CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES
OF WILD FAUNA AND FLORA

Thirtieth meeting of the Animals Committee
Geneva (Switzerland), 16-21 July 2018

QUOTAS FOR LEOPARD HUNTING TROPHIES

1. This document has been submitted by the Secretariat at the request of Humane Society International in relation to agenda item 15.[1]

2. At its 17th meeting (Johannesburg, 2016), the Conference of the Parties adopted four interrelated decisions on *Quotas for leopard hunting trophies,* including:

Directed to the Animals Committee

17.115 The Animals Committee shall consider the information submitted by the relevant range States under Decision 17.114 and any other relevant information, and, if necessary, make any recommendations to the range States and to the Standing Committee relating to the review. [emphasis added]

3. Attached is a document containing information relevant to quotas for leopard hunting trophies for consideration by the Animals Committee under Decision 17.114.

Recommendation

4. The Animals Committee is invited to consider the information in the attached document.

[1] *The geographical designations employed in this document do not imply the expression of any opinion whatsoever on the part of the CITES Secretariat (or the United Nations Environment Programme) concerning the legal status of any country, territory, or area, or concerning the delimitation of its frontiers or boundaries. The responsibility for the contents of the document rests exclusively with its author.*

QUOTAS FOR LEOPARD HUNTING TROPHIES (Decision 17.115)

May 17, 2018

At its 17th meeting (Johannesburg, 2016), the Conference of the Parties adopted Decision 17.114 directed to Parties with quotas established under Resolution Conf. 10.14 (Rev. CoP16): *Parties, which have quotas, established under Resolution Conf. 10.14 (Rev. CoP16) on* Quotas for leopard hunting trophies and skins for personal use *are requested to review these quotas, and consider whether these quotas are still set at levels which are non-detrimental to the survival of the species in the wild, and to share the outcomes of the review and the basis for the determination that the quota is not detrimental, with the Animals Committee at its 30th meeting.*

The Conference of the Parties also adopted Decision 17.115: *The Animals Committee shall consider the information submitted by the relevant range States under Decision 17.114 and any other relevant information, and, if necessary, make any recommendations to the range States and to the Standing Committee relating to the review* (emphasis added).

At the 29th meeting of the CITES Animals Committee, the Secretariat reported in AC29 Doc. 16 that it had not received any information related to Decision 17.114.

In this document, we provide information relevant to the leopard hunting quotas established in Resolution Conf. 10.14 (Rev. CoP16), and in response to Decision 17.115.

Leopard Population Status

The IUCN Red List status of the leopard demonstrates the precipitous deterioration of the status of the leopard over the past 15 years: in 2002, the species was considered Least Concern; in 2008, Near Threatened; and in 2016, Vulnerable (Stein et al. 2016). The most recent IUCN Red List assessment lists persecution, habitat fragmentation, an increase in illegal wildlife trade, excessive take for ceremonial use of skins, prey base declines, and poorly managed trophy hunting as major threats to the survival of the species (Stein et al. 2016). Regarding African leopard populations specifically, the subpopulation of North Africa potentially qualifies as Critically Endangered due to very small and declining number of mature individuals; since the previous IUCN assessment in 2008, leopards likely have become extinct in Morocco and Algeria (Stein et al. 2016). In sub-Saharan Africa, the leopard population has declined by >30% in the past three generations (Stein et al. 2016); this decline was caused by a 21% loss of leopard habitat in sub-Saharan Africa over the past 25 years, and 59% decline in prey loss in protected areas. At the regional level within sub-Saharan Africa, Stein et al. (2016) infer a >50% loss of leopard populations in East and West Africa, due to leopard prey reduction by 52% and 85% in those regions, respectively. In southern Africa, populations in Angola, Zambia, Mozambique, Zimbabwe and South Africa appear to be decreasing (Stein et al. 2016). In addition to habitat loss and loss of prey base, Stein et al. (2016) recognize two other major threats to leopards in sub-Saharan Africa: conflict with farmers over actual or potential killing of

domesticated livestock or farmed wild animals (game farming or game ranching); and poorly managed trophy hunting, especially when it is concentrated geographically and when it targets individuals in their prime, who are territorial and reproductively active.

Regarding the total population size for the African leopard subspecies across its range, according to the 2008 IUCN assessment (Henschel et al.), "there are no reliable continent-wide estimates of population size in Africa, and the most commonly cited estimate of over 700,000 leopards in Africa (Martin and de Meulenaer 1988) *is flawed*" (emphasis added). The most recent publication on leopard status and distribution (Jacobson et al. 2016) stated, "Earlier Africa-wide assessments of population size (Myers, 1976; Eaton, 1977; Martin & De Meulenaer, 1988; Shoemaker, 1993) employed questionable population models based on scant field data and were widely criticized as being unrealistic (Hamilton, 1981; Jackson, 1989; Norton,1990; Bailey, 1993)" (p. 2).

