

# Country Profile

## Republic of Botswana



### *Giraffe Conservation Status Report*

October 2021

#### General statistics

Size of country: 755,640 km<sup>2</sup>

Size of protected areas / percentage protected area coverage: 219,136 km<sup>2</sup>/29%

#### 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one species (*Giraffa camelopardalis*) and nine subspecies of giraffe (Muller *et al.* 2018) historically based on outdated assessments of their morphological features and geographic ranges.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) have 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 the Luangwa (or Thornicroft's) giraffe (*G. c. thornicrofti*) is likely a subspecies of the Masai giraffe (*G. tippelskirchi*) (Coimbra *et al.* 2021; Winter *et al.* 2018; Fennessy *et al.* 2016). 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 the Republic of Botswana:

- Species:** Southern giraffe *Giraffa giraffa*
- Subspecies:** South African giraffe *Giraffa giraffa giraffa*  
Angolan giraffe *Giraffa giraffa angolensis*

### Conservation Status

#### IUCN Red List (IUCN 2018):

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

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

*Giraffa giraffa giraffa* – Not Assessed

*Giraffa giraffa angolensis* – Least Concern (Marias *et al.* 2018)

#### In the Republic of Botswana:

In the Republic of Botswana (referred to as Botswana in this report), giraffe have been classified as a protected animal under Section 17 of The Wildlife Conservation and National Parks Act 1992 (Government of Botswana 1992). This legislation allows for the hunting and capture of giraffe under special circumstance and through a permit granted by the Director of the Department of Wildlife and National Parks (DWNP) within wildlife management areas. As of January 2014, new legislation made hunting laws more stringent and banned the hunting of all protected animals, with some exceptions allowing hunting under special permits (for disease control, property protection, research, etc.) on privately owned land (Government of Botswana 2014).

### Issues/threats

Botswana is one of the only African countries considered to be a haven for wildlife species (Mogomotsi *et al.* 2020). Ninety percent of Botswana's landscape is covered in savanna and 84% by the Kalahari Desert (Botswana Tourism Organisation 2016). The country has four national parks and six game reserves, with giraffe occurring both within and outside of all these areas (DWNP 2012). Their habitats range from dry savannah of the Central Kalahari Game Reserve (CKGR) to the wetlands of the Okavango Delta and Chobe National Park (NP) which, along with wildlife areas in neighbouring countries, comprises one of the most valuable ranges of natural savanna and wetland habitats remaining in Africa (East 1999). Tourism accounts for the country's second largest source of income (Central Intelligence Agency 2017). Therefore, any potential loss of giraffe and other iconic species could result in the loss of income and economic benefits (Lindsey *et al.* 2011). Despite giraffe population sizes being relatively stable throughout the country (DWNP 2012), persistent threats against giraffe need to be monitored and mitigated for the benefit of the species and the country long-term. Botswana has firm laws regarding the protection of wildlife, however they still face several major conservation issues. Main threats to giraffe in Botswana include illegal hunting (poaching), habitat loss and fragmentation as a result of expansion of agricultural activity and human development, climate change, and a general lack of education in wildlife conservation (Muller *et al.* 2018).



Illegal hunting (poaching) is one of the most severe threats to giraffe and other wildlife across Africa (Lindsey *et al.* 2013). In Botswana, giraffe are illegally hunted for their meat (Rogan *et al.* 2015), bones (Barbee 2015) and for body parts such as their hide, ears and tails (Muller 2008). Statistics Botswana (2015) reported that incidences of poaching increased from 2009 to 2013, with Rogan *et al.* (2015) estimating an annual average 98 giraffe are killed for the illegal bushmeat market. In 2014, Botswana issued a complete ban on legal hunting that had been allowed for certain wildlife species (excluding giraffe). A common concern since the start of this complete hunting ban is that local people who traditionally hunted for subsistence could no longer legally adhere to this tradition. However, since many Batswana, including the San, have taken up farming practices, the claim that they are hunting for subsistence comes with a critical caveat highlighted by Rogan *et al.* (2015): “Just because people eat bushmeat, doesn’t mean they need bushmeat to eat.”. Furthermore, they hypothesised that farming seemed to be supplemented by bushmeat hunting as an alternative source of food and income, allowing for more livestock to be sold. With an ever increasing human population, Pires & Moreto (2011) proposed that more livestock owners would turn to hunting, and deplete the resources that supply Botswana’s tourism sector (i.e. wildlife), driven by personal gain, or the tragedy-of-the-commons model of overexploitation. Both poachers and consumers of bushmeat are often unaware which species are declining and usually assess the change in population sizes incorrectly. It is often assumed that hunting for bushmeat does not affect population size and that, in terms of hunting, giraffe are an inexhaustible resource (Rogan *et al.* 2015).

