Country Profile

Republic of Zambia

Giraffe Conservation Status Report

Sub-region: Southern Africa

General statistics

Size of country: 752,614 km²

Size of protected areas / percentage protected area coverage: 30%

(Sub)species

Thornicroft's giraffe *(Giraffa camelopardalis thornicrofti)*

Angolan giraffe *(Giraffa camelopardalis angolensis)* – possible

South African giraffe *(Giraffa camelopardalis giraffa)* – possible

Conservation Status

IUCN Red List (IUCN 2012):

Giraffa camelopardalis (as a species) – least concern

G. c. thornicrofti – not assessed

G. c. angolensis – not assessed

G. c. giraffa – not assessed

In the Republic of Zambia:

The Zambia Wildlife Authority (ZAWA) is mandated under the Zambia Wildlife Act No. 12 of 1998 to manage and conserve Zambia's wildlife and under this same act, the hunting of giraffe in Zambia is illegal (ZAWA 2015).

Zambia has the second largest proportion of land under protected status in Southern Africa with approximately 225,000 km^2 designated as protected areas. This equates to approximately 30% of the total land cover and of this, approximately 8% as National Parks (NPs) and 22% as Game Management Areas (GMA). The remaining protected land consists of bird sanctuaries, game ranches, forest and botanical reserves, and national heritage sites (Mwanza 2006).

The Kavango Zambezi Transfrontier Conservation Area (KAZA TFCA), is potentially the world's largest conservation area, spanning five southern African countries; Angola, Botswana, Namibia, Zambia and Zimbabwe, centred around the Caprivi-Chobe-Victoria Falls area (KAZA 2015). Parks within Zambia that fall under KAZA are: Liuwa Plain, Kafue, Mosi-oa-Tunya and Sioma Ngwezi (Peace Parks Foundation 2013).

The goal of the KAZA TFCA is "To sustainably manage the Kavango Zambezi Ecosystem, its heritage and cultural resources based on best conservation and tourism models for the socio-economic wellbeing of the communities and other stakeholders in and around the eco-region through harmonization of policies, strategies and practices." (KAZA 2015).

While the sustainable use of wildlife and its habitats is promoted in national parks through eco-tourism, both settlements and hunting are strictly prohibited (Mwanza 2006).

GMAs in Zambia were established by government to control the hunting of game and protected animals through a licensing and monitoring system. There are 34 GMAs in Zambia which cover a total of 165,700 km^2. Because other forms of land use, such as settlements and agriculture are allowed, GMAs are not strictly protected areas (Mwanza 2006).

The number of Zambian game ranches established by the private sector increased from 30 in 1997 to 177 (~6,000 km^2) in 2012 (Lindsey *et al*. 2013), and support both consumptive and non-consumptive uses of wildlife (Mwanza 2006). Because of the substantial economic benefits derived from game ranching, a number of commercial farmers have opted for game ranching instead of traditional livestock. As a result, game ranching has made a valuable contribution to biodiversity conservation in Zambia, especially of rare and endangered animal species (Mwanza 2006). Despite this high number of game ranches, the industry is performing poorly, due to rampant commercial bushmeat poaching, failure of government to allocate outright ownership of wildlife to landowners, bureaucratic hurdles, perceived historical lack of support from the Zambia Wildlife Authority and government, a lack of a clear policy on wildlife ranching, and a ban on hunting on unfenced lands including game ranches (Lindsey *et al*. 2013).

In February 2015 IUCN Eastern and Southern African Regional Office (ESARO) began implementing a study to assess the potential for consumptive and non-consumptive use of wildlife in Zambia. The study is expected to result in various outputs including a national assessment of Wildlife Based Land Uses and Game Ranching in Zambia, assessing the restoration and replenishment of wildlife of degraded ecosystems of Lower and Upper East Lunga and Luswishi hunting blocks with private sector involvement (IUCN 2015).

Issues/threats

Thornicroft's giraffe

Thornicroft's giraffe (*G. c. thornicrofti* - occasionally also known as Rhodesian giraffe) survives as an entirely isolated population in a small area of north-eastern Zambia (Fennessy *et al.* 2013; Fennessy 2008a). Occurring only in the South Luangwa Valley, the restricted distribution of Thornicroft's giraffe coincides with a limited population size (Stutzman & Flesch 2010). Their geographic isolation is most commonly attributed to the Rift Valley Escarpment which prevents genetic flow with other giraffe in neighbouring areas (Stutzman & Flesch 2010).