Leopard Habitat

African populations of the leopard have experienced significant and ongoing loss of habitat. The most recently published scientific assessment of the status and distribution of the species (Jacobson et al. 2016) found that *P. pardus pardus*, the African leopard, has lost 48-67% of its historical range. In North Africa, *P. pardus pardus* has lost 93.9-99% of its historic range; in West Africa, the range loss is 86-95%; in Central Africa, the range loss is 45-66%; in East Africa, the range loss is 40-60%; and in Southern Africa, the range loss is 28-51% (Jacobson et al. 2016). Jacobson et al. (2016) state, "even for this relatively widespread subspecies, there is still substantial cause for concern across large portions of its range." The subspecies existed historically in 47 range States, but exists in only 38 today, and thus has been extirpated from nine countries: Mauritania, Togo, and Tunisia; Gambia, Lesotho, and Morocco (possibly extinct); and Algeria, Burundi, and Mali (possibly present) (Jacobson et al. 2016).

The most recent IUCN assessment of the leopard (Stein et al. 2016) agrees largely with the findings of Jacobson et al. (2016) with regard to range loss over the past three leopard generations (22.3 years); they estimated a 61% range loss for the species across its range (from 21,953,435 km^2 in the 2008 IUCN assessment to 8,515,935 km^2 in the 2016 assessment); a 21% range loss in sub-Saharan Africa; a 97% range loss in North Africa; a "dramatically reduced" range in West Africa; "substantial range declines" in West, Central, and East Africa; and a 21% range loss in southern Africa. Stein et al. (2016) attributes the range declines in West, Central, and East Africa to habitat loss and fragmentation which threaten the survival of leopards because they "require large, contiguous habitats with low human impacts to reproduce successfully" (Stein et al. 2016). Other factors contributing to range loss in Africa are prey reductions due to the illegal and unsustainable bushmeat trade, illegal harvest of skins, and humanleopard conflict and retaliation for livestock depredation.

International Trade in Leopard Specimens

According to information contained in the CITES Trade Database, between 2005 and 2014, 35,421 leopard specimens (leopards, dead or alive, and their parts and derivatives, the equivalent of at least 12,791 leopards), were traded internationally. Of these 12,791 leopards traded internationally, 10,191 of these specimens were hunting trophies.

Poorly managed trophy hunting is considered a major threat to the survival of leopards in sub-Saharan Africa, especially when it is geographically concentrated and targets individuals in their prime, who are territorial and reproductively active (Stein et al. 2016). Recent studies have demonstrated that trophy

hunting caused leopard population declines in South Africa (Balme et al. 2009, Pitman et al. 2015), Mozambique (Jorge 2012), Tanzania (Packer et al. 2009, 2011), and Zambia (Packer et al. 2009). Concern about unsustainable leopard trophy hunting has resulted in South Africa banning the export of leopard trophies in 2016; Botswana banning all trophy hunting, including of leopard, beginning in 2014; and Zambia banning leopard hunting in 2013 (Stein et al. 2016).

Currently, CITES has established export quotas for twelve African countries for leopard skins traded for personal and hunting trophy purposes, totalling 2,648 leopard skins per year (CITES Resolution Conf. 10.14 (Rev. CoP16)) (see **Table 1**). CITES export quotas have grown substantially over time. The total number of leopards that can be exported annually rose five-fold from 460 in 1983 to 2,648 in 2016; and the number of countries with export quotas rose from seven in 1983 to twelve in 2016.

Table 1: CITES African leopard export quotas 1983-2016.

Countries	**Quota 1983**	**Quota 1985**	**Quota 1987**	**Quota 1989**	**Quota 1992**	**Quota 1994 - 2001**	**Quota 2002**	**Quota 2004**	**Quota 2007 - 2016**
Botswana	80	80	80	100	100	130	130	130	130
Central African Republic	0	0	40	40	40	40	40	40	40
Ethiopia	0	0	500	500	500	500	500	500	500
Kenya	80	80	80	80	80	80	80	80	80
Malawi	20	20	20	20	50	50	50	50	50
Mozambique	60	60	60	60	60	60	60	60	120
Namibia	0	0	0	0	100	100	100	250	250
South Africa	0	0	0	50	75	75	75	150	150
Uganda	0	0	0	0	0	0	0	0	28
United Republic of Tanzania	60	250	250	250	250	250	500	500	500
Zambia	80	300	300	300	300	300	300	300	300
Zimbabwe	80	350	500	500	500	500	500	500	500
Total	**460**	**1140**	**1830**	**1900**	**2055**	**2085**	**2335**	**2560**	**2648**

However, these quotas have no scientific basis and are not routinely reviewed to ensure that are not detrimental to the survival of the species. Indeed, the basis for the original and subsequent CITES export quotas for leopards is a model by Martin and de Meulenaer (1988) that has been dismissed by modern leopard scientists – as discussed further below – as over-simplified since it was based on a correlation between rainfall and leopard numbers in savannah habitats of East Africa and used to predict leopard numbers across their entire sub-Saharan Africa range (Braczkowski et al. 2015). Martin and de Meulenar's model was reviewed by specialists from the IUCN SSC Cat Specialist Group and was rejected because the methodology used was highly flawed resulting in exaggerated and inaccurate population figures (Jackson et al. 1989, Balme et al. 2010, Grey 2011). Yet, the model remains as the sole basis for the existing CITES leopard export quotas.

