

**IN THE HIGH COURT OF SOUTH AFRICA
(GAUTENG DIVISION, JOHANNESBURG)**

Case No: **86515/17**

In the matter between:

**NATIONAL COUNCIL OF THE
SOCIETY FOR THE PREVENTION OF
CRUELTY TO ANIMALS**



Applicant

and

THE MINISTER OF ENVIRONMENTAL AFFAIRS

First Respondent

**THE DIRECTOR-GENERAL,
DEPARTMENT OF ENVIRONMENTAL AFFAIRS**

Second Respondent

SOUTH AFRICAN PREDATOR ASSOCIATION

Third Respondent

**MEC: DEPARTMENT OF ECONOMIC
DEVELOPMENT, ENVIRONMENT AND
TOURISM (LIMPOPO PROVINCE)**

Fourth Respondent

**MEC: DEPARTMENT OF
ECONOMIC DEVELOPMENT, ENVIRONMENT,
CONSERVATION AND TOURISM
(NORTH WEST PROVINCE)**

Fifth Respondent

**MEC: DEPARTMENT OF AGRICULTURE
AND RURAL DEVELOPMENT (GAUTENG PROVINCE)**

Sixth Respondent

MEC: DEPARTMENT OF

Seventh Respondent

**ECONOMIC DEVELOPMENT,
TOURISM AND
ENVIRONMENTAL AFFAIRS (FREE STATE PROVINCE)**

AMENDED NOTICE OF MOTION: URGENT APPLICATION

PLEASE TAKE NOTICE that the applicant intends to apply to this Court on 9 October 2018 at 10:00 or as soon thereafter as counsel may be heard for an order in the following terms:

1. Directing that the matter is urgent and that it be heard as such in terms of Rule 6(12);
2. Prohibiting the first respondent to seventh respondents from issuing permits for the exportation of lion bone pending the finalisation of the review application (as amended and supplemented) launched by the applicant under the above case number;
3. Directing the first and second respondents to pay the costs of the application, jointly and severally, the one paying, the other to be absolved;
4. Directing the fourth to seventh respondents to pay the costs of the application, only in the event of their opposition; and
5. Further and/or alternative relief.



TAKE NOTICE FURTHER THAT the affidavits of **ESTE KOTZE**, together with the attachments to these affidavits, will be used in support of this application.

TAKE NOTICE FURTHER THAT if you intend to object to this application, you are required to:

1. By 14 September 2018 file a notice to oppose and in such notice appoint an address within 15 kilometres of the office of the Registrar of this Court at which the respondents will accept notice and service of all process in these proceedings; and
2. By 2 October 2018, file your answering affidavit.
3. The applicant will thereafter file their replying affidavit, if any, by 5 October 2018.

Dated at Sandton on this the day of September 2018



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Applicant's Attorneys

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SOLOMON & NICOLSON



Suite 301, Block 4
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PRETORIA

TO:

THE REGISTRAR OF THE ABOVE
HONOURABLE COURT
PRETORIA

AND TO:

STATE ATTORNEY PRETORIA
FIRST & SECOND RESPONDENTS' ATTORNEY
SALU Building
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Private Bag X91
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Ref: Mrs A Wasserman



RECEIVED COPY HEREOF ON THIS
DAY OF SEPTEMBER 2018

AND TO:

JACO DEMPSEY ATTORNEYS
THIRD RESPONDENT'S ATTORNEYS

c/o Frits Snyman Attorneys
561 Rachel de Beer Street
Pretoria North
Tel: 012 546 3015
Ref: Snyman/CvdW/S19926

RECEIVED COPY HEREOF ON THIS
13 DAY OF SEPTEMBER 2018



AND TO:

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12HS9

**MEC: DEPARTMENT OF ECONOMIC DEVELOPMENT,
ENVIRONMENT AND TOURISM**

(LIMPOPO PROVINCE)

Fourth Respondent

Served by email

AND TO:

**MEC: DEPARTMENT OF ECONOMIC DEVELOPMENT,
ENVIRONMENT, CONSERVATION AND TOURISM**

(NORTH WEST PROVINCE)

Fifth Respondent

Served by email

AND TO:

**MEC: DEPARTMENT OF AGRICULTURE AND RURAL
DEVELOPMENT (GAUTENG PROVINCE)**

Sixth Respondent

Served by email



AND TO:

**MEC: DEPARTMENT OF ECONOMIC DEVELOPMENT,
TOURISM AND ENVIRONMENTAL AFFAIRS (FREE STATE
PROVINCE)**

Seventh Respondent

Served by email



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MEC: DEPARTMENT OF ECONOMIC DEVELOPMENT, TOURISM AND ENVIRONMENTAL AFFAIRS (FREE STATE PROVINCE)	Seventh Respondent

FOUNDING AFFIDAVIT

I, the undersigned,

ESTE KOTZE



do hereby make oath and state as follows:

1. I am the Deputy Chief Executive Officer of the applicant. I am authorised to depose to this affidavit on its behalf.
2. Except where the contrary is expressly stated or appears from the context, the facts in this affidavit are within my personal knowledge. To the best of my knowledge, they are true and correct.
3. Where I make legal submissions, I do so on the advice of my legal representatives, which advice I believe to be correct.
4. The purpose of this affidavit is to set out the NSPCA's application for urgent, interim relief pending the determination of its review application.
5. The parties to this application are the same parties as in the main application under the above case number.
6. The proceedings were initially launched as review proceedings by the NSPCA and were ongoing when recent events necessitated urgent, interim relief to prevent cruelty to lions.
7. In what follows, I first deal with the following in turn:
 - 7.1 The circumstances rendering this application urgent;
 - 7.2 The NSPCA's *locus standi* to bring this application;
 - 7.3 The facts that satisfy the requirements for the granting of an interim interdict.



8. I rely on the following evidence, the relevant sections of which are referred to below, in support for this application:

- 8.1 The South African National Biodiversity Institute (“SANBI”) Interim Report, dated 27 November 2017 and entitled “*South African Lion Bone Trade: A collaborative lion bone research project*”, which is attached and marked “EK1” (“SANBI Interim Report”). This is the first report in the study commissioned by Department of Environmental Affairs to study the effect of South Africa’s lion bone quota,
- 8.2 The affidavit of Ross Harvey, which is attached as “EK2” and the report entitled “*The Economics of Captive Predator Breeding in South Africa*”, which is attached to his affidavit as “RH1”;
- 8.3 The affidavit of Dr Paul John Funston, together with its attachments, which is attached as “EK3”. As he is currently out of the country, I have attached an unsigned copy. A signed copy will be provided upon his return;
- 8.4 Smaragda Louw’s confirmatory affidavit and its attachments, which is attached as “EK4” (including the report entitled “*The Extinction Business: South Africa’s ‘Lion’ Bone Trade*”, which is attached to Louw’s affidavit as “SL2”).

Urgency

9. This application for interim relief is urgent.

- 9.1 On 28 June 2017, DEA issued a notice establishing the original quota of 800 skeletons (“original quota”).



- 9.2 On 28 December 2017, the NSPCA filed and served its application to review and set aside the original quota on the grounds set out in the main application.
- 9.3 When the previous quota of 800 was published in June 2017, this quota was exhausted by applications within 5 weeks to two months (see the SANBI Interim Report, p 22 and the comments of Mr ‘t Sas-Rolfes (at the Parliamentary Colloquium, which was held from 21 – 22 August 2018) who stated that the quota was exhausted within 5 weeks. The confirmatory affidavit of Trendler, who attended the Parliamentary Colloquium on behalf of the NSPCA, is attached and marked “**EKS**”.
- 9.4 On 16 July 2018, whilst the DEA was still in the process of drip-feeding the NSPCA the record of the decision to determine the original quota, media articles appeared reporting that the Minister had notified provincial authorities that the DEA had determined a new quota for the exportation of lion bones of 1500 skeletons (“**2018 quota**”).
- 9.5 Based on how quickly the original quota was taken up it is probable that the 2018 quota will be taken up quickly, meaning that 1500 lions will be slaughtered for their skeletons to meet the demand from the East, and based upon what the NSPCA has encountered in the manner in which these captive lions are kept and slaughtered, there is a high probability that cruel conditions of captivity and killing will be inflicted on one or more lions during the execution of the 2018 quota;
- 9.6 Thus, the NSPCA needed to take legal advice on the implications of the new quota for its pending review application and its legal options in regard to the 2018 quota. Clearly, a new review application was going to take too long, given the length of time that it had taken for the record to be produced by the DEA. The first date on which it could do so was



Saturday, 21 July 2018 because its counsel was engaged in matters outside of Gauteng during the week.

- 9.7 Its counsel then began to prepare this application and its supplementary affidavit. The NSPCA was on the verge of launching this application on 6 August 2018 when it received a letter from the state attorney requesting that the parties meet.
- 9.8 After much correspondence, a meeting was finally arranged for 4 September 2018. The relevant correspondence in this regard is attached and marked “EK6” – “EK8”.
- 9.9 The meeting was held on a without prejudice basis on 4 September 2018 at the chambers of counsel for the DEA and being without prejudice its contents cannot be revealed save to state that the parties were not able to resolve the matter.
- 9.10 On 5 September 2018, the NSPCA’s attorney addressed a letter to the respondents requesting a written undertaking by 7 September 2018 (at noon) that no permits would be issued pending the determination of its review application. A copy of the relevant letter is attached and marked “EK9”.
- 9.11 On 7 September 2018, the state attorney responded and refused to provide the requested undertaking. A copy of the relevant letter is attached and marked “EK10”.
- 9.12 In the letter of 7 September 2018, the state attorney also indicated that the provincial authorities are responsible for the issuing of permits. The relevant have consequently been cited in this application (as the fourth to seventh respondents) for whatever interest they may have. Costs will



only be sought against them in the event of their opposition.

9.13 This application was finalised and launched as soon reasonably possible afterwards, which was on 12 September 2018. Given the apparent demand for permits by the captive lion breeding industry, I submit that an urgent interim interdict is necessary to prevent the harm of the 1500 new permits being issued in haste, long before the review proceedings may be decided.

Locus standi

10. As set out in the NSPCA's founding affidavit, the NSPCA has *locus standi* in terms of section 3 of the Societies for the Prevention of Cruelty to Animals Act No 169 of 1993 ("the SPCA Act"). Under section 3 of the SPCA Act, the NSPCA is mandated to ensure the welfare of animals and as its name implies, to prevent cruelty to them. It is also required to take cognisance of the application of the laws that affect animals and to make representations in connection therewith.
11. The "*welfare*" of an animal includes its ability to cope in its environment. This is also the essence of the conservation of wild animals. The NSPCA will thus often become involved in situations where animals, including wild animals, are not able to cope in their environments or where there is a risk of such a situation developing.
12. As an example, the need to cull elephants in national parks like the Kruger is both a conservation and a welfare issue. Thus, in certain circumstances, this is necessary from both a conservation and a welfare perspective, because the ability of elephants to cope in their environments is threatened if it is not carried out.
13. There is an extensive history of NSPCA's involvement in the elephant culling. The NSPCA played a big role in that stakeholder process. The gazette Norms



and Standards for the management of elephants in South Africa (“N and S”) state that culling will only be allowed if all alternatives have been excluded. In addition, that any cull must be on the basis of adequate scientific evidence. The NSPCA has also previously monitored the culling of wild elephants.

14. Accordingly, the NSPCA would have strong legal grounds to challenge or question the culling techniques used based on the contents of the N and S and welfare implications. Thus, the NSPCA’s mandate is welfare of both individual elephants and the bigger welfare and conservation issue of a subpopulation as a whole. Thus, in certain circumstances, not culling would result in elephants slowly dying of starvation and would this be as much an issue for the NSPCA as the culling of elephants and the techniques used.
15. The issue of the regulated trade in lion bone is an overlapping issue of conservation and welfare for two reasons. First, it poses a risk of threatening not only the wild lion populations of South Africa, but also those across other African lion range states. Lions are considered keystone species and of ecological importance in terrestrial ecosystems. Anthropogenic factors such as retaliation killing due to livestock predation, prey competition with humans, loss of habitat and conversion; and poaching of lions affect their welfare ability to cope in their environment. These factors challenge the conservation and the welfare status of this species and are cause for concern.
16. Second, there is no legislation in South Africa that establishes standards for the keeping of lions in captivity and the manner in which they are to be slaughtered.
17. The DEA has continued to insist that the welfare of captive-bred lions does not form part of its mandate and thus to wash its hands of any responsibility in this regard (despite being responsible for the development and growth of the captive bred lion industry).



18. Thus, ensuring the welfare of the approximately 6000 – 8 000 lions in captivity in South Africa has fallen solely on the NSPCA. Despite being extremely concerned about this issue, the NSPCA simply does not have the resources to monitor and police the captive-bred lion industry properly. It receives no government funding or assistance, and is reliant upon public donations for its survival.
19. In addition, to date, the DEA have been unwilling or unable to provide the NSPCA with the details of captive bred lion breeders, despite repeated requests for such information. Instead, the DEA refers the NSPCA to the relevant provincial authorities, who refuse to provide the information in the absence of a formal request under the Promotion of Access to Information Act 2 of 2000. Thus, the NSPCA is not only carrying the responsibility for the welfare of captive bred lions (including those slaughtered for their bones) but is doing so in the absence of regulations and the co-operation of the DEA.
20. To the extent that it has been able to do so, the NSPCA has frequently raised welfare concerns with captive lion breeders. The NSPCA and Societies have inspected captive lion facilities and frequently raised welfare concerns with captive lion breeders. I attach some examples of the documented welfare issues, in the form of photo-packs, that have been uncovered at such facilities as “EK11” – “EK14”, which illustrate the horrific treatment and conditions to which captive bred lions are subject.
21. The lion bone trade quota compounds the very real concerns that the NSPCA has regarding the welfare of captive bred lions in South Africa for the following reasons:
 - 21.1 With the trophy hunting of lions, the lions are required to be in a good condition. This is not the case with the lion bone trade – there is no economic incentive for the breeders of captive-bred lions to ensure that



their lions are appropriately fed and maintained in a good condition, since all that is required is an adult lion skeleton;

- 21.2 Indeed, the economic incentive is to spend as little as possible on the upkeep of the lions in order to maximise profits from the sale of lion bones. The captive bred lion population intended for the lion bone trade is thus extremely vulnerable to ill-treatment, and in particular, to being over-bred, kept in small enclosures or cages, which gives rise to behavioural problems such as pacing, gnawing, and other forms of self-destructive obsessive-compulsive type behaviour, and being fed inadequate diets;
- 21.3 With the current USA ban on the importation of trophies from captive bred lion hunts, there is growing evidence of lion breeders switching to the lion bone trade as their primary trade/business in lion (EMS/BAT Report, SANBI Interim Report). In addition, if South Africa continues to determine a lion bone quota, particularly if it continues to increase the quota, more lion breeders will be encouraged to increase the breeding of lions for their bones and others may enter the trade in order to do so;
- 21.4 In addition, as set out below, the available science indicates that the regulated trade in lion bone will not serve as a buffer for wild lions but will likely fuel the demand for lion bone and provide a cover for illegal trade to operate alongside the legal one;
- 21.5 The DEA relies on the demand for lion bone (from South East Asia) as its rationale for determining a quota for the export of such because of its misconceived notion, which has no grounding in science, that this will prevent the poaching of wild lions. The likelihood of the legal trade providing cover for trade in illegally procured (poached wild lion) has



not been excluded by the DEA or the studies it relies upon;

- 21.6 Given that the wild population is only of the order of 3000 lion in South Africa there is no margin for error in the current situation. If the 2018 quota (which is half of this number) results in a spike in poaching of wild lion – a danger which the DEA simply cannot on its available data say is not likely – the wild lion population could be decimated to levels that put the survival of the species at risk;
- 21.7 Thus, the DEA's misconceived notion is leading it into a catch-22 situation (for which lions, both wild and captive-bred, will ultimately pay the price unless the relief sought herein is granted on an urgent basis in terms of rule 6(12));
- 21.8 The regulated (legal) trade will continue to feed demand in South-East Asia for lion bone. This has already meant an ever-increasing number of lions being bred and held in captivity in South Africa. This is unacceptable in a situation in which, as set out above, there is no legislation which regulates welfare standards for the keeping of captive-bred lions;
- 21.9 This is exacerbated by the fact that the DEA insists that it is not responsible for the welfare of captive bred lions, and abdicates responsibility for the welfare and protection of these lions solely to the NSPCA – an organisation already stretched too thin in terms of manpower and finances. Thus, the relief claimed in this application is essential to protect the lions of South Africa;
- 21.10 Relief in the ordinary course cannot be obtained in these circumstances. The NSPCA simply does not have the resources to police the conditions of the captive lion breeding facilities. The NSPCA's concern is thus that

South Africa is sitting on a ticking time bomb, in relation to the welfare of both wild lions and of captive-bred lions;

21.11 If the DEA is going to determine quotas for the sale of lion bone, it is of the utmost importance that it do so lawfully;

21.12 As set out in the NSPCA's founding and supplementary affidavits, NEMBA requires DEA to determine a lion bone quota only in circumstances where (a) it has determined that there is a proper scientific basis for doing so and (b) after a proper public consultation process. DEA has to date, in relation to both the 2017 and 2018 quotas, failed to do both.

22. The NSPCA therefore has *locus standi* to bring this application.

The requirements for the granting of an interim interdict

Prima facie right

23. The decision to establish the 2018 quota is reviewable on at least any of the four following grounds:

23.1 The Minister failed to comply with sections 57(2) of NEMBA when she established the new quota for 2018;

23.2 The Scientific Authority failed to comply with section 61(2) of NEMBA;

23.3 The Minister failed to follow a public consultation process before she established the new quota; and



23.4 The new quota is irrational.

Section 57(2) of NEMBA

24. Section 57(2) of NEMBA provides as follows:

“The Minister may, by notice in the Gazette and subject to such conditions as the Minister may specify in the notice, prohibit the carrying out of any activity-

(a) which is of a nature that may negatively impact on the survival of a listed threatened or protected species; and

(b) which is specified in the notice”

25. Prior to the establishment of the quota for the exportation of lion bone, there was no restriction on the export of lion bones, save that the practice was subject to the granting of CITES permits. Thus, from 2007 – 2017, approximately 6000 lion skeletons were exported from South Africa to South East Asia.
26. The determination of a quota consequently constitutes the partial prohibition of the exportation of lion bone. The exportation of lion bone is an activity which may negatively impact on the survival of threatened species, namely lion. This is evident from the notice in terms of which the original quota was established (attached to the founding affidavit as “MM2” at paginated page 41) and from the SANBI Interim report.
27. Thus, section 57(2) of NEMBA is applicable to the determination of a quota for the exportation of lion bone. Under section 63(1) of NEMBA, before doing so, she was required to follow a consultation process as set out under sections 99 – 100 of NEMBA. She failed to do so.
28. The Minister failed to apply section 57(2) when she established the 2018 quota. Irrespective of any other factor this is fatal to the 2018 quota.

29. The new quota consequently stands to be reviewed and set aside under section 6(2)(b)(i) of PAJA because mandatory and material procedures/conditions as prescribed by the empowering provisions were not followed, alternatively, in terms of the principle of legality under section 1(c) of the Constitution.

The failure to comply with section 61(1)(d) read with section 61(2) of NEMBA

30. Section 61(1)(d) provides as follows:

“The Scientific Authority must make non-detriment findings on the impact of actions relating to the international trade in specimens of listed threatened or protected species and species to which an international agreement regulating international trade applies, and must submit those findings to the Minister.”

31. Section 61(2) provides as follows:

“(a) base its findings, recommendations and advice on a scientific and professional review of available information; and

(b) consult, when necessary, organs of state, the private sector, non-governmental organisations, local communities and other stakeholders before making any findings or recommendations or giving any advice.”

32. The Scientific Authority failed to comply with section 61(2) when it issued the 2018 NDF:

- 32.1 The 2018 NDF stated that *“at present there is no evidence to suggest that the lion bone trade between South Africa and East-South East Asia is detrimental to South Africa’s wild lion population.”* Yet, there is no scientific basis for this conclusion.

- 32.2 The SANBI Interim report (at page 25), on which the 2018 NDF was reportedly based, in fact states that wild lion populations in other African range states are “*likely*” to be “*adversely affected*” and that this requires urgent investigation. The 2018 NDF simply ignored this finding.
- 32.3 As in the case of the SANBI Interim Report (at page 25), the 2018 NDF only states that South African lion populations are stable at present. It does even consider what impact the trade in lion bone is likely to have on them in the medium term.
- 32.4 The 2018 NDF in no way provides a basis for the revised 2018 quota of 1500 skeletons. Rather, it simply states that a quota for the export of skeletons derived from captive breeding operations must be established and revised on an annual basis.
33. The new quota consequently stands to be reviewed and set aside under section 6(2)(b)(i) of PAJA because mandatory and material procedures/conditions as prescribed by the empowering provisions were not followed, alternatively, in terms of the principle of legality under section 1(c) of the Constitution.

No public consultation

34. Even if section 57(2) of NEMBA was not applicable (which is denied) the Minister was obligated under PAJA to provide the NSPCA (and other interested organisations) with a reasonable opportunity to make representations before she established the new quota.
35. The need for public consultation in the circumstances of this case is further confirmed by section 61(2)(b) of NEMBA, which provides as follows:

“The Scientific Authority must consult, when necessary, organs of state, the private sector, non-governmental organisations, local communities and other stakeholders before making any findings or recommendations or giving any advice.”

36. There was no public consultation process before the new quota was established. The new quota consequently stands to be reviewed and set aside under section 6(2)(c) of PAJA, alternatively, in terms of the principle of legality under section 1(c) of the Constitution.