In Botswana, the majority of the population generally perceive wildlife as a financial burden with little benefits seen for local communities. Despite the stringent laws about bushmeat hunting, poachers are rarely deterred as penalties are often far less severe than the profit of hunting e.g. reduced fines, suspended sentences, or no fine or prison sentence despite conviction (Rogan *et al.* 2015; Barnett 1997). Coupled with the fact that firearms are relatively easily accessible on the informal market, there is little to deter poachers from hunting giraffe and other wildlife. Some poachers evade conviction all together, for example, during a 30-month period starting from 2009, 64 suspects were arrested for poaching in the NG26 Concession in northern Botswana but no one was convicted (Lindsey *et al.* 2013). However, to accompany the government’s goal of increasing wildlife numbers, Botswana’s military police has unofficially adopted a “shoot-to-kill” policy towards suspected poachers. Patrolling for poachers has become more widespread, assisted with the introduction of surveillance aircraft in 2016. While anti-poaching efforts can have an impact on illegal hunting, the potential cost of legal punishment is low or non-existent and poaching is still not sufficiently discouraged. This is further bolstered by the fact that the personal investment of a poacher is very low.

Botswana has enjoyed economic growth and reduction in poverty over the last decade (The World Bank 2016b). Many people are moving to cities (Statistics Botswana 2015b), but still retain ties with rural areas. According to Lesetedi (2003), 91.9% of citizen migrants that moved to Botswana’s capital Gaborone still own land elsewhere in the country, including 64.7% owning farmland. Despite a flourishing economy, many citizens still live under the poverty line and/or have no source of income other than crop farming, meat production or in increasingly fewer instances, dairy farming (Moreki & Tsopito 2013). In rural areas, cattle farming is the largest source of income. Increasing population and an ever-growing cattle production in Botswana has largely resulted in new farms encroaching on giraffe and other wildlife habitat. More than half of Botswana’s households own livestock, and it is estimated that 45.9% of the land (as of 2014) is used for agriculture (The World Bank 2016a). Allowing for land to be used in the cattle industry in central and southwestern regions has led to confining wildlife in these areas to the Central Kgalagadi-Khutse Game Reserves and the Transfrontier Conservation area (East 1999). According to East (1999), these protected areas are large enough to maintain large stable or increasing populations of giraffe and other wildlife, in the



face of encroachment elsewhere. However, the encroachment of farmland into the habitat of wildlife (which is prevalent all throughout the country) can lead to more human-wildlife conflict. For example, giraffe may create a negative attitude through crop destruction (Leroy *et al.* 2009). In an attempt to prevent loss of wildlife and wildlife areas, the DWNP devised a plan in the early 1980s to designate certain areas of the country, particularly around parks and reserves, as “wildlife management areas” (Parry & Campbell 1990). The purpose was to create buffer zones with a primary focus on wildlife, but the land could still be used commercially at the same time, provided that this would not negatively impact wildlife conservation. These wildlife management areas were meant to boost the economy of rural areas by allowing local people to manage the wildlife and stimulate commercial activities such as photographic safaris and hunting. However, the plan was implemented without the participation of local stakeholders and consequently lacks the support of the very people it was aimed to assist (Mbaiwa & Darkoh 2005). Furthermore, the wildlife management areas do not prevent fencing nor the allocation of land to livestock farming outside of “livestock free” zones (Government of Botswana, 1992).