Botswana:

Botswana was one of the first countries to receive a CITES-approved leopard export quota in 1983, of 80 animals;[2] the working documents discussed at the 1983 meeting are not readily available, so it is not possible to evaluate the information used by the Parties when approving this quota. The quota was increased in 1987 to 100,[3] and then increased again in 1994 (effective in 1995) to 130.[4] Demonstrating the lack of an effective system to evaluate proposals to increase CITES leopard export quotas, the two most recent increases occurred without Botswana providing a supporting statement; there was no written proposal submitted for consideration by the Parties; Botswana simply requested the increases and the CITES Parties granted the request. Botswana then banned all trophy hunting, including of leopard, beginning in 2014 (Stein et al. 2016) due to declining wildlife populations, according to the Ministry of Wildlife, Environment and Tourism.[4] It is worth noting that 1987 is when the draft report of Martin and de Meulenaer (1987) was also presented to the Parties and this report was apparently used to establish or increase a number of CITES leopard quotas, including that of Botswana, where the authors estimated the population to be 7,729. (*Id.* at 647). However, in 1992, Botswana (and Malawi, Namibia, Zambia and Zimbabwe) proposed to transfer its population to CITES Appendix II with an export quota of 100; this proposal, which was not approved, estimated Botswana's leopard population to be 5,822 animals.

Central African Republic:

Central African Republic received a CITES leopard export quota in 1987, for 40 animals,[5] and this has remained the same until today. The supporting statement by Central African Republic in which this quota was requested did not provide a population estimate, explain how the figure of 40 was derived, or any provide other information about how they would ensure this offtake would not detrimental to the survival of the leopard.[5] Nonetheless, the CITES Parties approved the quota. It is worth noting that 1987 is when the draft report of Martin and de Meulenaer (1987) was presented to the Parties and this report was apparently used to establish or increase a number of CITES leopard quotas, including that of Central African Republic, where the authors estimated the population to be 41,546. (*Id.* at 647).

Ethiopia:

Ethiopia received a CITES leopard export quota in 1987 of 500.[6] However, there is no record of Ethiopia having submitted a supporting statement to the meeting where this quota was established.[7] No summary record of this meeting is readily available to the public. However, 1987 is when the draft report of Martin and de Meulenaer (1987) was presented to the Parties and this report was apparently used to establish or increase a number of CITES leopard quotas, including that of Ethiopia, where the authors estimated the population to be 9,782. (*Id.* at 647). Therefore, the export quota would allow the offtake of 5.1% of the population annually, which is wholly unsustainable.

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[2] CITES CoP5 Doc. 5.23, p. 414. https://cites.org/sites/default/files/eng/cop/05/doc/E05-23.pdf
[3] CITES CoP8 Doc. 8.20, p. 1. https://cites.org/sites/default/files/eng/cop/08/doc/E-20.pdf
[4] CITES CoP9 Com. I Summary Report, p. 172. https://cites.org/sites/default/files/eng/cop/09/E9-ComI.pdf
[4] Press Release, Hunting Ban in Botswana, Message from Permanent Secretary, 20 August 2013. https://www.facebook.com/permalink.php?story_fbid=500849569997706&id=148228411926492 [5] CITES CoP7 Doc. 7.28, p. 791. https://cites.org/sites/default/files/eng/cop/07/doc/E07-28.pdf
[5] CITES CoP6 Doc. 6.28, p. 671. https://cites.org/sites/default/files/eng/cop/06/doc/E06-28.pdf
[6] CITES CoP7 Doc. 7.28, p. 791. https://cites.org/sites/default/files/eng/cop/07/doc/E07-28.pdf
[7] CITES CoP6 Doc. 6.1. https://cites.org/eng/cop/06/doc/index.php

Kenya:

Kenya was one of the first countries to receive a CITES leopard export quota in 1983, of 80;[8] the working documents discussed at the 1983 meeting are not readily available to facilitate the evaluation of the information used by the Parties when approving this quota. This quota has remained unchanged from 1983 to the present, although Kenya banned trophy hunting in 1977 (further demonstrating that the CITES export quotas are not based on the best available information).

