

## VKM assessment:

# Non-detriment finding for leopard (*Panthera pardus*)

Authors:

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Species:

Scientific name: *Panthera pardus* Linnaeus 1758

Common name: Leopard

Norwegian name: Leopard

Type of permit:

CITES Appendix I import

Country of Export:

Namibia

Purpose and source:

One personal sport-hunted trophy (skull and full mount) taken from the wild, with source code W (specimen taken from the wild) and purpose code H (hunting trophy)

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## Conclusion

VKM adopted the **definition of detriment** suggested by the U.S. Fish and Wildlife Service Division of Scientific Authority

(<https://www.fws.gov/international/pdf/archive/workshop-american-ginseng-cites-non-detriment-findings.pdf>):

1. Harvest is not sustainable
2. Harm to the status of the species in the wild
3. Removal from the wild that results in habitat loss or destruction, or interference with recovery efforts for a species.

In the case of the leopard, VKM concludes that the requested import of one wild-caught hunting trophy from Namibia **is unlikely to be detrimental** to the survival of the species in the wild.

The number of trophies hunted in Namibia has been on a steady increase since 2010 (although within the annual quota of 250 individuals), yet, the number of leopards in Namibia have been reported to increase (Pers. Comm. Laurie Marker, Cat Specialist Group/Director Cheetah Conservation fund, 25.1.19).

The Namibian quota was recently reviewed by the Animal Committee, which recommended that the current annual quota is non-detrimental to the survival of the species.

Namibia imposed a trophy-hunting moratorium in 2009 and reviewed its hunting practices before opening for hunting again in 2010, with stricter regulations in place (see section 5 of this document), including minimum skull size measure and that the leopard should be a male > 7 years old (AC30 Doc.15 A2).

It is however important to note that population estimates are highly uncertain, the species seems to be on decline range-wide and is subject to an array of threats including loss of habitat and prey as well as illegal offtake (Stein et al., 2016), and hunting practices should be reviewed on a regular basis to ensure that it is sustainable.

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## 1. Biological information

### ***Distribution***

The leopard (*Panthera pardus*) has one of the largest geographical ranges of any terrestrial mammal in the world and ranges from southern Africa, through the Middle East, to eastern Asia from South Africa to eastern China and the Russian Federation (Stein et al., 2016). The African leopard (*P.p.pardus*) is one of about nine subspecies and occurs primarily in the sub-Saharan regions (Jacobsen et al., 2016). About 13% of the leopards' potential range is estimated to fall within protected areas (Marker and Dickman, 2005 and references herein).

National distribution in Namibia: Leopards inhabit the majority of the country with the exception of the highly populated northern region, the arid southeast farmlands and the desert coast (Export quota review for Namibia, AC30 Doc.15 A2).

### ***Life history***

The leopard – all subspecies considered - occurs in highly diverse habitats, from the desert and semi-desert of Namibia and Botswana, arid regions of Egypt and the Arabian Peninsula, to rugged montane regions of southwest Asia and in the savannah grasslands of East and Southern Africa (Stein et al., 2016). The species is also found in mountain regions up to an altitude of 5,200 m (in the Himalayas) and in rainforest (Stein et al., 2016).

Leopard diet is dependent on prey availability as well as the presence of larger competitors such as lions (*Panthera leo*) (Stein et al., 2016). Leopards feed primarily on medium-sized predators (Family Cervidae) (Hanssen et al., 2017), but they also feed on insects, reptiles, birds, and small mammals as well as larger ungulates (Stein et al., 2016). Although considered a generalist species, individuals will often become specialized on one particular type of prey, with occasional supplement of other food items (Stein et al., 2016). Domestic animals are an important part of leopard diet in some areas, with dogs having been reported as an important food item (Stein et al., 2016 and references herein).

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Leopards are solitary, nocturnal and territorial, with home ranges between 13-35 km<sup>2</sup> (Hunt, 2011). Leopard home range varies depending on prey availability and habitat structure, with the largest home ranges recorded within the arid and semi-arid areas with low density of prey and the smallest home ranges in the rain forest (Stein et al. 2016 and references herein).

Females mate for the first time at around 3 years of age, giving birth to 1-3 cubs (Balme et al. 2013). Cub survival is generally fairly low (e.g. 37 % in Balme et al., 2013, 53 % in Owen et al., 2010), and is affected by maternal age and vulnerability to infanticide (Balme et al., 2013).