The confinement of the entire world's population of Thornicroft's giraffe to the Luangwa Valley renders them susceptible to a genetic bottleneck and other problems inherent in small populations that make them vulnerable to extinction (Bercovitch *et al.* 2014; Stutzman & Flesch 2010). Natural catastrophes or environmental changes can have strong negative impacts on small populations, as can habitat loss and fragmentation, as well as diseases (Bercovitch *et al.* 2014; Stutzman & Flesch 2010). Increasing human population growth in the area could also pose threats to the Thornicroft's giraffe (Bercovitch *et al.* 2014; Simukonda 2012). For example, if the Luangwa River and its tributaries are diverted for agricultural use, then the Thornicroft's giraffe only habitat would be compromised (Bercovitch *et al.* 2014).

The Luangwa Valley GMAs are in a spiral of degradation economically, sociologically and ecologically, and the natural habitats available to support wildlife in GMAs are shrinking due to increased settlements, cultivation, traditional land claims and un-coordinated planning by government departments (Simasiku *et al.* 2008). The Thornicroft's giraffe have lived in protected habitats since 1938 (Bercovitch *et al.* 2014), but most of the GMAs in the Luangwa Valley lack enforceable land use plans to the extent that settlements are largely uncoordinated and not in tandem with wildlife management (Simukonda 2012). Over the past decade, law enforcement has generally failed to control the harmful impact of anthropological threats and very little funding goes to resource protection (Simasiku *et al.* 2008). Diseases, such as anthrax and rinderpest, have had a history of devastating wildlife populations in South Luangwa National Park. In 1987, an anthrax outbreak swept the Luangwa Valley, killing over 4,000 hippopotami (Siamudaala 2003). Although the exact cause of the anthrax epidemic is unknown, low rainfall, high temperatures and poor drainage probably contributed to the outbreak (Siamudaala 2003). Hippopotamus had an estimated 7% mortality rate during the 1987 anthrax outbreak, and a number of Thorncroft's giraffe also succumbed at the time (Siamudaala 2003). Anthrax can remain dormant underground for long periods of time and is therefore a continuing threat to wildlife as it can re-emerge if conditions that foster the spread of the disease becomes favourable. Global warming could increase the prospects of drought and fire in the Luangwa Valley, which would endanger not only the Thronicroft's giraffe, but also other fauna, as well as flora. Lion hunting is legal, with a permit, in the GMAs adjacent to South Luangwa NP and as a result movement of these lions into the park to avoid hunters is likely. Lion predation can reduce the giraffe population size (Bercovitch *et al.* 2014; M. Becker pers. comm.).

Although only a single confirmed case of direct illegal hunting of giraffe has been recorded within the last few years, snaring, albeit probably aimed at other animal species, does pose a threat to giraffe (Bercovitch *et al.* 2014; M. Becker pers. comm.). Recently, up to five giraffe snaring incidents per year have been reported (R. McRobb pers. comm.). Snaring and illegal hunting are therefore potential threats to Thornicroft's giraffe, but none of these human activities appears to be a major threat at present (Bercovitch *et al.* 2014).

The continued expansion of mining operations in Zambia could pose a potential threat to the Thornicroft's giraffe. Mineral extraction and resource exploitation could hinder the free-flow of the Luangwa River and, although South Luangwa NP is not directly affected by the mining industry, the Luangwa River runs through the park (Bercovitch *et al.* 2014). Should the river become a key water source for mining, or polluted by mining extracts, the wildlife within the Park will most likely suffer (Bercovitch *et al.* 2014). Zambia has the world's second largest reserves of copper, with China being the biggest foreign mining operation extracting not only copper but also coal, nickel, uranium and gemstones (Okeowo 2013).

Angolan/South African giraffe

Sioma Ngwezi National Park in south-west Zambia has a population of giraffe that is taxonomically unknown: they are either Angolan (*G. c. angolensis*) or South African (*G. c. giraffa*) giraffe (J. Fennessy pers. comm.). Once an area teeming with wildlife, these were decimated during the conflicts which have characterised the history of the region (Peace Parks Foundation 2013). The 25-year long Angolan Civil War and illegal hunting devastated wildlife populations in neighbouring Sioma Ngwezi NP (Chase & Griffin 2009; APF 2003; East 1999). The Park's proximity to the Luiana Partial Reserve across the border in south-east Angola, the base of military operations for UNITA, exposed the wildlife of the park to extensive illegal hunting (Chase & Griffin 2009). Refugees also depended heavily on bush meat to survive and illegal hunting is difficult to control in these areas (WCS 2014; Chase & Griffin 2009).

