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Giraffa camelopardalis ssp. rothschildi, Rothschild's Giraffe

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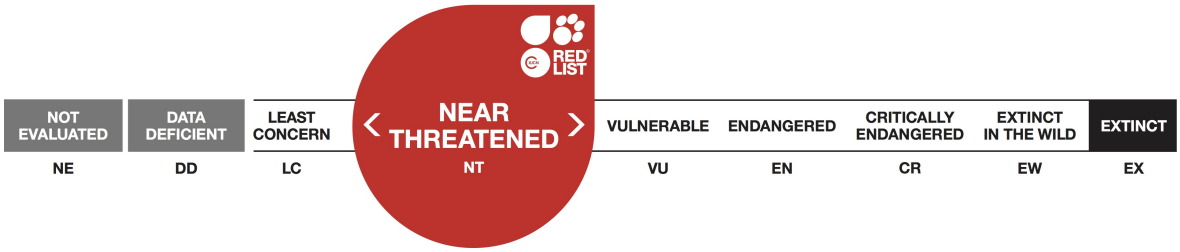

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Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Mammalia	Cetartiodactyla	Giraffidae

Taxon Name: *Giraffa camelopardalis ssp. rothschildi* Lydekker, 1903

Parent Species: See *Giraffa camelopardalis*

Common Name(s):

- English: Rothschild's Giraffe, Baringo Giraffe, Ugandan Giraffe

Taxonomic Notes:

The currently accepted nomenclature and taxonomy of Giraffe places the nine different types into subspecies categories (Dagg 2014). Some authorities have suggested that Rothschild's Giraffe should be elevated into a species, *G. rothschildi* (Groves and Grubb 2011), or included with Nubian Giraffe *G. c. camelopardalis* as a new species – the Northern giraffe *G. camelopardalis* (Fennessy *et al.* 2016). Phylogenetic and taxonomic studies are ongoing.

Assessment Information

Red List Category & Criteria: Near Threatened ver 3.1

Year Published: 2018

Date Assessed: January 27, 2018

Justification:

Listed as Near Threatened under criterion D1 because the number of mature individuals is estimated at less than 1,468 (total population c. 2,098 individuals). Rothschild's Giraffe exists in eighteen populations; four in Uganda and fourteen in Kenya. Of these, two populations are naturally occurring (Murchison Falls NP and Kidepo Valley NP in Uganda), one has been re-introduced to its previous natural range (Ruko Conservancy) and the remaining populations are extralimital conservation introductions. The population size is increasing overall, but there is little or no potential for dispersal between sites, some of which are fenced, and limited capacity for expansion.

Previously Published Red List Assessments

2010 – Endangered (EN)
http://dx.doi.org/10.2305/IUCN.UK.2010-2.RLTS.T174469A7077893.en

Geographic Range

Range Description:

When Lydekker first described Rothschild's Giraffe in 1903, their distribution ranged from the Rift Valley of central-west Kenya across Uganda to the Nile River and (possibly) northwards into South Sudan (Dagg and Foster 1982). Rothschild's Giraffe has been mostly extirpated from much of its former range, with

the global distribution currently limited to 18 isolated populations, 4 in Uganda and 14 in Kenya (Fennessy and Brenneman 2010, GCF 2013).

All known wild populations of Rothschild's Giraffe in Kenya have been extirpated by agricultural expansion and the remaining populations are derived from translocations to national parks, private reserves and other protected areas. In Uganda, Rothschild's Giraffe is restricted to Murchison Falls National Park (on the northern and southern Banks of the Victoria Nile), Kidepo Valley NP, and Lake Mburo NP. These populations are isolated from one another and are not interbreeding (UWA 2017).

In northern Kenya, a reintroduction of Giraffe into Ruko Community Wildlife Conservancy occurred in 2011. The other 13 subpopulations in Kenya, as well as the introduced populations in Lake Mburo NP and southern Murchison Falls NP, Uganda, are extralimital introductions, carried out for conservation reasons.

Country Occurrence:

Native: Kenya; Uganda

Population

In the early 1960s, Dagg (1962) estimated the population of Rothschild's Giraffe in Uganda to be 1,130 individuals. By the mid to late 1990s East (1999) estimated the total number in Uganda at 145 individuals, most of which occurred in Murchison Falls National Park, while Rwetsiba (2005) reported that Rothschild's Giraffe population in Uganda numbered approximately 2,500 in the 1960s but had decreased to an estimated 350 individuals.

In 2002, nine Rothschild's Giraffe were estimated to remain in the Kidepo Valley Conservation Area (Rwetsiba and Wanyama 2005). In 2005, the first aerial total count counted 14 Giraffe, all of which occurred in the southern parts of Kidepo Valley National Park (Rwetsiba and Wanyama 2005).

Lamprey (2000) estimated Murchison Falls National Park's Giraffe population at 347. 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 and Wanyama 2005).

