

# Democratic Republic of the Congo

## Giraffe Conservation Status Report

July 2019

### General statistics

Size of country: 2,345,410 km<sup>2</sup>

Size of protected areas / percentage protected area coverage: 11%

### 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one species (*Giraffa camelopardalis*) and nine subspecies of giraffe (Muller *et al.* 2016) historically based on outdated assessments of their morphological features and geographic ranges.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 giraffe (*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 five 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, preliminary data suggests that the Thornicroft's giraffe is genetically similar to the Masai giraffe, however, additional research is necessary to determine if they are genetically identical or should be considered a subspecies of Masai giraffe (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 occur in the Democratic Republic of the Congo (DRC):

**Species:** Northern giraffe (*Giraffa camelopardalis*)

Southern giraffe (*Giraffa giraffa*)

**Subspecies:** Kordofan giraffe (*Giraffa camelopardalis antiquorum*)

Angolan giraffe (*Giraffa giraffa angolensis*)

South African giraffe (*Giraffa giraffa giraffa*)

## Conservation Status

### IUCN Red List (IUCN 2018):

*Giraffa camelopardalis* (as a species, old taxonomy) – Vulnerable (Muller *et al.* 2016)

*Giraffa camelopardalis antiquorum* – Critically Endangered (Fennessy and Marais 2018)

*Giraffa giraffa* (as a species) – Not assessed

*Giraffa camelopardalis angolensis* – Least Concern (Marais *et al.* 2018)

*Giraffa camelopardalis giraffa* – Not assessed

### In the Democratic Republic of the Congo:

Giraffe are classified by the Congolese Institute for Nature Conservation (Institut Congolais pour la Conservation de la Nature – ICCN) as a rare or endangered species that is fully protected and may not be hunted. However, with addition of extralimital giraffe populations this may need to be assessed more in the future.

## Issues/threats

Giraffe in the Democratic Republic of the Congo (DRC) are currently naturally restricted to the Garamba National Park and adjacent hunting reserves in the north-east of the country (Amube *et al.* 2009; De Merode *et al.* 2000; East 1999). The Garamba complex consists of Garamba National Park (4,900km<sup>2</sup>) and three adjacent hunting reserves: Azande to the west, Gangala na Bodio to the south and Mondo Missa to the east, totalling a further 7,527km<sup>2</sup> (Amube *et al.* 2009; De Merode *et al.* 2000; East 1999; Hillman Smith 1985). Falling within the Sudano-Guinea savanna zone, the vegetation of the park varies from well-watered open long grass savanna in the south through increasing bush and woodland towards the higher ground of the north. The surrounding reserves are more bushed and wooded than the park and provide important habitat for giraffe.

Garamba National Park, created in 1938, is one of the oldest national parks in Africa and borders South Sudan on the Congo-Nile watershed (De Merode *et al.* 2000). Together with the northern white rhino, the giraffe were important in motivating the park's declaration as a World Heritage Site in 1980.

The park is managed by the Congolese government conservation authority, the ICCN, but for most of the last forty years has relied on international support to fulfil this mandate. Following the end of an FAO/UNDP project in the 1970s, serious illegal hunting of elephant (66%), rhino (97%), and giraffe (50%) occurred. From 1984 to 2005 the ICCN mandate was supported through the Garamba Project with the help of a consortium of international donors. During this time, wildlife numbers increased until a new flare up of civil unrest in the area. Since 2005 African Parks has taken over park management in partnership with the ICCN.

The park has faced many challenges, several of which were related to Central Africa's turbulent political landscape (Cunliff 2010a; Amube *et al.* 2009; Hillman Smith & Ndey 2005; Hillman Smith 2004; Hillman Smith *et al.* 2003a). The first of these challenges was the post-Independence Simba Rebellion in the 1960s which decimated wildlife numbers. Giraffe populations began to slowly recover with reinstated protection and the illegal hunting of the late 1970s and early 1980s focused on other wildlife species, however, the heavy presence of illegal hunters likely also negatively impacted giraffe. From 1984, the conservation and development activities of the Garamba Project facilitated an increase in wildlife, despite an influx of weapons, military deserters and refugees into the DRC in 1991 from civil war ridden South Sudan (Hillman Smith *et al.* 2003a). Sudan People's Liberation Army (SPLA) rebels and associates of local military were involved in