### ***Role in the ecosystem***

The leopard is a keystone predator. In Namibia, the majority of large predators, such as lions and spotted hyenas (*Crocuta crocuta*), have been extirpated from the farmlands to reduce livestock predation, thus leaving leopards and cheetahs (*Acinonyx jubatus*) as the top predators of these ecosystems (Marker and Dickman, 2005).

## **2. Population trend**

Global population status: Decreasing (Stein et al., 2016)

Namibia: The Namibian leopard population is considered stable or increasing (AC 30 Doc. 15 A2; Pers. Comm. Laurie Marker 25.1.19). A fairly recent National leopard survey estimated the Namibian population to be 14,154 individuals (95% CI=13,356 – 22,706) (Stein et al. 2011 in AC30 Doc.15 A2). This estimate is larger than the previous estimate from 2003 (AC 30 Doc. 15 A2).

It is, however, important to note that the elusive nature of leopards combined with wide-ranging biology makes estimates for national, regional or range-wide population sizes unrealistic and with such wide confidence intervals that they are meaningless from a management perspective (AC30 Doc.10.2, Annex 1). In order to inform management decisions (also in regard to trophy hunting) it is recommended that range states develop reliable estimates of population trends, rather than using population size estimates (AC 30 Doc. 10.2. Rev. 1).

## Conservation status

Global IUCN Red List: Vulnerable (Stein et al. 2016).

Criteria A2cd for vulnerable, based on loss of habitat and prey, and exploitation. These conservation threats are not well understood, have not ceased and are likely to continue (Stein et al., 2016)

Comparison of the extent of range presented in the previous red list assessment (Near Threatened, Henschel et al., 2008) with that of the most recent assessment (Stein et al., 2016) indicates a range reduction of 61%. Moreover, Southern Africa has been considered as the stronghold of the leopard, but there is no evidence to suggest that the population has remained stable, with an estimated regional range loss of approximately 21 % (Stein et al., 2016).

## 3. Threats

Anthropogenic actions cause the primary threats to leopards. Habitat fragmentation, reduced prey base, conflict with livestock and game farming has reduced leopard populations throughout most of their range (Stein et al. 2016 and references herein).

### Range-wide:

- Habitat loss and fragmentation: the conversion of forest and savannah habitats to agriculture and livestock farming have significantly reduced leopard range (Stein et al., 2016). Generally, such conversion of habitat also leads to a reduction in prey species (Stein et al., 2016).
- Conflict with farmers: leopards may prey on commercially valuable species, causing conflict with local farmers and game-owners (Stein et al., 2016).
- Poorly managed trophy hunting: leopards are targets for trophy hunting and if poorly managed, this activity can be detrimental to the population, particularly when permits are issued in one geographic area and targeted individuals are in their prime reproductive age (Balme et al., 2010).

### Namibia:

- Human-leopard conflict is a significant issue in Namibia. Landowners and community members in remote regions kill leopards in retaliation for, or to

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prevent, livestock or game predation (<http://panthera.org/leopards-conservation>)

#### **4. Conservation and Management measures:**

##### ***International legislation***

The leopard is listed on:

- CITES Appendix I since 1975
- EU Wildlife Trade Regulations Annex A since 1997
- Convention on the Conservation of Migratory Species of Wild Animals (CMS ) Appendix II

##### ***National legislation***

In Namibia, the leopard is listed as Protected Game under national legislation (Nature Conservation Ordinance of 1975, Controlled Wildlife Products and Trade Acts, 2008). As such, it is illegal to hunt a leopard without a permit, however, owner or occupiers of land may kill leopards in defence of human or livestock life. In such incidences, there is a 10-day deadline for reporting to the Ministry of Environment and Tourism (AC30 Doc. 15 A2).

##### ***Conservation measures***

CMS-CITES African Carnivores Initiative: The leopard is part of a joint initiative by CMS and CITES. CMS-CITES African Carnivores Initiative (CMS 2017 a,b). The conservation threats to be addressed include habitat loss and fragmentation, conflict with humans, depletion of the prey base and unsustainable trade practices.

Project pardus: Conservation program spanning all leopard range, with specific measures being initiated for the various range states. In Namibia, where human-leopard conflict is a significant issue, project pardus works to mitigate tension between people and leopards (<https://www.panthera.org/leopards-conservation-country>)

Namibia is in the process of developing a leopard conservation management plan, which will be completed in 2019 (AC30 Doc.15 A2).

