

# Country Profile

## Republic of Uganda



### Giraffe Conservation Status Report

August 2017

#### General statistics

Size of country: 241,551 km<sup>2</sup>

Size of protected areas / percentage protected area coverage: 8%

#### 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one species (*Giraffa camelopardalis*) and nine subspecies of giraffe (Muller *et al.* 2016) historically based on outdated assessments of their morphological features and geographic ranges.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 possibly occur in the Republic of Uganda:

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

**Subspecies:** Nubian giraffe (*Giraffa camelopardalis camelopardalis*) – formerly Rothschild's giraffe (*G. c. rothschildi*)

## Conservation Status

### IUCN Red List (IUCN 2012):

*Giraffa camelopardalis* (as a species) – Vulnerable

*Giraffa camelopardalis rothschildi* – Endangered (2010) *Re-assessment submitted 2016*

Note: Recent research proposes four species of giraffe, and the Rothschild's giraffe be subsumed into the Nubian giraffe (*G. c. camelopardalis*), subspecies of the Northern Giraffe (*G. camelopardalis*) as they are genetically identical (Fennessy, J. *et al.* 2016). GCF recognises the Rothschild's giraffe as Nubian giraffe, and ongoing efforts are underway to confirm these findings.

### In the Republic of Uganda:

In the Republic of Uganda (referred to as Uganda in this report), giraffe are protected under the Game (Preservation and Control) Act of 1959 (Chapter 198). Giraffe are listed under Part A of the First Schedule of the Act as animals that may not be hunted or captured in Uganda.

## Issues/threats

Uganda is home to the Nubian giraffe (*G. c. camelopardalis*) – formerly known as Rothschild's giraffe, one of the most imperilled giraffe (sub)species remaining in the wild. Illegal hunting, agricultural expansion, human encroachment, and habitat degradation, fragmentation and destruction have led to the extirpation of giraffe from almost all of its former range (GCF 2013; USAID 2011; Fennessy & Brenneman 2010; Sidney 1965). Only a number of small and isolated populations of Nubian giraffe remain in Ethiopia, Kenya, South Sudan and Uganda, all of which are now confined to national parks and other protected areas (Fennessy. S. *et al.* In Prep; GCF 2013; Fennessy & Brenneman 2010).

In the 1960s, wildlife numbers and diversity in Uganda was high, roaming freely both inside and outside of protected areas in the country (Rwetsiba & Nuwamanya 2010; Olupot *et al.* 2009; Rwetsiba & Wanyama 2005). The breakdown of rule and law in the country during the 1970s and early 1980s resulted in large-scale illegal hunting for bush meat by starving local people and soldiers, resulting in significant declines of many wildlife populations including giraffe (Rwetsiba *et al.* 2012; Smith 2012; Rwetsiba & Nuwamanya 2010; Smart *et al.* 1985; Eltringham & Malpas 1980).

Northern Uganda has experienced ongoing conflict between Uganda Government forces, the Uganda Peoples Defence Forces (UPDF) and the Lord's Resistance Army (LRA) since 1986 (Nampindo *et al.* 2005). Nevertheless, protected area management has improved since the late 1980s, and numbers of most wildlife species in Kidepo Valley and Murchison Falls National Parks have since increased steadily (Smith 2012; Rwetsiba *et al.* 2010; Lepp 2008; Rwetsiba 2005). However, protected areas in the region still face several problems related to anthropogenic influences, including large-scale landscape changes (USAID 2011; Nampindo *et al.* 2005).

Illegal hunting for the bush meat trade (frequently by using snares) as a result of food insecurity and for cultural reasons, remains rampant and limited manpower and resources are available to conduct anti-poaching patrols (MTWA 2012; USAID 2011; Olupot *et al.* 2009; Nampindo *et al.* 2005). In Uganda, giraffe



have been predominantly hunted for medicinal purposes, their meat, coats and their tail hair (Brenneman *et al.* 2009).

National parks in Uganda are increasingly being encroached upon by neighbouring communities and their agricultural developments (MTWA 2012; USAID 2011). Widespread, frequent, and severe human-wildlife conflicts occurs around both Kidepo Valley and Murchison Falls National Parks as a result of wildlife movements from inside these protected areas into the surrounding agricultural and pastoral lands (USAID 2011). Crop raiding cases are regularly reported by communities neighbouring these parks, although not giraffe, and along with other forms of human-wildlife conflict are two of the key drivers of illegal hunting (MTWA 2012; Olupot *et al.* 2009). An increasing number of incidences of human-wildlife conflict can be expected as a direct result of the high human population growth rate around protected areas (USAID 2011).

