraffe (*G. c. tippelskirchi*), Nubian giraffe (*G. c. camelopardalis*), reticulated giraffe (*G. c. reticulata*), Rothschild's giraffe (*G. c. rothschildi*), South African giraffe (*G. c. giraffa*), Thornicroft's giraffe (*G. c. thornicrofti*) and West African giraffe (*G. c. peralta*).

However, GCF together with their partner Senckenberg Biodiversity and Climate Research Centre (BiK-F) has performed the first-ever comprehensive DNA sampling and analysis (genomic, nuclear and mitochondrial) of all major natural populations of giraffe throughout their range in Africa. As a result, an update of the traditional taxonomy now exists. This study revealed that there are four species of giraffe and likely six subspecies (Fennessy *et al.* 2016; Winter *et al.* 2018). The four species are Masai giraffe (*G. tippelskirchi*), northern giraffe (*G. camelopardalis*), reticulated giraffe (*G. reticulata*) and southern giraffe (*G. giraffa*). The northern giraffe has three subspecies: Nubian giraffe (*G. c. camelopardalis*), Kordofan giraffe (*G. c. antiquorum*), and West African giraffe (*G. c. peralta*). The southern giraffe has two subspecies: Angolan giraffe (*G. g. angolensis*) and South African giraffe (*G. g. giraffa*). Two of the former subspecies have been subsumed within other taxa as data supports they are genetically identical: the Rothschild's giraffe (*G. c. rothschildi*) is synonymous with the Nubian giraffe (*G. c. camelopardalis*) and it is likely the Thornicroft's giraffe (*G. c. thornicrofti*) is synonymous with the Masai giraffe (*G. c. tippelskirchi*) (Fennessy *et al.* 2016; Winter *et al.* 2018). Two of the former subspecies are raised to specific rank: *G. c. reticulata* is now the reticulated giraffe (*G. reticulata*) and *G. c. tippelskirchi* is now the Masai giraffe (*G. tippelskirchi*). Based on this research, GCF in all publications refers to the updated giraffe taxonomy of four species, while a taxonomy review by the IUCN is ongoing.

The following species and subspecies of giraffe are found in Niger:

Species: Northern giraffe (*Giraffa camelopardalis*)

Subspecies: West African giraffe (*Giraffa camelopardalis peralta*)

Conservation Status

IUCN Red List (IUCN 2018):

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

Giraffa camelopardalis peralta – Vulnerable (Fennessy *et al.* 2018)

In the Republic of Niger:

The West African giraffe is fully protected under Niger's 'Loi N° 82-002 du 28 Mai 1982 portant réglementation de la chasse' (Law N°98-07 of 29 April 1998 regulating hunting and wildlife protection) and may not be hunted.

Issues/threats

Once widely distributed across the Sudano-Sahelian Zone, from Senegal to Lake Chad, West African giraffe (*Giraffa camelopardalis peralta*)¹ were extirpated from most of their former range as a result of anthropogenic pressure (Hasannin *et al.* 2007; Ciofolo & Le Pendu 2002; Le Pendu & Ciofolo 1999; Ciofolo 1995; Dagg & Foster 1976; Happold 1969). Human population growth, civil unrest, illegal hunting, habitat alteration, destruction and fragmentation as well as climate change leading to a series of intense droughts have all contributed to the dramatic decline in the distribution and range of West African giraffe (BBC News 2018; Hasannin *et al.* 2007; Suraud & Dovi 2007; Niandou *et al.* 2000; Le Pendu & Ciofolo 1999; Ciofolo & Le Pendu 1998; Ciofolo 1995; Dagg & Foster 1976; Happold 1969).

