UNEP-WCMC **technical report**

Review of species selected on the basis of the analysis of 2018 CITES export quotas

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Introduction

This report provides a review of five species selected on the basis of the *Analysis of 2018 CITES export quotas*.

National export quotas for CITES-listed taxa are an important tool to manage and monitor international wildlife trade. According to Resolution Conf. 14.7 (Rev. CoP15), the establishment or revision of an export quota should be based on a non-detriment finding (NDF) by the Scientific Authority of the exporting country, and the NDF should be reviewed annually. Once such annual quotas are established, the need for an NDF for each individual shipment of the species concerned is eliminated.

The EU, through stricter measures outlined in the EU Wildlife Trade Regulations, requires an NDF by importing Member States and therefore monitors newly-established quotas and changes to previous quota levels to assess the situation where necessary, or to reassess SRG opinions or EU decisions.

Export quotas are usually established by each Party to CITES unilaterally on a voluntary basis, but quotas can also be set by the Conference of the Parties, or result from recommendations of the Animals and Plants Committees. To ensure that national quotas are effectively communicated and implemented on permits and certificates, countries should inform the CITES Secretariat when they establish national export quotas for CITES species (Resolution Conf. 12.3 (Rev. CoP16)). In turn, the Secretariat informs the Parties by publishing a list of national export quotas of which it has been informed on the CITES website (www.cites.org/eng/resources/quotas/index.php). Once published, quotas can also be accessed online via Species+ (speciesplus.net).

UNEP-WCMC analysed the 2018 CITES export quotas to identify:

a) Quotas that were newly established in 2018 (i.e. 2018 quotas for particular taxon/country/term/source combinations that have not previously been subject to a quota, or have not been subject to a quota since 2013);
b) Quotas that increased in 2018 compared with 2017 quotas (or compared with the most recent quota since 2013 if no quota was published in 2017);
c) Quotas that decreased in 2018 compared with 2017 quotas (or compared with the most recent quota since 2013 if no quota was published in 2017).

This analysis was discussed by the Scientific Review Group and the following taxon/country combinations were selected for review for the 86th meeting of the SRG:

- *Panthera pardus/* Ethiopia (increased quota from 50 trophies in 2017 to 500 trophies and skins in 2018)
- *Cercocebus chrysogaster/* Democratic Republic of the Congo (DRC) (new quota, 300 live)
- *Cercopithecus hamlyni/* DRC (new quota, 300 live)
- *Cercopithecus lhoesti/* DRC (new quota, 300 live)
- *Cyclanorbis senegalensis/* Benin (new quota, 200 individuals)

CARNIVORA: FELIDAE

Panthera pardus I/A

COMMON NAMES:	Leopard (EN), Panthère (FR), Chita (ES)
RANGE STATES:	Afghanistan, Algeria, Angola, Armenia, Azerbaijan, Bangladesh, Benin, Bhutan, Botswana, Burkina Faso, Burundi, Cambodia, Cameroon, Central African Republic, Chad, China, Congo, Côte d'Ivoire, Democratic People's Republic of Korea, Democratic Republic of the Congo, Djibouti, Egypt, Equatorial Guinea, Eritrea, Eswatini (?), Ethiopia, Gabon, Gambia, Georgia, Ghana, Guinea, Guinea Bissau, Hong Kong SAR (extinct), India, Indonesia, Iraq, Islamic Republic of Iran, Israel, Jordan, Kenya, Lao People's Democratic Republic, Lebanon, Lesotho, Liberia, Libya (extinct), Malawi, Malaysia, Mali, Mauritania (?), Morocco, Mozambique, Myanmar, Namibia, Nepal, Niger, Nigeria, Oman, Pakistan, Republic of Korea, Russian Federation, Rwanda, Saudi Arabia, Senegal, Sierra Leone, Singapore (extinct), Somalia, South Africa, South Sudan, Sri Lanka, Sudan, Syrian Arab Republic (extinct), Tajikistan, Thailand, Togo, Tunisia, Turkey, Turkmenistan, Uganda, United Arab Emirates, United Republic of Tanzania, Uzbekistan (?), Viet Nam, Yemen, Zambia, Zimbabwe
UNDER REVIEW:	Ethiopia
EU DECISIONS	No current suspensions or opinions in place
IUCN:	Vulnerable

Taxonomic note

The 2016 IUCN assessment for *Panthera pardus* recognises nine subspecies (Stein *et al.*, 2016). Ethiopian leopards belong to *P. pardus pardus* (Stein *et al.*, 2016).

Trade patterns

P. pardus was listed in CITES Appendix I on 01/07/1975 and in Annex A of the European Union (EU) Wildlife Trade Regulations on 01/06/1997. Ethiopia has submitted CITES annual reports of exports for the years 2010-2011 and 2014-2017, but has not yet submitted annual reports for 2008, 2009, 2012 or 2013.

Ethiopia published annual export quotas for *P. pardus* trophies for all years 2008-2018 with the exception of 2013 and 2014. In 2018, Ethiopia published a quota for 500 trophies and skins, an increase of ten times compared to the quota established in 2017*. Trade in trophies does not appear to have exceeded the quota in any year 2008-2017, as reported by importers and Ethiopia (Table 1).

Table 1: CITES export quotas for *Panthera pardus* trophies from Ethiopia, 2008-2018 and global direct exports of trophies reported by countries of import and Ethiopia, 2008-2017. Ethiopia did not publish export quotas 2013-2014 and did not submit CITES annual reports for 2008-2009 or 2012-2013.

Quota note	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Quota (trophies)	500	500	500	500	10	-	-	50	50	50*	500
Reported by importer (trophies)	2	1	1	1					1		-
Reported by Ethiopia (trophies)	-	-	2			-	-	1			-

* Ethiopia published two quotas for *P. pardus* for 2017 - a quota for 50 trophies was published on 06/03/2017, and a quota for 500 trophies and skins was published on 22/02/2018 according to the CITES website.

Source: CITES Trade Database, UNEP-WCMC, Cambridge, UK, downloaded on 19/12/2018

According to the CITES Trade Database, direct trade in *P. pardus* from Ethiopia to the EU-28 2008-2016 comprised wild-sourced trophies for hunting and personal purposes, representing five individuals according to importers and two individuals according to Ethiopia. Imports of wild-sourced trophies remained below five individuals in all years 2008-2016; no trade was reported in 2017 (Table 2).

Direct trade from Ethiopia to the rest of the world 2008-2016 primarily consisted of wild-sourced trophies. Exports to the rest of the world peaked in 2009 but remained below ten individuals in all years. No trade was reported in 2017 (Table 2).

No indirect trade to the EU-28 in *P. pardus* originating in Ethiopia was reported 2008-2017.

Table 2: Direct exports of *Panthera pardus* from Ethiopia to the EU-28 (EU) and the rest of the world (RoW), 2008-2017. All trade was reported in number of items and was wild-sourced. Ethiopia has not yet submitted CITES annual reports for 2008-2009, or 2012-2013.