## 5. Trade/use

### ***Legal***

Although leopards are listed on Appendix I of CITES, 12 African countries are permitted to export a quota of leopard skins each year, as long as these skins are not used for commercial purposes. Most of the skins are procured through trophy hunting, with a combined annual quota for all countries of 2648 leopard skins (AC30 inf. 23).

The quotas were set at a time where the leopard was deemed low conservation priority (leopard was listed as Least Concern by the IUCN in 1996). Population estimates used to determine the existing quotas were mainly derived from a modelling exercise that correlated leopard numbers with rainfall (Martin and de Meulenaer, 1988). This model was widely criticised for omitting critical factors such as anthropogenic mortality and prey availability, and for relying upon questionable assumptions; e.g., that leopards occur at maximum densities in all available habitat (AC30 Inf. 23). Despite the above-mentioned factors, export quotas have not been reviewed or revised (unless to introduce new quotas or increase existing quotas) for almost 20 years (AC30 Inf. 23). At Cop17, Parties were therefore asked to consider whether these quotas were still set at levels which are non-detrimental to the species and to submit these reports to the 30<sup>th</sup> meeting of the Animals Committee (Geneva, 2018) (AC30 Inf. 23).

Leopard range states submitted status updates on national management and conservation efforts. The information provided by range states was reviewed by a working group, which then concluded on further actions. The working group recommendation for Namibia was as follows:

*"The Working Group recommends to the Animals Committee to inform the Standing Committee that it considers that the quotas for Leopards for Namibia, as mentioned in Resolution Conf. 10.14 (Rev. CoP16) are set at levels which are non-detrimental to the survival of the species in the wild."*

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The Animals Committee adopted this recommendation (AC30 Sum. 3), and it was further noted by the Standing Committee (SC70 Sum. 10 Rev.1).

A quota of 250 individuals is allocated annually in Namibia. Namibian leopard hunting quotas are allocated based on the size of the land (25,00 hm minimum) and any other relevant information available (including population size estimates, hunting success rate, density, habitat and incidences of human wildlife conflict). In the absence of such information, trophy quality and trends are used as a guide to population status (high quality trophies such as prime age males are considered to indicate a healthy population) (AC30 Doc.15 A2).

Leopard hunting permits must be obtained before the hunt commences and a copy of the permit must be in physical possession of the hunting guide while the leopard is being hunted. The hunting guide must inform the Ministry of Environment and Tourism seven days before the hunt commences. Permits are only valid for a specific time frame and within a specific area. The results of the hunt need to be reported to the staff member responsible for the hunting permit within 72 hours of the hunt. Furthermore, the hunting guide must submit the prescribed leopard hunting record sheet to the Ministry of Environment and Tourism (AC30 Doc.15 A2)

Skins and skull of hunted leopards must be brought to the Ministry of Environment and Tourism for inspection and tagging, which is compulsory for the issuance of a CITES export permit (AC30 Doc.15 A2)

Skull must measure 32 cm minimum and the leopard should be a male > 7 years old (AC30 Doc.15 A2). While there are discussions concerning the reliability of age-determination of leopards in the field, the minimum age threshold is currently considered among the few sound biological safeguards (in the absence of robust population data) that can be put in place to reduce the detrimental impacts of hunting leopards (AC30 Doc.10.2).

On average, 142 leopards were hunted annually in Namibia between 2004 and 2017, thus representing 56% of the annual quota (AC30 Doc.15 A2; trade.cites.org). Between 2004 and 2008, the quota of 250 individuals was filled due to very relaxed rules in regard to hunting. Therefore, the Namibian government imposed a trophy-hunting moratorium in 2009, and leopard hunting regulations were reviewed and revised. After 2010, the number of leopards hunted remained low, but has been on a steady increase towards 2017 (AC30 Doc.15 A2)

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## ***Illegal***

Leopards are illegally targeted for wildlife trade for their skins (which are used in traditional ceremonies), as well as bones and other parts (used for medicinal purposes in eastern cultures) (Stein et al. 2016).

## **References**

AC30 Doc.15 A2: Export quota review for Namibia

<https://cites.org/sites/default/files/eng/com/ac/30/E-AC30-15-A2.pdf>

AC30 Doc.10.2: Results of the international expert workshop on non-detriment findings for hunting trophies for certain hunting trophies included in CITES appendices I and II (Seville, April 26-29, 2018).

