

Country Profile

Republic of Niger



Giraffe Conservation Status Report

General statistics

Size of country: 1,267,000 km²

Size of protected areas / percentage protected area coverage: 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one species (*Giraffa camelopardalis*) and nine subspecies of giraffe (Muller *et al.* 2016) historically based on outdated assessments of their morphological features and geographic ranges.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 (*G. c. thornicrofti*) and West African giraffe (*G. c. peralta*).

However, over the past decade GCF together with their partner Senckenberg Biodiversity and Climate Research Centre (BiK-F) have performed the first-ever comprehensive DNA sampling and analysis (genomic, nuclear and mitochondrial) from all major natural populations of giraffe throughout their range in Africa. As a result, an update to the traditional taxonomy now exists. This study revealed that there are four distinct 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*). Nubian giraffe (*G. c. camelopardalis*), Kordofan giraffe (*G. c. antiquorum*), West African giraffe (*G. c. peralta*) are the three subspecies of the northern giraffe, while Angolan giraffe (*G. g. angolensis*) and South African giraffe (*G. g. giraffa*) fall under the southern giraffe. Rothschild's giraffe is genetically identical to the Nubian giraffe, and thus subsumed into it. Similarly, Thornicroft's giraffe is genetically similar to the Masai giraffe, and as such considered a separate subspecies of the Masai giraffe (*G. t. thornicrofti*) (Winter *et al.* 2018). 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 may occur in Malawi:

Species: Northern giraffe (*Giraffa camelopardalis*)

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

Conservation Status

IUCN Red List (IUCN 2012):

Giraffa camelopardalis (as a species) – Least concern

Giraffa camelopardalis peralta – Endangered

In the Republic of Niger:

West African giraffe are fully protected under the Republic of Niger's 'Loi N° 82-002 du 28 Mai 1982 portant réglementation de la chasse' (Law No. 82-002 of 28 May 1982 regulating hunting) 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 have been 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). Population growth, civil unrest, illegal hunting, habitat alteration, destruction and fragmentation as well as a series of intense droughts have all contributed to the dramatic decline in the distribution and range of West African giraffe (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 southwestern parts of the Republic of Niger (referred to as Niger in this report) where they persist in a densely populated, unprotected area that is under severe anthropogenic pressure (Le Roy *et al.* 2009; Hasannin *et al.* 2007; Suraud & Dovi 2006; Le Pendu & Ciofolo 1999). Niger's exponential human population growth have 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 fuelwood harvesting, shifting agriculture in search of better soil fertility, and widespread pastoralism, are all exerting substantial pressure on the sparse Sahelian vegetation that constitute the main habitat for West African giraffe. Despite gradually rebounding from a dramatic population bottleneck of approximately 50 individuals in the mid-1990s, West African giraffe remain Africa's most endangered giraffe (sub)species, listed as endangered (EN) on IUCN's Red List since 2008 (Fennessy & Brown 2008).

Niger's human population is largely impoverished, often rated as the poorest country in the world, and many rural communities historically relied on illegal hunting of bushmeat for food and as both a nutritional and income source (Fennessy & Tutchings 2014). Weak law enforcement and the involvement of some local officials facilitated the illegal trade and 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 resulting from 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.*

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.



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 'core' 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 tiger bush habitat at least until this habitat is fragmented or limited 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) (Suruad *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). Notwithstanding a rapid increase of the population, West African giraffe numbers remain rather low. Since the curtailment of illegal hunting at the end of the 1990s, habitat protection is now becoming the key driver behind the future success of protecting giraffe 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 across the regions (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).

Recent

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 on only a few dozen giraffe remaining in Niger and their number was decreasing at the time. However, an article published in 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.

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 since the early 1980s (Le Pendu & Ciofolo 1999). During the same time, intensive deforestation in the Gaya region forced giraffe to migrate to 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 core area (comprised of the Koure plateau and the area of Harikanassou) 80km south of Niamey with the remaining giraffe mainly living in 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). In 1996, less than 50 individuals remained, concentrated in an area close to Niamey (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 giraffe were identified through photo identification indicating that the population had increased rapidly in less than 10 years as a result of the eradication of illegal hunting, the implementation of successful education and awareness raising programmes, social development support in local communities by ASGN, 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).

In recognition of the general importance of the endemic population of the West African giraffe, the IUCN Red List listed this subspecies as endangered and of highest conservation priority in 2008 (Fennessy & Brown 2008).

In 2009 the first-ever Population and Habitat Viability Analysis (PHVA) was undertaken on the West African giraffe population, let alone any subspecies of giraffe. 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 Government of Niger in order to inform the first ever National Strategy for Giraffe Conservation in Niger (still the only one in all Africa). Unfortunately, although the National Strategy was approved it did not make best use of the research and management documents provided, and the subsequent implementations appears limited (Fennessy & Tutchings 2014).

Population numbers of West African giraffe in Niger

Year	1996	1997	1998	1999	2000	2001	2002	2005	2006	2007	2008	2009	2010	2011
No.	49	61	68	81	87	99	115	135	144	164	193	220	250	310



(Newby *et al.* 2006; Suraud & Dovi 2006; Suraud & Dovi 2007; Suraud 2008; Suraud 2009; Suraud 2010; AWF 2013)

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, predominantly associated with seasonal availability of forage (Suraud & Dovi 2007).

In the absence of illegal hunting, predation and sufficient resources, 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, not only considering the current ecological but 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 increasing agriculture (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, fuel wood harvesting and intensifying of pastoralism pose further threats (Suraud *et al.* 2012; Morou *et al.* 2009; Suraud 2008; Abdou 2005). Habitat destruction impacts on giraffe movements, with individuals already exploring new areas (Suraud 2008) and recent surveys have indicated that giraffe are continuing to expand their range. In September 2007, two giraffe were photographed in the Tilabéry Region (approx. 200km west of the giraffe zone) where giraffe had not been observed in more than 20 years (Suraud 2008). It is reported that giraffe have accelerated their search for new habitat, which is likely to show an impact on their survival (Suraud 2008). As giraffe search for more favourable habitat, a potential split of the population into several sub-populations appears likely (Suraud *et al.* 2012).

The most recent survey estimate of giraffe in Niger estimated 366 individuals (DFC/AP 2012). Taking into account the past 15 years of data, the giraffe population has increased on average approximately 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). A new action plan for the National Strategy for Giraffe Conservation was drafted in late 2013 and will hopefully provide the basis for future targeted giraffe conservation efforts in Niger.

The most recent West African giraffe census of 2013 estimates numbers at 403 (DFC pers. com.). While this would highlight a continued positive growth in the population, potential over estimation is a concern and further independent verification may be required.

In summary, the current *G. c. peralta* numbers in Niger, and total, are estimated at 403 individuals.

Future Conservation Management

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

- Review the first Niger National Giraffe Conservation Strategy in light of new data, as well as inclusion of results from the previously developed Population and Habitat Viability Analysis (PHVA) and development of a output focussed implementation action plan with all key stakeholders engaged;
- Greater understanding of the expanding giraffe population numbers and range within the country;
- Support to dedicated giraffe conservation, habitat protection, education and awareness initiatives (government, NGO and academic); and
- Assess transboundary giraffe conservation and management initiatives with neighbouring countries if giraffe are expanding i.e. Nigeria and Mali.



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Map

In preparation.