Deforestation for commercial use also disrupts the connections between seasonal ranges of wildlife and/or hinder the extensive ranges of large mammals. This habitat fragmentation threatens to decrease wildlife populations. Particularly in the upper western sections of the Okavango Delta, deforestation linked to increased grazing is destroying large tracts of land (DWNP 2010). The Okavango Delta is home to the largest numbers of giraffe in Botswana, and its system fulfils a very important ecological function by controlling microclimates and collecting and storing carbons and nutrients and directing these downstream (Bradley *et al.* 2007). The known threats for the existence of the Okavango Delta and the animals that depend on it include fragmentation of habitats and reallocation of land, encroachment of human settlements, and pollution from chemicals used in agriculture (Hamandawana & Chanda 2010).

As an inland delta in a semi-arid desert, the Okavango Delta is sensitive to drying out. Despite this delicate balance, water is increasingly extracted from the Okavango Delta and its tributaries for agricultural use, in particular in Namibia, and plans exist for the construction of numerous dams upstream in Angola. If implemented, these development activities will greatly modify the flow and volume of water needed to sustain the delta and affect the species that depend on it (Hamandawana & Chanda 2010).

Another potential for further habitat fragmentation is due to the fact Botswana is bisected by a veterinary fence line, dividing the country into northern and southern sections. This veterinary fence line was initially erected to prevent the spread of foot & mouth disease from wild animals to livestock. While the fences were detrimental to the population of wildebeest and zebra due to disruption of their migration, they did not cause the extensive loss of broader wildlife species that was predicted (East 1999). Furthermore, large parts of the fence line are now degraded, opening conduits for wildlife to traverse through. In an aerial survey of the Okavango Delta, 26 breaks were noted along the border fence with Namibia, which ranged from 3-40m in length (Chase 2011), while a 35km break in the Northern Buffalo Fence functions as an effective corridor for wildlife moving between the Okavango Delta and Angola via Namibia’s Zambezi Region (Chase & Griffin 2009; Albertson 2010). Giraffe ranges may depend on season and forage availability (McQualter *et al.* 2015), and as such fences might prevent their natural movement. Furthermore, animals can become entangled in fences (Albertson 2010) and die from dehydration (Darkoh & Mbaiwa 2014), or fall victim to predators that use the fence for hunting.

Climate is another important factor that affects wildlife population numbers in Botswana. The country experienced a 20-year drought that started in the early 1980s and this offers a possible explanation for the decrease of multiple wildlife species, including giraffe in the northern Ngamiland and Moremi GR (Chase *et al.* 2015; Gifford 2013). As highlighted, the Okavango Delta is sensitive to drought, and relies on rainfall in



Angola, and to a lesser extent Namibia and Botswana, to supply the floodplains. The average rainfall and flood levels in the Okavango Delta continued to drop during the 1990s with the lowest annual flood level in 1996 (since recording started in the 1920s). Surprisingly, Chase *et al.* (2015) found that giraffe populations in Ngamiland were actually lower in years with greater flows, possibly a result of displacement.

### Estimate population abundance and trends

In 2014 Bock *et al.* reported that giraffe in the CKGR and Khutse GR were Angolan giraffe, genetically different from the South African giraffe found in the countries north, and as such should be distinguished appropriately. This distinction was further solidified with genetic analysis performed by Fennessy *et al.* (2016) and Winter *et al.* (2018). Therefore, within Botswana the South African giraffe subspecies is found in northern part of the country, including Chobe NP, Moremi GR, the Okavango Delta, Makgadikgadi Pans and Nxai Pan NPs, and outside of protected areas across Ngamiland. The Angolan giraffe is found in the central and southern part of the country in CKGR and most likely as well in the Khutse GR, unprotected areas in the Ghanzi, the Kgalagadi District, the Kwenenge, and the Kgatleng Districts. The giraffe found in the Tuli Block in southeastern Botswana and throughout the Central District are likely hybrids of the Angolan and South African giraffe subspecies, however targeted analysis is required to better understand (J. Fennessy pers. comm.).