AC30 Inf. 23: A scientific overview of the conservation status of African leopards (*Panthera pardus pardus*), with a specific focus on trophy hunting. Report prepared by the secretariat

Balme, G.A., Hunter, L.T.B., Goodman, P., Ferguson, H., Craigie, J., Slotow, R. (2010). An adaptive management approach to trophy hunting of leopards: a case study from KwaZulu-Natal, South Africa. In Biology and conservation of wild felids: 341–352. Macdonald, D.W. & Loveridge, A. J. (Eds). Oxford: Oxford University Press

Balme, G. A., Batchelor, A., Woronin Britz, N., Seymour, G. , Grover, M. , Hes, L. , Macdonald, D. W., Hunter, L. T. (2013), Female leopard reproduction. Mammal Review, 43: 221-237. doi:[10.1111/j.1365-2907.2012.00219.x](https://doi.org/10.1111/j.1365-2907.2012.00219.x)

CMS (Convention on Migratory Species 2017a. Joint CMS\_CITES African Carnivore Initiative. UNEP/CMS/COP12/Doc.24.31.1:

[https://www.cms.int/sites/default/files/document/cms\\_cop12\\_doc.24.3.1.1\\_african-carnivores-initiative\\_e.pdf](https://www.cms.int/sites/default/files/document/cms_cop12_doc.24.3.1.1_african-carnivores-initiative_e.pdf)

CMS 2017b: Decisions of the Conference of the Parties to CMS in Effect After its 12<sup>th</sup> Meeting.

[http://www.cms.int/sites/default/files/documents/cms\\_cop12\\_decisions\\_e\\_0.pdf](http://www.cms.int/sites/default/files/documents/cms_cop12_decisions_e_0.pdf)

Hanssen, L., Funston, P., Alfred, B., Alfred, S (2017). Large Carnivore Survey, Bwabwata National Park, Namibia, August 2017. Kwando Carnivore Project,

Kyaramacan Trust Panthera, and the Namibian Ministry of Environment and Tourism.  
[http://www.theeis.com/data/literature/Report\\_Bwabwata%20Large%20Carnivore%20Survey\\_2017.pdf](http://www.theeis.com/data/literature/Report_Bwabwata%20Large%20Carnivore%20Survey_2017.pdf)

Henschel, P., Hunter, L., Breitenmoser, U., Purchase, N., Packer, C., Khorozyan, I., Bauer, H., Marker, L., Sogbohossou, E., Breitenmoser-Wursten, C. 2008. *Panthera pardus*. The IUCN Red List of Threatened Species 2008: e.T15954A5329380. doi: /10.2305/IUCN.UK.2008.RLTS.T15954A5329380.en.

Hunt, A. 2011. "Panthera pardus" (On-line), Animal Diversity Web. Accessed January 21, 2019 at [https://animaldiversity.org/accounts/Panthera\\_pardus/](https://animaldiversity.org/accounts/Panthera_pardus/)

Jacobsen, A. P et al. (2016) Leopard (*Panthera pardus*) status, distribution, and the research efforts across its range. PeerJ, 4, e1974. Available at:  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4861552/>

Marker, L.L., Dickman, A.J. (2005) Factores affecting leopard (*Panthera pardus*) spatial ecology, with particular reference to Namibian farmlands. South African Journal of Wildlife Research 35: 105-115.

Marker, L.L. 25.1.19 Personal communication by email.

Martin, R. B ., de Meulenaer, T. (1988). Survey of the status of the leopard (*Panthera pardus*) in sub-Saharan Africa. Lausanne: CITES Secretariat.

Owen, C., Niemann, S., Slotow, R. (2010) Copulatory parameters and reproductive success of wild leopards in South Africa. Journal of Mammalogy 91: 1178–1187.

SC70 Sum. 10 (Rev. 1):  
<https://cites.org/sites/default/files/eng/com/sc/70/exsum/E-SC70-Sum-10-R1.pdf>

Stein, A.B., Athreya, V., Gerngross, P., Balme, G., Henschel, P., Karanth, U., Miquelle, D., Rostro-Garcia, S., Kamler, J.F., Laguardia, A., Khorozyan, I., Ghoddousi, A. 2016. *Panthera pardus* (errata version published in 2016). The IUCN Red List of Threatened Species 2016:  
e.T15954A102421779. <http://dx.doi.org/10.2305/IUCN.UK.2016-1.RLTS.T15954A50659089.en>.

<https://trade.cites.org>



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