The 2018 quota is irrational and unreasonable

37. The DEA has invoked two reasons for its decision to establish a new quota:
- 37.1 The SANBI interim report; and
- 37.2 *“because they have surplus stockpiles of lion bones and want to get rid of them.”*
38. Regarding the SANBI interim report:
- 38.1 The SANBI Interim report recognises the possibility that it was not based on a representative sample (with only five respondents answering all six sections) and states that the sample size of respondents needs to be increased (pages 6, 25);
- 38.2 In addition, one of the researchers of the SANBI Interim Report, acknowledged before Parliament (at the Colloquium held from 21 – 22 August 2018) that the SANBI Interim Report is incomplete and should not have served as the basis for the determination of a quota. He acknowledged further that he informed DEA of this. Trendler’s confirmatory affidavit, attached as “EK5”, confirms this. Having been thus renounced by one of its authors, it provides no sound scientific or

rational foundation for any form of administrative action at all;

- 38.3 The SANBI Interim Report itself makes no recommendation, and provides no basis, for the establishment of a further quota of 1500 skeletons. Thus, the setting by the Minister of the 2018 quota of 1500 skeletons is arbitrary.
- 38.4 If the contents of the SANBI Interim Report are to be taken into account at all it should have dissuaded the Minister from establishing a further quota (at least until further investigation had been undertaken), since it indicates that:
- 38.4.1 There is a risk of a parallel illegal market developing for the exportation of lion bone and that if links develop between this market and established transnational criminal syndicates, there is a risk of the irreversible rhino poaching epidemic being repeated in relation to South Africa's wild lions (pages 14, 24);
- 38.4.2 It is "*likely*" that wild lion populations in other African range states are going to be "*adversely affected*" and that this requires "*urgent investigation*" (page 25).
- 38.5 Faced with these warnings in the Interim Report, it was therefore irrational and unreasonable for DEA to establish a further quota, particularly one that is so high;
- 38.6 At the very least, no further quota should be set until further research and studies conclude that the risk of potential, irreparable harm (warned against in the Interim Report) would not ensue if a further quota was determined for the exportation of lion bone;
- 38.7 If such studies had been conducted, a further quota would not have been

determined. This is because the EMS/BAT report establishes that there are already links between organised transnational criminal syndicates and South African lion breeders who export lion bone. Thus, the condition contemplated by the authors of the SANBI Interim Report is already satisfied. In addition, because increased rates of targeted poaching for lion body parts in our neighbouring countries have been reported;

- 38.8 The new quota consequently stands to be reviewed and set aside under section 6(2)(f)(ii)(cc) of PAJA because it is not rationally related to the information on the basis of which it was purportedly taken;
- 38.9 It also stands to be reviewed and set aside under section 6(2)(h) of PAJA because it was unreasonable, alternatively, in terms of the principle of legality under section 1(c) of the Constitution, on the basis that the decision was irrational.
39. **Regarding the desire to get rid of “*surplus stockpiles of lion bone*” :**
- 39.1 Under section 57(2) of NEMBA, the Minister is not empowered to exercise her powers to prohibit (or permit) (either fully or in part) an activity that may negatively impact on a threatened species, in this case lions, in the commercial interests of the captive-bred lion industry;
- 39.2 Rather, under section 57(2) of NEMBA and section 24(b) of the Constitution, she is empowered and obligated to do so in the interests of biodiversity. In this case, in order to conserve wild lions. There is no rational link between setting the quota and the conservation of wild lion;
- 39.3 To the extent that the Minister took the decision to establish the new quota because the captive-bred lion industry have “*stock piles*” of lion bone, which they wish to sell, it was taken for an ulterior purpose, on the basis of irrelevant considerations, in bad faith, due to the unwarranted dictates of another person

and arbitrarily. It was also grossly unreasonable;

- 39.4 It consequently stands to be reviewed and set-aside under sections 6(2)(e)(ii) - (vi) and 6(2)(h) of PAJA, alternatively, in terms of the principle of legality under section 1(c) of the Constitution, on the basis that the decision was irrational.

Conclusion

40. For the reasons that are set out above, I am advised and I respectfully submit that the NSPCA has made out a case for the relief sought in the notice of motion. The Honourable Court should thus grant such relief in the interests of the lions of South Africa.

A reasonable apprehension of irreparable harm

41. The NSPCA has a reasonable apprehension of irreparable harm on three bases:
- 41.1 The legal trade (endorsed by the issuing of quotas) provides cover for the illegal trade, reduces the resistance of consumers (in South East Asia) to purchasing lion bones as their consciences must be appeased by the knowledge that there is a legal trade and there is no reliably enforceable way of distinguishing legally from illegally killed lions;
- 41.2 Owing to the widely reported links between the lion breeders who export lion bone and transnational criminal syndicates who smuggle illegal animal products, the continued exportation of lion bone leading to a phenomenon similar to the rhino-poaching epidemic cannot be excluded. While it cannot be excluded, it should not be risked in relation to South Africa's wild lion populations. The risk has to be averted on reasonable grounds to ensure that the irreversible tipping point will not be reached - as has occurred with South Africa's wild rhino populations;

- 41.3 That lions in other African range states will be the subject of increased poaching and will thus be “*adversely affected*” in circumstances where they are already extremely vulnerable;
- 41.4 That the welfare of South Africa’s captive bred lion population is not being catered for and ensured. As set out above, and in the EMS/BAT Report, there are very real concerns in this regard, in particular in relation to lions bred for the trade in lion bone;
- 41.5 Thus, the welfare of captive bred lions in South Africa is being left solely to the NSPCA to monitor and enforce in circumstances where it simply does not have the capacity to do so and the evidence of cruelty is plain to see from the photographs annexed. Thus, DEA’s enactment of quotas (particularly a quota that is almost double the previous one) for the exportation of lion bone carries with it a reasonable risk of irreparable harm to the captive bred lions in South Africa.

The balance of convenience

42. As set out above, the NSPCA has a very strong right to the relief sought in the review application. I am advised and I submit that, on the bases set out above, it does not have merely a *prima facie* right but rather a clear right to such relief.
43. Thus, it is not necessary for the Court to determine whether the balance of convenience favours it or whether there is a risk of irreparable harm. But in any event, the balance of convenience does favour the granting of the interim interdict:
- 43.1 The EMS/BAT Report establishes that there are only a handful of lion breeders who are involved in the lion bone trade. SAPA has not provided any information as to the number of people employed by each



of these breeders or to the specific harm that these breeders will suffer if the relief that is sought in this application is granted;

43.2 Conservationists agree that there is no conservation value to the captive lion bred industry and that it is solely a commercial enterprise. I refer in this regard to the following:

43.2.1 The affidavit of Dr Paul Funston, paragraphs 22-25;

43.2.2 The EMS/BAT Report, pages 7 – 12, 27 – 32, 43 – 44, 67 (second paragraph); and

43.2.3 The SAIIA Report, pages 26 – 42.

43.3 The regulated trade in lion bone does not, contrary to the views adopted by the DEA, serve as a buffer for wild lion populations. There is simply no science to back up this assertion; it is conjecture. Rather, the science that does exist in relation to this issue points in the other direction. The regulated trade in lion bone is likely to fuel a demand for lion bones and to provide cover for the illegal (poached wild lion) trade. It will thus further imperil wild lion (and other wild cat) populations. I refer in this regard to the following:

43.3.1 The SANBI Interim report, which states that there is the potential for an illegal market for the sale of lion bones will develop parallel to the legal market for the trade in lion bone (pages 14, 24). In addition, that if this market/network developed links with transnational organised criminal syndicates then there is a risk of the rhino-poaching epidemic being repeated with regard to South Africa's wild lion populations;



- 43.3.2 The EMS/BAT Report (pages 11, 21 – 27, 45 – 59, 121), which establishes that these links already exist. Thus, that the lion breeders in South Africa export lion bone to transnational organised criminal syndicates. The conditions for the risk that is flagged in the Interim Report consequently already exist;
- 43.3.3 The SANBI Interim Report, which states that it is “*likely*” that wild lion populations in other African range states will be “*adversely affected*” and that this required “*urgent investigation*”. In addition, that the SANBI study will not encompass such an investigation;
- 43.3.4 The affidavit of Dr Paul Funston (paragraphs 26 – 33), the EMS/BAT Report (pages 7 – 12, 27 – 32, 43 – 44, 67) and the SAIIA Report (pages 10, 21 -22, 24 – 25, 42 – 45, 77 – 83);
- 43.3.5 The DEA is unable to regulate the exportation of lion to ensure that the regulated trade is not used to mask the illegal trade. I refer in this regard to the EMS/BAT Report, at pages 37 – 44.
- 43.4 There is no reliable evidence to establish that interdicting the export of lion bone will cause harm to the South African economy. On the other hand, the evidence suggests that the captive-bred lion industry is harming the South African economy and costing it revenue and jobs. Thus, that continued support for the captive bred lion industry may cost South Africa as much as R54 billion over the course of the next ten years. I refer in this regard to the affidavit of Ross Harvey at paragraph 6.5.

No alternative, adequate remedy

44. The NSPCA does not have an alternative, adequate remedy.

- 45. An interim interdict to halt the issuing of permits is the only way for it to preserve the rights that it seeks to vindicate under the review application, which has been launched under the above case number.

- 46. Once the lions are subject to the cruelty and other threats to their welfare to which some, if not all, of these magnificent beasts are destined by the implementation of the quota there is no undoing this inhumanity, no recovering of lost lives and no opportunity to undo the deleterious effects of inadequate science.

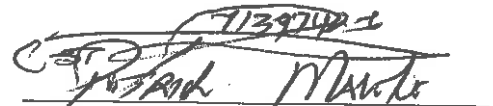
Conclusion

- 47. I respectfully submit that the NSPCA has made out a case for the relief sought in this application.



DEPONENT

I hereby certify I certify that the deponent has acknowledged that she knows and understands the contents of this Affidavit which was signed and sworn to before me at on this the day of September 2018 and that the provisions of the Regulations contained in Government Notice R1258 of 21 July 1972 (as amended) and Government Notice R1648 of 19 August 1977 (as amended) have been complied with.

713924-1
C. P. D.

COMMISSIONER OF OATHS
SOUTH AFRICAN POLICE SERVICE
CLIENT SERVICE CENTRE
2018-09-13
ALBERTON
SOUTH AFRICAN POLICE SERVICE

EKI

Interim Report 1

South African Lion Bone Trade

A Collaborative Lion Bone Research Project



**Report for the
South African National Biodiversity Institute (SANBI)**

27 November 2017

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Table of Contents

Table of Contents	2
1 Introduction and Project Aims	3
2 Methodology Overview for Sub-Projects & Activities Initiated in 2017	5
2.1 <i>National captive lion survey</i>	5
2.2 <i>Analysis of data from multiple information sources</i>	5
2.2.1 EXPORTS OF LION BONES: CITES EXPORT PERMITS & AIR WAYBILL DATA	5
2.2.2 QUOTA APPLICATIONS	5
2.2.3 OTHER	5
2.3 <i>Monitoring of muthi markets for lion products</i>	6
3 Captive Lion Survey	6
3.1 <i>Reasons for keeping and/or breeding lions, and the main purpose of the facilities</i>	6
3.2 <i>Estimated value of sales</i>	8
3.3 <i>Ban on the import of captive-produced lion trophies</i>	9
3.3.1 US BAN ON THE IMPORT OF CAPTIVE-PRODUCED LION TROPHIES	9
3.3.2 POTENTIAL OF A UK–EUROPE BAN ON THE IMPORT OF CAPTIVE-PRODUCED LION TROPHIES	10
3.4 <i>Lion bone quota: impact and adaptation</i>	11
3.5 <i>Lion euthanasia</i>	12
3.6 <i>Average age of lions sold for bones</i>	13
3.7 <i>Sale of lion bones</i>	13
3.7.1 FACILITIES SELLING BONES AND PARTS TO VARIOUS BUYERS	14
3.7.2 UTILISATION OF ‘BONE AGENTS’ OR MIDDLEMEN	14
3.7.3 ORIGIN OF SKELETONS	15
3.7.4 YEARS OF BONE EXPORTS	15
3.7.5 PRICE RANGES OF LION AND LIONESSE SKELETONS	17
3.7.6 SKELETON EXPORTS	19
3.8 <i>Summary discussion of questionnaire results</i>	20
4 Data from Multiple Information Sources	20
4.1 <i>Exports of lion bones (2008–2016)</i>	20
4.1.1 PUBLISHED CITES EXPORT PERMITS & AIR WAYBILL DATA	20
4.1.2 UNPUBLISHED CITES EXPORT PERMITS & AIR WAYBILL DATA	21
4.2 <i>Lion bone quota applications (2017)</i>	22
5 Muthi Market Monitoring for Lion Products	24
6 Discussion, Conclusions, Recommendations	24
6.1 <i>Current situation</i>	24
6.2 <i>Data limitations and further avenues to explore</i>	25
7 Supplementary Documents	26
8 References	26
9 Appendix 1	27
10 Appendix 2	29
10.1 <i>Abstract from Williams et al. 2017a (‘A roaring trade? The legal trade in Panthera leo bones from Africa to East-Southeast Asia’)</i>	29
10.2 <i>Extracts from the text of Williams et al. (2017a)</i>	29
11 Appendix 3	31
11.1 <i>Abstract from Williams et al. 2017b (‘Questionnaire survey of the pan-African trade in lion body parts’)</i>	31
11.2 <i>Extracts from Williams et al. (2017b)</i>	31

1 Introduction and Project Aims

The African lion is the only big cat listed on CITES Appendix II, and the only one for which international commercial trade is legal under CITES (Williams *et al.* 2017a). Debates on the contentious trade in lion bones and body parts were amplified at the 2016 CITES Conference of the Parties (CoP17) when consensus on a proposal by Chad, Côte d'Ivoire, Gabon, Guinea, Mauritania, Niger, Nigeria and Togo to transfer all African populations of *Panthera leo* (lion) from Appendix II to Appendix I of CITES could not be reached, and many southern African countries in particular opposed the proposal. Instead, through negotiations within a working group, a compromise to keep *P. leo* on Appendix II with a bone trade quota for South Africa, was agreed as follows:

A zero annual export quota is established for specimens of bones, bone pieces, bone products, claws, skeletons, skulls and teeth removed from the wild and traded for commercial purposes. Annual export quotas for trade in bones, bone pieces, bone products, claws, skeletons, skulls and teeth for commercial purposes, derived from captive breeding operations in South Africa, will be established and communicated annually to the CITES Secretariat.

CoP17 underscored a need for further information on lion trade and the consequences for lions across the continent. And, in accordance with the annotation, South Africa was required to establish an export quota for lion bones, and the Scientific Authority was mandated to advise the Department of Environmental Affairs (DEA) on the size of this quota on an annual basis. Following consultation with various relevant government agencies (national and provincial) and other stakeholders (including a public meeting on 18 January 2017), the 2017 export quota was set at 800 skeletons (with or without the skull) in July 2017. No specific export quotas were set for teeth, claws or individual bones; these items are included in the quota as parts of a skeleton. In order to provide sound scientific decision support to the DEA, an interdisciplinary and collaborative research project led by two independent experts, Dr VL Williams (VLW) and Mr M 't Sas-Rolfes (M'TSR), was commenced in March 2017 and will end in March 2020. This interim report is the first in the series of report backs on the research to SANBI.

The core aims of the collaborative research project, as given in the collaboration memorandum, are:

1. To increase understanding of the captive breeding industry and the trade in lions (especially bones, but also other products and live lions) in South Africa;
2. To investigate how the trade in captive-produced lion skeletons and other body parts under a quota system affects wild lion populations;
3. To strengthen the evidence base for the annual review of the lion bone export quota in order to ensure it is sustainable and not detrimental to wild populations.

The lion bone trade also interacts with the recreational hunting industry and may affect other felid species internationally; accordingly, the project also aims:

4. To gain a better understanding of the consequences of the US ban on imports of captive-origin trophies that took effect from the start of 2016;
5. To gain a better understanding of potential linkages between markets for lion body parts and those of other large felids in and beyond Africa.

In respect of the aims, various sub-projects and/or data analysis activities were initiated in 2017, namely:

1. *The National Captive Lion Survey*: an online questionnaire survey distributed to South African facilities that breed, keep, hunt and trade in lions (live and/or products) (commenced August 2017; ongoing, but to be closed in 2018 on a date to be determined; the focus of this report) (various collaborators);
2. *Analysis of data supplied by multiple information sources*: analysis of available data (see Table 1) to inform the evidence base;
3. *Muthi market monitoring*: a project tracking the presence of lion parts (mainly skins) in traditional medicine outlets/markets (commenced January 2017; ongoing) (VLW only; not SANBI funded).

Table 1: Summary of the multiple information sources used, or to be used, to provide data on lion related utilisation and activities over the progression of the 3-year collaborative research project. Progress on accessing and evaluating these data to date are indicated with a ✓ or ✘.

Data type	Evaluated? ✓ or ✘
Quota applications	✓ & ✘ (superficially)
CITES trade records as reported by exporters and importers (data sources include the CITES UNEP-WCMC trade database, and annual reports submitted by South Africa to the CITES Secretariat.)	✓ & ✘ (Partial up to 2015; see Williams <i>et al.</i> 2017a,b) (2016/17 reports requested)
TOPS permits issued (hunting, killing, exporting, selling, buying, transporting of lions)	✘ (Data requested)
TOPS registrations for captive breeding operations	✘ (Data requested)
Inspection reports for lion bone consignments inspected	✘ (Data requested)
(i) At source (hunting farm/captive breeding operation)	✓ & ✘
(ii) Upon endorsement of the permit	(Partial; complete data set not supplied)
Reports from Environmental Management Inspectors concerning	(i) Confiscations of illegal consignments of big cat bones (Data requested)
(ii) Illegal ToPS-restricted activities pertaining to lions	✘ (Data requested)
Wild and captive lion poaching statistics	✘ (Data requested)
Monitoring data from <i>muthi</i> markets	✓ (Ongoing project by VLW)
Results of forensic analyses of random DNA samples to verify species identification and sources of bones (captive/wild)	✘ (Data not requested)
Questionnaire of bone agents, hunting farms and captive breeding operations, with a particular focus on economics, and the breeding, maintenance and sourcing of lions	✓ (Ongoing survey; interim results presented in this report)
National trophy hunting statistics, and allied data	✓ & ✘ (Partial; analysis of data to 2010 in Williams <i>et al.</i> 2015)
Provincial hunting permits	(Statistics requested for 2011 to present) (Allied data requested in part)
Provincial legislation relating to lions	✘ (Data requested)
Air waybill data from freight consolidation company on behalf of the bone traders: actual exports of lion bone quantities from 2014–2016	✓ & ✘ (Partial; analysis of legislation to 2011 in Williams <i>et al.</i> 2015a) (Requires updates from the Provinces)
Industry trade data, for example:	✓ & ✘ (Mostly; part of analysis in Williams <i>et al.</i> 2017a; partial assessment in this report)
Price data along the supply chain (live, body parts, bones, etc)	✓ & ✘ (Incomplete; requires further data gathering from a variety of sources)
Audit of captive lion facilities per province / compliance report	✘ (Data requested)
Various documents relating to decisions, policy, legislation, etc	✓ & ✘ (Incomplete; wish list partially compiled)

This 2017 Interim Report 1 on the collaborative lion bone project summarises some of the information collected to date. Further additional research is planned for 2018 and beyond, which is discussed in Section 6 of this report along with some important broader contextual considerations.

2 Methodology Overview for Sub-Projects & Activities Initiated in 2017

2.1 National captive lion survey

In August 2017 we launched the online 'National captive lion survey'. The structured semi-quantitative questionnaire with 61 questions (Supplementary Doc 1) was designed and pre-tested over a four-month period. Input on the wording of selected questions in Sections B,D,E & G (Appendix 1) was sought from C. van der Vyver (former South African Predator Association [SAPA] CEO), and there was also some collaboration with L. Rall (Durrell Institute of Conservation [DICE], University of Kent).

The survey was created and administered using SurveyMonkey, and was translated into English and Afrikaans. The questionnaire was initially distributed via email invitation among potentially suitable research participants identified by SANBI, DEA, and SAPA. A hardcopy is also available to members of SAPA who don't wish to complete the survey online (to date, no hardcopy of the questionnaire has been completed, but SAPA will assist with identifying these members and collecting their responses). The survey will remain open until a suitable closing date is determined in 2018. However, the preliminary survey results presented in this report have identified (i) indicative trends to inform future research, and (ii) that a bigger sample size is needed (which we will pursue in early 2018).

All protocols were carried out in accordance with the ethical guidelines and recommendations of the Human Research Ethics Committee (non-medical) of Wits University (Protocol Number H17/06/55).

The interim results presented in this report are for responses captured up to 10th November 2017.

2.2 Analysis of data from multiple information sources

2.2.1 EXPORTS OF LION BONES: CITES EXPORT PERMITS & AIR WAYBILL DATA

The methods and results for this section are mostly detailed in Williams *et al.* (2017a) (see Supplementary Doc 2; and, Appendix 2), but some additional data not provided in that paper are briefly listed in this report. CITES export permit data indicate the total quantity that specific export permits were issued for; hence, an exported consignment should not exceed the quantity stated on the permit (Williams *et al.* 2017a). Actual quantities of legally exported bones can only be deduced from (1) records of CITES permits that have been inspected and 'endorsed' by a nature conservation inspector at the port of exit (*for which we had access to an incomplete set of records*), and/or (2) from the air waybills (AWB) generated by freight forwarding companies, and/or (3) from records kept by the exporting traders (Williams *et al.* 2017a). Data supplied by a freight forwarding company from the AWBs for 2014–2016 was with the consent of their customers (i.e. six of the main traders of lion bones in South Africa, who buy bones from farms and hunting facilities), and these data contained: (i) combined monthly totals of the sets of bones exported, (ii) the mass of the consignments, and (iii) the destination countries in East-Southeast Asia.

To estimate the maximum allowable levels of legal annual trade in lion bones, all CITES data were rigorously cross-checked against the annual reports submitted by South Africa to the CITES Secretariat (as detailed in Williams *et al.* 2017a). Where anomalies were discovered, appropriate adjustments were made. To date, however, we have not had access to the 2016 CITES reports to the Secretariat.

2.2.2 QUOTA APPLICATIONS

In October, the DEA provided us with some data relating to the quota applications received during 2017. These provided us with useful information on the current sources of bones for export.