Importer	Term	Purpose	Reported by	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Total
EU	trophies	H	Importer			1			1			1		3
			Exporter	-	-	1		-	-	1				2
		P	Importer		1					1				2
			Exporter	-	-			-	-					
RoW	skins	H	Importer		3			1						4
			Exporter	-	-		1	-	-					1
		P	Importer								1			1
			Exporter	-	-			-	-					
	skulls	H	Importer		3			1						4
			Exporter	-	-			-	-					
	trophies	H	Importer	1			1			1				3
			Exporter	-	-	1		-	-	1	1			3
		T	Importer	1										1
			Exporter	-	-			-	-					

Source: CITES Trade Database, UNEP-WCMC, Cambridge, UK, downloaded on 19/12/2018

Conservation status

Globally, *P. pardus* has a wide but patchy distribution from Senegal eastwards to Sudan, Ethiopia and Somalia, south through most of Africa (Hunter *et al.*, 2013). There is a relict population in North Africa, and the species is also present in the Middle East, Turkey, throughout Central Asia into the southwest of the Russian Federation, and throughout tropical Asia into Northern China and the far eastern Russian Federation (Hunter *et al.*, 2013). It is an adaptable species that can inhabit woodland, grassland savannah and forest, as well as mountain habitats, coastal scrub, shrubland, semi-desert and desert (Hunter *et al.*, 2013). Provided that cover and prey are present, *P. pardus* can also persist in reduced densities close to large human habitations (Wilson and Mittermeier, 2009; Hunter *et al.*, 2013); though some authors have argued that populations in sub-optimal areas are unlikely to be viable without protected source populations or large tracts of undisturbed habitat nearby (Ray *et al.*, 2005).

P. pardus individuals are solitary and territorial (Hunter *et al.*, 2013). The size of an individual's home range is broadly correlated to prey availability, with estimates ranging from 5.6 km^2 to 2750.1 km^2 (Hunter *et al.*, 2013). Radio-tagging studies from Kenya have estimated that females and males occupied home ranges of a mean extent of 14 km^2 and 32.8 km^2 respectively on ranchlands (Mizutani and Jewell, 1998), and 13.9 km^2 and 30.5 km^2 in Tsavo National Park (Hamilton, 1981). The species gives birth throughout the year and the gestation period is 90-106 days, with litters normally comprising 1-3 cubs (Hunter *et al.*, 2013). Cub mortality in the first year is high, with estimates ranging from 50-90 per cent (Hunter *et al.*, 2013). Cubs reach independence after 12-18 months, but dispersal occurs at between 15 and 36 months (Wilson and Mittermeier, 2009). Longevity in wild *P. pardus* is poorly known, but females aged over 15 years have been recorded in the literature (Hunter *et al.*, 2013). The species is known for having an extremely diverse diet, eating a wide variety of prey ranging from small rodents to ungulates weighing two to three times an individual's weight (Wilson and Mittermeier, 2009). *P. pardus* also prey on dogs, cats, sheep, goats, calves and pigs where they occur in urban areas (Wilson and Mittermeier, 2009).

There are no robust estimates of the total number of *P. pardus* individuals range-wide (Stein *et al.*, 2016), and neither are there reliable data to indicate changes in the abundance or distribution of *P. pardus* in Africa (Stein *et al.*, 2016). Based on measures of prey and habitat loss as well as high levels of exploitation, the species' 2015 IUCN assessment categorised *P. pardus* as Vulnerable; though the assessment noted that it is difficult species to categorise as a result of its wide geographic range, secretive nature and habitat tolerance (Stein *et al.*, 2016). The species' total extent of occurrence was estimated to have decreased by 61 per cent between 2007-2015, from 21 953 435 km^2 to 8 515 935 km^2. However, it is important to note that the severity of this reduction is likely to be inaccurate due to previous insufficient sampling, and that the authors of the assessment believed that the reduction has likely occurred over a longer time scale (Stein *et al.*, 2016). At least half of the 61 per cent reduction was estimated to translate to real and relatively recent range loss (Stein *et al.*, 2016). Jacobson *et al.* (2016) estimated that the species' extant range in Africa (defined as records no older than three leopard generations (21 years)) had declined by 48-67 per cent from its historic range (defined as the species' range in approximately the year 1750).

In Ethiopia, the distribution and abundance of *P. pardus* is also poorly known (Westerberg *et al.*, 2018). The species historically occurred throughout the country (P. Gerngross unpublished data in: Jacobson *et al.* 2016), but its extant range is now thought to cover only 346 900 km^2, or 31 per cent of the country's area (Jacobson *et al.*, 2016) (see Figure 1). *P. pardus* was reported to be found throughout southern Ethiopia according to the IUCN Red List assessment (Stein *et al.*, 2016), but there are also records of its occurrence in the northern highlands (Yirga *et al.*, 2013). Records of occurrence were found for Yechilay (Westerberg *et al.*, 2018), highland areas of Tigray (Yirga *et al.*, 2013) (both in northern Ethiopia), the Kafa Biosphere Reserve (Gebresenbet *et al.*, 2018), the Munessa Shashemene Forest (Nino *et al.*, 2017), and the Belete-Gera forest (Mertens *et al.*, 2018) (all in south west Ethiopia), though this is not an exhaustive list of the areas in which it is present. The species occurs in several protected areas within the country, including Mago National Park, Yangudi-Rassa National Park, the Babille Elephant Sanctuary (Government of the Federal Democratic Republic of Ethiopia, 2005) and Dati Wolel National Park (Park *et al.*, 2015). It has also been reported to occur in several controlled hunting areas; namely Mizan-Teferi, Maze and Murle (Government of the Federal Democratic Republic of Ethiopia, 2005).

No recent population or population density estimates of *P. pardus* in Ethiopia could be found; similarly, no estimates of the species' average home range size in the country could be located. However, in 2018 the CITES MA of Ethiopia reported that a regular census of the species is undertaken every two years, with plans to conduct a national leopard population survey in 2019 (SC70 Doc. 55). Neither the findings nor the methodology used in the country's biennial census appear to be publically available, but the CITES MA of Ethiopia described its population of *P. pardus* as "healthy" throughout most of its range (SC70 Doc. 55). The species was categorised as Least Concern in Ethiopia's 2008 Red List (Jacobson *et al.*, 2016), in which its population was reported to consist of "thousands" of individuals (Gebresenbet *et al.*, 2009). Martin and de Meulenaer's 1987 rainfall based model (Martin and de Meulenaer, 1988; CoP6 Doc 6.26), which is thought to have been used to originally set leopard hunting quotas under Resolution Conf. 10. 14, estimated a population of 9782 individuals (95 per cent CI= 5380-17 803 individuals) in the country. This model, however, has been extensively criticised for being overly simplistic and for, *inter alia*, not accounting for the effects of prey availability as well as other sources of anthropogenic mortality (Jackson, 1989 in Balme *et al.*, 2010; Norton, 1990; Marker and Dickman 2005; Balme *et al.*, 2010). Hunter *et al.* (2013) described the study's estimate of the number of leopards in Africa ("in excess of 700 000") as "impossibly optimistic". A more conservative estimate was made in 1992 in CoP8 Prop. EQ1-EQ5, using a model that assumed that leopards only occurred in protected areas listed in the 1987 World Resources Yearbook, and assumed an average density of one leopard per 20 km^2. Based on a protected area coverage of 30 275 km^2, Ethiopia was estimated to have 1514 individuals of *P. pardus* (CoP8 Prop. EQ1-EQ5).