Sioma Ngwezi National Park is highly susceptible to bush fires during the late dry season when neighbouring farmers burn their fields, thereby affecting the distribution and abundance of wildlife outside and inside the park (Chase & Griffin 2009). While previously the economic potential within the park was restricted due to limited to no tourism infrastructure (Chase & Griffin 2009), plans are currently in place to develop the Park under the support of the KAZA Transfrontier Conservation Area initiative (Peace Parks Foundation, 2013).

According to a 2003 report by the African Parks Network (APN, formerly African Parks Foundation), the destruction of wildlife in Sioma Ngwezi National Park was far greater than originally realised and translocation of animals from elsewhere in Zambia was not possible due to the limited supplies of game together with long distances and poor roads (APF 2003). Additionally, the settlements of thousands of people along the Cuando River have cut off this vital water source from the Park interior (APF 2003). African Parks Network initially provided support but withdrew from Sioma Ngwezi in 2003 to commit their resources to other parks in Zambia which have greater prospects for recovery and sustainability (APF 2003). Wedged between the Luiana Partial Reserve in Angola and the Bwabwata National Park in Namibia, the area plays an essential ecological role for wildlife movement along the Kwando and Zambezi Rivers despite it not extending all the way to the Zambezi River. The park and the surrounding area within the West Zambezi GMA have been earmarked for intensive wildlife recovery. Numerous wildlife species with distribution ranges limited to the area west of the Zambezi formerly occurred in the park and the wildlife recovery will include the restocking of these species – including giraffe (Peace Parks Foundation 2013; ZAWA per. comm.).

As part of their grant to KAZA TFCA, the German Kreditanstalt für Wiederaufbau (KfW) allocated €3.3 million to Sioma Ngwezi NP. Initial efforts were concentrated on field patrols, the mitigation of human-wildlife conflict, participation in the Community Centred Conservation and Development (CCCD) programme, compilation of work plans and finalisation of the Ngonye Falls development plan (Peace Parks Foundation 2013).

Biodiversity in Zambia in general is increasingly coming under pressure from both human and natural factors, including resource conflicts, settlement encroachment, climate change, pollution, and overexploitation of resources, deforestation, introduction of alien species into the ecosystem, and a lack of environmental education (Mwanza 2006). Giraffe are easily killed and poaching is an ongoing problem, not only for trinkets (fly whisks etc.) but more so now for the hide and meat (ZAWA 2015).

Estimate population abundance and trends

Although some authorities have suggested that the subspecies *G. c. thornicrofti* should be elevated into their own species, *G. thornicrofti* (Groves & Grubb 2011), current information regarding their mitochondrial DNA profile indicates that the Thornicroft's giraffe is genetically similar to the Masai giraffe, *G. c. tippelskirchi*, despite it being geographically and ecologically unique (Fennessy *et al.* 2013). Fennessy *et al.* (2013) have thus suggested that the subspecies *G. c. thornicrofti* could be subsumed into *G. c. tippelskirchi* with further research being required before any final taxonomic status is proposed. Additionally, current analysis of giraffe tissue samples from Mosi-oa-Tunya and Sioma Ngwezi National Parks is being undertaken by the Giraffe Conservation Foundation in collaboration with ZAWA and Bik-F Loewe, Frankfurt, Germany. The results of this analysis are still pending (J. Fennessy pers. comm.).

Historic

At the end of the 19th century, giraffe in Zambia were limited to two isolated regions: one in Barotseland, and the other in the Luangwa Valley (ZLS 1965). Previously it was thought doubtful whether giraffe historically existed in any other parts of the country (ZLS 1965; Ansell 1952), however, evidence indicates that giraffe were present in Kafue NP from a letter sent by Mr J Loewen to Mr P. de. V. Moss in 1974, who reported seeing three giraffe within the park. More investigation is required in order to confirm the historical presence of giraffe within the Kafue NP and neighbouring areas.