The last surviving population of West African giraffe occurs in the arid Sahelian scrubland of the south-western parts of the Republic of Niger (referred to as Niger in this report) where they persist in what has been termed the 'Giraffe Zone,' a densely populated, unprotected area that is under severe anthropogenic pressure (GCF 2018; Le Roy *et al.* 2009; Hasannin *et al.* 2007; Suraud & Dovi 2006; Le Pendu & Ciofolo 1999). Niger's exponential human population growth has resulted in an increase in development that encroaches upon and fragments remaining giraffe habitat, and increased incidents of human-wildlife conflict (Le Roy *et al.* 2009). A combination of ever intensifying fuel-wood harvesting, shifting agriculture in search of better soil fertility, and widespread pastoralism are all exerting substantial pressure on the sparse Sahelian vegetation that constitutes the main habitat for West African giraffe. The population has gradually rebounded from a dramatic bottleneck of approximately 50 individuals in the mid-1990s. West African giraffe were considered Africa's most threatened giraffe subspecies, listed as 'Endangered' on IUCN's Red List in 2008 (Fennessy & Brown 2008). Ten years later, after an incredible effort by Niger to protect giraffe and reduce illegal hunting, the population has grown enough for the West African giraffe to now be listed at 'Vulnerable' by the IUCN

¹ Although East (1999) referred to *G. c. peralta* and *G. c. antiquorum* collectively as western giraffe, *G. c. peralta* is now assumed to be West African giraffe as referred to throughout this document.



(Fennessy *et al.* 2018). However, their numbers remain the lowest of any giraffe subspecies and ongoing conservation management is critical to ensure their long-term viability.

Niger's human population, with an estimated density of 19 people/km², is largely impoverished and Niger is often rated as the poorest country in the world. Many rural communities historically relied on illegal hunting of bushmeat for food and as an income source (Worldometer 2020; Fennessy & Tutchings 2014). Weak law enforcement and the involvement of a few local officials facilitated the illegal trade and easy availability of bushmeat up until the mid-1990s (Fennessy & Tutchings 2014; East 1999; Ciofolo 1995; Mauny 1957).

The extension of agriculture, deforestation and infrastructure development has encroached upon and severely disturbed the sparse Sahelian vegetation, causing a rapid disappearance in the West African giraffe habitat (Le Pendu & Ciofolo 1999; Ciofolo & Le Pendu 1998; Mauny 1957). Destruction of the tiger bush, which constitutes West African giraffe's preferred habitat (Ciofolo 1995), has increased over the last 50 years due to unsustainable wood harvesting as a result of the extremely high wood demand of Niamey's human population (Niger's capital city), and as forage for local livestock production (Suraud *et al.* 2012; Le Roy *et al.* 2009). In 1950, tiger bush covered 56.6% of the area, but only 20.9% in 1995 (Fennessy & Tutchings 2014). Between 1975 and 2002, Abdou (2005) found a similar intensity for the destruction of tiger bush and reported a marked increase of field crops. It is ironic that giraffe numbers are increasing despite the escalation in habitat destruction. The increase in giraffe numbers can likely be attributed to the absence of illegal hunting and predators in recent years, combined with an increase in their range from the 'Giraffe Zone' (Suraud *et al.* 2012; Le Roy *et al.* 2009). With the ongoing destruction of tiger bush, it is expected that giraffe will increase pressure on the remaining vegetation, which may cause habitat fragmentation and limit its availability (Suraud *et al.* 2012).

Le Pendu & Ciofolo (1999) reported a number of long-distance movements by individual giraffe between Niger, Mali and Gaya on the Nigerian border. The progressive saturation of the giraffe core range in Niger is expected to cause increasing giraffe migrations (and forays) (Suraud *et al.* 2012). With an increasing tendency to migrate out of their preferred zone in search of other areas with sufficient vegetation, giraffe are likely to be more vulnerable to illegal hunting, especially in neighbouring Mali and Nigeria, despite these countries forming part of their historical range (Suraud *et al.* 2012; Le Pendu & Ciofolo 1999). Despite their rather rapid population increase, West African giraffe numbers remain rather low. Since illegal hunting was curtailed at the end of the 1990s, habitat protection is now the key driver for the future success of giraffe conservation in Niger (Le Roy *et al.* 2009).

Estimate population abundance and trends

Historic

During the Palaeolithic period, West African giraffe ranged across the major part of North and West Africa, now covered by the Sahara Desert (Happold 1969, Mauny 1957, Dekeyser 1955). Many prehistoric rock paintings and engravings also show evidence that giraffe were once found widely throughout the region (Hassanin *et al.* 2007). According to Dagg & Foster (1976), the former distribution of West African giraffe covered most countries of West and Central Africa, including Benin, Burkina Faso, Ghana, Guinea, Mali, Mauritania, Niger, Nigeria, Senegal, Togo, Cameroon, the Central African Republic and Chad. However, genetic analysis by Hassanin *et al.* (2007) concluded that the giraffe of West and Central Africa belong to two different (sub)species, *G. c. peralta* and *G. c. antiquorum* respectively; the latter encompassing the historical and current populations of Cameroon, Chad and Central African Republic. Hassanin *et al.* (2007) suggested that the ancestor of the West African giraffe dispersed from East to North Africa, and thereafter migrated to its current Sahelian distribution in West Africa in response to the development of the Sahara Desert.