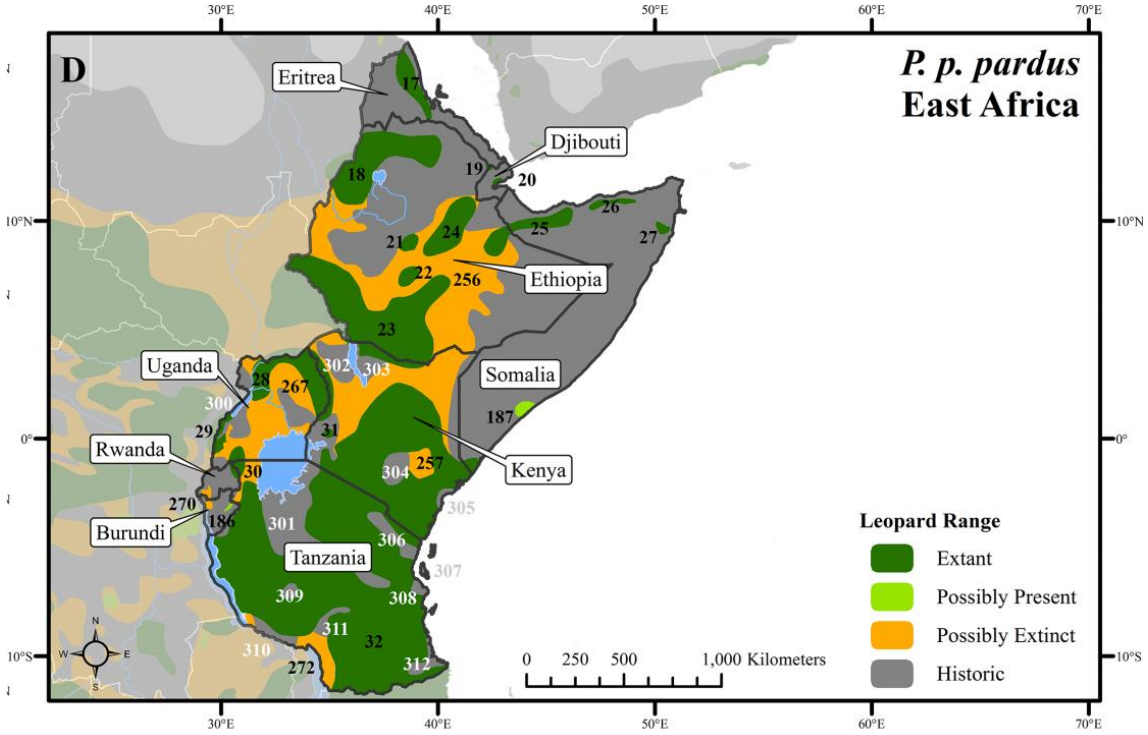

Figure 1: East African range of *Panthera pardus*, based on records collected by Jacobson *et al.* (2016). Figure adapted from Jacobson *et al.* (2016).

Threats to *P. pardus* include habitat loss and fragmentation (Ray *et al.*, 2005), persecution as a result of human-wildlife conflict (Ray *et al.*, 2005; Balme and Hunter, 2004; Balme *et al.*, 2010), declines in prey abundance (Wolf and Ripple, 2016), excessive harvesting for trade in skins (Stein *et al.*, 2016), and poorly managed trophy hunting (Packer *et al.*, 2011). It is unclear which of these threats (if any) are the most pertinent to the Ethiopian population. Leopard predation of domestic animals has been reported to occur in multiple Ethiopian communities (Yirga *et al.*, 2011, 2013; Gebresenbet *et al.*, 2018), however some studies have found that tolerance can be high and that leopards are not necessarily targeted for retaliatory or preventive killings (Gebresenbet *et al.*, 2018). Deforestation as a result of agricultural clearance and commercial logging has also taken place (Dessie and Kleman, 2007; Getahun *et al.*, 2013; Senbeta, 2018); however, no studies could be found that modelled the potential impact of these losses on *P. pardus* populations. Ethiopia's remaining natural forests were reported to be at risk of conversion to coffee forest (i.e. coffee cultivations under a canopy of indigenous tree species) (Mertens *et al.*, 2018), a habitat that has been hypothesized to be less favourable for leopards. A comparison of mammal communities found in coffee and natural forests in the Ethiopian highlands found that *P. pardus* appeared to be more common in natural forests, but an indicator species analysis did not find a significant relationship between the two (Mertens *et al.*, 2018). Leopard skins have been noted to be one of the main wildlife products trafficked out of the country (Tessema, 2017).

P. pardus is protected in Ethiopia under the Wildlife Development, Conservation and Utilization Council of Ministers Regulations No. 163/2008 (Government of Ethiopia, 2008). Under these regulations, which prohibit hunting in National Parks, Wildlife Sanctuaries and Wildlife Reserves without a licence, *P. pardus* is listed under 'Wildlife allowed to be hunted by foreign tourist hunters'. The number of these licences issued is dependent upon an approved annual hunting quota.

The quota for *P. pardus* for Ethiopia under Resolution Conf. 10. 14 remains unchanged since it was first set in 1987 at 500 skins (CoP7 Doc 7.28; AC30 Inf.18). Ethiopia's original proposal was for a quota of 500 skins for 1987-1989 in order to dispose of stocks of skins resulting from confiscation and livestock protection, after which it proposed to lower the annual export quota to 300 skins (CoP10 Doc. 10.42). Ethiopia did not pursue its intention to have a lower quota; the Secretariat brought the matter to the attention of the MA of Ethiopia, but it was reported at CoP10 in 1997 that they had not received a response (CoP10 Doc. 10.42). The original basis for Ethiopia's quotas is thought to be Martin and de Meulenaer's 1987 modelling exercise (AC30 Inf. 18), which, as discussed above, estimated the Ethiopian population of *P.pardus* at 9782 individuals (CoP6 Doc 6.26), but was widely considered a substantial overestimate. The Humane Society

International noted that an annual offtake of 500 individuals using this estimate would account for 5.1 per cent of the population, which was considered to be "wholly unsustainable" (AC30 Inf. 18).

It is unclear if the Mizan-Teferi, Maze and Murle controlled hunting areas have been maintained, or if there are additional leopard hunting areas in Ethiopia. Very rough calculations of the potential number of leopards in these hunting areas are provided in Table 3 below, using two different methodologies. Methodology a) assumes that (i) the whole hunting areas have territories, (ii) the home range size of *P. pardus* is c. 30 km^2 (based on an estimate for female leopards in Tsavo National Park (Kenya) (Hamilton, 1981)) and (iii) there is no overlap between home ranges; whereas methodology b) assumes that the density of leopards is one per 20 km^2 (the estimate used in CoP8 Prop. EQ1-EQ5).

Table 3: Potential number of leopards in hunting areas in Ethiopia, subject to the caveats outlined above.

Hunting area	Size	a) Potential number of individuals, using home range size of 30 km ^{2} method	b) Potential number of individuals, using density of 1 leopard per 20 km ^{2} method
Maze	365 km^2 (based on WDPA)	12	18
Mizan-Teferi	3166 km^2 (based on WDPA)	105	158
Murle	4,172 km^2 (Government of the Federal Democratic Republic of Ethiopia, 2005)	139	208
Total		**256**	**384**

Following concerns that leopard hunting quotas under Resolution Conf 10.14 had been set with little scientific input (Ray *et al.*, 2005; Balme *et al.*, 2010) and had not been reviewed in a long time, CoP17 Decision 17. 114 directed Parties with quotas established under that Resolution to review these quotas, and consider whether they were still set at levels which are non-detrimental to the survival of the species in the wild (CoP17 Doc. 39.1; SC70 Doc. 55). No response from Ethiopia had been received by AC30 (July 2018) (AC30 Doc. 15); however, the Party submitted a response for consideration at SC70 (October 2018). Ethiopia reported that trophy hunting data showed that, on average, five leopards are hunted annually (SC70 Doc. 55), and highlighted its biennial undertaking of a leopard population census (SC70 Doc. 55). SC70 agreed to propose to the 18th Conference of the Parties the renewal of Decisions 17.114 to 17.117 for Ethiopia, allowing the Animals Committee to evaluate the information and make appropriate recommendations after the 18th Conference of the Parties (SC70 Sum. 10 (Rev. 1)).

Ethiopia was consulted by UNEP-WCMC as part of this review. At the time of submission, Ethiopia had responded to indicate that they would provide the information requested at a later date.