Malawi:

Malawi was one of the first countries to receive a CITES leopard export quota in 1983, of 20 animals;[9] the working documents discussed at the 1983 meeting are not readily available to facilitate evaluation of the information used by the Parties when approving this quota. The quota was increased to 50 in 1992[10] when Malawi (and Botswana, Namibia, Zambia and Zimbabwe) proposed to transfer its population to CITES Appendix II with an export quota of 50; this proposal estimated Malawi's leopard population to be only 541 animals;[11] this means that the offtake for international trade could comprise as much as 9.2% of the population annually which is well beyond the reproductive capacity of the species. Nonetheless, while the Parties did not approve the proposed transfer, they did approve the increased export quota.

Mozambique:

Mozambique was one of the first countries to receive a CITES leopard export quota in 1983, of 60 animals;[12] the working documents discussed at the 1983 meeting are not readily available to facilitate evaluation of the information used by the Parties when approving this quota. In 2007, Mozambique proposed to the CITES Parties to increase their annual leopard export quota from 60 to 120.[13] The proposal cited the Martin and de Meulenaer (1988) estimate of 37,542 leopards in Mozambique in justifying the quota increase. (*Id.* at 2). Israel opposed the proposal due to lack of scientific rigor and that there was little recent information on population status, distribution and ecology.[14]

Namibia:

In 1992, Namibia (and Botswana, Malawi, Zambia and Zimbabwe) proposed to transfer its leopard population to CITES Appendix II with an export quota of 100.[15] The CITES Parties did not approve the change in status but did approve the quota. This quota was increased in 2004 to 250 based on a population estimated by Martin and de Meulenaer (1988) of 7,745 (which, it was said, could support a "safe harvest" of 332 animals,[16] or 4.2% of the population annually).

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[8] CITES CoP5 Doc. 5.23, p. 414. https://cites.org/sites/default/files/eng/cop/05/doc/E05-23.pdf
[9] CITES CoP5 Doc. 5.23, p. 414. https://cites.org/sites/default/files/eng/cop/05/doc/E05-23.pdf
[10] CITES CoP8 Resolutions Adopted, p. 26. https://cites.org/sites/default/files/eng/cop/08/E-Resolutions.pdf
[11] https://cites.org/sites/default/files/eng/cop/08/prop/E08-Prop-EQ1_to_EQ5_Panthera.PDF
[12] CITES CoP5 Doc. 5.23, p. 414. https://cites.org/sites/default/files/eng/cop/05/doc/E05-23.pdf
[13] CITES CoP14 Doc. 14.37.1. https://cites.org/sites/default/files/eng/cop/14/doc/E14-37-1.pdf
[14] CITES CoP14 Com. I Rep. 2 (Rev. 1) https://cites.org/sites/default/files/eng/cop/14/rep/E14-Com-I-Rep-02.pdf
[15] https://cites.org/sites/default/files/eng/cop/08/prop/E08-Prop-EQ1_to_EQ5_Panthera.PDF
[16] CITES CoP13 Doc. 19.1, p. 2. https://cites.org/sites/default/files/eng/cop/13/doc/E13-19-1.pdf

South Africa:

South Africa was first granted a CITES leopard export quota in 1989, of 50 animals;[17] the working documents discussed at this meeting are not readily available to facilitate evaluation of the information used by the Parties when approving this quota. However, according to Grey (2011) the proposal was based on a 1.5% offtake of the 23,472 leopards estimated to be in South Africa according to Martin and de Meulenaer (1988). South Africa's quota was increased to 75 in 1992[18] based on a verbal request from the country during a CITES meeting and with no documentation or reasoning provided. Then South Africa's quota was increased from 75 to 150 in 2004 based on information in a document submitted by the country that did not provide a population estimate but claimed that the leopard population was increasing;[19] the U.S. supported the increased quota despite the poor science.[20]

The increase in the CITES quota for South Africa meant that the number of permits issued in Limpopo Province of South Africa, where most leopard trophy hunting occurs, increased from 35 to 50 in 2006 even though there were no accurate population data for leopards in the province and no assessments were undertaken to determine whether offtake is sustainable (Grey 2011). However, Pitman et al. (2015) found that, in Limpopo Province, legal leopard offtake for trophy hunting and as problem animals combined was not sustainable. In 2015, the South Africa Department of Environmental Affairs similarly concluded that: national and provincial leopard hunting quotas are arbitrary; there is no rigorous estimate of the leopard population size, nor are there reliable estimates of trends at the national or provincial level; poorly managed trophy hunting and excessive offtakes were major threats; trophy hunting is poorly managed and not effectively controlled in many areas, and is not managed consistently throughout the country; and there are indications that trophy hunting is unsustainable in several provinces due to excessive hunting quotas, focused hunting efforts, and the additive impact of leopard poaching and problem animal control (South Africa Department of Environmental Affairs 2015). The Department concluded that export of hunting trophies poses a high risk to the survival of the species in South Africa (South Africa Department of Environmental Affairs 2015), and announced that it would suspend issuance of leopard export permits for 2016 (Pinnock 2016). The suspension continues in 2017.

