March 8, 2017

Ms Nosipho Ngcaba
The Director-General
Department of Environmental Affairs
Private Bag X447
PRETORIA 0001

Attention: Ms Makganthe Maleka

Dear Director-General Ngcaba,


In summary, while we are encouraged by the efforts of the South African government to improve the mechanisms available to monitor and regulate trophy hunting of the African leopard, we believe that the leopard hunting moratorium in place since 2016 must remain in place pending resolution of the concerns and recommendations referenced below.

Leopard hunting quota must take into account other causes of removal (ex: retaliatory and illegal killing)

Paragraph 2(1) of the draft norms and standards (“Purpose and Application of these Norms and Standards”), p. 16, states that the “purpose of these norms and standards is to manage the hunting of leopard in order to reduce the impact of hunting on the stability of the leopard population and to ensure that such hunting is carried out in an ecologically sustainable manner.” According to Swanepoel et al. (2014), who used a model to study the relative influence of retaliatory killing and trophy hunting on leopard populations in South Africa, accurate estimates of legal and illegal retaliatory killing are needed for any reliable assessment of sustainable harvest levels. Swanepoel et al. said (p. 119) that “Because of the dramatic effects of retaliatory killing on population persistence, our results highlight that reliable data on legal and illegal retaliatory killing are paramount for our ability to assess the sustainability of any given harvest level.”

Yet, according to Swanepoel et al. (2014, p. 117), “due to a low compliance to legislation regarding damage-causing leopards, only a low number of reports are received for DCA [Damage Causing Animal] permits issued, as well as leopards killed under such permits.” For example, reports were received for only 28% of DCA permits issued in Limpopo province.
Furthermore, only two provinces, Limpopo and KwaZulu-Natal had adequate records on the number of DCA permits issued. Together, these problems indicate that the reported number of animals killed under DCA permits is underreported and likely far higher.

Furthermore, there is no accurate estimate of the number of leopards illegally killed in South Africa. According to South Africa’s 2015 non-detriment finding for leopard, “there are almost no reliable estimates for the extent of illegal off-take of leopards . . .” (Non-detriment finding for Panthera pardus 2015, p. 1) A report on a 2010 workshop on non-detriment finding assessment for the trophy hunting of leopards in South Africa (Lindsey et al. 2011) contains available data on legal and illegal offtake 2000-2010. The authors state that the available data “represent gross underestimates due to the lack of reliable data on illegal off-takes and the inherent difficulty associated with obtaining such data.” Even the limited available data underscore that, in addition to offtake for trophy hunting, the legal and illegal take of leopards for other purposes is significant.

Table 1 (below, from Lindsey et al. (2011), p. 6) illustrates that the annual average legal take was 65.5 leopards (49.4 killed for trophies, and 16.1 for other purposes), noting that the authors characterized these figures as a gross underestimate. Table 2 (below, from Lindsey et al. (2011), p. 7) illustrates that an annual average of 45.6 leopards were killed illegally, noting again that this is a gross underestimate. There is no evidence in the draft norms and standards that the proposed annual hunting quota takes into account illegal offtake, or underreporting of legal offtake for purposes other than trophy hunting, even though such offtake will significantly compound the detrimental impact on leopard populations.

<table>
<thead>
<tr>
<th>Province</th>
<th>Trophy Hunting</th>
<th>Legal Lethal DCA Control</th>
<th>Translocation *</th>
<th>Destruction in self defence</th>
<th>Total</th>
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<tbody>
<tr>
<td>Gauteng</td>
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<td>0.1</td>
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<td>Mpumalanga</td>
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<td>0.4</td>
<td>0.2</td>
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<tr>
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<td>0.4</td>
<td>2.2</td>
</tr>
<tr>
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<td>0</td>
<td>0</td>
<td>0.3</td>
</tr>
<tr>
<td>Eastern Cape</td>
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<td>0.5</td>
<td>0.8</td>
<td>0.3</td>
<td>1.6</td>
</tr>
<tr>
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<td>0</td>
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<td>0</td>
<td>0.2</td>
</tr>
<tr>
<td>KZN</td>
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<td>1.3</td>
<td>0.3</td>
<td>0.3</td>
<td>4.5</td>
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<tr>
<td>Limpopo</td>
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<td>3.9</td>
<td>3.7</td>
<td>0.5</td>
<td>39.6</td>
</tr>
<tr>
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<td>49.4</td>
<td>7.3</td>
<td>6.6</td>
<td>2.2</td>
<td>65.5</td>
</tr>
</tbody>
</table>