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PRIMATES: CERCOPITHECIDAE

Cercocebus chrysogaster II/B

SYNONYMS:	*Cercocebus agilis chrysogaster* Milne-Edwards, 1886
	Cercocebus galeritus chrysogaster Peters, 1879
COMMON NAMES:	Golden-bellied Mangabey
RANGE STATES:	Democratic Republic of the Congo (DRC)
UNDER REVIEW:	DRC
EU DECISIONS:	No current suspensions or opinions in place
IUCN:	Data Deficient

Taxonomic note

In the past, *Cercocebus chrysogaster* has been considered to be a subspecies of both *C. agilis* (*C. a. chrysogaster*) (Groves, 1978; Wilson and Reeder, 1993) and *C. galeritus* (*C. g. chrysogaster*) (Oates, 1996; Grubb *et al.*, 2003). However, most recent publications (including the CITES Standard Reference for Primates - Wilson and Reeder, 2005) support its status as a full species (Groves, 2001, 2005; Mittermeier *et al.*, 2013).

Trade patterns

C. chrysogaster was listed in CITES Appendix II on 04/02/1977, as part of the order listing for Primates and in Annex B of the EU Wildlife Trade Regulations on 01/06/1997, also under the listing for the order Primates.

In 2018, the DRC published a quota for 300 live wild-sourced individuals – the first quota it has published for this species. DRC has submitted all annual reports for 2008-2018.

According to the CITES Trade Database, there were no direct or indirect exports of *C. chrysogaster* from, or originating in the DRC to the EU-28 or the rest of the world, 2008-2017. At the time of writing, data for 2018 had been received from the DRC; no exports to the EU-28 were reported in 2018 while 29 live, wild-sourced animals were exported for commercial purposes to the rest of the world, mainly to Uzbekistan.

Conservation status

C. chrysogaster is a medium-sized cercopithecine monkey endemic to the DRC (Hart *et al.*, 2008). The species is considered to be one of Africa's least studied and most inadequately known primates (Hart *et al.*, 2008; Inogwabini and Thompson, 2013; Mittermeier *et al.*, 2013). *C. chrysogaster* principally occurs in extensive swamp, riparian and seasonally flooded forests (Gautier-Hion *et al.*, 1999; Inogwabini and Thompson, 2013), at altitudes of 300-500 m (Butynski *et al.*, 2013; Inogwabini and Thompson, 2013). The species has also been recorded in secondary forests, and in some areas may be an agricultural pest (Hart *et al.*, 2008; Butynski *et al.*, 2013). It is principally terrestrial, prefering the ground and understory, with a diet consisting of fruits and seeds along with leaves, flowers, gums, and animal prey (Mittermeier *et al.*, 2013). Very little is known about the species' average group size; there are reports of 15-35 individuals but also of groups numbering over 100 individuals (Mittermeier *et al.*, 2013). Eriksson (pers. comm. in: Butynski *et al.*, 2013) thought that groups may sometimes number 200-300 individuals. There is no information on breeding parameters for the species in the wild, but captive *C. chrysogaster* begin breeding at c. 5 years of age (Mittermeier *et al.*, 2013; Butynski *et al.*, 2013).

The gestation period averages 165-180 days, and with interbirth intervals of 17-23 months (Mittermeier *et al.*, 2013). In captivity, *C. chrysogaster* has been known to live up to 30 years (Mittermeier *et al.*, 2013).

The species' occurs in the western and central Congo Basin, south of the Congo river, but its range is not fully defined (Butynski *et al.*, 2013; Mittermeier *et al.*, 2013). Gautier-Hion *et al.* (1999) reported the northernmost limit of its distribution to be the Luilaka River; however, surveys conducted by Inogwabini and Thompson (2013) indicated a smaller range. Based on intermittent and discontinuous surveys conducted 1994-2007, Inogwabini and Thompson (2013) considered the species to occur in a restricted range of approximately 70 000 km^2, limited in the north by the Lokolo River system, the east by the Ngendo River, and the south by the Kwa-Kasai-Sankuru River. The Congo River constitutes the most likely westernmost historical limit of the species (Inogwabini and Thompson, 2013). In a 25 000 km^2 area representing 38 per cent of the 70 000 km^2 estimated range, available records were provided solely by local communities and not transect surveys (Inogwabini and Thompson, 2013). Within the range polygon, the species is thought to be very patchily distributed (Hart *et al.*, 2008). Inogwabini and Thompson (2013) noted that "there are large areas within [the maximum range] that are probably void of *C. chrysogaster*", whereas Butynski *et al.* (2013) also noted that available information indicated that within its small and fragmented distribution, the area occupied by *C. chrysogaster* was small.

C. chrysogaster was listed as Data Deficient by the IUCN in 2008, on the basis that the species' distribution and population status was unclear (Hart *et al.*, 2008). Inogwabini and Thompson (2013) consided that *C. chrysogaster* should be consided as "one of the threatened endemic species in the Democratic Republic of the Congo" due to its restricted range, hunting levels and logging activities within the heart of its distribution area. They estimated that the species had dissappeared from 37 per cent of its presumed historical range, but did not indicate the time period over which this was estimated to have occurred. Butynski *et al.* (2013) also considered that the species deserved threatened status.

The principal threats to *C. chrysogaster* are considered to be hunting for the meat and pet trade and habitat degradation/loss (Hart *et al.*, 2008; Butynski *et al.*, 2013; Inogwabini and Thompson, 2013; Mittermeier *et al.*, 2013). A 48 hour survey conducted in 2001 by Inogwabini and Thompson (2013) found that the species constituted >70 per cent of hunted species encountered along the Mundja to Lopole road; in 2007, single-sweep market surveys of the Inongo and Nioki markets found that *C. chrysogaster* accounted for >31 per cent and 20 per cent of the bushmeat on offer, respectively. Although these studies were of short duration and unlikely to be fully representative, they indicate that the species may be heavily targeted. The extent to which the species is targeted for the pet trade is unknown, but there are anecdotal reports of the species being sold in markets in Kinshasa for both the meat and pet trade (Butynski *et al.*, 2013; Inogwabini and Thompson, 2013). The area encompassed by the heart of the species' range has been allocated to logging concessions (Inogwabini and Thompson, 2013).

C. chrysogaster is present in the southernmost tip of the Salonga National Park (Inogwabini and Thompson, 2013). Within the National Park, Law 14/003 prohibits, *inter alia*, the introduction of firearms and other hunting instruments, the transport of living specimens, skins or other remains of wild fauna, and the destruction of flora and fauna (Government of the Democratic Republic of the Congo, 2014). Outside of protected areas, Articles 13 and 14 of Law 14/003 prohibit hunting and trade of any species considered to be threatened or likely to be threatened by in the DRC. However, while *C. agilis* is on the list of partically protected species in the DRC, *C. chrysogaster* is absent from it (Government of the Democratic Republic of the Congo, 2006).

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PRIMATES: CERCOPITHECIDAE

Cercopithecus hamlyni II/B

COMMON NAMES:	Owl-faced Monkey (EN), Cercopithèque à tête de hibou (FR)
RANGE STATES:	Democratic Republic of the Congo (DRC), Rwanda, Uganda (extinct, distribution uncertain)
UNDER REVIEW:	DRC
EU DECISIONS:	Current no opinion iii) for wild-sourced specimens from DRC, Rwanda and Uganda formed on 27/06/2016. Previous Article 4.6(b) import suspension for wild-sourced specimens from DRC, Rwanda and Uganda first applied on 22/12/1997 and last confirmed on 28/05/2015.
IUCN:	Vulnerable

Taxonomic note

The lowland and highland forms of *Cercopithecus hamlyni* are recognised as two separate subspecies: *C. h. hamlyni* and *C. h. kahuziensis*, respectively, by Grubb *et al.* (2003) and the CITES Standard Reference (Wilson and Reeder, 2005). However, the validity of *C. h. kahuziensis* has been disputed (Hart and Butynski, 2008; Hart *et al.*, 2013) as the subspecies was described from characters in three immature specimens that have been subsequently shown to be variably present in immature *C. h. hamlyni*.