Thornicroft's giraffe

The stronghold of Thornicroft's giraffe appears to have always been on the east bank of the Luangwa River in the Petauke District, and in the narrow corridor between the Luangwa River and the Mwembezi Hills (Fennessy 2008a).

In the early 1900s, Thornicroft's giraffe were speculatively estimated to number only 30-70 individuals, mostly ranging on the east bank of the Luangwa River in small herds, but these counts came from the impressions of the early British administrators (Berry 1973). By the 1920s an estimate of over 500 giraffe appeared, but is probably inaccurate (Berry 1973). Their range increase north of the Mwembezi Hills is a relatively recent occurrence with giraffe not inhabiting the area before the 1930s (Fennessy 2008a). Pitman (1934) believed that there were about 300 or 400 individuals in the area, an increase on the probable seventy specimens previously recorded (ZLS 1965). In 1958, the population was estimated to number 300 individuals (Fennessy 2008a).

In the 1960s, Thornicroft's giraffe were reported to range primarily along the eastern side of the Luangwa River (Berry 1978; ZLS 1965; Dagg 1962; Darling 1960), but some individuals did cross the river to the western banks (Berry 1973; ZLS 1965; Dagg 1962; Darling 1960). The majority occurred in the Petauke area, although others ranged eastwards into the Fort Jameson District (ZSL 1965). According to Fennessy (2008a), giraffe became well established as far upstream as the Lupande confluence during the 1950s and 1960s at which time the population was estimated to number about 200-250 giraffe (Dagg 1962; Darling 1960). Their limited range restricted their numbers, but they were seldom, if at all, hunted (ZSL 1965).

In 1964, giraffe were reported in the Nsefu Game Reserve, coming either from below the Lupande confluence or the west bank of the Luangwa River (Fennessy 2008a). In 1965, giraffe were observed on the Rukuzye River, north of the Nsefu Game Reserve as well as on the east bank at the Chibembe pontoon (Fennessy 2008a). Giraffe were further reported at the Katete stream between the Lukusuzi and Rukuzye Rivers in 1967 (Fennessy 2008a). This was the farthest north the subspecies had been recorded on the east bank. In 1967, giraffe were reported near Zokwe on the Luangwa River and near Kalamulilo Hot Springs (Fennessy 2008a). In 1968, the species were observed north of the Mangwalala Safari Camp on the east bank of the Luangwa River; near the Chifuna Villages; and near the confluence of the Kanyu Stream with the Luangwa River (Fennessy 2008a). In 1968, giraffe were recorded at Minuwa Lagoon near the Kanyu/Luangwa Rivers confluence and on the east bank of the Luangwa River opposite the Luwi River (Fennessy 2008a).

By the end of the 1960s, more accurate records of Thornicroft's giraffe population size were obtained. Their range expanded in both northerly and southerly directions (Berry 1973), and by the end of the 1960s, the maximum population size was approximately 300 individuals (Berry 1973; Dagg and Foster 1982). According to Fennessy (2008a), the Thornicroft's giraffe population was estimated to number 300 individuals in 1974 and 270-300 in 1980.

Thornicroft's giraffe was estimated to number 450 in the early 1980s (East 1999). East (1999) reported the bulk of the population to occur in South Luangwa National Park and the Lupande GMA. In 1994, aerial samples counts of South Luangwa National Park estimated the Thornicroft's giraffe population at 275 individuals, while ground surveys of the Lupande GMA estimated a giraffe population of 780 individuals (East 1999). A total of 90 giraffe were further estimated to occur in other GMAs in the Luangwa Valley, while 16 giraffe reportedly occurred on private game ranches (East 1999). The subspecies was only found as vagrant in North Luangwa National Park (East 1999).

A total of 350 individuals were estimated to occur in South Luangwa National Park and the Lupande GMA in 1996; 398 in 1998; and 202 in 1999 (Fennessy 2008a).

Angolan/South African giraffe

The giraffe population in Barotseland (western Zambezi) roamed the western parts of the region, between the Zambezi and Mashi Rivers in the 1960s (Dagg 1962). Referred to as Barotse giraffe (*G. c. infumata*[1]), at the time, these animals occurred on the Siluana Plain and on the borders of the Mashi River in west Barotseland (ZSL 1965). In 1952, the Carp Expedition estimated that there were between 150 and 200 individuals in the region (ZSL 1965). In 1965, the estimated number of giraffe in Barotseland remained the same at 150-200 individuals (ZSL 1965).