commercial bushmeat poaching in the park and surrounding reserves during the 1990s but were largely controlled through the activities of the Garamba Project and ICCN. In 1997 the 'liberation war' in the DRC precipitated another upsurge of illegal hunting in the park as game guards were disarmed and anti-poaching was curtailed for several months (Hillman Smith *et al.* 2003a; Hillman Smith & Ndey 2005; Hillman Smith *et al.* 2003b). Conservation remained relatively stable throughout the second civil war in DRC, with extra support from the UN Foundation/UNESCO until the cease fire in South Sudan enabled the penetration in 2003 of *Janjaweed muharaleen* horsemen from the west and SPLA from the east, which decimated all wildlife, in particular giraffe.

Interestingly, the Azande and Mondo tribes living in the hunting reserves adjacent to Garamba National Park believed that consuming giraffe meat caused leprosy, and although this limited local poaching, possession of a giraffe tail hair fly whisk was a status symbol of the Mondo traditional chiefs (African Parks 2012). However, according to Amube *et al.* (2009), the traditional taboos have largely died out with the influence of modern society and the invading *muharaleen* horsemen specifically valued giraffe tails as part of their dowries. Therefore, illegal hunting of giraffe has increased (Amube *et al.* 2009). A decline in wildlife populations is furthermore linked to post war instability, continuing power struggles and exploitation of resources, particularly from neighbouring countries (Hillman Smith & Ndey 2005).

In 2005 the Lord's Resistance Army (LRA), a guerrilla group from northern Uganda, also established a base in the Azande Reserve adjacent to the park in order to escape the Ugandan army. The LRA often infiltrated the park, even attacking the headquarters in January 2009, killing 17 people and creating a long-term atmosphere of fear (ACF 2012; Cunliffe 2010a,b). The LRA remained in the Garamba ecosystem until a Ugandan-led military offensive drove them out in 2009 (Cunliffe 2010a), however, they remained present in the larger area.

In 2012, another LRA base camp was discovered within the park (ACF 2012; RNW 2012). At that time the security situation had stabilised with the assistance of the Congo military (FARDC) and UN Special Forces (MONUSCO) who temporarily moved in and once again managed to drive LRA operatives out (ACF 2012). It was believed that the LRA retreated to the densely wooded Azande Hunting Reserve west of Garamba, however, it was expected that they would return to the park unless an ongoing military presence was secured (ACF 2012). By 2017, both the USA and Uganda decided to terminate the hunt for the LRA and withdraw their military forces from Central Africa stating that the LRA had been reduced to under 100 individuals and there had been no documented LRA activities in the past five year – thus they were no longer considered a threat (Gaffey 2017; Miles 2017). Unfortunately, a mere two months after removal of military support, the LRA kidnapped 61 civilians in the Tanganyika mining region just outside Garamba National Park (Miles 2017). There is high concern the LRA could re-emerge in the coming years and pose a significant threat not only to the communities around Garamba National Park but also to the giraffe and other wildlife within the park. The surge in LRA activity also damaged the tentative tourism industry for Garamba National Park (Nicolon 2017).

There is hope for Garamba National Park, with antipoaching efforts and management under African Parks beginning to show a reduction of poaching incidents within the park (Nicolon 2017). In addition, in 2018 the first-ever National Giraffe Conservation Strategy and Action Plan for the DRC was created as a joined collaboration by African Parks, ICCN and GCF. This Action Plan provides a science-based framework for giraffe conservation and management in the DRC. The document outlines threats to the population(s) of giraffe within the DRC and set specific goals to achieve by 2020, with the intent to sustain viable populations of giraffe in healthy and secure ecosystems within the DRC (African Parks 2018).



## Estimate population abundance and trends

Taxonomic confusion has surrounded the (sub)species occurrence of giraffe in Central Africa. The giraffe population of the DRC were formerly thought to be West African giraffe (*G. c. peralta*, Dagg 1962), but genetic analysis undertaken by Hassanin *et al.* (2007) and supported by Fennessy *et al.* (2016) and Winter *et al.* (2018) clearly show that the natural giraffe population in Garamba National Park are Kordofan giraffe (*G. c. antiquorum*).