Trade patterns

C. hamlyni was listed in CITES Appendix II on 04/02/1977 as part of the order listing for Primates and in in Annex B of the EU Wildlife Trade Regulations on 01/06/1997, also under the listing for the order Primates. In 2018, the DRC published a quota for 300 live wild-sourced individuals – the first quota it has published for this species. In 2014, 2016 and 2017, DRC published a zero quota for live wild-sourced individuals of the genus *Cercopithecus.* DRC has submitted all annual reports for the years 2008-2018.

According to the CITES Trade Database, there have been no direct exports of *C. hamlyni* from DRC to the EU-28, 2008-2017. Low levels of wild-sourced skins, skulls and specimens of *C. hamlyni* were exported from DRC to the United States of America in 2008 and 2009 for scientific purposes (Table 1). DRC had submitted an annual report for 2018 at the time of writing; no exports were reported to the EU-28 while exports to the rest of the world in 2018 comprised one, wild-sourced individual exported for commercial purposes to Uzbekistan and low levels of trade in scientific specimens (Table 1). No indirect trade to the EU-28 in *C. hamlyni* originating in DRC was reported 2008-2018.

Table 1: Direct exports of *Cercopithecus hamlyni* from DRC, to the rest of the world 2008-2018. All trade was in wild-sourced specimens. DRC has submitted all annual reports for 2008-2018. Data for 2018 for importers is incomplete.

Importer	Term	Unit	Purpose	Reported by	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total
RoW	live	-	T	Importer												
				Exporter											1	1
	skins	-	S	Importer		1										1
				Exporter												
	skulls	-	S	Importer	3	1										4
				Exporter												
	specimens	-	S	Importer	6	5										11
				Exporter		2										2
	specimens	kg	S	Importer												
				Exporter											<0.01	<0.01

Source: CITES Trade Database, UNEP-WCMC, Cambridge, UK, downloaded on 07/01/2018

Conservation status

C. hamlyni is a medium-sized cercopithecine monkey (Hart *et al*., 2013), found in central eastern DRC and western Rwanda (Wilson and Reeder, 2005; Easton *et al*., 2011; de Jong and Butynski, 2012; Hart *et al*., 2013; Mittermeier *et al.*, 2013). It may also occur in southern Uganda and northern Burundi, but the validity of occurrence records in Uganda has been questioned (Hart *et al.*, 2013). The species is found in a variety of terra firma forest habitats, including lowland and montane forest as well as secondary growth forest (Hart *et al.*, 2013). Populations in Tshiberimu and Kahuzi (DRC) live in montane bamboo forest (Mittermeier *et al.*, 2013). *C. h. hamlyni* has been recorded at altitudes of between 600-3000 m, whereas *C. h. kahuziensis* occurs above 3000 m (Mittermeier *et al.*, 2013). *C. hamlyni* is diurnal and semi-terrestrial, spending <60 per cent of its time on the ground and showing a preference for lower levels of the forest canopy (Hart *et al.*, 2013). The species lives in small multi-male, multi-female or uni-male, multi-female groups, usually not exceeding ten individuals (Gautier-Hion *et al.*, 1999 in Easton *et al.,* 2011; Hart *et al.* 2013, Mittermeier *et al.* 2013); though solitary individuals are not uncommon (Mittermeier *et al.*, 2013). Mean group size in the Kahuzi-Biega National Park (DRC) lowland sector and the Ituri forest (DRC) was recorded as 2-3 individuals (Hall *et al.*, 2003; Hart unpubl. data in Hart and Butynski, 2008). No information on breeding parameters for the species in the wild could be located, but the European Endangered Species Breeding Program (EEP) studbook contains data for captive populations. In captive animals, the gestation length is 180 days, the youngest female at first birth was 2.25 years old, and the oldest recorded female giving birth was 24 years old (Hart *et al.*, 2013). Captive males live >23 years, whereas captive females live to >28 years (Hart *et al.*, 2013).

C. hamlyni's range is bounded by the Albertine Rift in the east, the Lini and Nepoko rivers in the north, and the Congo River/Lualaba River in the west (Gautier-Hion *et al.*, 1999 in Easton *et al.,* 2011; Hart *et al.* 2013) (all within DRC). The southern limit of the population is not well defined (Mittermeier *et al.*, 2013), but its southwestern limit is thought to be c. 16 km south of Kindu (DRC), and its southeastern limit is thought to be Nyungwe National Park, Rwanda (Hart *et al.*, 2013). There were several isolated, outlying populations in eastern DRC and in western Rwanda (Hart *et al.*, 2013) that have been extirpated, including populations in the Gishwati Forest (Rwanda), the Virunga Volcanoes (Rwanda/DRC), and forest islands between Kahuzi-Biega National Park and Massisi (DRC) (Hart and Butynski, 2008). The Rwandan population of *C. hamlyni* in Nyungwe National Park, which is restricted to a small 32 km^2 area of bamboo and bamboo-mix forest in the southern sector of the park (Majyambere, 2018), is thought to be the last population remaining in that country (Easton *et al.*, 2011). Although there are no records of the species in Burundi, it was thought that the species may well occur in the bamboo zone of Kibira National Park, which is contiguous with the area of bamboo in Nyungwe National Park where *C. hamlyni* is present (Vedder, Barakabuye and Kaplin, pers. comm. in Hart *et al.*, 2013). The only locality record for the species in Uganda appears to be from Rahm (1970, in Hart *et al*., 2013), but the basis for the record is not indicated and there is no museum specimen for any site in the country (Hart *et al.*, 2013). Even if the record is interpreted as valid, several authors have asserted that *C. hamlyni* has almost certainly since been extirpated from Uganda (de Jong and Butynski, 2012; Hart *et al.*, 2013).

The species' total extent of occurrence has been estimated to be c. 180 000-193 000 km^2 (Hart *et al.*, 2012; De Jong & Butynski pers. obs. in Hart *et al*., 2013), but the distribution of *C. hamlyni* is highly localised and the area of occupancy was considered much lower than this (De Jong & Butynski pers. obs. in Hart *et al*., 2013). Ukizintambara & Thébaud's (2002) assessment of extinction risk in *Cercopithecus* monkeys uses a much higher estimate for the species' total extent of occurrence (318 877 km^2), and quotes an area of occupancy of 173 751 km^2, but these figures are based on sources from the 1980s-1990s. Several authors (Easton *et al.*, 2011; Hart *et al.*, 2013) have noted that *C. hamlyni*'s cryptic colouration, secretive nature and predominantly terrestrial behaviour make the species difficult to survey, and Easton (2001) noted that there were no accurate population estimates across its range.

C. hamlyni was listed as Vulnerable in a 2008 IUCN Assessment, on the basis that the species has undergone past declines and continued to do so (Hart and Butynski, 2008). The main threats were considered to be habitat loss and fragmentation in montane areas (particularly as a result of illegal bamboo cutting (Majyambere, 2018; Tumwesigye *et al.*, 2018)) and hunting (which was considered a particular threat in lowland areas where snaring is common) (Inogwabini *et al.*, 2000; Hart and Butynski, 2008; Easton *et al.*, 2011). An assessment of threats faced by species in the Albertine Rift classified *C. hamlyni* as one of four threatened mammal species that was both important for use in the region and vulnerable to

climate change (Carr *et al.*, 2013). Fa *et al.* (2014) gave the species a hunting sustainability score of 2/5 (where a score of five is given to species that can be most sustainably hunted, and a score of one is given to species that can be least sustainably hunted), based on an index that took into account the species' population density weighted by a combination of ecological traits such as habitat breadth, rarity and vulnerability.