According to East (1999) only a small number of these giraffe (clumped in with the 'Southern giraffe' at the time) survived in south-western Zambia by the late 1990s, all inhabiting Sioma Ngwezi National Park.

Recent

Thornicroft's giraffe

An aerial census of South Luangwa National Park and the Lupanda GMA was undertaken in 2002 in order to establish the status of elephant and other large herbivores resident in the area (Dunham & Simwanza 2002). An estimate of 236 Thornicroft's giraffe were recorded for the area, of which 187 occurred in South Luanga National Park and 48 in the Lupande GMA (Dunham & Simwanza 2002).

An aerial survey of selected large wild herbivores in the Luangwa Valley hunting blocks was conducted in 2004 (Simwanza 2004). Giraffe were observed in only one hunting block, namely Nyampala hunting block, and the population was estimated at 41 individuals (Simwanza 2004).

In 2006, 191 giraffe were estimated to occur in South Luangwa National Park and Lupande GMA (Fennessy 2008a). The total estimate of Thornicroft's giraffe in 2008 was 700-880 individuals (Fennessy 2008a). Giraffe observations continue to be reported further north on the eastern bank of the Luangwa River up to Zokwe (Fennessy 2008a). While these are most likely vagrants, it appears that the population continues to dispere north, whilst its strong hold is in the south. This is most likely attributed to human population growth and pressures (Fennessy 2008a).

In 2009, giraffe were opportunistically photographed when encountered in the Luangwa Valley (Halloran *et al.* 2014). Individuals were identified using Wild-ID software for photographic capture/recapture analysis, resulting in an estimate of 423 giraffe (Halloran *et al.* 2014).

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[1]*G. c. infumata* is now considered to be a synonym of *G. c. angolensis* (Dagg 1971). Although East (1999) referred to *G. c. giraffe, G. c. angolensis, G. c. infumata, G. c. capensis and G. c. wardi (the latter two synonymous with G. c. giraffe,* Fennessy 2008b*)* collectively as southern giraffe, the subspecies occurring in Sioma Ngwesi National Park are considered to be either Angolan giraffe (*G.c. angolensis*) or South African giraffe (*G. c. giraffe*) as referred to above.

An aerial survey of the Luangwa Valley Ecosystem in 2011 estimated the giraffe population at 407 individuals (Simukonda 2012). Giraffe were sighted in four areas: South Luangwa National Park, and the Munyamadzi, Lupande and Sandwe GMAs (Simukonda 2012). An estimate of 168 giraffe was recorded in Lupande, 83 in South Luangwa National Park, 57 in Munyamadzi and 82 in Sandwe. The highest population of giraffe was observed in the Lupande GMA though most of these were observed close to South Luangwa National Park (Simukonda 2012).

In 2012, 423 giraffe were estimated in the Luangwa Valley (M. Becker pers. comm.).

Angolan/South African giraffe

In 2004 and 2005, aerial surveys of Sioma Ngwezi National Park estimated 211 giraffe in the area (Chase & Griffin 2009).

In 2008, an aerial survey of Mosi-oa-Tunya National Park, Kazungula and the Sioma Complex (which comprises Sioma Ngwezi National Park and West Zambezi GMA) was conducted. During this survey, 161 giraffe were estimated in the Lower West Zambezi and 420 in Sioma Ngwezi National Park, while 11 giraffe were observed in Mosi-oa-Tunya National Park, giving a total of 581 giraffe for the region (Simukonda 2009). Uncertainty remains with regards to the origin of the giraffe population in Mosi-oa-Tunya although what seems certain is they are an introduced population (M. Nyirenda pers. comm., F. Willems pers. comm.). Anecdotal sources from ZAWA suggest that they could have come from Sioma Ngwesi National Park, while others indicate they may be from north-eastern Zimbabwe (M. Nyirenda pers. comm.). Current genetic analysis will help to unravel this mystery.