The latest estimates for Uganda are c. 1,333: 1,250 in Murchison Falls N.P. north; 34 in Murchison Falls N.P. south; 34 in Kidepo Valley N.P. and 15 in Lake Mburo N.P (GCF 2017, UWA 2017). In Kenya, total numbers at the 14 sites are estimated at less than 808. Further details of historical, recent and current population estimates are provided in Appendix 1.

For further information about this species, see Supplementary Material.

Current Population Trend: Increasing

Habitat and Ecology (see Appendix for additional information)

Rothschild's Giraffe are selective browsers and as such, they typically inhabit *Acacia* and *Combretum* dominated savanna systems, where they browse on a wide range of available tree species. In Murchison Falls National Park, Rothschild's Giraffe are observed in most habitat types on the north side of the Victoria Nile; ranging from open savanna with scattered woodland patches consisting of *Acacia senegal, Acacia drepanolobium* and *Acacia sieberiana*, to open savanna with *Combretum binderianum* stands, to Acacia. sieberiana woodland (M. Brown pers. comm.). In recent surveys of Kidepo Valley National Park, Rothschilds's Giraffe were observed in predominantly dry *Acacia* savanna (Bryant *et al.* 2015). Lake Mburo National Park is also characterised by *Acacia* savanna with recent expansion of *Acacia hockii* throughout the Park.

Giraffe as a species are highly mobile and members of some subspecies have a demonstrated capacity for moving long distances in pursuit of sufficient forage, or mating opportunities (Fennessy 2009); however the small, isolated populations of Rothschild's Giraffe are predominantly surrounded by dense human settlement and agriculture, precluding the potential for long-distance movement and natural gene flow between populations.

Rothschild's Giraffe in Kenya exhibit a fission-fusion social system whereby social groups form and disband in response to local environmental factors. Significant patterns of preferred association and avoidance can be seen in populations; sub-adult males and females and adult females form the core of

social groupings, while adult males and mature bulls remain on the periphery of social organisation. Long-terms preferred and avoided relationships can be observed. Strong relationships exist between adult females, and between individuals which were born at the same time. Such long-term social preferences indicate that social relationships and social organisation are important aspects of ecology and should be considered in the management of Giraffe populations.

Systems: Terrestrial

Use and Trade

Some illegal hunting for meat and other products takes place. Level of trade is unknown.

Threats (see Appendix for additional information)

Illegal hunting, agricultural expansion, human encroachment, and habitat degradation, fragmentation and destruction have led to the extirpation of Rothschild's Giraffe from almost all of its former range (Sidney 1965, Fennessy and Brenneman 2010, USAID 2011, GCF 2013).

In the 1960s, wildlife numbers and diversity in Uganda were high, with animals roaming freely both inside and outside of protected areas in the country (Rwetsiba and Wanyama 2005, Olupot *et al.* 2009, Rwetsiba and Nuwamanya 2010). 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 local people and soldiers, causing a significant decrease of wildlife numbers, including Giraffe (Rwetsiba and Nuwamanya 2010, Rwetsiba *et al.* 2012, Smith 2012).
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 (Rwetsiba 2005, Lepp 2008, Rwetsiba *et al.* 2010, Smith 2012). However, protected areas in the region still face several problems related to anthropogenic influences, including large-scale landscape changes (Nampindo *et al.* 2005, USAID 2011).

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 (Nampindo *et al.* 2005, Olupot *et al.* 2009, USAID 2011, MTWA 2012). Giraffe were predominantly hunted for medicinal purposes, their meat, coats and their tail hair (Brenneman *et al.* 2009), and today are incidentally trapped by indiscriminate snare traps targeting other wildlife.

National parks in Uganda are increasingly being encroached upon by neighbouring communities and their agricultural developments (USAID 2011, MTWA 2012). 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 pasture lands (USAID 2011). Crop raiding cases are regularly reported by communities neighbouring these parks and along with other forms of human-wildlife conflict are two of the key drivers of illegal hunting (Olupot *et al.* 2009, MTWA 2012). 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).

In Kenya, Rothschild's Giraffe has diminished greatly and have become locally extinct from their natural range due to illegal hunting, agricultural development, human encroachment, habitat destruction and fragmentation (Sidney 1965, Brenneman *et al.* 2009, GCF 2013). These pressures resulted in the eradication of all known wild (or natural) populations of Rothschild's Giraffe in Kenya (Fennessy and Brenneman 2010, Muller 2011, GCF 2013).