*Not including cases where Leopards were caught and re-released in the same area

Source: Lindsey et al., 2011, p. 6.
It is not possible for South Africa to “ensure that such [leopard] hunting is carried out in an ecologically sustainable manner” in the absence of reliable data on causes of removal other than trophy hunting (e.g. DCA killing and illegal killing). We recommend that the proposed regulatory system for leopard hunting in South Africa be amended to ensure that hunting quotas will not be issued without accurate measurements of legal and illegal offtake, which will require effective data capture and recording systems at the provincial level.

Key principles outlined in Appendix 1 must include ensuring that leopard hunting is biologically sustainable

Appendix 1, p. 21-25, contains key principles informing the leopard hunting norms and standards: (a) Ensure an even distribution of hunting effort across leopard range in each province in South Africa; (b) Restrict trophy hunting to male leopards ≥7 years only; and (c) Ensure the mandatory submission of hunt return forms and trophy photographs from every hunt.

As noted above, Paragraph 2(1), p. 16, states that the “purpose of these norms and standards is to manage the hunting of leopard in order to reduce the impact of hunting on the stability of the leopard population and to ensure that such hunting is carried out in an ecologically sustainable manner.” We are therefore concerned that ensuring that leopard hunting is biologically sustainable is not one of the key principles in Appendix 1. Ensuring that hunting is evenly distributed, that only males ≥7 years are trophy hunted, and that hunt return forms and photographs are returned from every hunt are not enough to ensure that the level of hunting is biologically sustainable.

For example, as previously cited, according to Swanepoel et al. (2014, p. 119) “[b]ecause of the dramatic effects of retaliatory killing on population persistence, our results highlight that reliable
data on legal and illegal retaliatory killing are paramount for our ability to assess the sustainability of any given harvest level.”

*We recommend that accurate assessment of legal and illegal causes of removal, which underpin the biological sustainability of leopard hunting, are included among the key principles informing leopard hunting norms and standards of Appendix 1.*

**Availability of suitable leopard habitat underpins the hunting quota, but science is flawed**

Paragraph 3(8) of the draft norms and standards (“Quota and Permit Allocation for the Hunting of Leopard”), p. 17, states that “SANBI must, in consultation with provincial conservation authorities, establish LHZs [leopard hunting zones], of which the boundaries are determined on the basis of ensuring leopard population viability and even distribution of hunting effort across leopard range.” Appendix 1 (a) states LHZs will be established “based on the extent of suitable leopard habitat (derived from a maximum entropy-based habitat model; Swanepoel et al. 2013) and leopard population dynamics found within quaternary catchments in that province (Fig. 1A).”

The existence of suitable leopard habitat, however, does not mean that any leopards will be found there. Swanepoel et al. (2013) acknowledge (p. 2) that “predator distribution and densities are affected by the distribution and density of prey and other carnivores” but that “such data does not exist for South Africa on a national level and could therefore not be incorporated into our models.” Therefore, using the results of this modeling exercise to determine LHZs is inappropriate. Furthermore, it is not explained how “leopard population dynamics” in quaternary catchments were studied or what the results were. As there are 1,946 such catchments in South Africa, we find it difficult to believe that the leopard population dynamics are known for each of them.

Appendix 1 (a) explains how leopard population density and hunting quotas are to be calculated. “Suitable leopard habitat is grouped into four classes following Swanepoel et al. (2013), and each habitat class assigned a population density according to Swanepoel et al. (2014) and more recent province-wide camera-trapping efforts (SANBI unpub. data).” We have significant concerns with this calculation method.