More recently, three biogeographical barriers may have limited the distribution of giraffe in West Africa: the southern limit of the Sahara Desert to the north; the Niger and Benue Rivers together with the Upper Guinea rainforests extending from Guinea into Sierra Leone and eastward through Liberia, Ivory Coast, and Ghana into western Togo to the south; and the forests and mountains (Mandara and Alantika) on the border between Nigeria and Cameroon to the east (Hassanin *et al.* 2007).

Although giraffe were still present throughout West Africa in Mali as well as Gambia, Niger, Nigeria, Mauritania and Senegal by the end of the nineteenth century (Dagg & Foster 1976), a substantial reduction in their distribution was reported by the beginning of the twentieth century (Leroy *et al.* 2009; Suraud & Dovi 2007; Ciofolo 1995; Sidney 1965; Mauny 1957).

According to Ciofolo & Le Pendu (1998), large scale disappearance of West African giraffe was evident by the 1950s. Happold (1978) described that giraffe still roamed from Gaya in Nigeria to Mali in the 1960s, with the highest population density occurring near Ayorou in Niger, close to the border with Mali. Dagg (1962) reported that only a few dozen giraffe remained in Niger and their number was decreasing at the time. However, an article published by the Zoological Society of London in 1965 reported that West African giraffe occurred in 'large numbers' in the Mtnaka District and around Aderbissinat in central Niger (ZLS 1965), while according to Poche (1976) hundreds of giraffe could be found in Niger at the beginning of the 1970s. They were mainly observed between Tillabery and Ayorou, along the Niger River south of the Malian border. In 1978, Happold suggested that only a few hundred West African giraffe remained in Niger (Happold 1978).

It has been suggested that the prevalence of illegal hunting in the 1970s (Pfeffer 1981) in combination with persistent drought caused a general migration of giraffe from the Ayorou region in Niger to the Dallol Bosso in the early 1980s (Le Pendu & Ciofolo 1999). During the same time, intensive deforestation in the Gaya region in Niger forced giraffe to migrate to the Harikanassou area (Ciofolo 1995). At that time, giraffe occurred on the eastern side of the Niger River, with two-thirds of the population concentrating in the 'Giraffe Zone' (comprised of the Koure plateau and the area of Harikanassou) from approximately 80km south of Niamey with the remaining giraffe mainly living in surrounding peripheral regions (Le Pendu & Ciofolo 1999).

Extension of agricultural lands, deforestation, illegal hunting and droughts provoked a dramatic decline of giraffe numbers in the following years (Le Pendu and Ciofolo 1998), despite the implementation of an anti-poaching programme in the early 1980s (Pfeffer 1981). By 1996, 49 individuals remained, concentrated in the 'Giraffe Zone' (Suraud *et al.* 2012; Suraud & Dovi 2006; Ciofolo & Le Pendu 1998; Le Pendu & Ciofolo 1999). Recognising this critical situation, the Government of Niger implemented concerted measures to enforce long-term legislation preventing the illegal killing of giraffe. This effort was accompanied and supported by a community education and awareness campaign coordinated by the Projet d'Utilisation des Ressources Naturelles de Kouré (PURNKO, Ciofolo & Le Pendu 1998). Since 2000, with additional support of the Association for Saving the Giraffes of Niger (ASGN) and the Association pour la Valorisation de l'Ecotourisme au Niger (AVEN – the giraffe guide association) illegal hunting of giraffe in Niger almost disappeared, with only three reported cases between 2005 and 2009 (Suraud *et al.* 2012).