Uganda:

In 2007, Uganda proposed to the CITES Parties to transfer its population from CITES Appendix I to II, with an annual export quota of 50 of skins for personal purposes and trophies.[21] The proposal contained no information on the size or trend of the leopard population in Uganda, and provided no scientific basis for the quota of 50, although it did cite the Martin and de Meulenaer (1988) estimate of 700,000 leopards in Africa. (*Id.* at 2).

At CITES CoP14, Uganda followed the suggestion of the CITES Secretariat and requested during the CoP14 plenary that the Parties grant a quota under Resolution Conf. 10.14 and it would withdraw its proposal to transfer its population to Appendix II.[22] This request was agreed and the Parties established a

[17] CITES CoP8 Doc. 8.20, p. 1. https://cites.org/sites/default/files/eng/cop/08/doc/E-20.pdf
[18] CITES CoP8 Doc. 8.45.1, p. 1. https://cites.org/sites/default/files/eng/cop/08/doc/E-45-45_1.pdf
[19] CITES CoP 13 Doc. 19.2. https://cites.org/sites/default/files/eng/cop/13/doc/E13-19-2.pdf
[20] CITES CoP13 Com. 1 Rep. 1 (Rev. 1), p. 1. https://cites.org/sites/default/files/eng/cop/13/rep/E13-ComIRep1.pdf
[21] CITES CoP14 Prop. 3. https://cites.org/sites/default/files/eng/cop/14/prop/E14-P03.pdf
[22] CITES CoP14 Plen. 2. https://cites.org/sites/default/files/eng/cop/14/rep/E14-Plen-2.pdf

leopard export quota for Uganda of 28.[23] Democratic Republic of the Congo (DRC) supported the proposal but expressed concern for the cross-border leopard populations it shared with Uganda, noting that the quota might create tension or foster poaching in the DRC.[24] Israel opposed the proposal on the basis of lack of recent population data.

United Republic of Tanzania:

The United Republic of Tanzania's CITES-established export quota increased from 60 in 1983[25], to 250 in 1985,[26] to 500 in 2002,[27] which remains in effect today. The working documents discussed at the 1983 meeting are not readily available to facilitate evaluation of the information used by the Parties when approving this initial quota. The 1985 quota was approved based on a document submitted by the United Republic of Tanzania that admitted "there are no scientific data to provide a background for evaluation of this proposal;"[28] the document provided no estimate of the size of the leopard population in the country and no information on how the quota would not be detrimental to the survival of the species; the document stated that the reason for the increased quota was the large number of leopards killed each year by the government to protect lives and property, which numbered 406 in 1983. Despite this lack of information, as admitted by the proponent itself, the CITES Parties approved the export quota increase. In 2002, the United Republic of Tanzania requested to double its CITES leopard export quota to 500 on the basis of the Martin and de Meulenaer (1988) estimate of 39,000 leopards in Tanzania which would allow a "safe harvest" of 5% or 1,827 leopard annually.[29] In Tanzania, rising leopard hunting quotas drove a large-scale declines in leopard abundance particularly in populations outside of Selous; 400 leopards were trophy hunted annually at an average rate of 1.33 leopards/1000km^2 (Packer et al. 2011). A hunting quota of no more than 1 leopard/1000km^2 has been recommended in general and 3 leopards/1000km^2 in the Selous Game Reserve (Packer et al. 2011).

Zambia:

Zambia was one of the first countries to receive a CITES leopard export quota in 1983, of 80;[30] the working documents discussed at the 1983 meeting are not readily available to facilitate evaluation of the information used by the Parties when approving this quota. Zambia (and Botswana, Malawi, Namibia, and Zimbabwe) proposed to transfer its population to CITES Appendix II with an export quota of 300; this proposal estimated Zambia's leopard population to be 3,332 animals;[31] therefore, the offtake is approximately 9% of the population annually, which is excessive. The CITES Parties did not approve the transfer of the population to Appendix II, but did approve the quota increase which remains in effect today.