Firstly, the study by Swanepoel et al. (2013) was a modeling exercise that used data on leopard presence from the results of only 16 field studies, most of which were of an unknown date, and one of which dates from 1988 (30 years ago) (Table S1 in Swanepoel et al. 2013). Over the past 30 years, leopard populations have declined steeply due to loss of habitat, prey loss, and retaliatory killing (Stein et al. 2016). The results of a modelling exercise that used old field data of leopard presence should not form the basis for current hunting quotas. Furthermore, models are based on a series of assumptions and the resulting predictions must be tested against the results of current field studies to ensure that the model’s results are realistic; we are not aware

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1 Quaternary catchments are the principal water management units in South Africa; and 1946 have been demarcated. [https://www.dwa.gov.za/groundwater/groundwater_dictionary/index.html?introduction_quaternary_catchment.htm](https://www.dwa.gov.za/groundwater/groundwater_dictionary/index.html?introduction_quaternary_catchment.htm)
that the results of Swanepoel et al. (2013) have been field tested in this manner. Furthermore, the model used by Swanepoel et al. (2013) did not account for distribution and density of prey, which is a major factor in determining leopard distribution and densities; this is a major flaw in this study and means that the results do not provide a credible basis for the setting of hunting quotas.

Secondly, the study by Swanepoel et al. (2014) was also a modelling exercise that used a set of 27 field observations of leopard densities in South Africa (Appendix 2 of Swanepoel et al. 2014). As with the Swanepoel et al. (2013) study, most of the field observations used in the model are very old, some dating to 1972 (45 years ago); only 13 of the studies were published in 2007 or later (i.e. from the past 10 years). As noted above, over the past 30 years, leopard populations have declined steeply due to loss of habitat, prey loss, and retaliatory killing (Stein et al. 2016). The results of a modelling exercise that uses old field data should not be used today to set hunting quotas. Swanepoel et al. (2014) predicted leopard densities and multiplied these by the habitat suitability predictions in Swanepoel et al. (2013) to derive a range of leopard population sizes for each province.

Thirdly, Appendix 1 (a), p. 21, of the draft norms and standards states that, “Since catchments often comprise more than one habitat class, leopard densities are multiplied by the area of each habitat class in each catchment to obtain an estimated leopard population size per catchment.” However, the DEA does not explain where they derived the data on the area of habitat classes in each catchment, or whether such data are recent or more than ten years old.

Lastly, Appendix 1 (a), p. 21, of the draft norms and standards states that, in addition to the data from Swanepoel et al. (2014) pertaining to habitat and leopard density, it will consider “more recent province -wide camera -trapping efforts (SANBI unpub. data).” Firstly, Braczkowski et al. (2016) has questioned the value of camera surveys to leopard conservation efforts, noting that “density estimates for large carnivores derived from camera surveys often have wide confidence intervals due to low detection rates. Such estimates are of limited value to authorities, which require precise population estimates to inform conservation strategies.” Secondly, we are aware of a recent province-wide camera-trapping effort in Limpopo province, but we are not aware of such efforts in other provinces. Without fine-grain, accurate information on leopard density in all areas where leopards will be hunted, relevant government authorities will not be able to determine sustainable offtake.

Existence of suitable leopard habitat underpins the LHZs under the proposed leopard hunting permitting and monitoring system. However, there are significant limitations to the scientific basis for the underlying habitat analysis, including use of a modelling exercise in part reliant on severely outdated field studies untested against outcomes of current studies, lack of clarity on the source of certain data (ex: habitat classes in each catchment), and absence of camera-trapping efforts necessary for all LHZs. We recommend that the DEA evaluate whether the proposed hunting quotas may in fact undermine leopard population viability and level distribution of hunting effort.

The basis for the annual sustainable leopard offtake is a Tanzanian modeling exercise that is not directly applicable to South Africa and is untested against current field studies.
According to Appendix 1 (p. 21) “The annual sustainable offtake for each catchment is calculated based on a maximum sustainable harvest rate of 3.6% of the estimated population (derived using a stage-based dual-sex Leslie matrix model; Caro et al. 2009; Fig. 1C).” Using Caro et al. as the basis for the annual sustainable offtake calculation for South Africa may be flawed.

Firstly, Caro et al. (2009) is a modelling exercise that used demographic, offtake and other information from leopard populations in the Selous Game Reserve in Tanzania, and thus the results may not be directly comparable to leopard populations in South Africa. To wit, Caro et al. (2009) state that in Selous, both males and females are trophy hunted, whereas South Africa is proposing to limit trophy hunting to males ≥ 7 years.