2.2.3 OTHER

In May 2017, we met with a representative group (i.e. most) of the lion bone intermediary traders and exporters and gained significant contextual information (i.e. qualitative data) on the history and structure

of the bone export industry (some of which is included in Williams *et al.* 2017a). We have taken this background information into account both in planning our future research and in this interim assessment.

2.3 Monitoring of *muthi* markets for lion products

The *muthi* market monitoring project was initiated in January 2017 by VLW and is ongoing; the first sampling phase will be completed in February 2018. Lion products (mainly skins) are being monitored in tandem with two other threatened species. Each species has a different set of collaborators from several institutions (however, the project does not currently involve the collaborator M'TSR).

ToPS (Threatened or Protected Species) permits were obtained from the DEA for all collaborators so that samples could be legally acquired from vendors. The samples will probably be sent to the laboratory at the National Zoological Gardens (Pretoria) for DNA testing in 2018. Monitoring is currently occurring in four South African provinces and one neighbouring country. This component of the research is not SANBI funded.

3 Captive Lion Survey

By 10 November 2017, 124 respondents had visited the survey and started to complete it. However, there is a low rate of survey completion and only 34 respondents (27%) have answered ≥ 1 of the six sections. The number of respondents answering sections is: (i) all 6 sections: $n=5$; (ii) 5 sections: $n=9$; (iii) 4 sections: $n=11$; (iv) 3 sections: $n=5$; (v) ≤ 2 sections: $n=4$ (see Appendix 1 for response rates to individual questions). Respondents were mostly members of SAPA and/or PHASA (79%, Table 2). We note that SAPA membership has dropped significantly during the last two-year period and the number of cooperative respondents is thought to represent more than one third of extant members (C van der Vyver, November 2017). However, we need to establish the reasons for the low completion rate and ensure that the future finalised survey results account for a larger proportion of captive lions. At this stage, we must consider the results to be indicative rather than fully representative of industry trends.

Table 2: Number of respondents and the membership of the facilities to various associations.

Organisation	No. of respondents who answered all/some of the questionnaire (n=34)
SAPA ^a only	17
SAPA ^a & PHASA	6
PHASA only	3
SAPA, PHASA, WRSA, WTA	1
Membership not listed	7

^a SAPA has 55 paid members, which is down from 109 after resignations due to financial circumstances

3.1 Reasons for keeping and/or breeding lions, and the main purpose of the facilities

❖ *Reasons for breeding (Q9), reasons for keeping (Q10), and the core purpose of the facility (Q11)?*

The majority of facilities (56%–65%) breed and keep lions for live sales and hunting, and less than one-third breed and/or keep lions for the bones/products trade (Table 3). Hunting safaris and breeding/rearing were ranked highest as the core purpose of facilities, whereas lion bone sales had the 6th highest overall mean rank (Figure 1).

Table 3: Respondents' reasons for why their facilities breed and/or keep lions. Reasons that include the bone market are in blue. Blank cells indicate options not available in the respective questions

Reasons	Reasons for breeding lions (Q9) (n=34)	Reasons for keeping lions (Q10) (n=34)
Live sales	n=22 (65%)	n=21 (62%)
Hunting	n=21 (62%)	n=19 (56%) ^a
Products/derivatives (incl. bones)	n=10 (29%)	
Products/derivatives (e.g. skins)		n=7 (21%)
Skeletons/bones for Asia		n=9 (26%)
Muti		0
Personal use/pleasure/purposes	n=6 (18%)	n=6 (18%)
Relocation purposes	n=13 (38%)	
Tourism	n=9 (26%)	n=12 (35%)
Other	n=6 (18%) ^b	n=4 (12%) ^c

^a Keeping lions for hunting includes lions purchased from other breeders and kept for selling to hunting outfitters.

^b 'Other' reasons given by the facility for breeding lions are: conservation of wild lions; love of lions and the preservation of the species; "lions are free-roaming and are not a breeding project but an extensive system aimed at lions as a game farm animal (sic)"; education/research; gene preservation program; "breeding takes place per chance, the reserve as extra breeding camps for special game".

^c 'Other' reasons given by the facility for keeping lions are: love of lions; "lions as game farm animals to establish and utilise for hunting and ecotourism"; "we have one captive lioness due to her history as she could not be released back into the wild"; education/research.

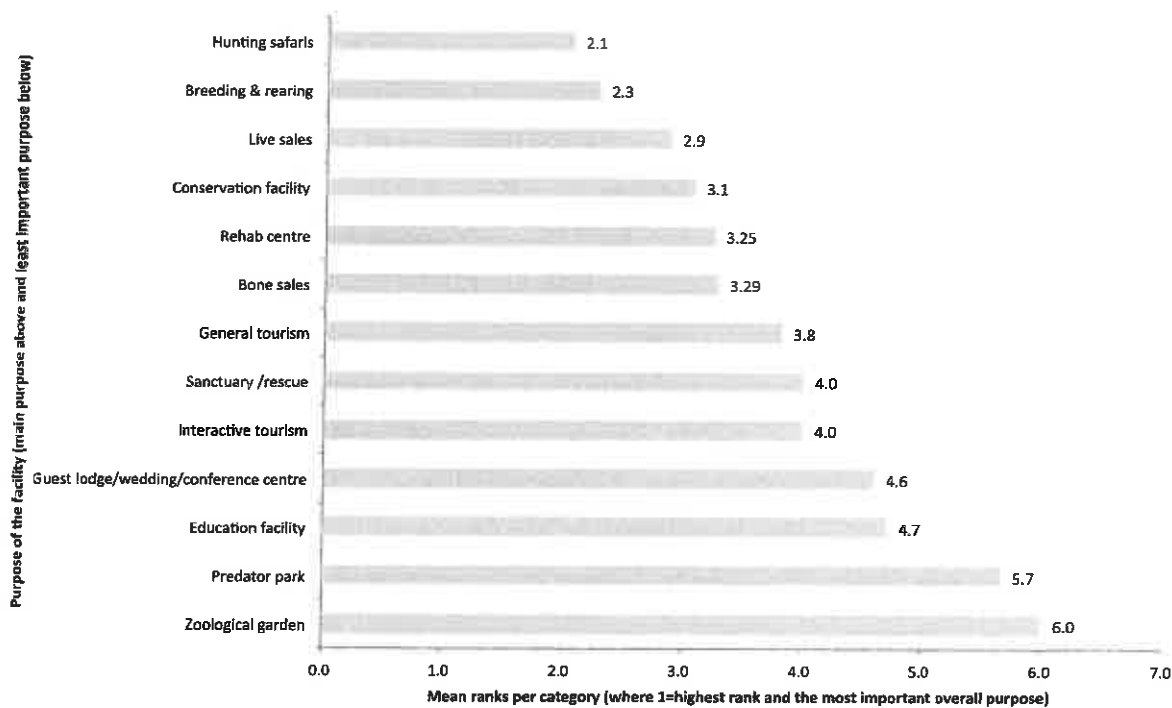


Figure 1: Core purposes of the facilities, expressed as the mean rank per purpose and ordered from top to bottom from the most to least important purposes respectively (Q11). Respondents ranked and selected as many categories as applied to their facility. Lion bone sales were placed sixth overall in the order of core purposes of a facility, but have a mean rank of 3.3.

3.2 Estimated value of sales

❖ Estimated annual value of sales per activity (Q15 & 16)

The original question requested information for eight income streams (viz. live sales for breeding; live sales for trophy hunting; live sales for keeping; trophy hunting on the property (international clients); trophy hunting on the property (SA clients); skin/body parts for 'muti'; display-tourism-educational visits; and, bone/skeleton sales for export market). For this interim report, we show results for bone sales along with those for live sales for trophy hunting and income from foreign trophy hunters, for illustrative comparative purposes.

- 14 facilities responded, with the number of respondents increasing per year from 2012 to 2016 as the number of new facilities entering the market also increased (Figure 2; Table 4). Accordingly, the median value of sales also increased annually (see Table 4 footnotes). However, the facilities deriving revenue from bone sales decreases markedly in 2017.
- The loss of total revenues from bone sales from 2015 to 2017 correlates with declines in the total values of live sales for trophy hunting and income from foreign trophy hunts, following the US trophy import restrictions in early 2016.
- Most surprising was the number of facilities that said the value of lion bone sales was >R1 million in prior years (especially in 2015 and 2016 – see Figure 2).

Table 4: The estimated annual value of sales, and the mean value per respondent, for lion bone sales, live sales for trophy hunting, and trophy hunting on the property for foreign clients.

	2012	2013	2014	2015	2016	mid-2017	
Bone sales	Number of respondents	9	10	11	12	13	8
	Total value of annual sales for facilities ^a	R5.4 mill.	R5.2 mill.	R7.2 mill.	R9.7 mill.	R6.6 mill.	R2.7 mill.
	Mean ^b value of sales per facility	R595 000	R519 000	R650 000	R809 000	R505 000	R344 000
Live sales for trophy hunting	Number of respondents	5	8	10	11	13	11
	Total value of annual sales for facilities	R7.4 mill.	R12.0 mill.	R16.1 mill.	R16.1 mill.	R6.6 mill.	R7.7 mill.
	Mean value of sales per facility	R1.47 mill.	R1.5 mill.	R1.61 mill.	R1.47 mill.	R508 000	R695 000
Trophy hunting on property: foreign	Number of respondents	6	12	12	14	13	12
	Total value of annual sales for facilities	R9.9 mill.	R21.3 mill.	R28.3 mill.	R30.3 mill.	R8.5 mill.	R9.6 mill.
	Mean value of sales per facility	R1.6 mill.	R1.8 mill.	R2.4 mill.	R2.2 mill.	R650 000	R802 000

^a Calculated per annum by multiplying the no. of respondents per sales value class (in ZAR) by the median value of the class (e.g. median of R22 500 for the 'R15 000–R30 000' class)

^b Calculated as the mean for the values in the preceding row (e.g. for 2012, R5.35 million / 9, etc.)

The results of these two questions indicate clearly the joint impact of the US trophy import restrictions and export quota on the bone trade. Breeders that previously benefited from joint trophy hunt and bone markets have seen sharply reduced revenues by 2017 and some have not traded at all. We note that 2016 was a somewhat anomalous year, that included potential lag effects from carried-over 2015 hunts and sales, as well as strategic behaviour in response to both the US trophy restrictions and the CITES quota decision (see also Williams *et al.* 2017a; Appendix 2 this report). We should also note that this sample is not necessarily representative of the breeding industry – in Section 4.2 we find that most of the successful 2017 quota applicants had not previously sold bones (that we know of; however, they may have sold bones to traders that consolidated consignments in previous years).

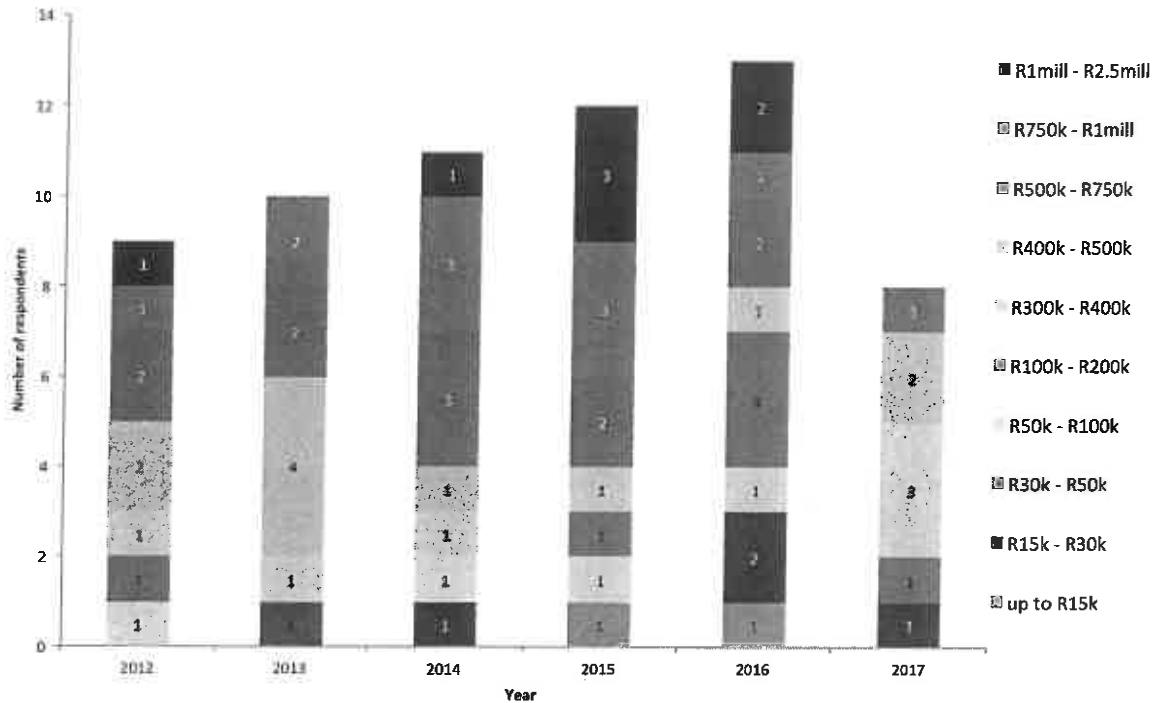


Figure 2: Estimated value of bone/skeleton sales for the export market (2012–2017) reported by the respondents (Q16). Note: number of new respondents entering the bone market increased annually by one, but dropped off in 2017. Corresponding figures for ‘live sales for trophy hunting’ and ‘trophy hunting on the facility for foreign clients’ not given (see the mean values in Table 4).

3.3 Ban on the import of captive-produced lion trophies

In an attempt to further understand the links between the lion trophy export and bone markets in relation to the captive breeding industry, we asked several further questions.

3.3.1 US BAN ON THE IMPORT OF CAPTIVE-PRODUCED LION TROPHIES

❖ *Did the January 2016 US ban on the import of captive produced lion trophies impact business in anyway? (Q17)*

- 34 facilities responded:
 - 27 (79%) indicated that the 2016 US ban had affected business;
 - 5 (15%) indicated the ban had no affect
 - 2 (6%) indicated this was ‘Not Applicable’ to their business

❖ *If the answer was ‘Yes’ to the above question, respondents were asked to indicate how they were adapting to the impact (Q18)*

- 28 facilities responded:
 - 23 (82%): breeding production scaled down
 - 17 (61%): employees/workers let go
 - 13 (46%): live lion stock sold off
 - 8 (29%): euthanized lions
 - 6 (21%): redirected business to focus on the lion bone trade
 - 3 (11%): redirected business to focus on interactive tourism
 - 3 (11%): continued business as usual
 - 6 (21%): selected ‘other’, and listed the following ways in which they were adapting:

- *We will start selling again from this year*
- *Change the business with more focus on buffalo, sable and roan hunts*
- *Extensive system begins with managed wild lions*
- *Must sell lions for MUCH less than they are worth – just to keep going and pay expenses*
- *No interested buyers at the lion sales. Value of animals has come down.*
- *Had to start over marketing in other countries. Many workers lost their jobs.*

Table 5: From the eight selectable adaptation strategies provided in Q18, the number of strategies that facilities indicated they are adopting because of the 2016 US ban is described.

Number of strategies adopted	Number of facilities	Strategy(s) most frequently selected as being adopted
1	8	n=3 listed <i>'scale down breeding production'</i>
2	5	n=3 listed the pair of <i>scale down breeding & let go of employees</i>
3	3	All 3 included <i>scale down breeding</i> , but the other strategies selected varied
4	9	Tended to select the combination of <i>scale down breeding & let go of employees</i> , with <i>sell off live lion stock</i> . n=4 also listed <i>euthanize lions</i>
5	3	All 3 selected the combination of <i>scale down breeding, focus on lion bone trade, let go of workers, sell live lion stock, & euthanize lions</i>

❖ *If the US ban continues to be implemented with no sign that it will be lifted in the near future, what would respondents do? (Q19)*

➤ 31 facilities responded:

- 16 (52%): will focus on the lion bone trade
- 9 (29%): will euthanize all lion stock
- 8 (26%): will convert business to another form of wildlife breeding
- 8 (26%): will close the business
- 7 (23%): will continue business as usual
- 4 (13%): will focus on interactive tourism
- 2 (6%): selected 'other', and listed the following ways in which they were adapting:
 - Marketing of lion hunts to move to other countries
 - Will continue extensively with fewer lions with high worth

Table 6: From the seven selectable potential adaptation strategies provided in Q19, the number of strategies that facilities said they might adopt IF the US ban continues is described.

Number of strategies that might be adopted	Number of respondents	Strategy(s) most frequently selected as likely to be adopted
1	14	n=5 selected only <i>focus on lion bone trade</i> ; n=3 selected <i>continue business as usual</i> . Remainder of the adaptations varied across the strategies
2	10	Strategy pairs varied
3	7	Strategy combinations varied

In other words, facilities mostly said they were adapting to the current ban by scaling down production, letting workers go, and selling off lion stock. However, facilities tended towards entering the bone trade and euthanizing lions IF there was no sign that the US ban would be lifted in the near future.

3.3.2 POTENTIAL OF A UK–EUROPE BAN ON THE IMPORT OF CAPTIVE-PRODUCED LION TROPHIES

❖ *In addition to the US ban, IF the UK and/or Europe also implemented bans on the import of lion hunting trophies, what would the respondents do? (Q19)*

➤ 32 facilities responded:

- 12 respondents (38%): will close their business

- 12 (38%): will euthanize all lion stock
- 12 (38%): will focus on the lion bone trade
- 10 (31%): will downscale but continue production expecting that the ban will be lifted
- 7 (22%): will convert business to another form of wildlife breeding
- 6 (19%): will continue business as usual
- 3 (9%): will focus on interactive tourism
- 2 (6%): selected 'other', and listed the following
 - *Because I have access to food for lion farming and capital has been spent on building cages and to create jobs and (the facility) is already established, it would make sense to continue farming and give the market what it needs to protect the wild (lion) population. Because I never did trophy hunting on my premises, it is only a result of the industry that there is still a need for bones. There will always be hunters who are willing to hunt lions and the need for bones will be there, legal or illegal*
 - *In this case, we will be affected because we would lose the interactive lion program.*

In other words, facilities tended towards closing businesses, euthanizing lion stock and entering the bone trade. Alternatively, they would keep the lions and derive income from the trade if the markets were opened up.

Table 7: From the eight selectable potential adaptation strategies provided in Q20, the number of strategies that facilities said they might adopt IF the UK/Europe implemented bans is described.

Number of strategies that might be adopted	Number of respondents	Strategy(s) most frequently selected as likely to be adopted
1	12	n=4 each selected <i>close business</i> , and <i>continue business as usual</i>
2	10	No dominant pairs of strategies, but n=6 pairs include <i>euthanasia</i> , and n=5 pairs include <i>bone trade</i>
3	8	Strategy combinations varied, but n=5 of the combinations included the pair <i>close business & euthanize all stock</i> , while n=3 combinations included the pair <i>bone trade & downscale production expecting ban to be lifted</i> .
4	2	All selected focus on <i>bone trade</i> , <i>focus on tourism</i> , <i>downscale production expecting ban to be lifted</i> , & <i>continue business as usual</i>

These results show that, in the wake of the US trophy import restrictions, a significant proportion of survey respondents are eager to sell lion bones in the near future, either as part of a strategy to continue commercial lion breeding, or to defray the costs of down-scaling and euthanizing animals. This tendency will likely be enhanced if the US does not lift restrictions and/or if other trophy export markets (e.g. Europe) are also closed off.

3.4 Lion bone quota: impact and adaptation

❖ Will the lion bone quota restrict business in anyway? (Q21)

- 34 facilities responded:
 - 17 respondents (50%) said YES (this should be 21 according to the answers to Q 22 below)

❖ If the answer was 'Yes' to the above question, respondents were asked to indicate how businesses would be adapted (Q22)

- 21 facilities responded:
 - 12 (57%): will search for alternative markets for the bones
 - 11 (52%): will continue selling bones, but downscale
 - 4 (19%): will close the business

- 4 (19%): will continue business as usual
- 2 (10%): will stop selling bones
- 2 (10%): selected 'other', and listed the following
 - *By reducing hunting or lion bones (from captive animals?) there will be no reason or purpose for lions and they will die as a result of wild populations being poached for the bone market. Poachers are 'lifted' above the law and smuggling will be like drugs that cannot be stopped. The scarcer the bones become, the more sought after (they are) and the prices will rise as the demand will continue to grow*
 - *The quota is not practical and currently not functional, how will the DEA determine who will get how many exports?*

Table 8: From the seven selectable adaptation strategies provided in Q22, the number of strategies that facilities said they have, or might adopt, in response to the bone quota is described.

Number of strategies adopted	Number of respondents	Strategy(s) most frequently selected as likely to be adopted
1	10	At most, n=3 respondents selected <i>continue selling bones, but downscale</i> ;
2	8	n=5 selected the combination <i>continue selling bones, but downscale & search for alternative markets for bones</i>
3	3	n=2 selected the combination <i>continue selling bones, but downscale & search for alternative markets for bones</i>

In answering these two questions, the respondents implied that a restrictive quota would incentivize people in the lion industry to find alternative channels for bone sales. We note that SAPA requested a considerably higher quota in early 2017 than 800, and that the exporters we spoke to also warned that frustrated aspiring sellers might resort to other (potentially illegal) trade channels. All these factors point to a distinct threat of the potential development of a parallel illegal market.

3.5 Lion euthanasia

- ❖ *In the past two years, has the number of lions euthanized at the facility increased? (Q23)*
 - 34 facilities responded:
 - 7 (21%): answered YES
 - 8 (24%): answered NO
 - 19 (56%): answered NOT APPLICABLE
 - Of the seven that answered YES, four elaborated on when they started euthanizing and why:
 - *Began in 2016. Before the US ban we ONLY sold lion bones from hunted lions – in 2016 we had to eliminate lions because the facilities were overcrowded and we needed the cash flow to look after the lions.*
 - *Must get an income from lions because hunting and sales have decreased and, I'm looking more at the breeding of better genes and I will thus reduce any lions with bad genes*
 - *Due to circumstances.*
 - *After the restrictions on the import of lions were introduced, we had to act drastically. At this stage we are still feeding the lions, but we can't carry on. If the hunts don't 'open up', we will have to get rid of all lions.*

The responses to this question re-emphasize our point in 3.4 above, namely that additional carcasses from euthanized lions provide an additional source of bone supply for which at least some breeders are likely to seek markets. The extent to which the size of this supply matches the loss of supply from reduced trophy hunts is unclear, but must be seen in the light of the implied overall shrinkage of the captive breeding industry (and therefore possible lower output rates in future).