### Historic

Botswana is a remarkably flat country, without mountains to geographically segregate the land. As giraffe take in most of their water through consumption of vegetation (Fennessy 2004), the dry environment has not deterred giraffe from spreading throughout the country. Giraffe formerly occurred abundantly throughout the savannahs of northern and central Botswana (East 1999), and rock paintings of giraffe in the Tsodilo Hills suggest that giraffe occurred in the far northwest of the country as well. Krumbeigel (1939) proposed that *Giraffa giraffa angolensis* occurred historically in Botswana, as well as what was known as *Giraffa camelopardalis capensis* (now the South African giraffe *Giraffa giraffa giraffa*) at the time. Cambell & Child (1971) reported that giraffe were common along the Molopo River down to Bokspits in the southernmost areas since at least the 1830s up through 1895. Based on journals of Andrew Geddes Bain (1949) and Gordon Cumming (1850), it was determined that giraffe were abundant in the south east in 1836 and 1843, respectively. Bryden (1891) suggested that giraffe were found at least as far east as “no great distance from (...) Shoshong”, and that in 1891, heading from Shoshong to Lake Ngami, giraffe were first encountered “in the bush and forest-region beyond Kanne (present day Tlabala)” in a waterless tract, likely referring to the Kalahari bush. He noted that between the Boteti River and halfway to Lake Ngami, Khama (III) restricted hunting of giraffe to him and his people. Furthermore, he described their distribution stretching north from “Khama’s country” to Victoria Falls, and west towards Chobe and Mababe Rivers, as well as north of Lake Ngami in “Moremi’s country”, and down south from the Boteti into the central Kalahari. From hearsay, he reported of giraffe as far south as the Molopo River, which forms a large portion of the border between southern Botswana and South Africa, as well as north west towards the Okavango River. However, Bryden (1891) also mentioned that giraffe no longer occurred westward of Lake Ngami, stating that Namaqua hunters “were too active”. Overall, this description of the distribution in 1891 roughly encompassed Botswana north of the Boteti River, parts of the central Kalahari from the Boteti River down south to the Molopo River, and further east than the current distribution suggests. Bryden further noted that hunting of giraffe was abundant and remarked on their rapid decline. Sidney (1965) reported that they were “fairly plentiful in the Ngamiland and Chobe districts” and also occurred south of “Lake Makarikari” (this probably refers to the Makgadikgadi Pans).



Since 1979, the DWNP has sporadically conducted aerial surveys of parts of Botswana to estimate the population sizes of large mammals and ostrich. The DWNP consider the estimates from aerial surveys before 1989 to be unreliable or incompatible with estimates from 1989 onward due to discrepancy in the estimation methodology (Murray 1997). The aerial surveys did not standardise the strata that were flown, and the country was not surveyed as a whole until 2003. However, progressively larger areas were covered on average since the surveys began and by 1999 only the Tuli Block was excluded. In 2004 most of the Central District was excluded, and in 2005 only the western half of the country was surveyed. In 2007, only the Kgalagadi District, parts of Ghanzi District, CKGR, Kgalagadi Transfrontier Park and Khutse GR were surveyed. Furthermore, giraffe are notoriously difficult to see in aerial surveys, and consequently the surveys probably underestimated their numbers (Central Statistics Office 2005). Estimates from particularly the early 90s have a large confidence interval.

Between 1989 and 1991, Statistics Botswana (2015a) estimated the entire giraffe population in Botswana at 11,706. In 1990, there were an estimated 9,312 giraffe in Botswana (Government of Botswana 2002). In 1996, the first aerial survey included all districts and protected areas. Following the historical trend observed, the majority of giraffe were South African giraffe counted in Ngamiland (10,608), and the Okavango Delta (7,627). South African giraffe were also relatively abundant in Chobe District (1,236), including 666 in Chobe NP. In 1998, giraffe still occupied a substantial part of their former range, with the largest numbers in the northern region. According to East (1999), there was an estimated stable population of 5,100 giraffe in protected areas, 30 on private lands, and a stable or increasing population size of 6,570 in other areas. Despite lacking estimates for districts or protected areas, East (1999) claimed that giraffe were still common throughout the north of the country, with high numbers of South African giraffe in Chobe NP, Makgadikgadi Pans and Nxai Pan NPs, Moremi GR and the Okavango Delta in general, as well as a “substantial population” of Angolan giraffe in the CKGR. The biggest proportion of giraffe were found outside of protected areas, and the largest numbers occurred in the Okavango Delta, with the exception of the Kgalagadi Region, where giraffe mostly occur in the CKGR (Statistics Botswana 2015a).