Secondly, although Caro et al. (2009) stated the “maximum sustainable quota” under the model was 3.6%, they also stated “in our model analyses, for simplicity we define the maximum sustainable yield as the largest quota for which population growth rates remain positive, k > 1. In practice, of course, it would be unwise to set quotas at or even close to this level” (emphasis added). Therefore, in addition to the fact that Caro et al. (2009) should not be relied upon to set lion trophy hunting quotas in South Africa, the DEA’s proposal to set hunting quotas based on a maximum sustainable quota is unwise according to Caro et al. (2009).

Thirdly, as noted above, models are based on a series of assumptions and the resulting predictions must be tested against the results of current field studies to ensure that the model is realistic; we are not aware that the results of Caro et al. (2009) have been field tested in South Africa.

As the proposed annual sustainable leopard offtake relies on a modeling exercise designed for Tanzania, that may not be directly applicable to South Africa, and is untested against current field studies, we recommend that the South African government commission a study utilizing demographic, offtake and other information from recent studies of leopard populations within its own borders and use that as the basis for any hunting quota determinations. Alternatively, if Caro et al. (2009) is relied upon until a new study is commissioned, these results must be applied conservatively to account for the high levels of illegal leopard offtake in South Africa.

Proposed leopard hunting quota far exceeds known average removals for trophy hunting purposes

Appendix 1(a), p. 22, of the draft norms and standards indicates that “[b]ased on this system, in 2015 the Department could issue a national annual leopard hunting quota of 81 if provinces that do not traditionally permit trophy hunting of leopards . . . are excluded . . .” In contrast, according to Lindsey et al. (2011), an average of 49.4 leopards were removed annually in South Africa for trophy hunting purposes between 2000 and 2010 (see Table 1 above). The proposed 81-leopard (or 89 if additional provinces are considered) hunting quota is a 62-78 percent increase from the 2000-2010 average annual removal for trophy hunting. This dramatic increase is inconsistent with previous concerns expressed by the DEA in their justification for a two-year moratorium between 2016 and 2017 (Non-detriment finding for Panthera pardus 2015, p. 2).
In its 2015 non-detriment finding, the South African government determined that the non-detriment finding assessment “demonstrates that legal local and international trade in live animals and the export of hunting trophies at present poses a high risk to the survival of this species in South Africa (Figure 2A) . . . [t]his is mostly due to poor management of harvest practices and a lack of reliable monitoring of leopard populations.” (Non-detriment finding for Panthera pardus 2015, p. 2) The proposed permitting and monitoring system – with which we have significant concerns as articulated below – does not demonstrate improvements in management that would warrant a 62-78 percent increase in harvest of leopards for trophy hunting.

We recommend that the DEA offer the public an opportunity to review information and relevant quota assessments for more recent leopard population and habitat data from 2016 and 2017, as well as a justification for the 62-78 percent increase above the average number of leopards killed annually in past years.

Problematic implementation of gender and age identification requirements

According to Paragraph 4(1) (“Management of Leopard Hunts”), p. 17, “[o]nly an adult male leopard that is seven years or older may be hunted.” Further, Paragraph 3(2) (“Quota and Permit Allocation for the Hunting of Leopard”), p. 16, indicates that the “local hunter” or “professional hunter” accompanying a leopard hunt must first pass a once-off leopard hunting examination in order to confirm he or she is “competent to assess the age of a male leopard and is familiar with applicable biodiversity legislation.” If what the DEA is envisioning here is the Leopard Education and Identification Course (http://www.saleopardhunting.com/), a joint project between DEA and other organisations, then we have several concerns with this method of examination.

The Leopard Education and Identification Course recommends that a hunter distinguish between males and females using three characteristics: 1) size of the head, 2) size of the neck, and 3) presence or absence of the scrotum. The first two characteristic significantly overlap between males and females. According to a related study in Balme et al. (2012, p. 4) “there was considerable confusion in distinguishing females from <2 year old males. At this age, male leopards superficially resemble females; they are a similar size (Table S3) and lack many of the distinctive features of adult males (e.g. well-developed chest and neck musculature, a prominent dewlap, etc.).” Balme et al. (2012, p.3) found that “[r]espondents misidentified 73% of <2 year males as females.”