3.6 Average age of lions sold for bones

❖ **What is the average age that live lions and lionesses are sold for breeding, hunting or bones? (Q39)**

- 17 facilities responded:
 - 13 (76%): answered for hunting
 - 17 (100%): answered for breeding
 - 10 (59%): answered for bones

Lions sold to facilities for breeding purposes are up to 5 years old; hunted lions are ≥3 years old (especially males, which tend to be >5 years); lion carcasses sold for bones are ≥1 years old (but typically 3–5 years) (Figure 3).

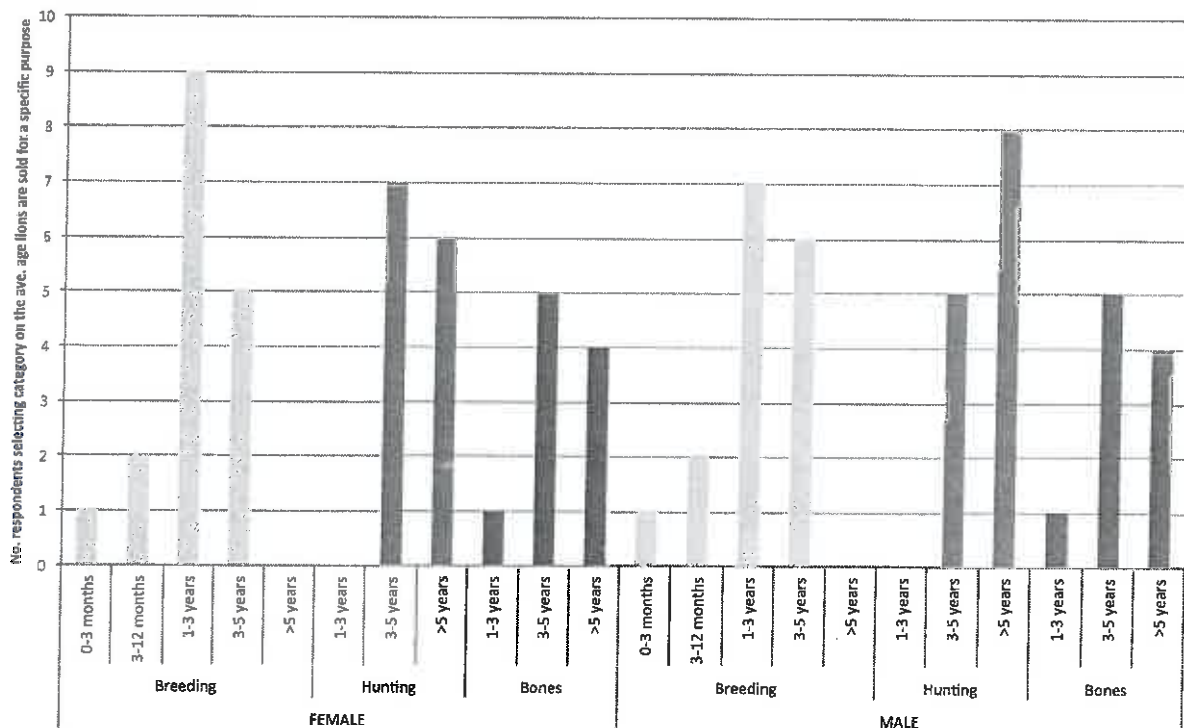


Figure 3: The number of responses for the average age when lions and lionesses are sold for specific purposes. Breeding purposes in beige, hunting purposes in red, and inclusion into the bone trade in blue.

The age distribution evident here (bias toward older males for hunting) suggests that if trophy hunting is further restricted, a greater number of younger males may start coming on stream in the bone market, with possible implications for future bio-economic supply functions.

3.7 Sale of lion bones

The following questions were aimed at finding out more about the specific structure and nature of the skeleton supply market. Industry structure plays a role in price formation and also influences the incentives of individual market participants. These factors are vital to the understanding of existing and potential market dynamics associated with variable quota setting. The role of other body parts apart from bones in the marketplace is also relevant.

❖ **Has the facility sold lion products, bones, skeletons, body parts, trophies and/or other derivatives (Q43)**

- 32 facilities responded:

- 13 (41%): answered YES

3.7.1 FACILITIES SELLING BONES AND PARTS TO VARIOUS BUYERS

❖ *Select the lion body parts the facility is aware of having sold/supplied to (Q44)*

- 12 facilities responded, and an additional facility declined to elaborate. A summary of the responses is in Table 9.

Table 9: Number of facilities that were aware of having sold/supplied specific lion products to different customers.

Product ^a	To taxidermist	Direct to Asia	To SA trader selling to Asia	Muti traders	Hunter
Full trophy ^b	5	2	5	-	6
Skeletons (full/partial)	5	2	8	-	4
Skin	7	1	2	-	7
Claws	4	1	5	-	7
Skull	4	2	5	-	6
Teeth	5	1	4	-	6
Paws	3	1	5	2	5
Individual bones	2	1	3	2	3
Fat ^c	1	1	2	2	1
Internal organs	1	1	2	2	1

^a One facility mentioned that lion legs are a by-product of hunting safaris, and that they were once thrown away. No facility supplied products to customers in other African countries

^b Includes: skeleton, skull, skin, teeth and claws

^c Fat cut off and given to staff members at a facility for their own use

Table 9 illustrates the complexity of the lion product market. In particular it highlights the existence of both local and overseas markets for lion body parts. It also indicates that breeders are selling both directly to foreign markets and via South African intermediaries. The fact that none of the surveyed breeders claim to be selling body parts to other African countries is also noteworthy.

3.7.2 UTILISATION OF 'BONE AGENTS' OR MIDDLEMEN

❖ *If the facility has used a middleman (SA and/or foreign) to export bones/skeletons to Asia, what % of the total number of skeletons went via a middleman/bone agent/trader (Q45)*

- 12 facilities responded:
 - 2 facilities did not use middlemen to export any bones to Asia (i.e. they have exported 100% of the bones at the facility directly to Asia without the use of a middleman) (consistent with Table 9 in 3.7.1)
 - 1 facility had used a middleman to export 50% of the available bones
 - 2 facilities used middlemen to export 70% of the available bones
 - 7 facilities used middlemen to export 100% of the bones
 - Mean % of bones exported with the assistance of a middleman is 74% (therefore 26% exported directly to Asia without using a middleman)

❖ *If you sell bones through middlemen, have you sold bones using middlemen in countries besides South Africa? If yes, what % of bones are sold through international middlemen (Q46)*

- 12 facilities responded:
 - 6 facilities have not used international middlemen to export any of the bones to Asia (i.e. they have exported 100% of the bones using South African agents)
 - 1 facility has used an international middleman to export 20% of the bones

- 1 facility used an international middleman to export 50% of the bones
- 1 facility used an international middleman to export 70% of the bones
- 3 facilities used international middlemen to export 100% of the bones
- Mean % of bones exported with the assistance of an international (non-South African) middleman is 37% (therefore 63% of bones are exported using South African middlemen)

We include the above results as they provide some evidence of existing industry structure, in which intermediary traders appear to have some market power, but in which some breeders also appear to have direct links to Asian markets. This is relevant insofar that it gives some indication of the potential for parallel illegal markets and/or potential laundering of illegal products. Whereas there seems little reason to suspect significant laundering of illegal products within South Africa at this time, there is some potential for illegal parallel markets to develop, with associated laundering on the Asian side of the supply chain.

3.7.3 ORIGIN OF SKELETONS

- ❖ *Before January 2016, what % of skeletons originating from hunting trophies and/or natural mortalities and/or euthanized animals went in to the bone market (Q47)*

In hindsight, this is an ambiguous question that respondents treated in 2 different ways:

- 1) As a sum of the parts (i.e. combined % from a facility = 100%) (n=4)
 - a. 94% of skeletons that went into the bone market were from *hunting trophies*
 - b. 5% of skeletons...were from *natural mortalities*
 - c. 5% of skeletons...were from *euthanized animals*
- 2) Each category as potentially 100% (n=6)
 - a. 77% of the skeletons from *hunting trophies* from a facility went to the bone market
 - b. 51% of the skeletons from *natural mortalities* went to the bone market
 - c. 84% of the skeletons from *euthanized animals* went into the bone market

Both of these sets of results are interesting. They show that (as expected) prior to the US trophy import ban, trophy hunts comprised the main source of exported skeletons. However, they also show that (i) not all skeletons from trophy hunted animals are exported (only around three quarters of these respondents did this) and that (ii) respondents are very likely to export skeletons from euthanized animals. They are less likely to do so from naturally deceased animals. This is most likely due to economies of scale (lions are likely euthanized in batches, as opposed to isolate natural mortalities). In future, it would be interesting to establish why some breeders do not sell their skeletons.

3.7.4 YEARS OF BONE EXPORTS

- ❖ *Indicate the years in which bones/skeletons originating from this facility were exported to Asia (Q48)*
 - 12 facilities responded, and the number of facilities selling bones annually increased (Table 10). The pattern of increase is similar to Figure 2, and the trend reflects the increase in exports detailed in Williams *et al.* (2017a).
 - Two facilities have been selling bones consistently since 2008.
 - In 2017, however, one facility (F9) indicated they would not sell bones – but two new facilities (F11 and F12) indicated they would enter the market in 2017. The responses of F11 and F12 to the questionnaire are summarised as case studies below Table 10 so as to understand why the facilities have decided to enter the bone trade following the announcement of the quota.

Table 10: Number of facilities indicating they sold bones/skeletons to Asia from 2008–2016 and/or predicted they would sell bones in 2017. Facilities F11 and F12 predicted they would sell bones for the first time in 2017 (the year of the quota). ? = facilities F8 and F9 indicated in Q51 (Table 11) that they exported skeletons in 2012/2013, but they did not select these years when answering this question (Q48).

Facility	2008	2009	2010	2011	2012	2013	2014	2015	2016	Predicted to sell in 2017	Total years selling (to the end of 2016)
F1	*	*	*	*	*	*	*	*	*	*	9
F2	*	*	*	*	*	*	*	*	*	*	9
F3			*	*	*	*	*	*	*	*	7
F4			*	*	*	*	*	*	*	*	7
F5				*	*	*	*	*	*	*	6
F6					*	*	*	*	*	*	5
F7					*	*	*	*	*	*	5
F8					?	*	*	*	*	*	4 (5?)
F9					?	?	*	*	*	*	3 (5?)
F10									*	*	1
F11										*	0
F12										*	0
Total/a	2	2	4	5	7(9?)	8(9?)	9	9	10	11	

The following two accounts (case studies) of new market entrants F11 and F12 provide useful indicative information on potential future trends:

Case study 1: Facility F11

- A 2500ha facility in the Eastern Cape that opened in 2009 for the purposes of hunting and live sales;
- Ranked purposes: 1=hunting; 2=breeding/rearing; 3=live sales;
- Average of 50 paying visitors per year; number of visitors is stable;
- No. of lions on property decreased from Jan 2016;
- Facility has never sold lion bones before (explicitly stated that they were not in the bone business)
- Value of sales:
 - In 2014/2015: facility had 5 income streams
 - Live sales for breeding (up to R100,000/a)
 - Live sales for keeping (<R15,000/a)
 - Live sales for trophy hunting (R1 mill to R2.5 mill/a)
 - Trophy hunting on property (international clients): (R1 mill to R2.5 mill/a)
 - Trophy hunting on property (SA clients): (up to R100,000/a)
 - In 2017: facility listed only 2 income streams
 - Trophy hunting on property (international clients): (R1 mill to R2.5 mill/a)
 - Trophy hunting on property (SA clients): (up to R100,000/a).
- January 2016 affected business. Facility is adapting by scaling down business and dismissing workers;
- If the ban continues, and/or the EU/UK decide to implement a ban, they will close down the business and euthanize lion stock;
- Since January 2015: there was a 40% and 50% decline in adult males and females respectively, a 60% decline in cubs, and a 15% increase in sub-adults i.e. a 36% decline overall in the number of lions on the property (in 2015 there were 90 lions on the property, and by January 2017 there were 58)
- Facility indicated that they would potentially sell bones for the first time in 2017, and that they could supply 20 SKE
- Facility estimated that their loss of earnings since January 2016 has been R1.6 million, and they have retrenched 10 workers.

Case Study 2: Facility F12

- A 2000ha facility in the Free State that opened in 1995, and their only purpose is live sales;
- Ranked purposes: 1=educational; 2= breeding/rearing;
- Average of 20-30 paying visitors per year, but this has stopped;
- In 2015, income from live sales was R750,000 to R1 million. No income stream was listed for 2017, and they have never sold bones;

- January 2016 affected business. Facility adapting by scaling down business;
- If the ban continues, and/or the EU/UK decide to implement a ban, they will close down the business;
- Indicated that the bone quota will affect business – and they will adapt by looking for alternative markets for bones;
- In the last 2 years they have euthanized more lions as a result of the circumstances;
- Since January 2015: there was a 33% and 40% decline in adult males and females respectively, a 50% decline in cubs, and a 17% decline in sub-adults, i.e. a 32% decline overall in the number of lions on the property (in 2015 there were 28 lions on the property, and by January 2017 there were 19);
- They did not list how many skeletons they could supply in 2017, and they did not list their loss of earnings.

The above results and two case studies illustrate the growing participation in, and significance of, the bone market, essentially as an alternative source of income for breeders. These results also indicate that supply from this sector would meet the current quota level, if not much more, for at least the next year or two.

3.7.5 PRICE RANGES OF LION AND LIONESSE SKELETONS

Market prices provide a valuable indication of market trends – i.e. the extent to which supply is able to meet demand. Rapidly rising prices indicate a widening gap between demand and supply. Price drops suggest that demand is declining relative to supply. Collecting accurate price data is challenging, as market participants are often incentivised to report incorrectly (for various reasons). We attempted to obtain some indicative price data time series for skeletons, by asking the following.

- ❖ *List the prices (or a range) at which the facility sold lion (Q48) and lioness (Q49) skeletons in the respective years.*

- 8 facilities responded

Responses are recorded below by way of illustrative graphs (Figures 4a-c); Figure 4a includes outliers¹, whereas Figures 4b and 4c have been adjusted to remove the outliers. The graphs suggest that prices have been consistently rising over the last five years, at a rate that appears slightly higher than the official rate of inflation. This is indicative of slow but steady growth in consumer demand. The 2017 prices should be viewed as less reliable indicators given the wider variance, incomplete sampling across the year, and constricting effect of the quota.

¹ There were three facilities with outliers. Two of these facilities had never sold bones prior to 2016, but indicated they could possibly supply ≤ 3 skeletons in 2017. A third facility sold on average 5 skeletons per year (compared to >20 per year by facilities where price data was not anomalous). Hence the anomalous prices quoted by three facilities were not aligned with the prices quoted by the facilities that consistently sold larger quantities from at least 2012.

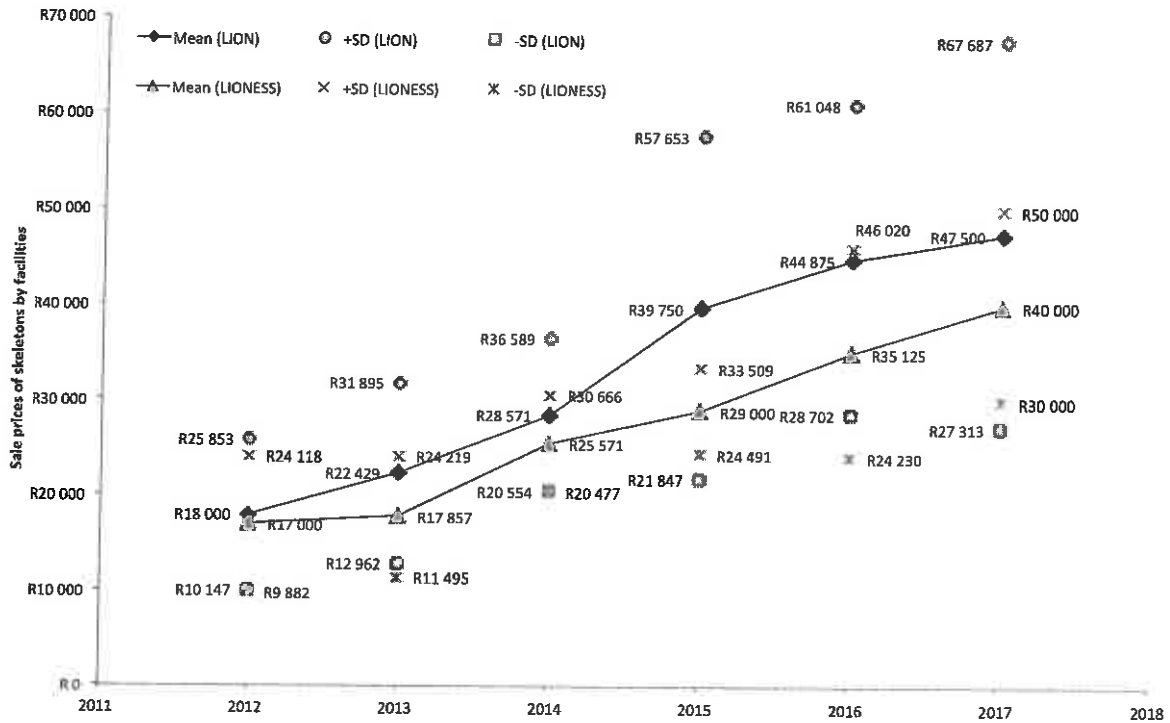


Figure 4a: Prices of lion and lioness skeletons (2012–2017) (mean \pm standard deviation). The means include three anomalous data points. The annual price means for lions and lionesses without the anomalies are in Figures 4b and 4c respectively.

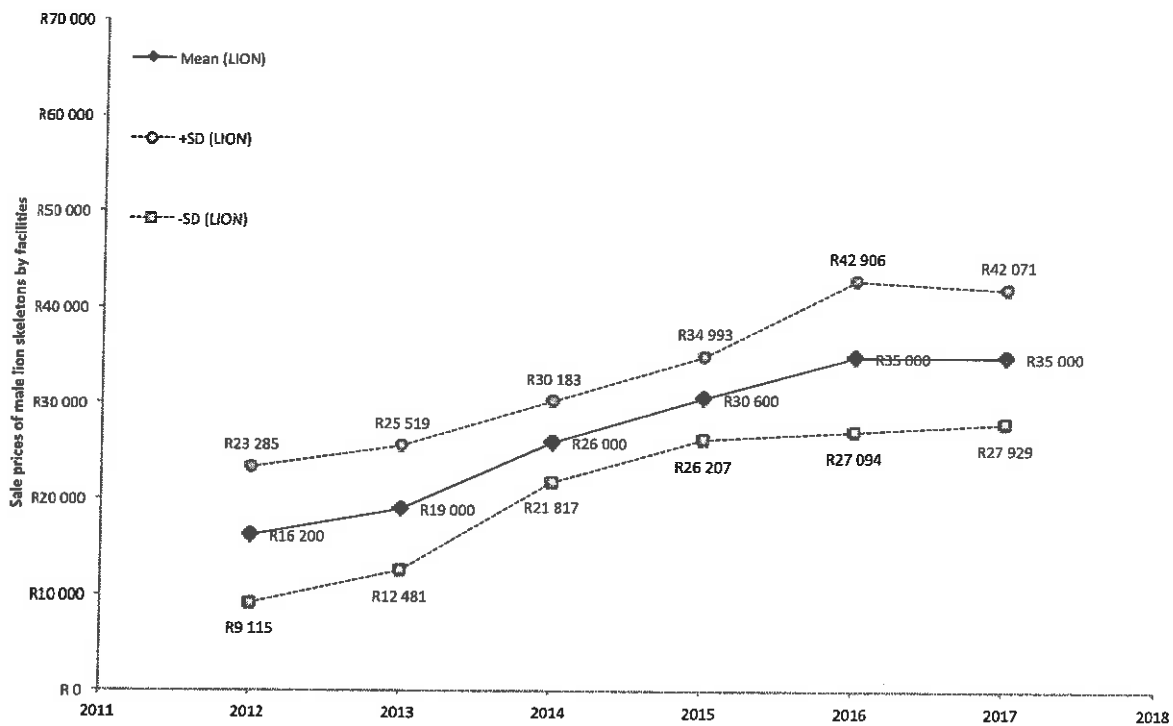


Figure 4b: Prices of male lion skeletons (2012–2017) (mean \pm standard deviation) (excluding three anomalous data points).