C. hamlyni's entire range has been noted to be in an area of intense conflict, which has exacerbated the above threats (Hart and Butynski, 2008). In the face of ongoing political climates, the species' IUCN assessment expected that declines would continue, resulting in an overall population reduction of over 30 per cent over a 30-year time period (Hart and Butynski, 2008). However, no estimates of population trends based on empirical data for the species could be located.

The species was reported to be listed as Class B in the African Convention on the Conservation of Nature and Natural Resources (Hart and Butynski, 2008; Mittermeier *et al.*, 2013).

Democratic Republic of the Congo: The majority of *C. hamlyni*'s global range is located within DRC (Hart *et al.*, 2013). The species' occurs from the Albertine Rift Valley south through to Butondo (c. 80 km north of Nyunzu), with the Congo and Lualaba rivers serving as the western limit of the species' range and the Rwanda/Burundi borders serving as the eastern limit of the species' range (Hart *et al.*, 2013).

Surveys conducted in the 1980s and 1990s found *C. hamlyni* to be locally abundant in Kahuzi-Biega National Park (Inogwabini *et al.*, 2000; Hall *et al.*, 2003), as well as Irangi, Masisi and Kasese (Yamagiwa *et al.*, 1989 in: Hart *et al.* 2013). In Kahuzi-Beiga National Park, in 1994-5, the species was estimated to occur at densities of 5-7 individuals/km^2 (Hall *et al.*, 2003). Hart *et al.* (2013) also reported the species to be widespread and common in the Okapi Faunal Reserve based on the frequency of the dawn call. In the Ituri forest, Thomas (1991) estimated that *C. hamlyni* occurred at a density of c. 0.1 individuals/km^2; this was two orders of magnitude lower than the most common species of *Cercopithecus* in the area surveyed. Hart (pers. obs in Hart *et al.,* 2013) noted that *C. hamlyni* was particularly prevalent in monodominant *Gilbertiodendron* forests in the central Ituri forest, but no density estimates are available. Maiko National Park is listed alongside the Okapi Faunal Reserve and Kahuzi-Biega National Park by Hart *et al.* (2013) as an important protected area for the species.

No information regarding threats specifically faced by *C. hamlyni* in DRC could be located; however, given the country comprises the majority of the species range, the most important threats are assumed to be those described for the species at a global level. Surveys of the Kisangani market in eastern DRC by van Vliet *et al.* (2012) reported that the number of carcasses of small diurnal monkeys (*Cercopithecus* spp. and *Cercocebus* spp.) had increased four-fold over a six year period, from 2221 carcasses recorded over 124 survey days in 2002, to 8228 carcasses recorded over 131 survey days in 2008-2009. Olivier Basa *et al*. (2017) pooled data from surveys of the number of carcasses recorded at Kisangani conducted in 2009, 2014-2015, and 2014-2016. They found that, over the three data collecting periods, 10 438 *Cercopithecus* (unidentified sp. carcasses) were recorded, but only one carcass of *C. hamlyni* was recognised to species level. *Cercopithecus* was by far the most commonly encountered primate genus on the market.

C. hamlyni was listed as a totally protected species by Ministerial Decree No.20/CAB/MIN/ECN-EF/2006 (Government of the Democratic Republic of the Congo, 2006), although Olivier Basa *et al*. (2017) reported it to be only a partially protected species. Hunting and trade of protected species is prohibited by Articles 13 and 14 of Law 14/003 (Government of the Democratic Republic of the Congo, 2014). In protected areas, Law 14/003 also prohibits the introduction of firearms and other hunting instruments, the transport of living specimens, skins or other remains of wild fauna, and the destruction of flora and fauna (Government of the Democratic Republic of the Congo, 2014).

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PRIMATES: CERCOPITHECIDAE

Cercopithecus lhoesti II/B

SYNONYMS:	*Allochrocebus lhoesti*
COMMON NAMES:	L'Hoest's Monkey (EN), Cercopithèque de l'Hoest (FR)
RANGE STATES:	Democratic Republic of the Congo (DRC), Burundi, Rwanda, Uganda
UNDER REVIEW:	DRC
EU DECISIONS:	No current suspensions or opinions in place
IUCN:	Vulnerable

Taxonomic note

The current CITES Standard Reference (Wilson and Reeder, 2005) places *lhoesti* in the genus *Cercopithecus*; however, molecular work by Tosi *et al.* (2003) raised doubts about the validity of classifying L'Hoest's monkey in this genus. Tosi *et al.* (2004) suggested a number of options, including moving *Cercopithecus lhoesti* to the genus *Chlorocebus* or *Allochrocebus*. While the authors favoured the first option, Groves (2006) favoured the placement of *lhoesti* in *Allochrocebus*; this latter taxonomy is followed by multiple other authors (Hart *et al.*, 2008; Mittermeier *et al.*, 2013; Sarmiento, 2013).

In addition, *A. lhoesti*, *A. preussi* and *A. solatus* are variably considered to comprise the *Allochrocebus (preussi)* group (Grubb *et al.*, 2003) or the *Allochrocebus (lhoesti)* group (Gautier *et al.*, 2004). The status of each as a full species (and thus of *A. lhoesti* as a monotypic species) is considered by some authors (e.g. Sarmiento, 2013) to remain unresolved.

Trade patterns

C. lhoesti was listed in CITES Appendix II on 04/02/1977, as part of order listing for Primates and was listed in Annex B of the EU Wildlife Trade Regulations on 01/06/1997, also as part of the listing for the order Primates.

In 2018, DRC published a quota for 300 live wild-sourced individuals – the first quota it has published for this species; in 2014, 2016 and 2017, DRC published a zero quota for live wild-sourced individuals of the genus *Cercopithecus*. DRC has submitted all CITES annual reports for the years 2008-2018.

According to the CITES Trade Database, no exports of *C. lhoesti* from or originating in the DRC to the EU-28 or the rest of the world were reported 2008-2017. DRC had submitted an annual report for 2018 at the time of writing; no exports were reported to the EU-28 while exports to the rest of the world in 2018 comprised 12 live, wild-sourced animals for commercial purposes.

Conservation status

C. lhoesti is a medium-sized diurnal guenon, found in eastern DRC, southwest Uganda, western Rwanda, and northern Burundi (Wilson and Reeder, 2005; Mittermeier *et al.*, 2013; Sarmiento, 2013). It is an omnivourous semi-terrestrial species that can exploit terrestrial herbs, fruits, seeds, young leaves, flowers, berries, invertebrates, birds eggs, lichens, and sap (Mittermeier *et al.*, 2013). It is also an occasional crop raider (Mittermeier *et al.*, 2013), and has been observerd raiding bean, maize, rice, oil palm, cassava and banana plantations (Sarmiento, 2013). Groups of *C. lhoesti* commonly comprise one adult male, several adults females, and immature individuals (Sarmiento, 2013), usually totalling around 10-

17 animals (Mittermeier *et al.*, 2013). There are no estimates of gestation length in the wild, but it is though to be similar to that of other guenons at 140-187 days (Sarmiento, 2013). The interbirth interval is c. 2 years (Mittermeier *et al.*, 2013).