The fact that adult male leopards are larger than females cannot be used to distinguish the gender of an individual unless the two are side-by-side. The Course materials show photos of only male leopards; how are students to learn how to compare males and females? Provided that the only characteristic that does not overlap between the two is the presence or absence of the scrotum, the only certain way to know if the animal is a male or female is to see the scrotum.

With regard to age, the Course materials recommend that hunters use “dewlap size” (a fold of loose skin hanging from the neck or throat of an animal) as their primary aging indicator, stating that if a “prominent dewlap” is present, then the male is a “viable trophy” aged ≥ 7 years. But
how can a hunter know if a dewlap is “prominent” without comparing it side-by-side to other leopards? In fact, Balme et al. (2012, p. 6) confirmed that while “≥7 year old males were the easiest to identify . . .”, “4–6 year males registered the most misclassifications . . . suggesting that our aging methodology is unlikely to improve hunters’ ability to recognise 4–6 year old leopards.” Further, the Course predominantly uses side-profile images when the Balme et al. (2012, p. 3) study found that “[r]espondents were also more likely to correctly age portrait photographs (MPC = 60.18 ± 0.93) than side-profile (MPC = 42.80 ± 0.76) . . . ”

After carefully studying the Course materials, some of the authors of this comment took the online practice exam (http://www.saleopardhunting.com/practice-exam.html). In our experience, the relative size of the dewlap is difficult to determine in all but the most extreme cases where there is a very large dewlap. The online practice exam can be taken repeatedly before the official exam is taken, and the same photos appear each time. We recommend that the official exam (which is not currently available on the website) use images that do not overlap with the practice exam, thus eliminating the unfair advantage this would offer. As identified in Balme et al. (2012, p. 4), factors such as photograph presentation “were all significant predictors of aging ability.”

We also note with concern that in the Balme et al. (2012, p. 4) study “Respondents performed poorly at aging male leopards, with less than 50% of photographs classified correctly. Hunters recorded the lowest scores, which presumably reflects the relative amount of time they spend observing leopards.” Balme et al. suggest that hunters may be educated with “appropriate training” (p. 5), but as articulated above, we have concerns with the Leopard Education and Identification Course and recommend that the actual training adopted must be more rigorous.

While sex and age restrictions proposed are improvements to the previously unrestricted trophy hunting of South African leopards (prior to the 2016 and 2017 hunting moratoria), we call on the DEA to ensure that age and sex are determined on characteristics that do not overlap between males and females (such as presence of the scrotum) and that a robust course and examination system be put in place.

Concerns with proposed permit allocation systems and monitoring of the leopard hunts

We have five additional comments regarding the wording and structure of the regulations, and suggest several important changes to the regulatory language that should be included in the final text. These changes are important for meeting the regulatory objective stated in Paragraph 2(1), p. 16, of reducing “the impact of hunting on the stability of the leopard population and to ensure that such hunting is carried out in an ecologically sustainable manner . . . .”

Firstly, there are several important provisions for meeting the goal in Paragraph 2(1) that are included in Appendix 1 to the leopard hunting regulations but not in the regulations themselves. We recommend that the regulations include the following provisions:

- “each LHZ qualifies for a single hunting permit per year,” Appendix 1, p. 22.
• “No export permits will be awarded for unsuitable trophies (i.e. female leopards or males <7 years old). The hunting permit will also be withheld from the affected LHZ for at least one year to allow the leopard population time to recover.” Appendix 1, p. 24.

We urge that these provisions be added to Paragraph 5, p. 18.

Secondly, Paragraph 5(7), p. 19, purports to provide the disincentives that will apply to leopard hunting that “could contribute to a disruption in the stability of the population.” This provision needs to be mandatory and not voluntary. It currently reads that such hunting “could result in the following disincentives being imposed by the relevant issuing authority” (emphasis added). We strongly recommend that this section instead state that such hunting “shall result in one or more of the following disincentives being imposed by the relevant issuing authority.” The disincentives in Paragraph 5(7) are irrelevant if they are discretionary, and will not automatically penalize unwanted and unsustainable leopard hunting.