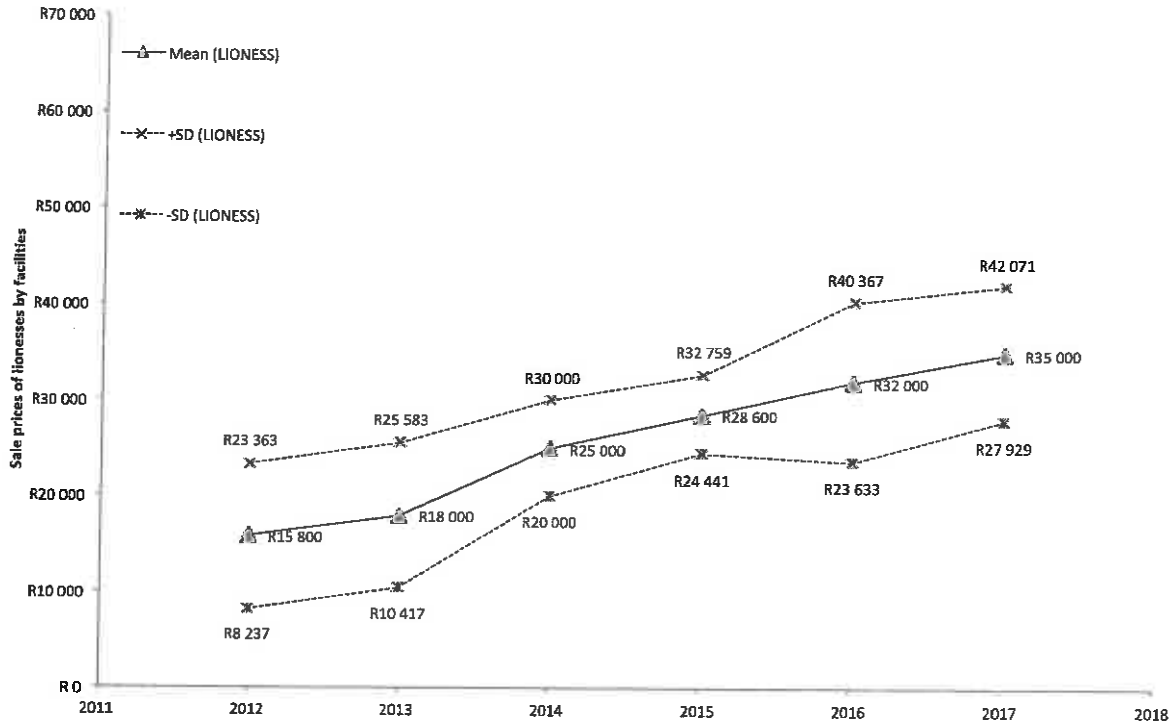


Figure 4c: Prices of lioness skeletons (2012–2017) (mean \pm standard deviation) (excluding three anomalous data points).

3.7.6 SKELETON EXPORTS

- ❖ Indicate the number of skeletons that made up the bone exports from the facility to Asia each year (2012–2017) (Q51)
- ❖ Estimate how many skeletons could currently be exported to Asia in one year if there were no restrictions (Q52)
 - 8 facilities responded (although 10 said in Q48 that bones from their facility had been exported to Asia to the end of 2016, Table 10)

Seven of the eight facilities had exported 10–80 skeletons to Asia per year from 2012 to 2016 (Table 11). Two facilities had sold more than 300 skeletons in total over the five-year period. The number of skeletons that they said they could supply without restriction varied. Six facilities said they could sell more bones than supplied in 2016 (although listed 2016 export quantities were notably down from previous years), and these quantities also tended to be the same as but mostly more than the quantities sold in 2015 or earlier (for example, F2 said they could supply 40–80 skeletons in 2017, but they had sold five in 2016 and >40 in 2015 and earlier; F3 said they could supply 30 skeletons in 2017, but their average annual skeletons sales from 2012–2016 was five).

The sample, which is skewed toward respondents who supply skeletons as a by-product of trophy hunts, indicates that output has dropped in 2016 and 2017. The reasons for this are somewhat complicated and not necessarily reflective of the entire industry (in which other breeders may be euthanizing lions on a larger scale). However, it is worth noting the higher estimates of potential bone supply in the potential absence of restrictions.

Table 11: Numbers of skeletons that responding facilities exported from 2012–2017, and they could export if there was no quota. The facility numbers correspond with those in Table 10.

Facility	Number of skeletons exported (Q51)						Total	Number of skeletons that could be exported without restrictions (Q52)
	2012	2013	2014	2015	2016	2017		
F1	50	50	50	50	50	50	300	Do not know
F2	30	40	60	44	5	0	179	40–80 ^a
F3	4	4	4	6	8	0	26	30 ^b
F4	50	50	60	60	5	5	230	5
F5	40	50	60	60	4	0	214	5–10 ^c
F6	70	65	80	80	14	20	329	70–90 ^d
F7	<i>No figures given, but facility indicated in Q48 (Table 10) that bones were exported from 2012–2016</i>							
F8	40	45	50	55	34	22	246	100 ^e
F9	10	10	20	25	30	0	95	30
F10	0	0	0	0	?	0	0	2–3 ^g
F11	0	0	0	0	0	0	0	20
F12	0	0	0	0	0	0	0	Zero ^h (see Table footnote)
Total	295	315	385	381	151	98	1625	>369

^a Comment from facility: "This is the number of lions we can comfortably hunt every year if there were no restrictions".

^b Comment from facility: "With the current hunting market decreasing, there has also been a reduction in the sales of breeding animals – i.e. we are now obliged to sell 40–60% of our lion stock in to other markets such as bones. With my current breeding, I have to sell about 30 carcasses".

^c Comment from facility: "In 2016 we only hunted 5 lions, compared to 50 in 2015. Because the import of lions into the USA is closed, we only hunt between 5–10 lions per year".

^d Comment from facility: "Average 70–90 based on current bookings from USA clients if the USFWL open hunting and bookings from Middle East clients China and Poland".

^e Comment from facility: "If the USA market opens up, I will be able to export 100 skeletons with the European market".

^f No figure given for 2016, but facility indicated in 48 (Table 10) that bones were exported

^g Comment from facility: "Natural mortalities of lions that have killed each other".

^h Facility answered 'geen' ('none'); however, in Q48 (Table 10), they predicted they would sell bones in 2017

3.8 Summary discussion of questionnaire results

The questionnaire results to date have provided some useful indicative information of some of the trends within the industry. However, we need to be mindful of sample limitations, and note that the respondents likely only account for less than 20% of the total number of lions in the captive breeding industry. The sample most likely suffers from an element of self-selection bias (see comments in the final paragraph of Section 4.1.2 below). Breeders keen to avoid attention or exiting the industry are less likely to have responded. To improve the representative validity of the answers we would ideally identify and target the largest breeders and encourage them to answer the full questionnaire. We hope to accumulate a larger sample of respondents as the study progresses.

4 Data from Multiple Information Sources

4.1 Exports of lion bones (2008–2016)

4.1.1 PUBLISHED CITES EXPORT PERMITS & AIR WAYBILL DATA

Read Williams *et al.* (2017a) for a comprehensive assessment of the trade in lion bones from South Africa for 2008–2016 (extracts provided in Appendix 2). This paper includes an evaluation of the CITES data, air waybill data on actual exports from a company exporting lion bones on behalf of six lion bone traders, and input from one of the South African lion bone traders. Figure 5 (below) is from that paper and shows the number of CITES permits issued to export bones and bodies from South Africa from 2008–2015, and the actual number of skeletons exported from 2014–2016 (derived from the air waybill data).

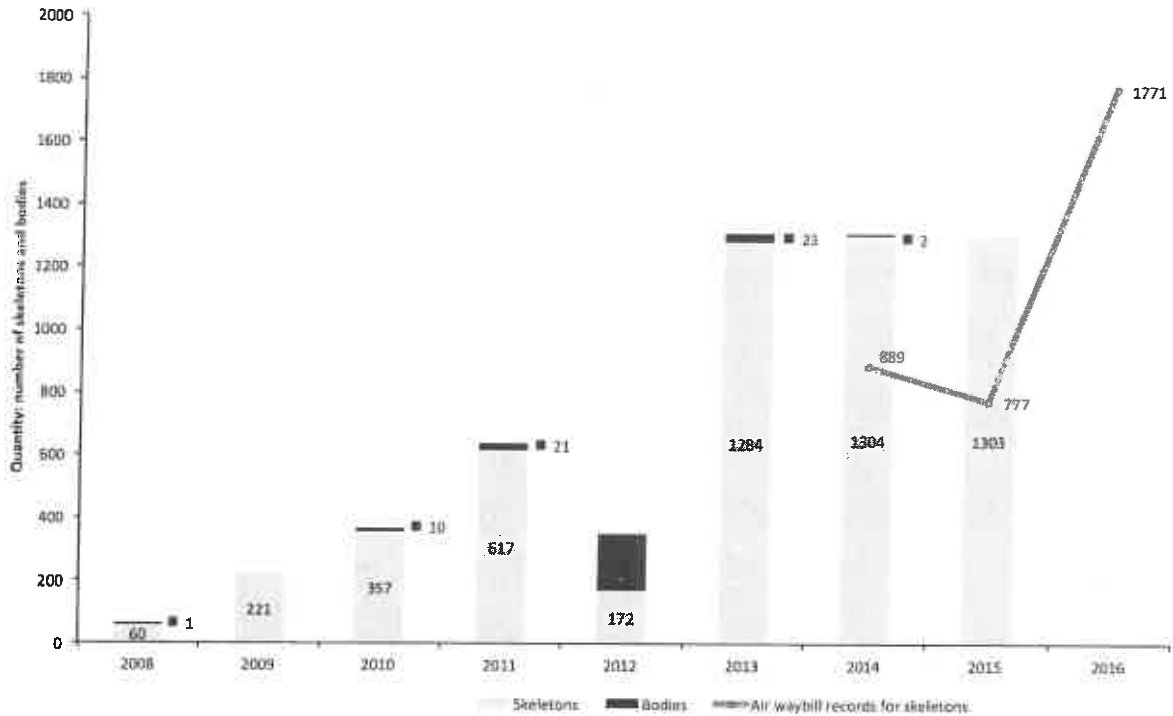


Figure 5: Combined number of lion skeletons and bodies sourced from South Africa and listed on issued CITES permits from 2008–2015 (histogram), compared to air waybill records (blue line) for actual exports of skeletons to East-Southeast Asia from 2014–2016. CITES permit records for skeletons and bones represent the maximum permitted annual quantity and not the actual annual exports. (Source: Williams *et al.* (2017a), but excluding 47 skeletons from Namibia that were issued in 2013–2015). CITES data for 2016 unavailable.

For additional information on lion trade across Africa, see Williams *et al.* (2017b), which is based on a questionnaire survey of the pan-African trade in lion body parts and a literature survey on the consumptive use of lions across the continent. The abstract of this paper is provided in Appendix 3 (the abstract, and extracts from Williams *et al.* (2017a) are provided in Appendix 2)

4.1.2 UNPUBLISHED CITES EXPORT PERMITS & AIR WAYBILL DATA

Absent from Williams *et al.* (2017a) (and hence from Figure 2 in that paper), are the combined weights of the consignments that were exported quarterly. The mass has previously been used by Williams *et al.* (2015b) to assess the mean mass of exported skeletons and detect potentially fraudulent exports (e.g. more skeletons in a consignment than the permits allow). Hence, Figure 6 (below) includes the weight of the consolidated consignments; the bigger the gap between the point on the blue line and the top of the histogram, the heavier the average mass of a skeleton was.

However: as explained in Williams *et al.* (2017a) (based on comments from a bone exporter), prior to 2016 and rumours of the US intending to ban the export of captive-origin trophies, farmers and traders tended to stockpile bones throughout the year and export them in the first quarter of the new year. Hence, bones tended to dry out (and thus weigh less) before export. Recent uncertainties in the market meant that skeletons were exported sooner after the lion was hunted, thus the skeletons were wetter and heavier. Furthermore, countries like Thailand have a preference of bones with more meat on – and those consignments were accordingly heavier. While the abovementioned factors influenced the mass of the consolidated consignments, there was sufficient reason to believe that some consignments had more bones than allowed by the permits (that said, the bag counts matched the permit requirements, according to the freight forwarder, which would have also been checked when the permit was endorsed).

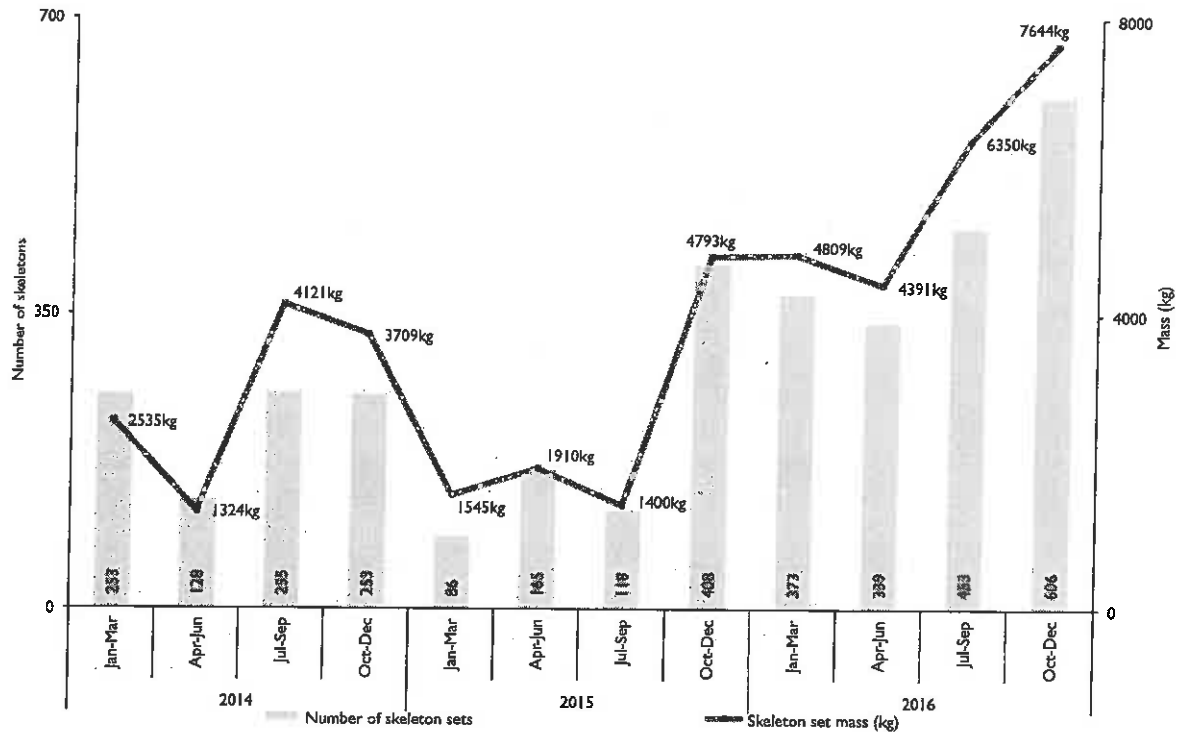


Figure 6: Actual annual quarterly exports of sets of lion skeletons from South Africa to East-Southeast Asia from 2014–2016, obtained from air waybill records provided by a freight forwarding company handling the exports on behalf of six lion bone traders.

The significantly increased volume of bone exports in 2016 suggests that the survey results indicated in Table 11 above are not representative of the industry (i.e. the survey sample respondents had reduced their overall bone sales in 2016). It is unclear to what extent the increased overall industry volumes are made up of trophy skeletons versus euthanized lions, but likely that the latter played a significant role (refer to the 2017 results below in Section 4.2). Observing the overall trend reflected by Williams *et al.* (2017a) (and in Figure 5), we would expect stakeholders in the industry to consider the 2017 quota of 800 skeletons to have been ‘insufficient’ relative to the supply. The rapid uptake of the quota reflected in the following Section (4.2) appears to bear this out.

4.2 Lion bone quota applications (2017)

From data supplied to us, 14 people applied for the lion bone quota, four of whom exported bones to Asia prior to 2017 (Figure 7; applicants A1 & A3–A5). The remaining 10 applicants are not known to have applied for CITES permits in the period 2012–2016. One exporter (A1) from the Free State applied for 52% of the quota. Given our knowledge of where applicants A1 & A3–A5 exported bones to in the past, we know that A1 (52%) will export to Vietnam, A3 (10%) will export to Thailand, A4 (7%) and A5 (3%) will export to Laos. The destinations of the remaining quota applications (28%) will only be known from the CITES permit applications. Once the quota was opened, it took less than two months for it to be used up (Figure 8). Most of the quota was for bones originating in the Free State (63%) and for euthanized lions (74%) (Table 12).

The data from the quota applications are clearly indicative of the disruption to the captive breeding industry and show that euthanized lions are now displacing hunted lions as the primary source of skeletons for export.

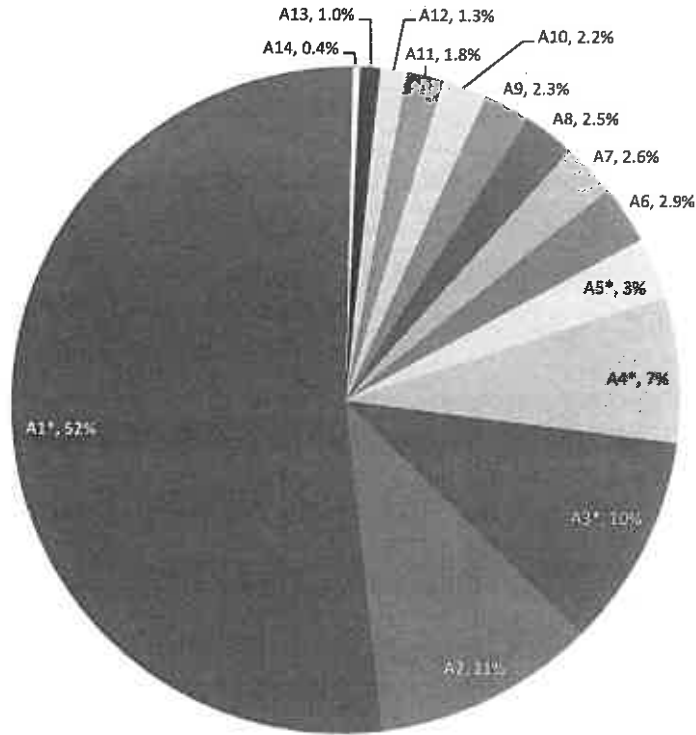


Figure 7: Applications received for the lion bone quota: listed by applicant (A1 – A14) and the percentage of the quota they applied for. Applicants A1* and A3*–A5* exported lion bones prior to 2017; however, all other applicants were newcomers to the market.

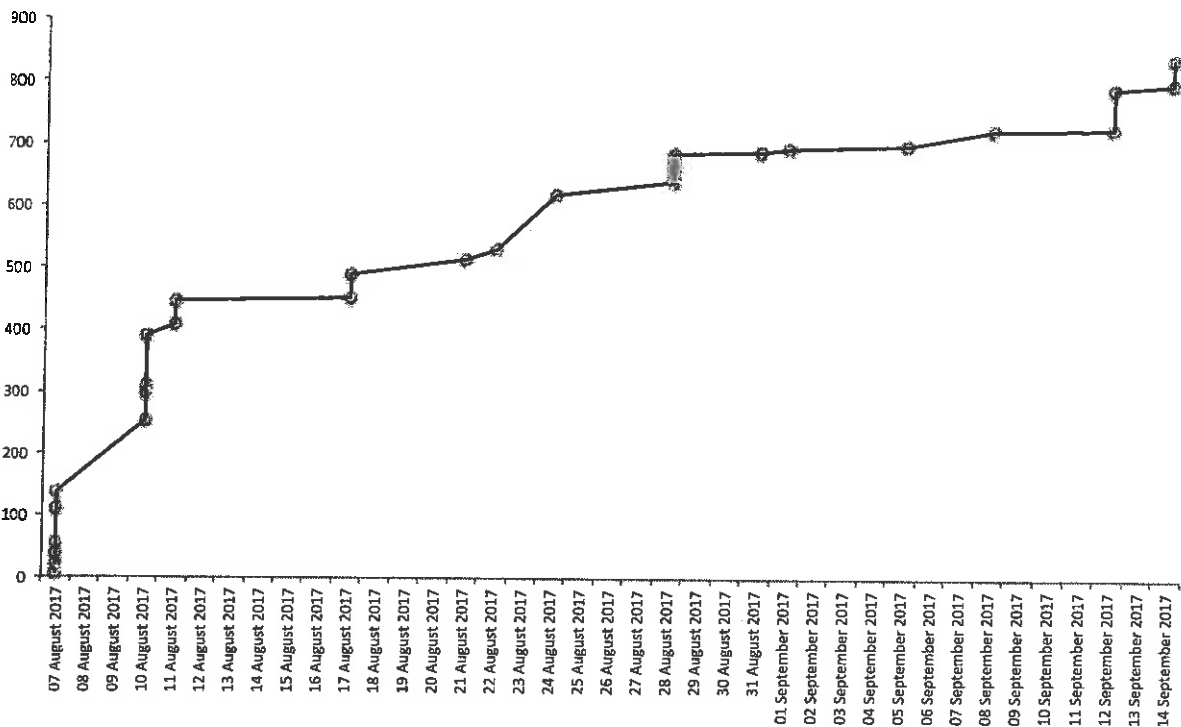


Figure 8: Date and rate of received applications for the 2017 lion bone quota

Table 12: Applications received for the lion bone quota: number of skeletons per province and cause of death.

Cause of death	Euthanasia		Hunting		Natural Causes	DCA ^a
	Free State ^b	Gauteng	North West	Gauteng	North West	North West
Province						
Number	529	90	166	41	3	8
Percentage	63%	11%	20%	5%	0.4%	1%

^a 'Damage Causing Animals'

^b Includes 38 applied for after the quota was reached

5 Muthi Market Monitoring for Lion Products

This information on muthi market monitoring is not essential to the collaborative research project on lion bones, and is an ongoing work in progress. The results of this project will eventually give some essential indication of the prevalence of lion skins in provincial muthi markets, the prices of the samples relative other similarly monitored threatened species, the prevalence of fakes (i.e. the species being sold as lion), and appropriate information from DNA testing. Tissues samples acquired for DNA testing during the research include skin, fat, mane hair, a tooth, meat and 'saliva'.

The muthi market survey represents a branch of the illegal trade in lion body parts in South Africa. One assessment that needs to be conducted in due course is an assessment of known incidents of poaching, illegal trade, confiscations, ToPS restricted activities pertaining etc. Some of these data have been requested.

6 Discussion, Conclusions, Recommendations

We conclude this report with the following:

1. An overview of our understanding of the current situation, based on our research to date; and
2. A summary the limitations of the data received to date, highlighting potential avenues for further research.

6.1 Current situation

The captive lion breeding industry is in state of flux (i.e. unstable), having been significantly affected by the recent US trophy import restrictions, as well as the imposition of the skeleton export quota. Lion breeders are adapting in different ways. If there is no reversal in the US policy, or if there are further EU trophy import restrictions, there will (judging from the responses of the respondents) be further 'fallout'. Different breeders will continue to respond in different ways, which are not that easy to predict.