In 2005, 135 West African giraffe were identified through individual photo identification showing that the population had increased rapidly in less than 10 years (Suraud *et al.* 2012). This increase was a result of the eradication of illegal hunting, the implementation of successful education and awareness programmes, social development support in local communities, and the expansion of ecotourism, which ultimately benefited the local population (Suraud & Dovi 2006). In 2006, 144 individuals were identified (Suraud & Dovi 2007), 164 in 2007 (Suraud 2008), 193 in 2008 (Suraud 2009) and in 2009 the population was estimated at 220 individuals (Suraud *et al.* 2012).



After a detailed evaluation, in 2008 Niger's endemic population of West African giraffe was added to the IUCN Red List as an endangered subspecies and considered of highest conservation priority (Fennessy & Brown 2008).

In 2009, the first-ever Population and Habitat Viability Analysis (PHVA) of giraffe was conducted on the West African giraffe population. The PHVA provided a scientific basis for predicting the development of the giraffe population over time by looking at past knowledge of the population, its biology and the current and perceived threats. The outputs of the PHVA provided the basis for the Government of Niger to develop the first-ever National Strategy for Giraffe Conservation in Africa. Unfortunately, although the National Strategy was officially adopted it did not make best use of the available research and management documents, and the subsequent implementation was limited in the initial years (Fennessy & Tutchings 2014).

Current

Currently, there are three main areas in Niger that form the West African giraffe range – commonly referred to as the 'Giraffe Zone': Fakara Plateau (Kouré, Fandou), Harikanassou (Dallol Bosso) and the Intermediate Zone (Suraud & Dovi 2007). Giraffe appear to roam increasingly between all three areas and most recently they also migrate further afield, predominantly associated with seasonal availability of forage and as a result of increasing pressure from growing populations (both human and giraffe) (GCF 2018; Suraud & Dovi 2007).

In the absence of illegal hunting and predation and with sufficient resources available, living conditions for giraffe in Niger seem close to ideal (Suraud 2008). However, it is reasonable to assume that their high annual growth rate cannot be maintained over a longer period of time, in particular considering the current ecological and also economical context in Niger (Suraud *et al.* 2012). Even though the population of giraffe continues to increase, their core rainy season habitat, the tiger bush, continues to decrease rapidly as a result of ever-expanding agricultural land (Suraud *et al.* 2012; Suraud 2008; Suraud & Dovi 2006; Abdou 2005). Between 1975 and 2002, agriculture in the 'Giraffe Zone' increased from 50% to 80% of the area, while uncontrolled timber and fuel wood harvesting, as well as intensifying of pastoralism pose further threats (Zabeirou 2017; Suraud *et al.* 2012; Morou *et al.* 2009; Suraud 2008; Abdou 2005). Habitat destruction impacts on giraffe movements, with individuals already exploring new areas and recent surveys have indicated that giraffe are continuing to expand their range (GCF 2018; Suraud 2008). It is reported that giraffe have accelerated their search for new habitat, which is likely to show an impact on their survival (GCF 2018; Suraud 2008). As giraffe search for more favourable habitat, a potential split of the population into several sub-populations appears likely, as does an increased threat from inevitable human/wildlife conflict (GCF 2018; Suraud *et al.* 2012).

In 2012, the giraffe population in Niger was estimated at 366 individuals which then increased to an estimated 403 individuals by 2013 (DFC/AP 2012; DFC pers. com.). By 2016, the giraffe population was estimated to have grown to 547 individuals (Giraffe Census Niger 2016). The most recent surveys, undertaken in 2017, 2018 and 2019 have shown a continuing increase in giraffe numbers with estimates of 607, 633 and 664 individuals respectively (Zabeirou 2017; Giraffe Census Niger 2019). Taking into account the past 15 years of data, the giraffe population has increased on average approximately 11-12% per annum. This constitutes the highest growth rate ever seen in giraffe and is close to the maximum rate feasible for the species (Suraud *et al.* 2012).

An updated Action Plan for the National Strategy for Giraffe Conservation was drafted and published in 2016 and has since provided the basis for current and future targeted giraffe conservation efforts in Niger. As a result of this conservation management plan and associated translocation assessment, eight West African giraffe (three males and five females) were successfully translocated from the 'Giraffe Zone' to establish a founder population in the Gadabedji Biosphere Reserve in October 2018 (GCF 2018). This is the first step



towards further protection and conservation of the West African giraffe population in Niger as well as towards developing the Gadabdi Biosphere Reserve as a flagship wildlife reserve in Niger (GCF 2018).