### Historic

Recent records of the occurrence of giraffe in the DRC are limited to the Garamba ecosystem, but in the past they occurred throughout the savannas of *Haut Uele* in northern Congo (de Saeger 1954). In the 1950s, giraffe were distributed throughout the park, but at somewhat lower density in the north-west, due to illegal hunting (Verschuren 1958). Verschuren estimated at least 300 giraffe in the park and noted that counts by Cornet d'Elzius had observed at least 60 giraffe in the *Domaine de Chasse Gangala-na-Bodio* to the south of the park (East 1999)<sup>1</sup>. The presence of a large elephant population had opened the habitat over previous decades resulting in giraffe largely moving into the peripheries of the park and the adjacent reserves, where woodland density was higher (Amube *et al.* 2009; De Merode *et al.* 2000; East 1999).

The first systematic aerial census of Garamba National Park, carried out in 1976, estimated the giraffe population at 350 individuals (Savidge *et al.* 1976). The same method was subsequently applied from 1983 to 2004. Throughout most of the 1980s and 1990s, surveys also included full coverage of the more wooded surrounding reserves, though visibility was sometimes limited.

See table below for aerial survey figures for giraffe from Garamba National Park and reserves from 1976 to 2012.

Year	Garamba NP	SE	Reserves (DCS)	Source
1976	350	±250	Not surveyed	Savidge <i>et al.</i> 1976
1983	175	±163	20	Hillman <i>et al.</i> 1983
1984	237	±144	0 in part DC	Hillman Smith 1989
1986	153	±140	13	Hillman Smith 1989
1991	346	±203	46	Smith <i>et al.</i> 1993
1993	347	±419	0	Smith <i>et al.</i> 1993
1995	178	±210	52	Hillman Smith <i>et al.</i> 1995
1998	144	±73	Not surveyed	Hillman Smith <i>et al.</i> 2003b
2000	118	±64	Not surveyed	Smith & Hillman Smith 2000
2002	62	±13	Not surveyed	Hillman Smith <i>et al.</i> 2003b
2003	62	±75	Not surveyed	Hillman Smith <i>et al.</i> 2003b
2004	185	±152	Not surveyed	Hillman Smith <i>et al.</i> 2004

	Garamba NP (South)			
2005	48		Not surveyed	De Merode <i>et al.</i> 2005
2006	52		18 in parts of DCS	Emslie <i>et al.</i> 2006
2007	82		0 in part DC	Amube <i>et al.</i> 2009
2012	11		11 in part DC	African Parks 2012

<sup>1</sup> Although East (1999) referred to *G. c. peralta*, *G. c. antiquorum* and *G. c. congoensis* collectively as western giraffe, *G. c. congoensis* has been subsumed into *G. c. antiquorum* (Fennessy 2008) and is now considered Kordofan giraffe.



Systematic sample counting in the park, even with high density stratification of the southern sector, yielded fairly high standard errors for species with low numbers and clumped distribution such as giraffe. As a result, numbers fluctuated, but no significant reduction in numbers occurred until the effects of increased illegal hunting showed effect during the civil unrest. Recent aerial surveys were total counts over the southern sector and parts of the park. This method only showed minimum numbers and likely not all giraffe were counted in the survey.

Between 1976 and 1983 the park experienced very heavy illegal hunting of all wildlife and the 1983 count indicated a drop in giraffe number, however, this might have partly been due to their movement out of the park. During the first 10 years of the Garamba Project, from 1984 to 1995, numbers of most species, including giraffe, increased. The liberation civil war affected Garamba in late 1996 and early 1997, when disarming of guards forced a stop to all anti-poaching activities for several months and the park was penetrated by poachers, mostly from Sudan. The 1998 post-war count indicated a fall in giraffe numbers. In August 1998 the second civil war started and although conservation activities were maintained and wildlife numbers remained relatively stable, constraints on the transport of aircraft fuel made aerial surveys impossible, including for the surrounding reserves. Illegal hunting increased disastrously in 2003/4 with invasions by the SPLA and Sudanese *janjaweed* horsemen and giraffe numbers fell again.