Some breeders are most likely to scale down significantly, if not disinvest from lion breeding altogether. At least some of these will euthanize lions and attempt to recover costs through sale of skeletons. Even if the US does not change its stance on allowing any imports from captive bred lions, some breeders are seeking new trophy markets and this sector may grow slightly again, albeit at lower rates.

The fact that a large proportion of survey respondents have stated that they will seek 'other markets' for lion bones should be of concern. This clearly signals the potential for a parallel illegal market to develop. Should such a market develop closer links with organized criminal enterprises, the effects could be irreversible (as with the rhino horn trade) and result in greater and more widespread threats of focused commercial-scale poaching of wild felids. Well-informed existing legal exporters of lion skeletons share these concerns.

From a wildlife auction in April 2017 that VLW attended, we know that the prices of lion hunts have dropped markedly². In addition, the trajectory of skeleton prices suggests that consumer demand is stable and possibly growing (at a slow rate). We do not know anything about the elasticity of demand (sensitivity to price changes), but price shocks are best avoided. Although there have been some incidents of lion poaching within South Africa in the last year, none of these involved wild lions in formally proclaimed protected areas, nor were they aimed at procuring whole skeletons. We can currently find no substantial evidence that legal exports of skeletons from captive-bred lions have adversely affected wild populations in South Africa to date. What requires urgent investigation is the extent and impact of trade in other African lion range states where vulnerable wild lion populations are likely to be adversely affected (Williams *et al.* 2017a).

6.2 Data limitations and further avenues to explore

Although we are satisfied that we have some useful baseline data to assess the state of the industry, we would ideally prefer to obtain more, both in terms of additional types of data (see Table 1) and survey response rates. The response rate to the national captive lion survey has been disappointing; whereas a large number of respondents initially signed up, a far smaller portion followed through and actually answered the relevant questions. It would be very useful to find out why this was so. As discussed earlier, it is possible that the co-operative questionnaire respondents do not constitute a representative sample of the industry. For this reason, we intend to increase the sample size by increasing sampling effort; ideally, we would like to identify the largest breeders to try and ensure that they all participate to at least some useful extent. Knowing that we have received responses that account for the majority of the captive population would be more reassuring. We propose to pursue more potential respondents through channels such as SAPA, and by re-advertising the questionnaire. Hence, the survey will remain open until an appropriate closing date is determined.

There are three broad research avenues we feel are important to explore in 2018:

- We would like to obtain more accurate information on the current total number of lions in captivity and how this is being affected by the recent policy changes; ideally, we would like to access updated census data relating to the captive population.
- We would like to evaluate/compare South Africa's annual CITES permit reports with data on trophy hunts (e.g. the national trophy hunting statistics) (See Table 1 on what data we do/don't yet have) (this comparison would be similar to the one conducted by Williams *et al.* 2015a); ideally, we would monitor time series data on hunts.
- We also hope that the compliance report will generate more information on the state of captive breeding operations and, it is important that we obtain more comprehensive data on reported incidents of poaching and seizures.

Finally, we note that there is considerable research interest in the general topic. CITES/CMS have requested funds for a large-scale study on lion trade, and there are postgraduate students at various UK universities who are keen to investigate aspects of the lion bone trade, and who intend exploring conservation threats from lion trade and jaguar trade. Some of these students plan to co-ordinate their work with ours. In addition, both WildCRU and ICCS provide technical support of one of us (M[†]TSR) via the Oxford Martin Programme on Illegal Wildlife Trade, to further explore and understand the systemic links between legal lion trade, illegal trade in other felid species, and associated conservation impacts. This work will engage expert groups using techniques such as participatory modelling and scenario planning to develop a deeper shared understanding of the issues, identify areas of key uncertainty, and appropriate techniques for addressing these.

² Not presented here; details to be included in subsequent reports. A few examples are listed: (i) A trophy package of 1 lion and 1 lioness was sold for R104,000 – in 2016, this would have sold for ±R190,000; (ii) a trophy package for a male lion sold for R30,000 (where the hunting area had to be arranged) – in 2016, it would have sold for R130,000.



7 Supplementary Documents

1. National Captive Lion Survey: English version of the questionnaire
2. Williams VL, Loveridge AJ, Newton DJ & Macdonald DW (2017a) A roaring trade? The legal trade in *Panthera leo* bones from Africa to East-Southeast Asia. *PLoS ONE* 12(10): e0185996. <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0185996>
3. Williams VL, Loveridge AJ, Newton DJ & Macdonald DW (2017b) Questionnaire survey of the pan-African trade in African lion body parts. *PLoS ONE* 12(10): e0187060. <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0187060>

8 References

- Williams VL, Loveridge AJ, Newton DJ & Macdonald DW (2017a) A roaring trade? The legal trade in *Panthera leo* bones from Africa to East-Southeast Asia. *PLoS ONE* 12(10): e0185996. <https://doi.org/10.1371/journal.pone.0185996>
- Williams VL, Loveridge AJ, Newton DJ & Macdonald DW (2017b) Questionnaire survey of the pan-African trade in African lion body parts. *PLoS ONE* 12(10): e0187060. <https://doi.org/10.1371/journal.pone.0187060>
- Williams VL, Newton DJ, Loveridge AJ & Macdonald DW (2015) *Bones of Contention: an Assessment of the South African Trade in Lion Panthera leo Bones and Other Body Parts*. Cambridge: TRAFFIC and Oxford: WildCRU. A joint report. Available: http://www.traffic.org/species-reports/traffic_species_mammals83.pdf
- Williams VL, Loveridge AJ, Newton DJ & Macdonald DW (2015b) Skullduggery: lions align and their mandibles rock. *PLoS ONE* 10(11): e0135144. <https://doi.org/10.1371/journal.pone.0135144>



9 Appendix 1

Section	Question no.	Question	Answer count
A	Q1	(Preference for anonymity)	124
	Q2	Name	20
	Q3	Province	95
	Q4	Job description	94
B	Q5	Year facility opened	34
	Q6	Membership of organisations	34
	Q7	Facility purpose	34
	Q8	No. of employees	34
	Q9	Reasons for breeding	34
	Q10	Reasons for keeping	34
	Q11	Rank the core purposes of the facility	34
	Q12	No. of paying visitors	33
	Q13	Approximate sizes of various areas (farm, breeding, keeping, camps, etc)	34
	Q14	From January 2016, which ones increased/decreased/stayed the same (refers to no. of lions on the property, total breeding areas, total keeping/growing area, total hunting area)	34
	Q15	Est. annual value of sales 1 (4 income categories)	34
	Q16	Est. annual value of sales 2 (4 income categories)	34
	Q17	Any impact if 2016 US decision?	34
	Q18	If yes to (17), indicate how you are adapting?	31
	Q19	What will happen if US ban continues?	34
	Q20	If UK & Europe ban xxx, what will you do?	34
	Q21	Does the lion bone quota restrict business?	33
	Q22	If yes to (21), how will you adapt?	29
	Q23	Has euthanasia of lions increased in 2 years	34
	Q24	Does trade of captive lions affect wild lion pops (describe)	33
C	Q25	Est. no. lions at 31 January 2017	33
	Q26	Est. no. lions at 31 January 2016	33
	Q27	Est. no. lions at 31 January 2015	33
	Q28	From where has current lion stock been sourced?	33
	Q29	Where was original lion stock sourced from?	33
	Q30	Redirect: is purpose hunting only? (No → Q31; Yes → Q43)	33
	Q31	Redirect: does facility breed lions (Yes → Q32; No → Q37)	26
D	Q32	No. adults breeding	20
	Q33	% that certain factors result in reduction in lion numbers	20
	Q34	How are lion numbers controlled?	20
	Q35	Wild lions introduced to breeding stock?	20
	Q36	Stud book, identification, DNA?	20
	Q37	Redirect: has facility sold live lions (Yes → Q38; No → Q43)	23
E	Q38	Est. no. live lions sold 2014 - present	18
	Q39	Average age when sold	17
	Q40	Average sale price adult lion 2015	18
	Q41	Average sale price adult lion 2016	18
	Q42	Average sale price adult lion 2017	18
	Q43	Redirect: facility sold products, bones, trophies etc (Yes → Q44; No → Q53)	28
F	Q44	Have products been sold to named customers	11

	Q45	Has facility used middleman to export bones to Asia	11
	Q46	Has facility sold bones via middlemen in other countries	11
	Q47	Before Jan 2016, what % skeletons from named selected sources entered bone market	11
	Q48	When did bone exports from facility start?	11
	Q49	Prices of male skeletons 2012-2017	11
	Q50	Prices of female skeletons 2012-2017	11
	Q51	Number skeletons exported 2012-2017	11
	Q52	How many skeletons could you export?	11
	Q53	Redirect: hunting allowed at facility? (Yes → Q54; No → end of survey)	24
G	Q54	Ave. time lion in hunting area	25
	Q55	Details of hunting area(s) (sizes, number, etc)	25
	Q56	% clients from countries before 2016	25
	Q57	% clients from countries after 2016	25
	Q58	Number lions hunted 2012-2017 so far	25
	Q59	After Jan 2016, what month did income start to decline?	25
	Q60	Since Jan 2017: est. loss of earnings	25
	Q61	Due to ban, have people been retrenched?	25



10 Appendix 2

10.1 Abstract from Williams et al. 2017a ('A roaring trade? The legal trade in Panthera leo bones from Africa to East-Southeast Asia')

The African lion is the only big cat listed on CITES Appendix II, and the only one for which international commercial trade is legal under CITES. The trade in lion body parts, and especially the contentious trade in bones from South Africa to Asia, has raised concerns spanning continents and cultures. Debates were amplified at the 2016 CITES Conference of the Parties (CoP17) when a proposal to up-list lions to Appendix I was not supported and a compromise to keep them on Appendix II, with a bone trade quota for South Africa, was reached instead. CoP17 underscored a need for further information on the lion bone trade and the consequences for lions across the continent. Legal international trade in bones to Asia, allegedly to supply the substitute 'tiger bone' market, began in South Africa in February 2008 when the first CITES permits were issued. It was initially unclear the degree to which bones were sourced from captive-origin lions, and whether trade was a threat to wild lion populations. Our original assessment of the legal CITES-permitted lion bone trade from South Africa to East-Southeast Asia was for the period 2008–2011 (published 2015). In this paper, we consolidate new information that has become available for 2012–2016, including CITES reports from other African countries, and data on actual exports for three years to 2016 supplied by a freight forwarding company. Thus, we update the figures on the legal trade in lion bones from Africa to East-Southeast Asia in the period 2008–2016. We also contextualise the basis for global concerns by reviewing the history of the trade and its relation to tigers, poaching and wildlife trafficking. CITES permits issued to export bones escalated from $\pm 314y^{-1}$ skeletons from 2008–2011, to $\pm 1312y^{-1}$ skeletons from 2013–2015. South Africa was the only legal exporter of bones to Asia until 2013 when Namibia issued permits to export skeletons to Vietnam. While CITES permits to export ± 5363 skeletons from Africa to Asia from 2008–2015 were issued (99.1% from South Africa; 0.7% from Namibia) (51% for Laos), actual exports were less than stated on the permits. However, information on actual exports from 2014–2016 indicated that >3400 skeletons were exported in that period. In total, >6000 skeletons weighing no less than 70 tonnes have been shipped to East-Southeast Asia since 2008. Since few wild lions are hunted and poached within South African protected areas, skeletons for the legal trade appear to be derived from captive bred lions. However, confirmation of a 116kg shipment from Uganda to Laos, and reports of lion poaching in neighbouring countries, indicate that urgent proactive monitoring and evaluation of the legal and illegal trade is necessary in African lion range states where vulnerable wild lion populations are likely to be adversely affected.

10.2 Extracts from the text of Williams et al. (2017a)

The following extract from the paper are mostly relate to interviews (i.e. pers. comm.) with lion bone traders on key aspects of the trade and exports.

- **Page 9:** The CITES export data presented...for 2008–2015 are based on the adjusted quantities listed on the export permits issued for skeletons (SKE) and bodies (BOD)...– in other words, quantities traders had usually 'guestimated' they could export when they applied for the permits, and *not* the actual quantities exported. However, most traders say they tend to use the entire permit, so actual exports should be close to the quantities listed on the issued permits [Anonymous, pers. comm., July 2017].
- **Page 10:** From the permit endorsement records it was noted that some exported consignments were smaller than the maximum allowed by the corresponding permit, and some permits were not used in the same year they were issued. Lion bone traders said that this happened quite frequently in the past because hunting establishments had a tendency to stockpile all, or most, of the skeletons resulting from hunts in a year until ca. November, after which they would sell them to "[lion bone traders] to assist with travel expenses during January and February when most of the international [hunting] tradeshows take place" [Anonymous, pers. comm., July 2017]. And, since the traders were unable to complete the applications for permits (including CITES) in time due to the December vacation period in South Africa, the export of those stockpiled bones was typically delayed until January/February of the following year [Anonymous, pers. comm., July 2017]. However, bone traders also said that uncertainty in the industry from January 2016 resulted in this practice (of stockpiling) being abandoned, and most hunting farms sold bones on a monthly basis for the rest of that year [Anonymous, pers. comm., July 2017].
- **Page 10:** Traders say that under the 800 skeleton per year quota, 100% of the permit will be used



because the maximum quantity allowed for 2017 is less than what they can be supplied with [Anonymous, pers. comm., July 2017].

- **Page 14:** The 2016 figures, however, also show a significant increase in actual exported quantities compared to previous years (Figs 2 & 4). Because of prevailing uncertainty in the industry, the surge was partly indicative of the regular availability of skeletons due to farms selling available bones monthly to South African traders rather than stockpiling them to the end of the year (which also means that bones are likely to be wetter, and the average skeleton mass heavier, than estimated by Williams *et al.* (2015b). The most evident increase was in the last quarter of 2016 following the October 2016 outcome of CoP17 that a quota on bone exports was to be implemented in 2017. The surge after CoP17 was mostly indicative of traders buying and exporting as many skeletons as possible in anticipation of a zero quota, or a quota that would be lower than the quantities that they knew could be bought from facilities [Anonymous, pers. comm., July 2017].
- **Page 14:** Actual exports for 2016 are more than double the quantities of previous years, and thus appear to be a reaction to the various trade restrictions that were imposed, proposed and/or anticipated. South African lion bone traders agreed that these are all valid reasons for the 2016 figures [Anonymous, pers. comm., April and July 2017]. It is further noteworthy that, while the international market for South African lion hunts has declined markedly since 2016, the domestic market has allegedly expanded (partially due to hunts being sold at reduced rates); however, South African hunters tend not to take the skulls as trophies, and so complete skeletons from trophy hunted lions are entering the supply chain more frequently [Anonymous, pers. comm., August 2017].

11 Appendix 3

11.1 Abstract from Williams et al. 2017b ('Questionnaire survey of the pan-African trade in lion body parts')

The African lion is in decline across its range, and consumptive utilisation and trade of their body parts and skins has been postulated as a cause for concern. We undertook a pan-African questionnaire and literature survey to document informed opinion and evidence for the occurrence of domestic and international trade and consumption in African lion body parts across current and former range states. Sixty-five people from 18 countries participated in the online questionnaire survey (run from July 2014 to May 2015), with information provided for 28 countries (including 20 out of 24 countries believed to have extant populations). Respondents were experts within their professional spheres, and 77% had ≥ 6 years relevant experience within lion conservation or allied wildlife matters. Their opinions revealed wide sub-regional differences in consumptive use, drivers of trade, and access to lions that impact wild lion populations in different ways. Traditional medicine practices (African and Asian) were perceived to be the main uses to which lion body parts and bones are put domestically and traded internationally, and there is reason for concern about persistent imports from former lion range states (mainly in West Africa) for parts for this purpose. The domestic, rather than international, trade in lion body parts was perceived to be a bigger threat to wild lion populations. Parts such as skin, claws, teeth and bones are thought to be in most demand across the continent. The impact of international trade on wild populations was acknowledged to be largely unknown, but occasionally was judged to be 'high', and therefore vigilance is needed to monitor emerging detrimental impacts. Seventeen countries were nominated as priorities for immediate monitoring, including: South Africa, Tanzania, Zimbabwe, Mozambique, Zambia, Botswana, Kenya, Nigeria, and Cameroon. Reasons for their selection include: prevalence of trophy hunting, 'hot spots' for poaching, active domestic trade in lion body parts, trade in curios for the tourist market, and histories of legal-illegal wildlife trade. This survey, and increased incident reports since mid-2015 of lion poisoning and poaching in Mozambique, Zimbabwe and South Africa, and sporadic poaching events in Uganda and Tanzania, are signalling an escalating trend in the trade of lion products that is an increasing threat to some national populations. The evidence is sufficient to make more detailed investigation of this trade a conservation priority.

11.2 Extracts from Williams et al. (2017b)

The paper is extensive and covers trade in lions (all body parts) across their African range. The abstract will suffice as an overview of the content.

EK 2

**IN THE HIGH COURT OF SOUTH AFRICA
(GAUTENG DIVISION, PRETORIA)**

Case No: 86515/17

In the matter between:

**NATIONAL COUNCIL OF THE
SOCIETY FOR THE PREVENTION OF
CRUELTY TO ANIMALS**

Applicant

and

THE MINISTER OF ENVIRONMENTAL AFFAIRS

First Respondent

**THE DIRECTOR-GENERAL,
DEPARTMENT OF ENVIRONMENTAL AFFAIRS**

Second Respondent

SOUTH AFRICAN PREDATOR ASSOCIATION

Third Respondent

CONFIRMATORY AFFIDAVIT

I, the undersigned,

ROSS HARVEY

do hereby make oath and state as follows:

1. I am Ross Harvey. I am currently employed at the South African Institute

of International Affairs ("SAIIA") as a Senior Researcher in the Governance of Africa's Resources Programme ("GARP"). I am also a PhD candidate in Economics at the University of Cape Town. A copy of my curriculum vitae is attached and marked "RH1".

2. Except where the contrary is expressly stated or appears from the context, the facts in this affidavit are within my personal knowledge. To the best of my knowledge, they are true and correct.
3. Where I make legal submissions, I do so on the advice of my legal representatives, which advice I believe to be correct.
4. I confirm that I am the researcher and the author of the report entitled "*The Economics of Captive Predator Breeding in South Africa*", which SAIIA published in August 2018 ("SAIIA Report").
5. I confirm that in compiling the SAIIA report, I used the following research methodology:
 - 5.1 I conducted a review of the scientific and "grey" literature pertaining to predator breeding in South Africa and lion conservation more broadly; a distilled version of this section of the report is under review for submission with *Oryx*, one of the world's leading conservation journals.
 - 5.2 I then constructed a database of known facilities that exploit lions and other big cats in one form or another and used publicly available revenue data to build an idea of the current economic value of the predator breeding industry in South Africa.



5.3 For the cost-benefit analysis, I employed various methods to ascertain the opportunity costs and negative externalities associated with the industry, in addition to exploring what kind of economic opportunities may be available if the land currently allocated towards captive-bred predator exploitation were converted to land use that combined ecological benefit with economic value.

6. My main findings were as follows:

6.1 The captive-lion bred industry has no conservation value (pages 26 – 42).

6.2 There is no evidence to suggest that the regulated trade in lion bone serves as a buffer against the poaching of wild lions. On the contrary, it likely fuels demand for both tiger and lion bone by sending a supply-side signal to the market that trade is legitimate, with the consequent risk of the poaching of wild tigers and wild lions. Thus, South Africa's determination of a quota for the exportation of lion bone undermines international efforts to conserve these species and further imperils them (pages 10, 21 – 22, 24 – 25, 42 – 45, 77 – 83).

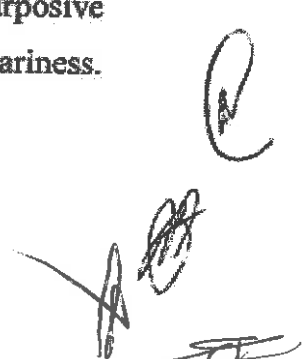
6.3 In addition, there was no scientific basis for the 2017 and 2018 export quotas of 800 and 1500 respectively. In particular, neither the 2015 non-detriment finding nor the 2018 non-detriment finding constituted such (pages 22 – 26).

6.4 The Van der Merwe *et al* Report, on which SAPA appears to

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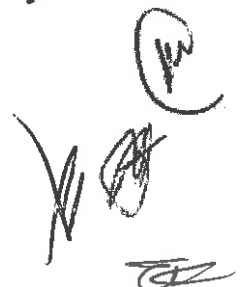
rely to demonstrate the “economic significance” of the captive-bred lion industry, is unreliable for a number of reasons (pages 15 – 19, 45 – 46, 60). These reasons include the following:

- 6.4.1 The authors used structured interviews to collect data. Their justification for using a qualitative approach (to retrieve quantitative information) is based on the following reasoning – “*qualitative research is an approach to exploring and understanding the meaning individuals or groups ascribe to a social or human problem*” (Van Der Merwe *et al.*, 2017, p. 316). However, it is not clear that the meaning respondents ascribe to a problem can produce objective quantitative data that researchers could reasonably subject to multiplier analysis. The study is designed to establish economic significance, not to explore the meaning that breeders assign to a problem.
- 6.4.2 There is no way to test that the reported quantitative data is accurate and reliable. This means that data collection is subject to myriad effects, not least of which is “*mirroring*” - the risk that interviewees will provide the data they believe the interviewer desires to hear.
- 6.4.3 Van der Merwe *et al* state that they chose every third member on SAPA’s member list, which amounted to only 22 respondents among 146 listed members. However, this seems less like stratified purposive sampling (the authors’ stated method) than arbitrariness.



For a purposive sample, "*participants are selected according to predetermined criteria relevant to a particular research objective*" (Guest, Bunce and Johnson, 2006, p. 61). It is not clear that such selection methods were employed.