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[23] CITES CoP14 Com. I Rep. 2 (Rev. 1) https://cites.org/sites/default/files/eng/cop/14/rep/E14-Com-I-Rep-02.pdf ; CITES CoP14 Plen. 4 (Rev. 2) https://cites.org/sites/default/files/eng/cop/14/rep/E14-Plen-4.pdf ; CITES CoP14 Com. I. 6. https://cites.org/sites/default/files/eng/cop/14/com/E14-Com-I-06.pdf

[24] CITES CoP14 Com. I Rep. 2 (Rev. 1) https://cites.org/sites/default/files/eng/cop/14/rep/E14-Com-I-Rep-02.pdf

[25] CITES CoP5 Doc. 5.23, p. 414. https://cites.org/sites/default/files/eng/cop/05/doc/E05-23.pdf

[26] CITES CoP6 Doc. 6.27. https://cites.org/sites/default/files/eng/cop/06/doc/E06-27.pdf

[27] CITES CoP12 Com. I Rep. 1 (Rev.), p. 2. https://cites.org/sites/default/files/eng/cop/12/rep/ComI_1.PDF

[28] CITES CoP5 Doc. 5.23, p. 421. https://cites.org/sites/default/files/eng/cop/05/doc/E05-23.pdf

[29] CITES CoP12 Doc. 12.23.1.2. https://cites.org/sites/default/files/eng/cop/12/doc/E12-23-1-2.pdf

[30] CITES CoP5 Doc. 5.23, p. 414. https://cites.org/sites/default/files/eng/cop/05/doc/E05-23.pdf

[31] https://cites.org/sites/default/files/eng/cop/08/prop/E08-Prop-EQ1_to_EQ5_Panthera.PDF

In May 2015, the Tourism and Arts Minister of Zambia announced that hunting of leopards (and lions) would be reinstated in 2016 after a moratorium that started in January 2013 (Zambia DNPW 2015a). The Minister stated that the ban on leopard hunting was based on "lapses in monitoring" that have been rectified and that the leopard population was and still is "healthy". Leopard hunting was to resume in 2015/2016 but with cautionary – though unspecified – quotas. Following the Minister's announcement, in May 2015, the Zambia Wildlife Authority (ZAWA) stated that there were, at minimum, an estimated 4,000 leopards in Zambia and that, according to surveys conducted by ZAWA, big cats are found in three ecosystems in the country: Luangwa Valley, Kafui and Lower Zambezi (Zambia DNPW 2015b).

Additionally, Ray (2011) conducted the first-ever population survey of leopards in Zambia, in Luambe National Park and a portion of an adjacent Game Management Area (GMA), located within the Luangwa Valley, in 2006-2008, when trophy hunting was permitted. Ray noted that it was the opinion of park managers and professional hunters in the area that the leopard was found in "very high abundance". Using camera traps, Ray found that only 12 leopards lived in the National Park in 2008 and 10 in the portion of the GMA studied, with densities of 3.36/100 km^2 in the former and 4.79/100 km^2 in the latter. Ray stated that only one other leopard study, in South Africa, had found a lower density than that she found in the Park and this other study was not in a protected area. The offtake of leopards in the GMA was 8-12 leopards per year, and considered by Ray to be unsustainable. Ray recommended an offtake of 2 leopards / 1000 km^2 in the area (instead of 12 / 2,555 km^2, among other measures. Ray recommended that loss of income from hunting could be addressed by increasing the price of trophies.

Ray explicitly notes, "Until the 1980s, the leopard was one of the most threatened species listed by IUCN. This changed with the study of MARTIN & DE MEULENAR (1988), who suggested a population of leopards of about 700,000 in Africa, which was criticized and largely discredited from the scientific community (MARTIN & DE MEULENAR 1989). Members of the IUCN Cat specialist group mentioned their doubts of the estimates from this habitat model (MARTIN & DE MEULENAR 1989). Nevertheless, the result was that CITES increased the international hunting quotas for the African leopard, despite the lack of reliable continent-wide estimates of its population size."

Zimbabwe:

Zimbabwe received its first CITES-established export quota of 80 leopards in 1983;[32] the working documents discussed at the 1983 meeting are not readily available to facilitate evaluation of the information used by the Parties when approving this quota. This quota was increased to 350 in 1985 based on information provided by Zimbabwe that there were an estimated 38,000 leopards in the country.[33] The quota was increased to 500 in 1987; however, there is no record of Zimbabwe having submitted a supporting statement to the meeting where this quota was established.[34] No summary record of this meeting is available on the CITES website. However, 1987 is when the draft report of Martin and de Meulenaer (1987) was also presented to the Parties and this report was apparently used to establish or increase a number of CITES leopard quotas, including that of Zimbabwe, where the authors estimated the population to be 16,064. (*Id.* at 647). (It is of interest to note that, in 1992, Zimbabwe (and Botswana, Malawi, Namibia, and Zambia)

[32] CITES CoP5 Doc. 5.23, p. 414. https://cites.org/sites/default/files/eng/cop/05/doc/E05-23.pdf
[33] CITES CoP5 Doc. 5.23, p. 16. https://cites.org/sites/default/files/eng/cop/05/doc/E05-23.pdf
[34] CITES CoP6 Doc. 6.1. https://cites.org/eng/cop/06/doc/index.php

proposed to transfer its population to CITES Appendix II with an export quota of 500; this proposal estimated Zimbabwe's leopard population to be only 1,379 animals).[35]