In 2002, the National Wildlife Aerial Survey (DWNP 2002) included an explicit representation of the strata that were surveyed and showed that South African giraffe occurred throughout the north of the country (with the exception of the farmlands to the west of the Okavango Delta) in Ngamiland, Ghanzi, to Chobe along the north eastern border with Zimbabwe. The survey also showed giraffe – now most likely all Angolan giraffe – in CKGR and to south in Khutse GR (the only giraffe in Kweneng District) throughout the Central District and along the eastern border with South Africa (DWNP 2002). The 2003 and 2004 surveys indicated the same (DWNP 2003 & 2004), with the addition of 295 and 291 giraffe, respectively, estimated in the Tuli Block in the far east of the country. In 2006, 1,379 giraffe were estimated in Chobe District, 6,763 in Ngamiland, and 129 in Makgadikgadi Pans and Nxai Pan NPs (data was absent for the other districts) (DWNP 2006).

### Current

In 2010, Elephants without Borders/DWNP conducted an aerial survey of the north of the country. According to Chase (2010), the average sampling intensity of 14% was far greater than the previous 5% for the DWNP aerial surveys between 1993 and 2006. South African giraffe were observed throughout the north of the country, with the majority (3,676) occurring in Ngamiland. Furthermore, a statistically significant annual giraffe population decrease of 10% in the Okavango Delta was noted since 1993, with a 36% decrease in Moremi GR since 2004. An estimated 1,075 South African giraffe resided in Moremi GR, 3,676 in Ngamiland, and 1,245 in Chobe District including 770 in Chobe NP. The overall population in Ngamiland showed a slight decline since 1993, whilst those in Makgadikgadi Pans and Nxai Pan NPs, and Chobe District were stable.



In 2012, the DWNP survey highlighted similar results to Chase (2011) that South African giraffe populations had significantly decreased in Chobe NP, decreased slightly in Makgadikgadi Pans NP and increased in Moremi GR and Nxai Pan NP (DWNP 2012). The 2012 survey also showed an increase in Angolan giraffe in Khutse GR, a slight decrease in CKGR, and no significant changes in other protected areas (DWNP 2012). This survey was the most comprehensive to date in terms of area covered in Botswana, and showed that South African giraffe occurred throughout the north of the country (with the exception of the farmlands to the west of the Okavango Delta) with 1,075 in Chobe including 545 in Chobe NP, and 5,041 in Ngamiland including 1,047 in Moremi NP, 92 in Makgadikgadi Pans and Nxai Pan NPs, and an unknown number eastwards towards and along the Zimbabwean border. In Ghanzi District, 923 Angolan giraffe were estimated including the population in the CKGR, 348 in Khutse GR, 272 in Kgalagadi District in the Khawa Wildlife Management Area, and unknown numbers along the eastern border with South Africa in the Tuli Block and in the Southern District. The total country-wide population of giraffe was estimated at 8,976.

Another aerial survey was performed in 2014 by Elephants Without Borders and DWNP for multiple species across northern Botswana in Moremi GR and Ngamiland as a whole, Chobe District, and a portion of Central District (Chase, 2015). In Ngamiland, South African giraffe were reported to have decreased since the 1990s, with an all-time low of 3,676 in 2010, but the 2014 survey indicated an increase (Chase, 2015). Estimations for Moremi GR and Ngamiland were 1,353 and 6,532, respectively. Furthermore, the giraffe populations in Chobe District including the Chobe NP also showed an increase, with an estimated 1,427 and 849 individuals, respectively (Chase 2015). This survey found giraffe as far east as the Zimbabwean border and the Tuli Block (Chase 2015).