- 6.4.4 The authors state that they used "*credibility*", "*transferability*" and "*dependability*" to establish methodological soundness and adequacy or "*trustworthiness*" (Van Der Merwe *et al.*, 2017, p. 317) of the data. However, little substantiation is provided as to how this was accomplished. It is insufficient to state that this is the best available method and that respondents were given a full and purposeful account of the research question. What is relevant is whether the data provided in response to the questions can be tested against reality.
- 6.4.5 It is difficult to know whether the "*stratified purposive sampling*" employed in the study provides a large enough sample with which to generate statistical value. The literature recommends that a sample is sufficient once a theoretical "*saturation point*" has been reached, though the parameters vary significantly. Van der Merwe *et al* provide no guidance on how they established that the sample size was sufficient to draw valid references.
- 6.4.6 These three problems are devastating for the study.



Average operational costs cannot easily be derived from what 22 breeders state as their running costs. The authors provide no indication of variation in the data, or levels of confidence that can be attributed to it. This does not suggest that the data is of no value. However, it does suggest that further efforts need to be more rigorous, while acknowledging that conducting research into this activity is necessarily hindered by a lack of access to open, audited financial statements.

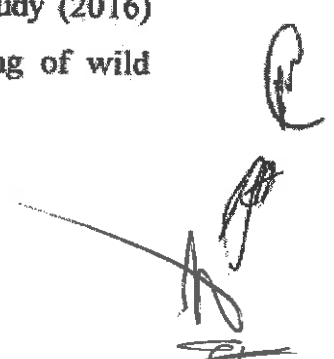
- 6.4.7 Finally, the authors of the study contend that their research contributes to conservation 'since the private lion industry does create healthy lion populations' (Van Der Merwe *et al.*, 2017, p. 321) but no evidence was provided to support this closing assertion. No scientific evidence yet produced suggests that the captive-bred lion population in South Africa is genetically healthy, and SAPA's own lion management plan recognises the problem of inbreeding within the captive population (SAPA, 2017).
- 6.5 The revenue that is generated by the captive-bred lion industry, whilst large (potentially R2.67 billion per year) amounts to only a fraction (1.85%) of South Africa's total tourism value (estimated at R144.3 billion in 2016). Alternative economic activities with genuine conservation value would likely create more jobs than the captive-bred lion industry creates. The gross revenues that are generated are not worth the conservation risks (imperilling wild tiger and lion populations) and the damage,

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which the industry is doing to brand South Africa. Continued support for the captive-bred lion industry could end up costing South Africa as much as R54 billion during the next ten years (pages 16 – 19, 45 – 46, 62 – 76).

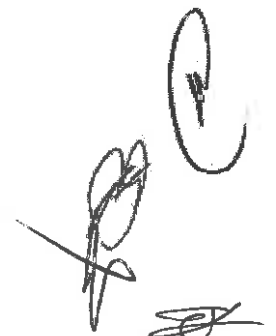
7. In addition, I have been asked to consider what would constitute a scientific study for determining a quota for the exportation of lion bone. My response is as follows:

- 7.1 A scientific basis for an export quota would have to encompass a detailed study of the relationship between supply and demand. The first issue that needs to be established is whether the demand for lion and tiger bone in Asian markets has grown since the availability of lion bone supply from South Africa. Second, channels of distribution need to be examined. The EMS/BAT Report shows that the handful of lion bone traders in South Africa are linked to transnational organised criminal syndicates, suggesting that the distribution of lion bone is through illegal channels. The presence of a legal trade may therefore provide laundering channels for illegal supply to enter legal markets.
- 7.2 This raises the question over whether a legal channel would undermine illegal trafficking, and the probability seems to be zero, given the sheer efficiency of the syndicates that are already involved, who have created distribution channels for ivory and rhino horn too. The third requirement would be a detailed study of what has happened in comparable markets after the release of a quota (or a once off sale). The Nitin and Sekar study (2016) suggests that ivory prices (and the rate of poaching of wild

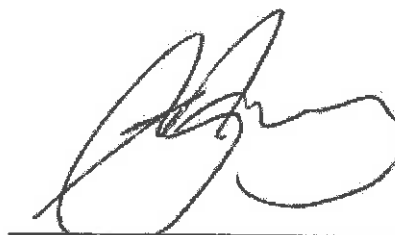
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elephants) did not decrease after a once-off sale of ivory. Studies regarding the sale of rhino horn reach similar conclusions (Crookes (2017) and Crookes and Blignaut (2015) studies) that supply-side interventions such as quotas for a limited trade do not help to reduce demand or prices.

- 7.3 What would not be good science to inform a quota are questionnaire or interview-based questions by a group of respondents with a particularly strong vested interest in a particular outcome (the lion bone quota). In addition, it is difficult, if not impossible, to check the factual accuracy of the self-reported responses. For instance, that lion breeders suggest that they would look for alternative markets for lion bones if a legal one were not available for them (Williams and 't Sas-Rolfes, 2017) is not solid ground on which to establish a quota; it seems more like acquiescing to a threat.
- 7.4 A scientific study would thus use information that has been physically gathered on the demand side in order to check price dynamics in relation to supply-side policy changes. It would thus need to encompass a fully funded undercover investigation into practices and prices on both the supply, distribution and demand sides of the trade, which would give us a clearer picture of the supply chain.
- 7.5 Until we can show beyond reasonable doubt that the quota will not inadvertently stimulate demand (and undermine demand-reduction efforts) we have no reasonable scientific grounds on which to establish a quota.



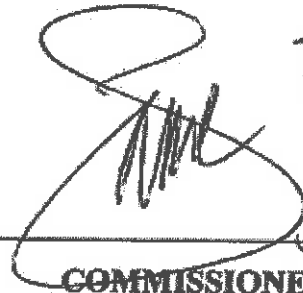
8. I request that the SAILA Report be read as if incorporated into this affidavit.
9. In compiling this affidavit, I have referred to the following sources:
- 9.1 Guest, G., Bunce, A. and Johnson, L. (2006) 'How Many Interviews Are Enough?', *Field Methods*, 18(1), pp. 59–82. doi: 10.1177/1525822X05279903.
- 9.2 Van Der Merwe, P., Saayman, M., Els, J. and Saayman, A. (2017) 'The economic significance of lion breeding operations in the South African Wildlife Industry', *International Journal of Biodiversity and Conservation*, 9(11), pp. 314–322. doi: 10.5897/IJBC2017.1103.
- 9.3 SAPA (2017) *Management plan for captive lions: A national strategy for the captive lion (Panthera leo) industry in South Africa.*
- 9.4 Williams, V. L. and 't Sas-Rolfes, M. (2017) *Interim Report 1: South African Lion Bone Trade: A collaborative lion bone research project.*

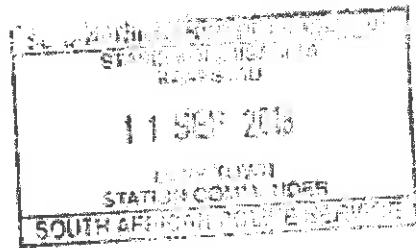


DEPONENT



I HEREBY CERTIFY that the deponent has acknowledged that he knows and understands the contents of this affidavit, which was signed and sworn to before me at CAPE TOWN on this the 11th day of September 2018, the regulations contained in Government Notice No R1258 of 21 July 1972, as amended, and Government Notice No R1648 of 19 August 1977, as amended, having been complied with.


Johannes Philipp
C/A
S. NEZAS Philipp
COMMISSIONER OF OATHS







WORKING PAPER

The Economics of Captive Predator Breeding in South Africa

By Ross Harvey

Table of Contents

THE ECONOMICS OF CAPTIVE PREDATOR BREEDING IN SOUTH AFRICA.....	ERROR! BOOKMARK NOT DEFINED.
GLOSSARY OF TERMS.....	3
EXECUTIVE SUMMARY	6
SECTION 1: PICKING A BONE WITH CAPTIVE PREDATOR BREEDING IN SOUTH AFRICA	8
INTRODUCTION	8
ECONOMIC SIGNIFICANCE OF THE CAPTIVE BREEDING INDUSTRY	11
IMPORTANT PRIORS	12
AIM OF STUDY AND METHODOLOGICAL APPROACH	15
THE APPLICATION OF THE SOCIAL ACCOUNTING MATRIX.....	16
REMARKS ON CURIOUS CONCLUSIONS	19
THE RELATIONSHIP BETWEEN CAPTIVE PREDATOR BREEDING AND WILD LION SURVIVAL	19
THE ROLE AND IMPACT OF REGULATIONS AND CONSERVATION AUTHORITIES	22
CAPTIVE BREEDING AND CONSERVATION	26
CAPTIVE BREEDING, GENETIC FITNESS AND THE UNSUSTAINABILITY OF 'SUSTAINABLE USE' DOCTRINE	33
SUSTAINABLE USE	37
THE TRADE IN LION BONES	42
CONCLUDING REMARKS	45
REFERENCE LIST	48
SECTION 2: THE OPPORTUNITY COSTS OF SOUTH AFRICA'S PREDATOR BREEDING AND VISITOR-INTERACTION INDUSTRY	56
INTRODUCTION	56
METHODOLOGY	59
PRELIMINARY RESULTS AND RELATED METHODOLOGICAL NOTES	62
DESCRIPTIVE STATISTICS	64
ALTERNATIVE ECONOMIC OPPORTUNITIES FOREGONE	58
PREDATOR BREEDING AND BRAND SOUTH AFRICA	70
THE ECONOMICS OF THE LION BONE TRADE.....	77
ORGANISED CRIME AND PREDATOR BREEDING	79
CONCLUSION	80
ACKNOWLEDGEMENTS	83
REFERENCE LIST	84
APPENDIX A	92
APPENDIX B	93

Glossary of Terms

- Canned hunting** The unethical hunting of predominantly captive-origin lions (though not necessarily limited to this) under conditions that preclude 'fair chase' due to mental (human habituation) and physical constraints (relatively small enclosures that offer no chance of escape), or some degree of both.
- Captive bred lions** Lions bred in conditions of captivity for the sole purpose of being commercially exploited through a range of 'sectors' within the captive lion industry. Managers actively manipulate all vital rates and demographics. Some are bred with minimal human imprinting ('ranching') and hunted in larger enclosures than their hand-reared counterparts. Others are used for cub petting activities, or what South African Predator Association (SAPA) calls 'working' or 'tourism' lions. In petting, the cubs are exploited either at the breeding facility or sold from breeding farms to the petting facilities. Some facilities rent cubs from breeders and return them once they have fulfilled their purpose. Once cubs are too old to pet, they are either sold to hunting facilities (some of which are directly linked to the petting facilities) or become 'walking' lions, where tourists can walk with lions, before being sold either directly into the bone trade or to the canned hunting industry. Because of the large stock of intensive-bred lions, and the declining demand for canned hunting, many lions are being slaughtered directly for the sale of their skeletons into the bone trade.
- CITES** The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), an international treaty ratified by more than 180 member countries, the purpose of which is to ensure that listed species are not subject to over-exploitation for international trade. Species listed on CITES Appendix I are 'threatened with extinction' and are or may be affected by trade; they, or their parts, cannot be traded internationally for commercial purposes. Species listed on Appendix II are not necessarily threatened with extinction but may



become so unless trade is subject to strict regulation to avoid utilization incompatible with their survival. The African lion is listed on CITES Appendix II with an annotation that prohibits trade in bones, bone pieces, bone products, claws, skeletons, skulls and teeth removed from the wild lions and traded for commercial purposes; however, the annotation allows South Africa to establish an annual export quota for these items from lions at captive breeding operations.

- Conservation value** A genuine contribution to species conservation in the wild. For a captive-bred lion to have conservation value, for instance, it must be i) genetically uncompromised, ii) able to socialise and survive under wild conditions, and iii) have had zero human habituation, as human-habituated lions lose their fear of people. No evidence yet exists that captive-bred lions have conservation value.
- Consumptive use** The exploitation of an animal for consumptive purposes. Cub petting, for instance, is a form of 'consumptive use' tourism, as is walking with lions (regardless of the fact that some 'walking lions' are less human-habituated than others). Trophy hunting, similarly, is a form of 'consumptive use', as is the sale of lion skeletons into the predator bone trade. The antimony of consumptive use is non-consumptive use. For instance, photographic tourism – taking pictures of wild lions in their natural habitats – or game viewing in the wild.
- Fair chase** A set of conditions under which an animal being hunted has a genuinely fair chance to evade its hunter for extended periods and on multiple occasions. Essentially, under these conditions, a kill is not guaranteed, even if the hunt lasts for weeks.
- Game farming** The practice of breeding wild animals for sale to, for example, tourist lodges or hunting ranches. Game ranching does not necessarily involve breeding, but stock would be acquired from game farms.
- Intensive breeding** The process of breeding to maximise reproductive capacity and increase reproduction rates, or to promote traits such as mane colour and cape size. It has no conservation value.

South African Predator Association (SAPA)	The industry body that exists ‘to co-ordinate and promote the interests of its members with a view to establishing and maintaining a healthy and profitable predator breeding and hunting industry in congruence with national and international conservation principles and current national and provincial legislation.’ ¹
Sustainable use	The concept that animals can be harvested as long as the relevant population’s maximum sustainable yield is not exceeded. In other words, the exploitation of animals for commercial gain is not viewed as necessarily problematic, provided that over-exploitation is avoided. While in principle the idea informs wildlife management just about everywhere, it has also become a smokescreen behind which controversial decisions are rationalised, based on a narrow reading of section 24 of South Africa’s constitution at the expense of broader biodiversity preservation commitments made in the same section. Also referred to as the “wildlife economy” or “green economy”.
Wild managed lions	Wild lions managed (to limit population growth and maintain genetic diversity) on small fenced areas or reserves typically less than 1000km ² in size. The National Lion Biodiversity Management Plan (BMP) of 2015 estimates that there are about 800 lions on over 45 small, fenced reserves in South Africa. The conservation value of these lions has been questioned because of the fragmentation of landscapes and resultant isolation of populations from each other that affects genetic health.
Wild lions	Lions that completely fulfil their role as apex predators in biodiversity processes. They exist only in formally proclaimed national parks and game reserves.

¹ This definition is from the body’s own website: <http://www.sapredators.co.za>, accessed 17 August 2018.



Executive Summary

In July 2018, without public consultation or scientific substantiation, South Africa's Department of Environmental Affairs (DEA) raised its annual lion skeleton export quota to 1,500, up from 800 the year before. These skeletons are supplied by the predator breeding industry, which breeds lions in captivity for multiple and sometimes overlapping purposes.

This is a report in two parts.

The first is a formal academic review of the scientific and 'grey' (reports and newspaper articles) literature pertaining to the predator breeding industry. It interrogates the most recent attempt to quantify the economic significance of the industry and finds its conclusions questionable for a number of reasons. One of its claims, for instance, is that the predator breeding industry provides positive conservation value. The review examines this claim against the available literature and finds it dubitable. Even if the conservation impact was neutral, it is not clear that the genetic impairment and welfare problems justify the continuation of the industry, even under the banner of 'sustainable utilisation' and the 'wildlife economy' doctrine. This is especially important if the theoretical possibility of future adverse conservation consequences is strong. Finally, it examines the dynamics of the lion bone trade and questions whether predator breeding can satisfy demand for tiger and lion derivative parts in East-Southeast Asia. If, as it seems, legal bone exports provide a laundering channel to feed the illicit wildlife trade, South African authorities are well advised to reconsider their current position and instead set the export quota to zero.

The second part of the report provides a framework for assessing the claims – made by the predator breeding industry - of economic significance and positive conservation value. The literature is relatively clear that these claims do not correspond to reality, but no work yet exists in the public domain that tentatively quantifies the costs and benefits of the industry. The word 'tentatively' is used because the next steps required are a full forensic audit of the industry and a more rigorous cost-benefit analysis using the most appropriate scientific methods. Neither of these research propositions can be fulfilled without a full dataset of the

industry and its revenue flows. This report aims to provide a foundation on which future work can be built. In doing so, it provides more data than existing work to date. From that data, it demonstrates that current efforts to quantify the economic significance of the predator breeding industry are inadequate and likely misleading. For instance, jobs currently undertaken by volunteer tourists crowd out local labour participation. One major finding, for instance, is that potentially as many as 84 full time jobs that would otherwise be available to local job-seekers are currently undertaken by volunteer tourists who falsely believe that they are contributing to conservation. The report also demonstrates that the industry in its current form has no conservation value. To market it in that way is therefore disingenuous. In summary, the opportunity costs and negative externalities of the captive predator breeding industry in South Africa warrant substantive public policy reform and highlight the urgent need for more well-informed regulation.

Section 1: Picking a bone with captive predator breeding in South Africa

Introduction

In 2017, South Africa's Department of Environmental Affairs (DEA) issued an annual quota for the legal export of 800 lion skeletons (Cruise, 2017). Since 2008, more than 6,000 skeletons weighing no less than 70 tonnes have been shipped to East-Southeast Asia (Williams et al., 2017). These skeletons are supplied by the predator breeding industry, which breeds lions in captivity for multiple purposes. Estimates suggest that there are between 6,000 and 8,000 lions in captivity (Born Free Foundation, 2018), though the number could be as high as 14,000. In July 2018, the DEA near-doubled the export quota to 1,500 skeletons. In early July, the department's spokesperson denied that a quota had been set. It was subsequently revealed that the minister, Edna Molewa, had informed the provincial authorities in June of the quota decision. No public consultation occurred, and the DEA rationalised its decision with reference to an interim study (Williams & 't Sas-Rolfes, 2017) that had not yet been publicly released, but is now available and dated November 2017. This clearly indicates that the DEA were in possession of the report well in advance of its July 2018 decision (backdated to 7 June 2018 because of the uncomfortable fact that the Minister had notified the provinces of the decision on that date, even though the departmental spokesperson denied, in early July, that a decision had been taken).

The authors of the interim study were not involved in the decision to set a quota, nor did their work necessarily support a quota (EMS Foundation & Ban Animal Trading, 2018, p. 4). Nonetheless, the authors warn that, with a skeleton export quota limited to 800 (at the time the interim report was written - 2017), industry respondents suggested they would seek ways to sell bones illegally. Williams and 't Sas-Rolfes express concern that this would create a parallel illegal market that would come to resemble the illegal rhino horn trade with its attendant problems of organized crime. However, it seems clear that a parallel illegal market has already existed for some time and the connection of bone traders to organised crime is similarly well established. It is not clear that these developments are related to the export quota decision either, as little remains known about the economic dynamics of the

trade, and therefore the precautionary principle – refrain from trade unless the market is well understood and stable – should apply with respect to regulatory decisions that may affect the fate of wild lions. Despite the recent improvements on the economics evidence base over the last two years, the latest work and its predecessors rely on survey responses and are subject to the constraint of small sample sizes. The Williams and 't Sas-Rolfes report is no different in this respect, with only 5 respondents having answered all six sections of the online survey, and only 34 respondents (27%) having answered more than one of the sections (Williams & 't Sas-Rolfes, 2017, pp. 5–6).

Many captive breeding facilities supply lions to the canned hunting industry, which is still legal in South Africa despite widespread international and domestic objection to the practice. Skeletons from hunted lions are sold to bone traders as a by-product. Some facilities supply captive-bred lions to game ranches or private game reserves, where visitors are invited to walk with lions or to observe 'wild' lions in enclosures (where they are fed by humans – unseen to visitors – because of their inability to hunt in the wild). In the breeding process, cubs are often removed from their mothers prematurely, and volunteer tourists pay to feed and cuddle these cubs under the pretext that they are contributing towards predator rehabilitation and future release back into the wild. Facilities that exploit cubs for these purposes knowingly lie to tourists (Peirce, 2018).

Some facilities exist purely to supply the East-Southeast Asia bone trade (Schroeder, 2018), and a study of skeleton exports in 2017 found that 91% included skulls (EMS Foundation & Ban Animal Trading, 2018, p. 5). As hunters keep the skulls for trophies, this constitutes clear evidence that the bone trade is not – contrary to the DEA's assertion – merely a by-product of the hunting industry; it is separate and often independent. In short, and either way, captive predator breeding is a lucrative business; it offers multiple and overlapping revenue streams.

While the total figure is unknown, estimates suggest that upwards of 200 breeding facilities exist in the country, with one recent academic paper citing a figure of 297 (Van Der Merwe et al., 2017), only 146 of which are registered with the South African Predator Association (SAPA), which supported the research. The same paper estimates that the industry

contributes R500 million annually to the South African economy and sustains 1,162 jobs if multiplier effects are accounted for. On the basis of this calculation, the authors assert that it is 'important for local government to support these types of developments in rural areas', as 'if lion breeding was banned... [it would] result in fewer employment opportunities and reduction in new entrepreneurs in the breeding of wildlife' (Van Der Merwe et al., 2017, pp. 320–321). Perhaps most surprisingly, the authors also assert – though the authors did not study the interaction between captivity and conservation at all – that their research shows that lion breeding 'also contributes to conservation in South Africa, since the private lion industry does create healthy lion populations' (ibid).

This review provides an assessment of the debates in the literature over predator breeding. It does so according to the following categories.

First, it assesses the quality of the latest peer-reviewed contribution (Van Der Merwe et al., 2017) in the academic literature that has attempted to ascertain the economic significance of the industry for South Africa. Where relevant, it references the Williams and 't sas-Rolfes (2017) interim report too, which is based on survey questionnaire responses, but which asked different questions of lion breeders. To our knowledge, no peer-reviewed cost-benefit analysis has yet been conducted that quantifies the economic significance of the industry with a methodology that accounts for its negative externalities and opportunity costs.

Second, it addresses the question of whether predator breeding could make any positive contribution to wild lion survival and under what conditions. The corollary question is whether it may prove detrimental (Lindsey et al., 2012a). The latest IUCN Red List of Threatened Species classifies lions (*Panthera leo*) as 'vulnerable' – not yet 'endangered' but worse than 'near threatened'. In population terms, it states that 'we have greater confidence in an estimate of closer to 20,000 lions in Africa than in a number over 30,000' (Bauer et al., 2016, p. 9) and that the 'lion population is inferred to have undergone a reduction of approximately 43% over the past 21 years' (Bauer et al., 2016, p. 2). While some populations have grown, others have declined rapidly. The 16 fenced African subpopulations have grown by 29 percent since 1993 (Bauer et al., 2016, p. 4). Unfenced populations have done less well. The consequent claim that captive origin lions are thus

needed to bolster wild or wild-managed populations remains refuted (Miller et al., 2016). While the overall qualification was 'vulnerable', 'it is of great concern that the vast majority of the population is inferred to have declined at a rate that meets the criteria for Endangered' (Bauer et al., 2016). The relevant question for this review is whether captive predator breeding in South Africa affects wild populations or may do so in the future.