Recent oil and gas exploration have shown substantial commercial quantities within Murchison Falls National Park and the adjoining areas (USAID 2011). Oil sector development has already resulted in destruction of wildlife habitat and the two preliminary studies undertaken to assess the impacts of oil exploration activities on large mammals in Murchison Falls National Park found giraffe to be one of the mammal species most negatively affected (Ayebare 2011; Prinsloo *et al.* 2011; USAID 2011). The results of these studies suggested indirect habitat loss at different temporal and spatial scales as giraffe showed increased habitat avoidance around the exploration activities (Ayebare 2011).

### Estimate population abundance and trends

#### Historic

The historic distribution of Nubian giraffe ranged from the Rift Valley of central-west Kenya across Uganda to the Nile River and northwards into South Sudan and Ethiopia (Fennessy, S. *et al.* In Prep; Wube *et al.* In Prep; Dagg & Foster 1976).

In the early 1960s, Dagg (1962) estimated giraffe in Uganda at 1,130 individuals. In contrast, Rwetsiba (2005) reported that Rothschild's giraffe in Uganda numbered approximately 2,500 in the 1960s. However, by the early 1980s, the population had decreased to an estimated 350 individuals (Rwetsiba 2005).

It is important to note that although Dagg (1962) referred to *G. c. cottoni* and *G. c. rothschildi*, *G. c. cottoni* was subsumed into *G. c. rothschildi* (Dagg 1971).

By the mid to late 1990s East (1999) estimated the total number of giraffe in Uganda at 145 individuals, most of which occurred in Murchison Falls National Park. In contrast to this, Rwetsiba (2005) estimated Uganda's giraffe population to number 250 individuals at the same time.

In 1968, an aerial survey of the Pian-Upe Wildlife Reserve in the Karamoja Region, estimated 899 giraffe in the reserve (Zwick *et al.* 1998; Lamprey & Michelmore 1996). The population subsequently decreased to an estimated 109 giraffe in 1983 (Eltringham & Malpas 1993). In 1995, an aerial survey estimated the population at only 10 individuals (Lamprey & Michelmore 1996), and subsequent ground surveys in 1996 recorded a single indirect sighting of the remains of a giraffe that had been dead for several years. No giraffe were recorded during an aerial survey of the reserve in the same year (Lamprey & Michelmore 1996). Anecdotal reports suggested that the giraffe recorded by Lamprey & Michelmore (1996) in 1995 were hunted to local extinction (Zwick *et al.* 1998).

In 1967, 157 giraffe were estimated to occur in the Matheniko Wildlife Reserve (Nampindo *et al.* 2005). By 1983, giraffe had disappeared from the area (Nampindo *et al.* 2005).



In 1968, 207 giraffe were estimated to occur in the Bokoro Corridor Wildlife Reserve (Nampindo *et al.* 2005). The population decreased to an estimated 96 individuals in 1983 and only five individuals by 1996 (Lamprey & Michelmore 1996). This was the last time giraffe were reported in the Reserve.

Kidepo Valley National Park, located in the Karamoja Region in the extreme north-eastern part of Uganda, formerly supported the country's largest protected giraffe population (East 1999). In the late 1960s to early 1970s there were an estimated 400 giraffe in the park (NEMA 2009; Rwetsiba 2006; Nampindo *et al.* 2005). The population decreased to an estimated 160 giraffe in 1982 (NEMA 2009; Rwetsiba 2006; Rwetsiba & Wanyama 2005) and by 1995, a mere five individuals remained (East 1999). Three giraffe (one male and two females) were successfully translocated from Kenya's Lake Nakuru National Park to Kidepo Valley National Park in 1997 in an attempt to promote the recovery of the park's giraffe population (Rwetsiba & Wanyama 2005; East 1999; Lamprey & Michelmore 1996).