Du Preez et al. (2014) confirmed that the 500 figure was the result of using the flawed Martin and de Meulenaer model as a basis which over-estimated the number of leopards in Zimbabwe at 16,064. Today, as then, there is no reliable estimate of Zimbabwe's national leopard population and leopard numbers are not monitored in most of the areas where they are hunted (Du Preez et al. 2014). Yet, more leopards are hunted in Zimbabwe than any other country with up to 882 leopard hunting permits issued annually (although the average number of successful hunts each year, 261, does not fill the allocation (Du Preez et al. 2014)). Leopard trophy hunting offtakes have repeatedly failed to fill the allocation, possibly indicating that there are not enough leopards remaining and that leopard hunting in Zimbabwe is unsustainable, especially combined with other threats such as habitat loss (Du Preez et al. 2014). The large leopard quota in Zimbabwe is unjustified because there has been no rigorous scientific research undertaken to estimate the national leopard population (Du Preez et al. 2014). Hunting of female leopards is prohibited in Zimbabwe and there is a skull size minimum that must be met for exports to be allowed (Lindsey and Chikerema-Mandisodza 2012). In Zimbabwe, leopard hunting occurs without a national leopard management plan and leopard hunting quotas exceed the CITES export quota (Lindsey and Chikerema-Mandisodza 2012).

Recommendation

Humane Society International urges the Animals Committee, under Decision 17.115, to recommend to the Standing Committee that Resolution Conf. 10.14 (Rev. CoP16) be revised to establish a process that will ensure that there is scientific justification for the quotas approved by the CITES Conference of the Parties. Quotas that have no scientific basis, yet that are approved by the CITES Parties, undermine the credibility of the Convention. Humane Society International further recommends that the Resolution be amended to include a procedure for review of such quotas including that any Party wishing to retain their leopard quota provide scientific justification for continuing the quota at each meeting of the Conference of the Parties, and that all matters related to establishment, continuance or increase of leopard quotas be approved by a two-thirds majority vote of the Parties.

References Cited

Bailey, T.N., 1993. *The African leopard: ecology and behavior of a solitary felid*. Columbia University Press.

Balme, G.A., Slotow, R. and Hunter, L.T., 2009. Impact of conservation interventions on the dynamics and persistence of a persecuted leopard (*Panthera pardus*) population. *Biological Conservation*, *142*(11), pp.2681-2690.

Balme, G.A., Hunter, L.T., Goodman, P., Ferguson, H., Craigie, J. and Slotow, R., 2010. An adaptive management approach to trophy hunting of leopards *Panthera pardus*: a case study from KwaZulu-Natal, South Africa. *Biology and conservation of wild felids. Oxford University Press, Oxford*, pp.341-352.

[35] CITES Cop8 Prop. EQ5, p. 11. https://cites.org/sites/default/files/eng/cop/08/prop/E08-PropEQ1_to_EQ5_Panthera.PDF

Braczkowski, A.R., Balme, G.A., Dickman, A., Macdonald, D.W., Fattebert, J., Dickerson, T., Johnson, P. and Hunter, L., 2015. Who Bites the Bullet First? The Susceptibility of Leopards *Panthera pardus* to Trophy Hunting. *PloS one*, *10*(4), p.e0123100.

du Preez, B.D., Loveridge, A.J. and Macdonald, D.W., 2014. To bait or not to bait: a comparison of camera-trapping methods for estimating leopard *Panthera pardus* density. *Biological Conservation*, *176*, pp.153-161.

Eaton, R.L., 1977. *The Status and Conservation of the Leopard in Sub-Saharan Africa*. Safari Club International. Tucson, USA.

Grey, J.C., 2011. *Leopard population dynamics, trophy hunting and conservation in the Soutpansberg Mountains, South Africa* (Doctoral thesis, Durham University, South Africa).

Hamilton P.H., 1981. *The Leopard* Panthera pardus *and the Cheetah* Acinonyx jubatus *in Kenya. Ecology, Status, Conservation, Management.* Report for the US. Fish and Wildlife Service, the African Wildlife Leadership Foundation, and the Government of Kenya.

Henschel, P., Hunter, L., Breitenmoser, U., Purchase, N., Packer, C., Khorozyan, I., Bauer, H., Marker, L., Sogbohossou, E. and Breitenmoser-Wursten, C., 2008. *Panthera pardus*. *The IUCN Red List of Threatened Species 2008:* e.T15954A5329380. Downloaded on 27 February 2016.