### Current

Although giraffe population numbers have always been relatively low, they plummeted to only a few individuals in the past decades (African Parks 2012). Currently, naturally occurring Kordofan giraffe are predominantly in the southern sector of Garamba National Park and in areas that extend to the Azande, Mondo Missa and Gangala na Bodio Hunting Reserves (Amube *et al.* 2009). Aerial counts of the southern part of the park and adjacent hunting reserves in 2007 indicated that approximately 85 individuals remained in the area (Amube *et al.* 2009). In 2012, African Parks (2012) observed only 11 giraffe in the park and 11 in the reserves during an aerial total count, but estimated approximately 70 individuals roaming the park. Recent surveys performed in 2017 indicated an estimated 47-50 giraffe (African Parks 2017). The most recent survey of April 2019 estimated that the population has risen to 55 individuals (African Parks 2019). This is an encouraging trend and as a result, the population goal of 60 individuals, that was set in the National Giraffe Conservation Strategy and Action Plan should be reached by 2020 (African Parks 2018).

Extralimital populations of both Angolan and South African giraffe have recently been introduced into a number of wildlife reserves in the DRC. In 2007, two South African giraffe (one male and one female) were imported from a private game farm in Zambia to Mikembo Sanctuary, DRC, where the population was estimated at seven individuals in 2018 (I. Parsons and M. Hasson pers. comm.). In 2010, another two South African giraffe (both female) were imported from Zambia to Society Virginia, the governor's property in Lubumbashi, to be joined shortly afterwards by a male South African giraffe also from Zambia (I. Parsons pers. comm.).

In May 2017, the Herholdt Family Trust and Wildlife Vets Namibia were approached by the DRC government to help restock Parc de la Vallee de la Nsele with Angolan giraffe, among other wildlife species, from Namibia (Wildlife Vets Namibia 2018). Throughout 2017 a total of 16 Angolan giraffe were translocated to the DRC by way of ship and trucks. Unfortunately, one giraffe died in transit but the remaining 15 arrived safely in DRC (M. Bijsterbosch pers. comm.). Once in country, four giraffe were transported to Mateba Island, near the southern border with Angola. Unfortunately, all four giraffe died within a month after their arrival, possibly due to ingestion of a cardiotoxic plant despite a thorough habitat/vegetation assessment prior to their introduction (M. Bijsterbosch pers. comm.). The other 11 giraffe were transported to Parc de la Vallee de la



Nsele, located close to the capital Kinshasa. The giraffe did not adapt well to their new habitat and vegetation (M. Bijsterbosch pers. comm.). High tick burdens were observed on the giraffe and only four individuals survived the first year. However, the most recent count in 2019 showed one calf, bringing the current population of Angolan giraffe to five individuals, which are closely monitored (M. Bijsterbosch and U. Tubbesing pers. comm.). There are plans under way to move more giraffe to Parc de la Vallée de la Nsele in future. To increase the success rate of such a translocation it is planned to keep the giraffe in a boma for a period of time to help them acclimatise to the new vegetation and treat them for ticks (M. Bijsterbosch pers. comm.).

In summary, current natural giraffe numbers in the DRC are estimated at 55 Kordofan giraffe, found exclusively in the Garamba National Park and adjacent hunting reserves. Extralimital populations of giraffe introduced to the DRC include approximately seven South African giraffe in Mikembo Sanctuary, three South African giraffe in Lubumbashi, and five Angolan giraffe in Parc de la Vallée de la Nsele.

### Future Conservation Management

The following are proposed conservation management goals for giraffe in the DRC outlined in the first-ever National Giraffe Conservation Strategy and Action Plan for the DRC:

- Increase in giraffe population in Garamba National Park and surrounding Reserves to 60 individuals by 2020;
- Support effective ongoing anti-poaching efforts to conserve the population and the ecosystem of Garamba National Park and Reserves;
- Promotion of giraffe as a flagship-species in local communities both surrounding Garamba National Park as well as on a national level; and
- Support to dedicated giraffe conservation, habitat protection, education and awareness initiatives (government, NGO and academic).

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## Map