The most recent giraffe population estimates are based on the 2018 aerial survey by Elephants Without Borders and DWNP performed during the dry season across northern Botswana, covering the same areas surveyed in 2014 (Chase *et al.* 2018). A total population estimate of 8,343 was made for giraffe in northern Botswana, covering the Chobe, Central, and Ngamiland Districts, and therefore presumably all South African giraffe (Chase *et al.* 2018). It was noted that the slight decline seen from the 2014 survey results was non-significant and the giraffe population remains stable (Chase *et al.* 2018). A complete summary of giraffe numbers (both South African and Angolan subspecies) from 1990 until 2018 is given in Table 1 below.



Table 1: Estimated number of giraffe in various districts and protected areas of Botswana from 1990 to 2014, compiled from aerial surveys of the DWNP and Mike Chase of Elephants without Borders, Statistics Botswana, Development Plan 9 of the government of Botswana and the African Antelope Database 1998 by Rod East. Blank cells mean data is not available. \*Includes both CKGR and Khutse GR, \*\*Not fully surveyed, \*\*\*Only Nxai Pan NP \*\*\*\*Only the north of the Central District, and excludes populations in the Tuli Block.

	1990	1991	1992	1993	1994	1995	1996	1998	1999 wet	1999 dry	2001
Chobe Dist.							1236		1208	1262	978
Chobe NP				364	1107		666		552	850	692
Ghanzi Dist.							923		1149	2661	1546
Moremi GR				1309	1334		1691		1526	1370	1777
Okavango Delta							7627		8017	6725	5207
Ngamiland							10608		10118	9578	7577
CKGR					1115*		893		1149	2661	1416
Makgadikgadi Pans and Nxai Pan NPs				214	390		475		232	200	206
Khutse GR							53		27		317
Kgalagadi Dist.											
Central Dist.											
Kweneng Dist.											
Kgatleng Dist.											
<b>Total Estimate</b>	9312	8970	7181		14049	9811	14143	11700		14689	12056

	2002	2003	2004	2005	2006	2007	2010	2011	2012	2013	2014	2018
Chobe Dist.	835	1528	1885	1379	1379		1245	1483	1071		1427	1539
Chobe NP	540	999	1044		793		770	777	545	638	849	
Ghanzi Dist.	1374	703	1148	1298					923			
Moremi GR	1233	958	1101	1629	1008		1075		1047	584	1353	
Okavango Delta	5358	4372	4496	4331								
Ngamiland	6985	5517	6566	5262	6763		3676		5041		6532	
CKGR	1253	703	1148	1210		1183			923			
Makgadikgadi Pans and Nxai Pan NPs	524	327	867		129		227		92***	62	562	
Khutse GR	0	0	154	219					348			
Kgalagadi Dist.									272			
Central Dist.		821	991***						1285	562	1450****	1172
Kweneng Dist.			154						348			5633
Kgatleng Dist.									59			
<b>Total Estimate</b>	10290	9463	11090	6779					8976			8343





## Summary

The last country-wide survey of giraffe in northern Botswana occurred in 2018 estimating a total of 8,343 individuals (Chase *et al.* 2018). Based on the data from northern Botswana from the most recent aerial survey (Chase *et al.* 2018), combined with data from the aerial survey from 2014 (Chase 2015) and rest of the country in 2012 (DWNP 2012) a good estimate of the total number of giraffe (both South African and Angolan subspecies) in Botswana as of 2018 is approximately 10,000 giraffe. As of 2018 there are an estimated 8,000 South African giraffe and 2,000 Angolan giraffe. Based on data since 1989, it is estimated that populations within the protected areas are stable or increasing in recent years after an initial decline.

## Future Conservation Management

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

- Development of National Giraffe Strategy and Action Plan for Botswana;
- Greater understanding of and updated giraffe population numbers, range and conservation status across the country, including (sub)speciation;
- GPS satellite tagging of giraffe populations to help with monitoring and anti-poaching support; and
- Support to dedicated giraffe conservation, habitat protection, anti-poaching, education and awareness initiatives (government, NGO and academic).

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Map