Jackson, P., Bell, R., Borner, M., Bothma, J.du P., Caughley, G., Hestbeck, J.B., Leyhausen, P., Mendelssohn, H., Norton, P.M., Ranjitsinh, M.K., Shoemaker, A.H., Singh, A., Swank, W., Walker, C., Wilson, V.J. and Martin, R.B., 1989. *A review by leopard specialists of The Status of Leopard in SubSaharan Africa by Martin and de Meulenaer*. Information document No. 3 submitted to the seventh meeting of the Conference of the Parties to CITES (Lausanne, 1989).

Jacobson, A.P., Gerngross, P., Lemeris Jr, J.R., Schoonover, R.F., Anco, C., Breitenmoser-Würsten, C., Durant, S.M., Farhadinia, M.S., Henschel, P., Kamler, J.F. and Laguardia, A., 2016. Leopard (*Panthera pardus*) status, distribution, and the research efforts across its range. *PeerJ*, *4*, p.e1974.

Jorge, A.A., 2012. *The sustainability of leopard* Panthera pardus *sport hunting in Niassa National Reserve, Mozambique.* (Master's thesis, University of KwaZulu-Natal, South Africa, March 2012).

Lindsey, P.A. and Chikerema-Mandisodza, R., 2012. *Preliminary Non-Detriment Finding Assessment: Preliminary Report for Leopards in Zimbabwe*. Zimbabwe Parks and Wildlife Management Authority, Zimbabwe. December 2012.

Martin R.B. and de Meulenaer T., 1987. *Survey of the Status of the Leopard (*Panthera pardus*) in Sub-Saharan Africa.* Doc. 6.26, Trade in Leopard Skins, Annex, pages 641-666. Sixth Meeting of the Conference of the Parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). https://cites.org/sites/default/files/eng/cop/06/doc/E06-26.pdf

Martin, R.B. and de Meulenaer, T., 1988. *Survey of the Status of the Leopard (Panthera pardus) in SubSaharan Africa*. CITES Secretariat, Lausanne.

Myers, N., 1976. The Leopard *Panthera pardus* in Africa. IUCN Monograph No. 5. International Union for Conservation of Nature and Natural Resources. Morges, Switzerland.

Norton, P., 1990. How many leopards? A criticism of Martin and de Meulenaer's population estimates for Africa. *S. AFR J. SCI./S.-AFR. TYDSKR. WET.*, *86*(5), pp.218-219.

Packer, C., Brink, H., Kissui, B.M., Maliti, H., Kushnir, H. and Caro, T., 2011. Effects of trophy hunting on lion and leopard populations in Tanzania. *Conservation Biology*, *25*(1), pp.142-153.

Packer, C., Kosmala, M., Cooley, H.S., Brink, H., Pintea, L., Garshelis, D., Purchase, G., Strauss, M., Swanson, A., Balme, G. and Hunter, L., 2009. Sport hunting, predator control and conservation of large carnivores. *Plos One*, *4*(6), p.e5941.

Pinnock, D., 2016. South Africa bans leopard trophy hunting for 2016. *Africa Geographic* blog, 25 January 2016.

Pitman, R.T., Swanepoel, L.H., Hunter, L., Slotow, R. and Balme, G.A., 2015. The importance of refugia, ecological traps and scale for large carnivore management. *Biodiversity and Conservation*, *24*(8), pp.1975-1987.

Ray, R.R., 2011. *Ecology and population status and the impact of trophy hunting of the leopard* Panthera pardus *(LINNAEUS, 1758) in the Luambe National Park and surrounding Game Management Areas in Zambia* (Doctoral dissertation, Bonn, Univ., Diss., 2011).

Shoemaker, A.H., 1993. *The status of the leopard, Panthera pardus, in nature: a country by country analysis*. Riverbanks Zoological Park, South Carolina.

South Africa Department of Environmental Affairs, 2015. Non-detriment Findings. *Government Gazette* No. 39185, 10 September 2015, Department of Environmental Affairs Notice 897 of 2015.

Stein, A.B., Athreya, V., Gerngross, P., Balme, G., Henschel, P., Karanth, U., Miquelle, D., Rostro, S., Kamler, J.F. and Laguardia, A. 2016. *Panthera pardus.* The IUCN Red List of Threatened Species 2016: e.T15954A50659089. Downloaded on 11 July 2016. http://www.iucnredlist.org/details/full/15954/0

Zambia DNPW (Department of National Parks & Wildlife), 2015a. *Tourism Minister lifts ban on cat hunting*. Department of National Parks & Wildlife, 20 May 2015. https://www.facebook.com/ZambiaWildlife-Authority-ZAWA-420351424735202/ (downloaded 20 April 2016)

Zambia DNPW (Department of National Parks & Wildlife), 2015b. *Cat hunting explained.* Department of National Parks & Wildlife, 28 May 2015. https://www.facebook.com/permalink.php?story_fbid=585933481510328&id=420351424735202 (downloaded on 20 April 2016).