In the early 1970s the giraffe population in the Murchison Falls Conservation Area, consisting of Murchison Falls National Park and the adjacent wildlife reserves of Bugungu and Karuma in the north-western part of Uganda, was estimated at 150 to 200 individuals (Rwetsiba *et al.* 2012; NEMA 2009; Rwetsiba 2006). Several aerial sample counts of wildlife in the Conservation Area were conducted in the 1990s. The population decreased to an estimated 78 giraffe in 1991 (Olivier 1991). Sommerlatte & Williamson (1995) estimated the population at 100 individuals, while Lamprey & Michelmore (1996) estimated 153 individuals.

#### Recent

In 2002, nine giraffe were estimated to remain in the Kidepo Valley Conservation Area (Rwetsiba & Wanyama 2005). In 2005, the first aerial total count of wildlife in the Conservation Area counted 14 giraffe, all of which occurred in the southern parts of the newly named Kidepo Valley National Park (Rwetsiba & Wanyama 2005).

By the new millennium, Lamprey (2000) estimated Murchison Falls National Park's giraffe population at 347 giraffe. In 2002, a total aerial count estimated the population at 229 individuals (Rwetsiba *et al.* 2002). In 2005, sample aerial counts of the Murchison Falls Conservation Area estimated the population at 245 giraffe, all of which were observed in Murchison Falls National Park, north of the Nile River (Rwetsiba & Wanyama 2005). In 2010, aerial sample counts of the Conservation Area estimated the giraffe population at 904 individuals (Rwetsiba & Nuwamanya 2010), however, these results are inaccurate as the analysis and extrapolation were for the whole park rather than the north only where the giraffe inhabit.

According to Rwetsiba (2005) and USAID (2011), Uganda's Rothschild's giraffe population was estimated at a total of 240 individuals in 2003. The population increased to an estimated 259 giraffe by 2006 (Rwetsiba 2006).

#### Current

Kidepo Valley National Park's giraffe population have increased. Vehicle-based photographic surveys conducted in 2015 and 2016 by GCF and partners report an estimated 30 unique individuals throughout the Park (Bryant *et al.* 2015; Fennessy *et al.* 2016).

In 2012, aerial sample counts of wildlife in the Murchison Falls Conservation Area estimated the giraffe population at 757 individuals, all of which reside north of the Nile River in the Murchison Falls National Park (Rwetsiba *et al.* 2012). Rwetsiba *et al.* (2012) further reported that the giraffe in Murchison Falls National Park seem to be increasing steadily. Recent vehicle-based photographic capture-recapture surveys were conducted at four-month intervals between July 2014 and December 2015 as the first step in a long term monitoring and research programme of the Murchison Falls populations. Preliminary results from these surveys corroborate the increasing population trends and suggest that the current Nubian giraffe population



may exceed 1,200 adults and subadults (Brown 2015). However, in 2016 estimates from a continuation of this monitoring programme by M. Brown (pers. comm.) suggest that the giraffe population in Murchison Falls National Park currently exceeds 1,500 individuals.

Additionally, the Uganda Wildlife Authority (UWA) has recently undertaken two successful giraffe translocation operations within Uganda to create separate giraffe populations and increase their range. In July 2015, UWA translocated fifteen individual giraffe from Murchison Falls National Park to Lake Mburo National Park in southwest Uganda and in January 2016, supported by GCF through their World Giraffe Day fundraiser 'Operation Twiga', 18 individual giraffe were translocated across the Nile to the southern side of Murchison Falls National Park, of which 15 are assumed to have survived the first year.

In summary, current Nubian giraffe numbers for Uganda are estimated at approximately 1,545 individuals, of which approximately 1,500 occur in Murchison Falls National Park (15 of these on the southern bank of the River Nile), approximately 30 in Kidepo Valley National Park and 15 in Lake Mburo National Park.

### Future Conservation Management

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

- Development of National Giraffe Strategy for Uganda;
- Identification of priority conservation efforts for giraffe conservation, specifically for the viable remaining population in Murchison Falls National Park and Kidepo Valley National Park, and the newly translocated populations in southern Murchison Falls National Park and Lake Mburo National Park;
- Continuation of robust and systematic population monitoring programme in all populations;
- Development of scientifically rigorous assessments of giraffe habitat use in Uganda; and
- Support to dedicated giraffe conservation, translocation, habitat protection, education and awareness initiatives (government, NGO and academic).

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# Map