In summary, the current estimated *G. c. peralta* number in Niger, which is also the total number of this giraffe subspecies in the wild, is 664 individuals in 2019.

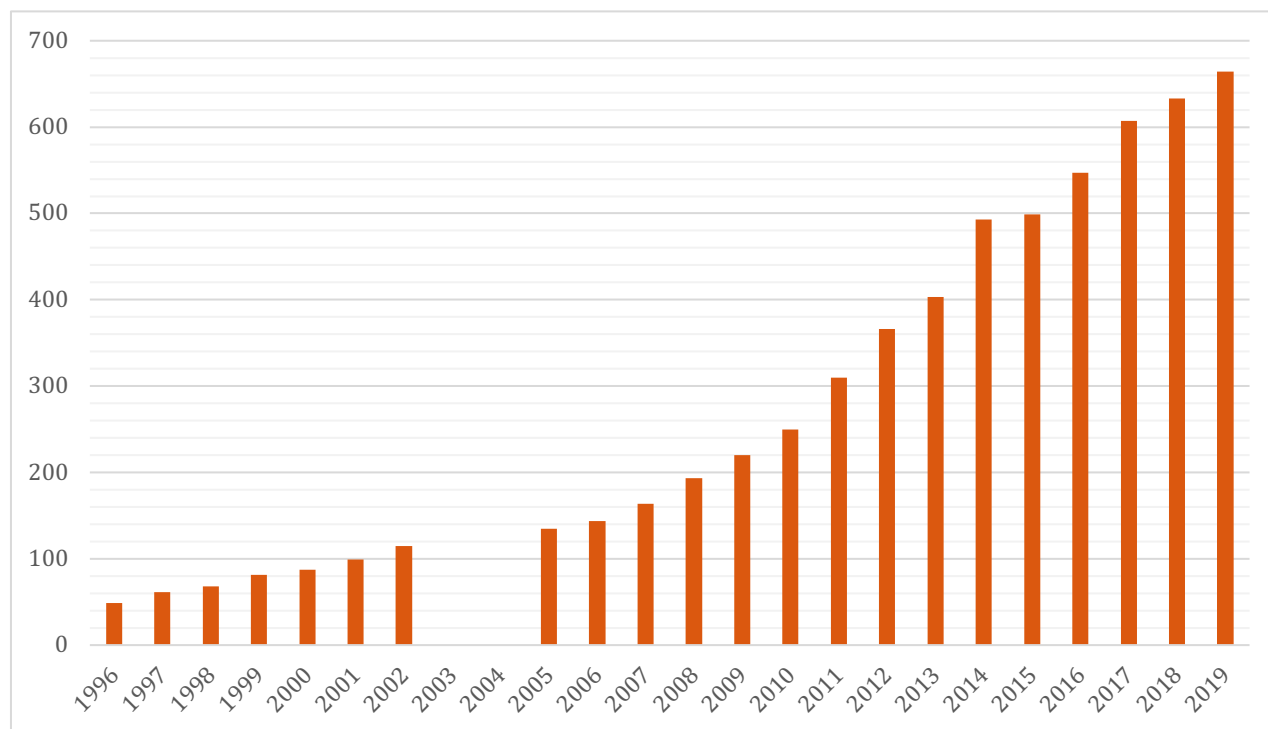


Figure 1: Graph depicting growth of the West African giraffe in Niger over the past 34 years: 1995-2019.

Future Conservation Management

The following are proposed conservation management options for giraffe in Niger:

- Review and development of a new National Giraffe Conservation Strategy and Action Plan for Niger involving all key stakeholders;
- Greater understanding of the increasing giraffe population number and expanding range within the country – need to better understand and develop new survey methods and analysis;
- Support dedicated giraffe conservation, habitat protection, education and awareness initiatives (government, NGO and academic);
- GPS satellite tagging of giraffe to help with monitoring and anti-poaching support;
- Assess new translocation opportunities for giraffe within Niger and into neighbouring countries; and
- Assess transboundary giraffe conservation and management initiatives with neighbouring countries if giraffe numbers continue increasing e.g. Nigeria and Mali.



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Map