C. lhoesti's extent of occurrence has been estimated at c. 474 000 km^2 (Sarmiento, 2013). The species occurs in a variety of forest types including lowland, riparian, submontane, montane, and dry woodland forests (Mittermeier *et al.*, 2013), and is also found at a wide altitudinal range from 400-2700 m (Sarmiento, 2013). It is apparently tolerant of human disturbance, as evidenced by studies where *C. lhoesti* are more abundant along roads, in disturbed areas, and at forest edges rather than the forest interior (Kaplin, 2001; Mugerwa *et al.*, 2012). Recent density estimates of *C.lhoesti* are lacking, with some studies unable to calculate them because of too few sightings (Hall *et al.*, 2003). A census of the Ituri forest (DRC) in 1986 estimated a density of c. 0.4 individuals/km^2 (Thomas, 1991), whereas surveys of the species in Kibale National Park (Mitani *et al.*, 2001) and the Bwindi Impenetrable National Park (Butynski, 1984) (both in Uganda) estimated higher population densities of 4 individuals/km^2 and 10 individuals/km^2 respectively. No estimates for the species' population size could be located.

C. lhoesti was categorised as Vulnerable globally in a 2008 IUCN Assessment (the same assessment was re-published in 2016 to reflect the taxonomic move from *Cercopithecus* to *Allochrocebus*), with a decreasing population trend, on the basis that the species has undergone past declines and has continued to do so (Hart *et al.*, 2008). An assessment of threats faced by species in the Albertine Rift classified *C. lhoesti* as one of four threatened mammal species that was both important for use in the region and vulnerable to climate change (Carr *et al.*, 2013). Fa *et al.* (2014) gave the species a hunting sustainability score of 2/5 (where a score of five is given to species that can be most sustainably hunted, and a score of one is given to species that can be least sustainably hunted), based on an index that took into account the species' population density weighted by a combination of ecological traits such as habitat breadth, rarity and vulnerability. The entire range of the species has been noted to be in a region of intense human conflict (Hart *et al.*, 2008; Mittermeier *et al.*, 2013), which is thought to have exacerbated the threat of deforestation and hunting for its meat and fur (Hart *et al.*, 2008; Mittermeier *et al.*, 2013). The former was reported to be taking place along the eastern edge of the main block of the species' range, primarily as a result of agricultural expansion (Hart *et al.*, 2008).

In the face of ongoing political climates the assessment expected that declines would continue, resulting in an overall population reduction of >30 per cent over a 30 year period. However, no estimates of population trends based on empirical data for the species could be located. Sarmiento (2013) stated that, "given its habitat preferences, *A. lhoesti* [*C. lhoesti*] is not immediately threatened and may actually benefit from human disturbance to habitats"; however the author also noted that the species is less well able to exploit extensively human altered environments than savannah monkeys and *Papio* spp., noting that this posed a threat to the species' survival.

Democratic Republic of the Congo: *C. lhoesti* has been reported to occur in the east of the country, from the Lualaba River east to the Ituri forest, with additional populations south of the lower Lindi River (Mittermeier *et al.*, 2013). Important protected areas for the species include the Okapi Faunal Reserve (where the species was reported to be "locally common" (Hart *et al.*, 2008)), the Maiko and Kahuzi-Biega National Parks (Sarmiento, 2013), and the Tayna Gorilla Reserve (Mittermeier *et al.*, 2013). No DRC-specific population estimates or trends for the species could be identified.

C. lhoesti was reported to be particularly vulnerable to snare and shotgun hunting (Hart *et al.*, 2008). Surveys of the Kisangani market in eastern DRC by van Vliet *et al.* (2012) reported that the number of carcasses of small diurnal monkeys (*Cercopithecus* spp. and *Cercocebus* spp.) had increased four-fold, from 2221 in 2002 to 8228 in 2008-2009. Olivier Basa *et al*. (2017) pooled data from surveys of the number of carcasses recorded at Kisangani conducted in 2009, 2014-2015, and 2014-2016. They found that, over the three data collecting periods, 10 438 *Cercopithecus* (unidentified sp.) carcasses were recorded, as well as 68 carcasses of *C. lhoesti*. *Cercopithecus* was by far the most commonly encountered primate genus on the market (Olivier Basa *et al.*, 2017). A number of studies have previously raised questions about the sustainability of both subsistence and commercial hunting in the Okapi Wildlife Reserve (Stephenson and Newby, 1997; Wilkie *et al.*, 1998).

C. lhoesti was listed as a partially protected species by Ministerial Decree No.20/CAB/MIN/ECN-EF/2006 (Government of the Democratic Republic of the Congo, 2006). It is unclear what protection this affords it, however Articles 13 and 14 of Law 14/003 prohibit hunting and trade of any species considered to be threatened or likely to be threatened in the DRC. Within National Parks, Law 14/003 prohibits, *inter alia*, the introduction of firearms and other hunting instruments, the

transport of living specimens, skins or other remains of wild fauna, and the destruction of flora and fauna (Government of the Democratic Republic of the Congo, 2014).

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TESTUDINES: TRIONYCHIDAE

Cyclanorbis senegalensis II/B

COMMON NAMES:	Senegal Flapshell Turtle (EN)
RANGE STATES:	Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Côte d'Ivoire, Ethiopia, Gabon, Gambia, Ghana, Guinea Bissau, Mali, Nigeria, Senegal, Sudan, Togo
UNDER REVIEW:	Benin
EU DECISIONS:	No current suspensions or opinions in place
IUCN:	Vulnerable

Trade patterns

Cyclanorbis senegalensis was listed in CITES Appendix II on the 02/01/2017 and in Annex B of the European Union (EU) Wildlife Trade Regulations on the 04/02/2017. Trade data are only available for 2017, as this was the first year for which CITES Parties were required to report on trade in this species in their annual reports to CITES. Benin has not yet submitted a CITES annual report for 2017. In 2018, Benin published an export quota of 200 wild-taken individuals of *C. senegalensis*.

According to the CITES Trade Database, no direct trade in *C. senegalensis* from Benin to the EU-28 was reported in 2017. Direct trade from Benin to the rest of the world in 2017 was importer-reported only, and consisted of six live, source I ('seized/confiscated') individuals imported by the United States of America for commercial purposes. No indirect trade to the EU-28 in *C. senegalensis* originating in Benin was reported in 2017.

Conservation status

Cyclanorbis senegalensis is a medium-sized, freshwater softshell turtle distributed across sub-Saharan Africa from Senegal in the west to Sudan in the east (Fritz and Havaš, 2007; Luiselli *et al.*, 2012; van Dijk *et al.*, 2014; Diagne *et al.*, 2016) and recently discovered in western Ethiopia (Mazuch *et al.*, 2016). Diagne *et al.* (2016) described three large, disjunct populations of *C. senegalensis* – one in West Africa (from Senegal to western Nigeria), a second in Central Africa (from southern Chad to the Central African Republic), and a third in East Africa (Sudan and South Sudan, with an extension into western Ethiopia). Throughout its range, the species occurs in rivers, streams and lakes in gallery forest (Branch, 2008), as well as swamps, ponds and other stagnant water bodies (Bonin *et al.*, 2006) and rivers crossing relatively arid savannah (Akani *et al.*, 2018). *C. senegalensis* was described as having a "wide tolerance in terms of macrohabitat usage" (Akani *et al.*, 2018).

C. senegalensis is omnivorous, feeding on a varied diet of aquatic animals, fallen fruit, animal carcasses and other organic detritus (Bonin *et al.*, 2006; Branch, 2008). The species is reportedly elusive, rarely basking (Branch, 2008). *C. senegalensis* nests several hundred metres from the water (Bonin *et al.*, 2006). The species grows to an average carapace length of approximately 23 cm (Akani *et al.*, 2018) and up to a maximum of 60 cm (Alderton, 1988; Bonin *et al.*, 2006). Females are known to grow larger than males (Branch, 2008). Several clutches of eggs may be laid within a season (March-April), with approximately 12 eggs per clutch (Branch, 2008). Species-specific information on longevity and age at maturity are lacking for *C. senegalensis* (Diagne *et al.*, 2016). However, "most softshell turtles" are known to reach maturity at 10-15 years of age, with a longevity of around 60 years (CITES, 2016; IUCN/TRAFFIC, 2016). Diagne *et al.* (2016) estimated a generation time of 15 years for the species.