Thirdly, Paragraph 3(6), p. 17, provides that “[m]ultiple adjoining land properties that are suitable for the hunting of leopard may be included in a single leopard hunting application, but no individual land property may be included in more than one leopard hunting application.” The last part of this paragraph is confusing. If no individual land property can be included in more than one application, how will applicants learn whether an application has already been submitted for a particular individual land property? The regulations fail to provide a mechanism for ensuring that multiple leopard hunting applications are not submitted for the same individual land property. More importantly, since Appendix 1, p. 22, provides that “each LHZ qualifies for a single hunting permit per year,” so long as only one permit per LHZ is issued per year the mechanism for submitting applications is not as important from a leopard conservation standpoint. Therefore, we reiterate our request that Paragraph 5 of the regulations specify that only one hunting permit per year or season will be issued for each LHZ.

Fourthly, Paragraph 3(13), p. 17, provides that: “In the case where a leopard has not been hunted successfully in a particular LHZ after the issuance of three leopard hunting permits within the same hunting season in respect of such LHZ, the issuing authority may decide to not issue any further leopard hunting permits for that particular LHZ, until the next hunting season.” However, Appendix 1, p. 22, explains that “each LHZ qualifies for a single hunting permit per year.” Definition 1, p. 15, defines a hunting season as “the period 01 January to 31 December of any particular year.” How can three leopard hunting permits be issued for the same LHZ within the same hunting season when only one permit will be issued per LHZ per year? Paragraph 3(13), p. 17, makes no sense in light of the one permit per LHZ per year requirement. We recommend that Paragraph 3(13) be revised to read “In the case where a leopard has not been hunted successfully in a particular LHZ after the issuance of three leopard hunting permits within three consecutive hunting seasons, the issuing authority may decide to not issue any further leopard hunting permits for that particular LHZ until renewed offtake is shown to be non-detrimental.”

Finally, Paragraph 3(13), p. 22, does not make sense in light of the explanation that “[t]he delineation of the LHZs, and the provincial and national leopard hunting quotas will change annually, based on information collected by the National Leopard Monitoring Programme on
local leopard population densities and trends.” Concluding that leopards should not be hunted in an LHZ during the next season or year after three failed attempts the year before only makes sense if the LHZs remain the same from year-to-year. However, the draft regulations and appendix appear to contemplate the LHZ designations changing from year-to-year.

We are concerned that changing the LHZs from year-to-year could hide what is really happening to leopards in South Africa and make it difficult to track illegal hunting and to monitor and enforce the regulations. If the intent to change the LHZs is carried forward, then at a minimum we recommend that the following sentence, p. 22, should be edited to remove the commas to read as follows: “[t]he delineation of the LHZs and the provincial and national leopard hunting quotas will change annually based on information collected by the National Leopard Monitoring Programme on local leopard population densities and trends.” With the current comma usage, the sentence does not make sense.

In summary, we strongly recommend ensuring consistency between the requirements outlined in the appendix and the actual regulations, therefore including in the main body the limitation of a single hunting permit per LHZ per year, disqualification of unsuitable trophies from export, and withholding of permits for violators for at least one year. We further urge that the regulations provide for mandatory disincentives for violations of the leopard hunting quota requirements. We also advise that the regulations establish a system to guarantee that no individual land property is included in more than one permit application and revise a paragraph reference to three leopard hunting permits for one LHZ, which is prohibited in another part of the text. Finally we call on the authorities to correct confusing text on the changing delineation of LHZs.

Our organisations strongly urge the South African government to develop a plan that will explain how each of these challenges and recommendations will be addressed, and in the meantime to maintain the leopard hunting moratorium in place since 2016.

Thank you in advance for urgently considering these recommendations. Please contact Audrey Delsink at adelsink@hsi.org with any questions.

Sincerely,

Audrey Delsink, Executive Director
Humane Society International – Africa

Tanya Sanerib, Senior Attorney
Center for Biological Diversity
With support from the following individuals and organisations:

Sarel van der Merwe, (Pr.Sci.Nat.)
Chair: African Lion Working Group
Affiliated with the Cat and Conservation Breeding Specialist Groups IUCN/SSC

Animal Alliance of Canada
Animal Protection Party of Canada
Animals Asia Foundation
Big Cat Rescue
Born Free USA
East Caribbean Coalition for Environmental Awareness
FOUR PAWS South Africa
Outraged South African Citizens Against Poaching
Pro Wildlife
Species Survival Network
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Wildlife Impact
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