Current

Thornicroft's giraffe

In 2013, two systematic surveys of giraffe were undertaken in the South Luangwa National Park (Bercovitch *et al.* 2014). The first survey estimated the density of giraffe at between 0.38/km and 0.53/km, with an average of 0.44/km (Bercovitch *et al.* 2014). The second survey, using a slightly different method for counting subjects along a road, estimated the density of Thornicroft's giraffe to be 0.49 giraffe/km (Bercovitch *et al.* 2014). Giraffe were encountered during both surveys in discrete areas rather than sighted all along the survey area (Bercovitch *et al.* 2014). Given a giraffe density of approximately 0.44/km along the Luangwa River, according to the first survey, and an approximate length of 250km for the Luangwa River between the confluence with the Chibembe River and the confluence with the Msanzara River, then an estimated 110 Thornicroft's giraffe reside in their core area along the roads near the Luangwa River (Bercovitch *et al.* 2014). Given that giraffe rarely range outside of the alluvial zone within 3km of a river (Berry 1978), these figures produce an estimated maximum of 660 Thornicroft's giraffe living in the Luangwa River Valley (Bercovitch *et al.* 2014). Following the same assumptions as for the first survey, according to the second survey, an estimated maximum of 735 giraffe live in the Luangwa River Valley (Bercovitch *et al.* 2014).

The independent methods for estimating the current Thornicroft's giraffe population size are in general agreement. The lowest estimate was 121 individuals and the highest estimate was 735 individuals. The current population seems to be stable and the average value across all of the studies suggests a population size of approximately 556 individuals in the Luangwa Valley (Bercovitch *et al.* 2014).

Angolan/South African giraffe

All of the giraffe on game farms in Zambia are descended from two consignments of animals imported in the late 1980s and 1990s from the Lowveld of Zimbabwe (I. Parsons pers. comm.). In addition there is a

population of giraffe in Livingstone Park, however, Parsons believes the individuals found here are possibly inbreeding.

An aerial survey of elephant and other wildlife in Sioma Ngwezi National Park was conducted in 2013 (Chase *et al.* 2013). A total of 232 giraffe were estimated: 44 in Sioma Ngwezi National Park West and 188 in Sioma Ngwezi National Park East (Chase *et al.* 2013).

The Kasanka Trust, working across the southern Bangweulu basin, Chambeshi in the upper Congo system including Kasanka National Park, Lavushi Manda National Park, and the Bangweulu wetlands, report no giraffe occurring in the region (F. Willems pers. comm.).

In summary, the Thornicroft's giraffe population in the Luangwa Valley appears to be stable and genetically viable, with a population estimate of 556 individuals. An estimated population of <260 giraffe, either Angolan (*G. c. angolensis*) or South African (*G. c. giraffa*) giraffe, resides in south western Zambia, <240 in Sioma Ngwesi National Park, thirteen in Mosi-oa-Tunya National Park and four on the property of Zambezi Sun (J. Katampi pers. comm.).

Extra-limital introductions of giraffe (*G. c. giraffa*) onto commercial game farms have occurred across the central regions of Zambia. There are some game farmers / private reserves that keep them, but only in very small numbers. Typically 1-5 animals, thus "ornamental" rather than commercial (F Willem pers. comm.).

Game Farm/Ranch	Giraffe Numbers (Extra-limital)	From/Comment	Source
Lilay Game Ranch	7	Originally from Zimbabwe in the 1980's	I. Miller pers. comm.
Kafue Lodge, Mpongwe	10	Thought to be from Chamanuka Lodge, Lusaka in 2003	T. Blackenberg pers. comm.
Kwisoko Game Ranch	3	Chamanuka Lodge, Lusaka in 2011	M. Mwanakatwe, pers. comm.
Gamamwe Ranches	6	Translocated in 2008 however their origin is uncertain.	N. Kirkpatrick pers. comm.
Lwimba Ranch	1	Kabwe	C. Clubb pers. comm
Khal Amaz Game Farm	15	Chamanuka Lodge, Lusaka in 2005	S. Barnes pers. comm

Table 1: Extra-limital giraffe data for game farms/ranches within Zambia. Survey ongoing.

Data obtained from ZAWA game ranch returns and questionnaire surveys estimate giraffe numbers within the Protected Area Network at 757 individuals, while numbers on game ranches were estimated at 757 individuals (29.8%) (Lindsey *et al.* 2013). However, the survey for these extralimital giraffe populations within Zambia is ongoing.

Future Conservation Management

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

- Development of National Giraffe Strategy for Zambia;
- Identification of priority conservation efforts for giraffe conservation; and
- Support to dedicated giraffe conservation, translocation, habitat protection, education and awareness initiatives (government, NGO and academic).

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Map:

In preparation.