C. senegalensis is categorised as Vulnerable in the IUCN Red List as, whilst it is widespread, it is "perceived to be declining across much of its range, especially in West Africa", with population reduction likely exceeding 30 per cent over the past

two generations (Diagne *et al.*, 2016). *C. senegalensis* was previously listed as Near Threatened (1996). The authors further noted that the species was suspected to have been extirpated from "many localities" within its global range (Diagne *et al.* 2016). However, IUCN/TRAFFIC (2016) noted no indication of a major species-wide decline.

The species was reported to be common in southern Senegal and throughout its West Africa range (Bonin *et al.*, 2006). However, Gramentz (2008 in: Diagne *et al.* 2016) cautioned that observations of apparently abundant populations could be based on occasional aggregations of individuals from wider areas at seasonal ponds. Few population studies have been conducted for African softshell turtles, including *C. senegalensis*, and scarce information on trade volumes or market availability for these species makes inferring population size difficult (CoP17 Prop. 36). Furthermore, softshell turtles rarely bask, making them difficult to detect in the wild (CITES, 2016). A recent study by Akani *et al.* (2018) recorded 196 *C. senegalensis* individuals from ten localities in West and Central Africa where the species was known to be present. The authors noted that the species was generally common in most of the surveyed localities; they suggested that the latter observation was a result of the species' preference for savannah watercourses where both human population density and economic development were comparatively lower than elsewhere in West Africa (Akani *et al.*, 2018).

C. senegalensis was reported to face multiple threats throughout its range, including local harvest, habitat alteration and some international pet trade (CITES, 2016; Diagne *et al.*, 2016). In many parts of its range, the species is caught for subsistence consumption (Bonin *et al.*, 2006; Branch, 2008) and domestic trade at food markets (Gramentz, 2008 in: Diagne *et al.*, 2016). It was also reported to be traded at fetish markets (Segniagbeto *et al.*, 2013). In the proposal to list the species in CITES Appendix II (CoP17 Prop. 36), it was noted that international trade in softshell turtles, particularly for consumption as food and traditional medicine in east Asian markets, is typically non-species specific and has historically followed a "boom and bust" pattern whereby trade shifts from one species to another as species become depleted and/or subject to higher levels of protection. Softshell turtles (family Trionychidae) are considered particularly vulnerable to overexploitation due to certain life history characteristics (such as late maturity, adult longevity and limited annual reproductive output), which rely on producing a relatively modest number of eggs per year over a long lifespan (CITES, 2016). Certain life-history traits of *C. senegalensis*, namely late maturity and limited reproductive output, decrease the species' ability to recover from exploitation; the larger body size of females may also elicit differential harvest of reproductive females (CITES, 2016). In a study modelling the conservation threats facing freshwater turtles, Luiselli (2009) also considered *C. senegalensis* to be "vulnerable to decline" based on six variables including habitat type, habitat status and larger body size, conferring a greater risk of targeted consumption by humans.

C. senegalensis may be at particular risk from habitat alteration due to climate change, through aridification of wetlands and shifting agricultural and land use patterns and water usage (Diagne *et al.* 2016). Disturbance of riverine habitat from sand mining, gold mining and river dams was also reported to threaten riverine species of the family Trionychidae, due to inundation of nest sites and changes to water flow (CITES, 2016). Softshell turtles are not known to be bred in captivity in Africa (CITES, 2016), thus all trade is assumed to be in wild-sourced specimens. The species was reported to be "well-represented" in protected areas across its global range (Diagne *et al.*, 2016).

Benin: Within Benin, *C. senegalensis* has been reported to occur in the Pendjari National Park [north western Benin] (Diagne *et al.*, 2016; Moritz and Laléyé, 2016; Akani *et al.*, 2018) and in the localities of Bello Tonga, Chutes de Koudou and Keremou [northern Benin] (Akani *et al.*, 2018). Several distribution maps indicate the occurrence of *C. senegalensis* throughout Benin, but provide no further information on distribution within the country (Bonin *et al.*, 2006; Branch, 2008; van Dijk *et al.*, 2014; Diagne *et al.*, 2016).

At the time of writing, no quantitative information on the species' population size and status within Benin could be found. However, Akani *et al.* (2018) reported *C. senegalensis* as "common" (in this case, "common" was defined as a qualitative assessment based on the authors observing "several individuals" at study sites in addition to local fishermen and/or field guides reporting that the species was locally abundant) in Bello Tonga, Chutes de Koudou and Keremou. Additionally, Chirio (2009) noted that the species was common in the Niger and Mekrou Rivers and in the Benin-Burkina Faso-Niger transboundary W National Park [northern Benin]. Rödel and Grabow (1995 in: Diagne *et al.*, 2016) reported that *C. senegalensis* had been "regularly observed" in Pendjari National Park, but added that "it is rare".

No information on country-specific threats could be found for *C. senegalensis* in Benin. However, the West African sub-region comprising Benin, Togo and Ghana was noted to be the second most-prolific region in the world (after Central and South America) for the export of reptiles into international trade (Harwood, 2003).

C. senegalensis was not included in the 2011 National Red List of Benin (Neuenschwander *et al.*, 2011), and does not appear to be protected at the national level. Annex III of Benin Law No. 87-014 lists all Chelonian species as non-protected small game species (Government of Benin, 1987). The species is known to occur in Pendjari National Park within the W National Park complex (Diagne *et al.*, 2016). Pendjari National Park is one of four Ramsar wetland sites in the country (Ramsar Sites Information Service, 2018). In 2006, Moritz and Laléyé (2016) conducted interviews with more than 80 fishermen from six villages on the Benin side of the Pendjari River, and reported regular violation of fishing regulations including use of seine nets, fishing within protected zones, pollution around fishing camps, and eating rather than releasing bycatch species including *C. senegalensis*. Fishing in the Pendjari National Park is restricted by law to the December-May hunting season (Moritz and Laléyé, 2016).

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Appendix

Table 1: Purpose of trade

Code	Description
B	Breeding in captivity or artificial propagation
E	Educational
G	Botanical garden
H	Hunting trophies
L	Law enforcement / judicial / forensic
M	Medical (including bio-medical research)
N	Reintroduction or introduction into the wild
P	Personal
Q	Circus and travelling exhibitions
S	Scientific
T	Commercial
Z	Zoos

Table 2: Source of specimens

Code	Description
W	Specimens taken from the wild
R	Specimens originating from a ranching operation
D	Annex A animals bred in captivity for commercial purposes and Annex A plants artificially propagated for commercial purposes in accordance with Chapter XIII of Regulation (EC) No 865/2006, as well as parts and derivatives thereof
A	Annex A plants artificially propagated for non-commercial purposes and Annexes B and C plants artificially propagated in accordance with Chapter XIII of Regulation (EC) No 865/2006, as well as parts and derivatives thereof
C	Annex A animals bred in captivity for non-commercial purposes and Annexes B and C animals bred in captivity in accordance with Chapter XIII of Regulation (EC) No 865/2006, as well as parts and derivatives thereof
F	Animals born in captivity, but for which the criteria of Chapter XIII of Regulation (EC) No 865/2006 are not met, as well as parts and derivatives thereof
I	Confiscated or seized specimens (to be used only in conjunction with another source code)
O	Pre-Convention (to be used only in conjunction with another source code)
U	Source unknown (must be justified)
X	Specimens taken in “the marine environment not under the jurisdiction of any State”