Kenya-wide extralimital translocations of Rothschild's Giraffe occurred in the 1960s and 1970s. Most of these introductions were into private fenced wildlife areas where specific threats result from their confinement (Brenneman *et al.* 2009). Brenneman *et al.* (2009) reported possible dietary complications in young Rothschild's Giraffe in Lake Nakuru National Park; their introduction to and confinement within this area resulted in overconsumption and declining numbers of preferred acacia trees, which in turn caused highly concentrated tannin levels in their forage. This might have compromised their health, making them easier and opportunistic prey for the park's lion population (Brenneman *et al.* 2009). Other complications which might arise from confinement include inbreeding and reduced genetic diversity, although Brenneman *et al.* (2009) suggested that Lake Nakuru National Park's Rothschild's Giraffe population was in good genetic health with respect to the likelihood of inbreeding depression.

Human-wildlife conflict is another factor affecting this subspecies, especially surrounding protected areas. Inadequate staffing and patrolling, vandalism and lack of fence maintenance in Ruma National Park allow adjacent communities 'easy' access to the park and at the same time allow Giraffe to enter human settlements to destroy crops (Awange *et al.* 2004). Wildfires, deliberately set by neighbouring communities in expressions of disgruntlement, further destroy and reduce giraffe habitat (Awange *et al.* 2004). Illegal hunting for medicinal use, meat and skins remains a concern (Muller 2011).

A major loss of Rothschild's Giraffe is also accounted for by disease (Kaitho *et al.* 2013). An anthrax outbreak occurred at the Mwea National Reserve in 2011, which caused a severe decline in Giraffe numbers in the reserve (Kaitho *et al.* 2013).

Conservation Actions **(see Appendix for additional information)**

Rothschild's Giraffe is accorded full protection under the Kenyan Wildlife (Conservation and Management) Act (Chapter 376) and in the Republic of Uganda giraffe are protected under the Game (Preservation and Control) Act of 1959 (Chapter 198) and listed under Part A of the First Schedule of the Act as animals that may not be hunted or captured.

All current populations in Uganda occur in national parks and in national parks, conservancies or fenced reserves in Kenya. Kenya-wide extralimital translocations of Rothschild's giraffe occurred in the 1960s and 1970s.

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Both Kenya and Uganda have developed a draft National Giraffe Strategy and Action Plan (KWS 2010, UWA 2017).

Credits

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External Resources

For Supplementary Material, and for Images and External Links to Additional Information, please see the Red List website.

Appendix

Habitats

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Habitat	Season	Suitability	Major Importance?
1. Forest -> 1.5. Forest - Subtropical/Tropical Dry	Resident	Suitable	-
2. Savanna -> 2.1. Savanna - Dry	Resident	Suitable	-
3. Shrubland -> 3.5. Shrubland - Subtropical/Tropical Dry	Resident	Suitable	-

Threats

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Threat	Timing	Scope	Severity	Impact Score
2. Agriculture & aquaculture -> 2.1. Annual & perennial non-timber crops -> 2.1.2. Small-holder farming	Ongoing	Minority (50%)	Unknown	Unknown
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion		
2. Agriculture & aquaculture -> 2.3. Livestock farming & ranching -> 2.3.2. Small-holder grazing, ranching or farming	Ongoing	Minority (50%)	-	-
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion		
5. Biological resource use -> 5.1. Hunting & trapping terrestrial animals -> 5.1.1. Intentional use (species is the target)	Ongoing	Minority (50%)	Unknown	Unknown
	Stresses:	2. Species Stresses -> 2.1. Species mortality		
5. Biological resource use -> 5.1. Hunting & trapping terrestrial animals -> 5.1.2. Unintentional effects (species is not the target)	Ongoing	Minority (50%)	Unknown	Unknown
	Stresses:	2. Species Stresses -> 2.1. Species mortality		
8. Invasive and other problematic species, genes & diseases -> 8.6. Diseases of unknown cause	Ongoing	Minority (50%)	Unknown	Unknown
	Stresses:	2. Species Stresses -> 2.1. Species mortality		

Conservation Actions in Place

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Conservation Actions in Place
In-Place Research, Monitoring and Planning
Action Recovery plan: Yes
Systematic monitoring scheme: Yes

Conservation Actions in Place
In-Place Land/Water Protection and Management
Conservation sites identified: Yes, over entire range
Occur in at least one PA: Yes
Percentage of population protected by PAs (0-100): 91-100
Area based regional management plan: No
Invasive species control or prevention: Not Applicable
In-Place Species Management
Harvest management plan: No
Successfully reintroduced or introduced beningly: Yes
In-Place Education
Included in international legislation: Yes

Conservation Actions Needed

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Conservation Actions Needed
1. Land/water protection -> 1.1. Site/area protection

Research Needed

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Research Needed
1. Research -> 1.1. Taxonomy
3. Monitoring -> 3.1. Population trends

Additional Data Fields

Distribution
Number of Locations: 18
Lower elevation limit (m): 200
Upper elevation limit (m): 1000
Population
Number of mature individuals: 1399
Continuing decline of mature individuals: No

Population
Extreme fluctuations: No

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