Third, the review deals with questions of genetic variation, animal welfare and business conducted under false pretexts. This section also highlights problems with South Africa's narrow application of the 'sustainable use' doctrine (Orr, 2016) to justify activities that potentially undermine biodiversity conservation efforts (a key objective of Section 24 of the country's constitution and legislation such as the National Environmental Management: Biodiversity Act, no. 10, of 2004).

Fourth, the review examines the dynamics of the lion bone trade (Williams et al., 2015, 2017; Born Free Foundation, 2018) and the criminal syndicates involved, highlighting latent negative externalities generated by the predator breeding industry.

Economic significance of the captive breeding industry

Shifting economic dynamics and the relative (and recent) increase in profitability of game ranching has led to significant land-use activity switching from the 1990s onwards among some land owners in South Africa. Private property rights for both land and wild animals has generated incentives, in conjunction with increased demand from wildlife tourism, to switch from farming livestock (or other agricultural and economic activities) towards game farming and ranching. The private wildlife industry in South Africa currently operates on approximately 18 million hectares, an area 2.2 times larger than state-protected wildlife areas (Van Der Merwe et al., 2017). Van der Merwe and his co-authors note that the private wildlife industry consists of consumptive and non-consumptive tourism. The distinction is contentious in some respects, as the breeding of wildlife is considered non-consumptive, though clearly breeding facilities supply consumptive exploitation such as trophy hunting, and so the distinction is muddied by the realities of the supply chain. Photographic safaris and wildlife tourism are clearly non-consumptive in that they do not directly consume the

animal(s) in question. Trophy hunting and wildlife meat production, on the contrary, is clearly consumptive.

Though a number of studies have been conducted to ascertain the relevant economic significance of lions (Cadman, 2009; Lindsey et al., 2013; Cloete & Rossouw, 2014), Van der Merwe et al. note that 'none of these studies investigated the significance of lion breeding (from supply side point of view (sic)), except Cadman, but it lacks a sound methodology' (2017, p. 316). They provide the first attempt in the academic literature to determine the economic significance of the predator breeding industry in South Africa. Williams and 't Sas-Rolfes (2017) commenced a research project in March 2017 that aims to increase understanding of the captive breeding industry and the trade in lions (and their parts), and how such a trade – under a quota system – will affect wild lion populations. This research programme will end in March 2020 and is designed to 'provide sound scientific decision support to the DEA' (2017, p. 3) regarding its export quota management. The authors have produced an interim report thus far, which is not yet peer reviewed. Before interrogating the overall methodology and the results of the van der Merwe et al. paper, a few important priors are necessary.

Important priors

First, the authors note that there has been a dramatic decline in lion population numbers across Africa due to habitat destruction, poaching, human-wildlife conflict, hunting and the illegal bush meat trade (Van Der Merwe et al., 2017, p. 315). This observation is not in dispute. One of the latest peer-reviewed assessments indicates that wild lion populations are declining rapidly, except in intensively managed areas. 'African lion populations are declining everywhere, except in four southern countries (Botswana, Namibia, South Africa and Zimbabwe) ... lion conservation is successful in southern Africa, in part because of the proliferation of reintroduced lions in small, fenced, intensively managed, and funded reserves' (Bauer et al., 2015, p. 14894; Miller et al., 2016). Wild population depletion in large habitat areas is significant, as the importance of apex predators for ecosystem health cannot be overstated. 'Current ecological knowledge indicates that large carnivores are necessary for the maintenance of biodiversity and ecosystem function ... These facts,

combined with the importance of resilient ecosystems, indicate that large carnivores and their habitats should be maintained and restored wherever possible' (Ripple et al., 2014, p. 15).

The van der Merwe et al. paper only assesses the economic significance of captive breeding, as the results are generated from qualitative interviews conducted with 22 of the 146 active (at the time of conducting the interviews) SAPA members. Williams and 't Sas-Rolfes note that 'SAPA membership has dropped significantly during the last two-year period' (2017, p. 6), though no data exists on the organisation's website that provides a reliable estimate of total membership numbers. The Williams and 't Sas-Rolfes report does not reference the van der Merwe study, as the latter was only published in November 2017 (at the same time as the former).

As will be shown in the second part of this review, captive breeding plays no role in the conservation of wild lions despite assertions to the contrary (that the role may be indirect, for instance, through removing poaching pressure on wild lions). It is therefore unclear why van der Merwe et al. conduct their research in the context of the plight of wild lions. On the SAPA website, an article entitled "9 Myths about Captive-bred Lions" opines – in response to claims of imminent extinction – that the 'lion population is stable at between 20,000 and 30,000 cats worldwide ... In South Africa, because of the endeavours of the game ranch community, lion numbers are actually showing a healthy increase' (SAPA, 2017). South African increases, however, are relatively anomalous in global terms. SAPA's claim that the global population is stable is false, and the reference to South African increases is selective. The claim ignores the science that infers 'a decline of 43% percent based on time trend analysis of census data for 47 relatively well monitored lion subpopulations. These subpopulations approximately totalled an estimated 7,500 Lions in 2014 and comprise a substantial portion of the total species population, so that we feel confident in applying observed trends to the species as a whole as well as on a regional basis' (Bauer et al., 2016, p. 2). While it is true that a 'vulnerable' listing is not equivalent to imminent extinction, and southern African populations are doing relatively well, the wild lion population is not, on average, stable. No evidence is cited on the SAPA website for the claim of stability.



The only plausible reason that an article defending captive breeding would mention wild lion population stability is connected to the view that 'there are numerous cases where captive-bred lions have successfully made the transition to become wild lions' (SAPA, n.d.), or possibly that the supply of bones from captive-origin lions would be sufficient to reduce poaching pressure on wild lions (though this is not mentioned in any of SAPA's documents). The article mentions two studies 'of note' but does not reference them. Again, the second section of the review will address this matter in greater depth, but it is important upfront to interrogate the economic significance of an industry in the light of its own claims about its contribution to wild lion conservation. Not only does SAPA make claims that captive breeding contributes to conservation, Van der Merwe et al. also make the explicit claim that their research shows that lion breeding 'contributes to conservation in South Africa, since the private lion industry does create healthy lion populations' (Van Der Merwe et al., 2017, p. 321). As mentioned in the introduction, however, this claim is not supported in the research presented. The Van der Merwe paper only claims to assess the economic significance of captive breeding from an operational expenditure perspective (and not from its purported contribution to conservation). Attention is drawn to SAPA's views here because the interviewees in the Van der Merwe study are all SAPA members.

Second, because some breeders contribute to the wildlife ranching industry, it is important to address the fact that the relationship between ranching and wild lion conservation is also unclear. SAPA expressly attributes wild lion population health to the endeavours of the ranching industry. However, a 2017 study (Pitman et al., 2017) demonstrates that game ranching practices have become more intensive to facilitate the breeding of high-value game species. 'Our findings demonstrate that the proportional increase in problem animal control of nuisance wildlife has far outweighed the proportional increase in game ranching trends towards more intensive practices' (2017, p. 408). The irony is that while Van der Merwe et al., and others emphasise the conservation value of private wildlife ranching, these are increasingly the ranches that are killing apex predators. The consequences of decreased tolerance towards ecologically important free-ranging wildlife is likely to have detrimental impacts on species survival and ecosystem integrity. Ironically, the top three species killed as putative problem animals (by game ranchers) are leopards, elephants and lions. These are also among the species that generate the highest returns for non-

consumptive tourism (van Tonder et al., 2013). While further quantitative work is required, it appears that general intensive game breeding has become increasingly incentive-incompatible with broader conservation ambitions.

Aim of study and methodological approach

Van der Merwe et al. aimed to answer three research questions. First, what is the economic significance of lion breeding in South Africa? Second, how many people are employed in the captive lion breeding industry? Third, how much does it cost to breed lions in captivity? The study excluded the costs of infrastructure development and focused only on operational costs to avoid cross-farm heterogeneity and time effects (infrastructure returns generally accrue long after the initial expenditure). The value addition of answering these questions is not only to measure the scale of activity but to provide useful information for evaluative decision-making in the presence of trade-offs.

The authors used structured interviews to collect data. Their justification for using a qualitative approach (to retrieve quantitative information) is from Creswell – ‘qualitative research is an approach to exploring and understanding the meaning individuals or groups ascribe to a social or human problem’ (Van Der Merwe et al., 2017, p. 316). However, it is not clear that the meaning respondents ascribe to a problem can produce objective quantitative data that researchers could reasonably subject to multiplier analysis. The study is designed to establish economic significance, *not* to explore the meaning that breeders assign to a problem.

The second problem is that there is no way to test that the reported quantitative data is accurate and reliable. This means that data collection is subject to myriad effects, not least of which is “mirroring” – the risk that interviewees will provide the data they believe the interviewer desires to hear. Choosing every third member on the SAPA members’ list seems less like stratified purposive sampling than arbitrariness. For a purposive sample, ‘participants are selected according to predetermined criteria relevant to a particular research objective’ (Guest et al., 2006, p. 61). The authors state that they use ‘credibility’, ‘transferability’, and ‘dependability’ to establish methodological soundness and adequacy or

'trustworthiness' of the data. However, little substantiation is provided as to how this was accomplished. It is not sufficient to state that this is the best available method and that respondents were given a full and purposeful account of the research question. What matters is whether the data provided in response to the questions can be tested against reality.

The third problem is that it is difficult to know whether the 'stratified purposive sampling' employed in the study provided a large enough sample to generate statistical value. The literature recommends that a sample is sufficient once a theoretical 'saturation point' has been reached, though the parameters vary significantly. Van der Merwe et al. provide no guidance on how they established that the sample size was sufficient to draw valid inferences.

These three problems are devastating for the study. Average operational cost cannot easily be derived from what 22 breeders state as their running costs. The authors provide no indication of variation in the data, or levels of confidence that can be attributed to it. This does not suggest that the data is of no value. However, it does suggest that future efforts need to be more rigorous, while acknowledging that conducting research into this activity is necessarily hindered by a lack of access to open, audited financial statements.

The application of the Social Accounting Matrix

A Social Accounting Matrix (SAM) model was employed by van der Merwe et al. to determine the impact of a factor of productivity within each related industry. This is known as the multiplier effect, where a multiplier measures the changes in economic activity due to a change in spending. It captures the direct, indirect and induced effect of an increase in spending. The authors used the 2012 South African National SAM to determine these effects for captive lion breeding. The direct effect may accrue from direct expenditure, such as a breeder purchasing a fence for their property. The indirect effect is derived from what the fencing company may pay their employees and suppliers (Van Der Merwe et al., 2017, p. 317).



The authors estimate that the average running cost per breeding facility is approximately R50,000 per month (R600,000 per year). Multiplied by the total number of breeding facilities, this amounts to R178.2 million per year. 'From Table 3, it is clear that the highest spending by lion breeders is on financial and business services' (Van Der Merwe et al., 2017, p. 319) – this is derived from taking each cost item and dividing it into one of the SAM commodity divisions. However, Table 3 in the published paper is a repeat of Table 4, which measures the impact of the breeding industry on employment. One has to take the authors' word for it, then, that the production multiplier is equal to R3.93, 'which signifies that every R1 spent by a lion breeder leads to an increase in production in the South African economy of R3.93' (Van Der Merwe et al., 2017, p. 319).² Table 4 then reveals that the breeding industry supports a further 613 jobs through multiplier effects in addition to the 549 direct jobs, sustaining a total of 1,162 jobs. 'The sectors most affected regarding job opportunities are financial and business services (34.6%), construction (25.1%), and the manufacturing sector (11.6%)' (Van Der Merwe et al., 2017, p. 320). A rationale as to why these particular sectors are most affected is not offered.

The authors conclude three points from the exercise.

First, they argue (from Table 1) that because 59% of respondents self-identified as well-educated, this 'supports the notion that breeding of wildlife has become a science, and therefore is crucial in safeguarding the industry' (Van Der Merwe et al., 2017, p. 320). However, only 27% of those reported as possessing tertiary education (just over half of those 'well-educated') had university degrees. Even if one accepted the premise that self-reported tertiary education constituted being 'well-educated', it does not follow that the breeding of wildlife has become a science. As will be shown in the following chapter, it is the lack of scientific support for the practice of captive predator breeding that may have led to some of the genetic variation problems that now confront the industry.

² This researcher's attempts to retrieve the relevant information from the lead author of the journal article were unsuccessful.

Second, the authors conclude that from a regional economic development perspective, predator breeding contributes to rural development (most facilities are located in the Free State and North West provinces) and job creation. This points to one of the major shortcomings of the study, however. Even with multiplier effects – if one accepts these as legitimate – the employment effects are minimal. A total of 1,162 jobs sustained by the industry is relatively minimal, and it seems to assume no seasonality effects. In other words, one might expect that more people would be directly employed during the busier tourist seasons. The calculation also does not recognise that much of the potential labour absorptiveness of the industry may be substituted by volunteer tourism in which volunteers pay breeders to come and feed cubs and work on the facilities. Moreover, the economic and job creation effects do not consider the opportunity costs or externalities associated with the industry. This is crucial. A study of this nature can only be of value if it considers what the land might alternatively have been used for. Because it only considers captive breeding, and not the value of ranching (the subject of a separate study), the land quantity of 18 million hectares (referenced in the study) consumed by wildlife game ranching is irrelevant. This is, unless the ranching industry is predominantly dependent on its supply of lions from the captive breeding industry, but the authors do not quantify the link (if any) between breeding and ranching, or how many ranches also conduct breeding activities. Either way, to show that the captive breeding industry has economic significance, it must be demonstrated that it contributes more to the economy than its next best alternative. This has not yet been done, and future research should at least take the first steps in this direction. Moreover, if the industry generates a divergence between social costs and private returns (negative externalities), then this divergence undermines its purported economic significance. This is why the next section addresses the question of the relationship between captive breeding and wild lion conservation. If, for instance, the lack of genetic variation among bred lions necessitates the sourcing of wild lions to sustain the industry, that may generate a direct negative effect on wild lion survival. Other potential effects on wild lions will also be examined.

Third, the authors conclude that the multiplier effect of expenditure by the captive breeding industry has a positive impact on several other sectors in the respective provincial economies and consequently on the national economy. 'If lion breeding is banned or ceased



to exist, these sectors will be impacted on especially in rural areas' (Van Der Merwe et al., 2017, p. 321). This may be true, but the claim is difficult to verify in the absence of a counterfactual and/or examining what economic significance may plausibly be generated through alternative economic activities on that land.

Remarks on curious conclusions

Van der Merwe et al. are correct to point out that theirs is the first peer-reviewed investigation that attempts to determine the economic significance of captive predator breeding in South Africa. Certainly, their work demonstrates that more research is required in this direction. However, the claim that the work is based on sound methodology is potentially dubious. Qualitative interviews are undoubtedly the best form of information available in the absence of audited financial statements, but it is not clear that reliability checks were adequately employed, and the claim that every third member off the SAPA list constitutes purposive stratified sampling is questionable. Either way, the authors note that we now have better information about breeders' profiles and the geographic distribution of breeding than we had before. Thirdly, and most dubiously, the authors conclude that the 'private lion industry does create healthy lion populations' (2017, p. 321) despite the fact that SAPA has no stud books, no national level breeding plan and no rigorous disease screening programmes. But this was not in any shape or form the focus of their paper, nor do they provide any indication of what parameters might constitute a healthy population, or exactly what mechanism is at work between captive breeding and the production of such populations. They only focused, as far is evident, on captive breeding rather than the private lion industry (including ranching) more generally. This concluding line therefore comes across more as special pleading rather than a logically deduced conclusion that follows from evidence-based premises. The next section deals specifically with the available literature on how predator breeding may affect wild lion survival.

The relationship between captive predator breeding and wild lion survival

Lions are listed under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), an international body consisting of more than 180 member countries, that seeks to regulate the international trade in wildlife. Species in Appendix I are threatened with extinction; no commercial international trade is permitted for wild specimens or their products. Species in Appendix II are not necessarily now threatened with extinction but may become so unless trade is regulated; 'commercial international trade is permitted at the discretion of the exporting Party, which must determine scientifically that such trade will not be detrimental to the species' survival and issue a permit for each shipment' (Bauer et al., 2018, p. 1). The Asiatic lion (*Panthera leo persica*) is listed on Appendix I and the African lion is listed on Appendix II. The top three threats to wild lion survival are prey depletion, habitat encroachment and human-predator conflict over livestock depredation. The captive breeding of lions does not address these threats. Trophy hunting and the trade in lion bone and parts are two further threats (Miller et al., 2016). While trophy hunting can contribute to securing lion habitat and community benefits, regulations are often poorly enforced in weakly institutionalised contexts. The trade in parts and bones will be discussed specifically later in this paper but suffice to note in this section that lion bone has been used since 2005 as a covert substitute for tiger bone in expensive wines made in East Asia. Some of this demand has ostensibly been met through the by-product of the "canned hunting industry" in South Africa, defined by Bauer et al as 'trophy hunting of captive bred lions in confined spaces' (2018, p. 2). Despite well-grounded theoretical fears that the presence of this industry would threaten wild tiger survival – and, by extension, wild lion survival – through demand exacerbation, no hard evidence exists for this connection as yet (Williams et al., 2017), although a recent report states (EMS Foundation & Ban Animal Trading, 2018, p. 7) that the DEA's decision is 'threatening Africa's wild lion populations, particularly because increasing demand (for tiger bones) is leading to a rise in illegal killings' (of wild lions), because lion bones masquerade as tiger bones in destination markets. Another concern regarding wild populations is that consumers in East-Southeast Asia are allegedly prepared to pay more for bones from free-ranging wild lions because of a belief that the effects are more potent than those of captive lions.

Kirkpatrick and Emerton (2010) provide at least three reasons to expect that tiger farming (and lion farming, by extension) will not help tigers in the wild (especially if the re-introduction of captive-bred tigers into wilderness areas is unviable).

First, as with most pro-trade arguments for scarce species, the assumptions are flawed – we have no reliable data to suggest that if supply increases that it will in fact cause a price reduction and thereby reduce poaching effort. The supply-side signal may – to the contrary – shift the demand curve outwards and so maintain or even increase the price. After all, the market is imperfect and likely oligopolistic, meaning that a simple increase in supply may affect price, but not in the assumed way (downwards only), especially if it has the inadvertent effect of changing consumer tastes towards increased consumption independent of price. Williams and 't Sas-Rolfes caution that because, in their study, a 'large proportion of survey respondents have stated that they will seek other markets for lion bones' (2017, p. 24), there is potential for a parallel illegal market to develop. However, it seems clear that such a market already exists, along with extensive connections to organised crime, and has occurred independently of the level at which the DEA has set the quota (EMS Foundation & Ban Animal Trading, 2018). Williams and 't Sas-Rolfes correctly note that we know nothing about demand elasticity for lion bones (the sensitivity of consumption behaviour to price changes). They argue that price shocks are best avoided (2017, p. 25), although the reasoning in this respect is unclear. Theoretically, if demand reduction campaigns resulted in an inward shift of the demand curve and a resultant price collapse, the incentive to breed or poach lions for their bones would disappear, solving the problem of how the existence of a predator breeding industry may affect wild lion populations beyond South Africa's borders. The authors seem to be concerned that the setting of an insufficiently high quota may artificially signal scarcity and drive prices upwards, creating an incentive to poach wild lions. As discussed below, however, the different cost structures for breeding and poaching may be the stimulus for parallel markets developing – the level at which the quota is set may be spurious and simply provide confusing supply-side signals to the market as to the legitimacy of the trade.

Second, farmed and wild tiger parts are not perfect substitutes. The same is true for lions. Third, no evidence exists that farmed tigers or lions can be produced less expensively than

poached ones. Therefore, it is likely that a parallel market will develop – poached lions will be supplied to one segment of the market, and farmed lions to another. As the EMS/BAT report (2018, p. 36) put it: ‘If, indeed, the current price [of a complete skeleton] “at the breeding farm gate” is between ZAR30,000 and ZAR50,000, then it is plausible that illegally killing wild lions for the bone trade may be cheaper than sourcing bones from the captive-breeding industry’. This view is supported by Tensen (2016), who shows that commercial breeding is only likely to reduce the pressure on wild populations if the demand for the product does not increase due to the presence of a legal market, if farming does not rely on wild populations for re-stocking, and no laundering of illegal products into the legal trade occurs.

The role and impact of regulations and conservation authorities

In 2010, a judgment by the Supreme Court of Appeal (SCA) found against the Department of Environmental Affairs and in favour of SAPA. The DEA had brought a case against SAPA in an attempt to change the conditions under which canned hunting takes place to make it more ethical. The judgement rightly concluded that it was arbitrary for the DEA to insist, first, on introducing a minimum habituation period for captive-bred lions to assimilate to their enclosures, as no amount of time was likely to increase the probability of attaining fair-chase conditions. Second, the DEA’s insistence on a minimum enclosure size was similarly arbitrary, as any hunt in a confined space of a captive-bred lion did not constitute a fair chase. The court further ruled that lion farming was in an entirely separate category to wildlife conservation and should therefore not be regulated by conservation authorities (Supreme Court of Appeal, 2010). This part of the ruling appears to have resulted in widespread confusion over which government entity is responsible for the welfare of captive-bred lions. The DEA asserts that the Department of Agriculture, Forestry and Fisheries (DAFF) is the responsible entity as these are seen as ‘farmed animals’. This confusion and resultant passing of responsibility fails to recognise the potential *conservation* relationship between the presence of captive lion breeding and the plight of wild lions, not only in South Africa but also in other African range states.

In respect of the relationship between captive-bred lions and wild lion survival, CITES requires that – for South Africa to export lions or their derivative parts, regardless of the captive or wild origin – a non-detriment finding (NDF) must be provided by the Scientific Authority. A NDF is meant to reasonably establish that such a trade will have no adverse effects on the probability of wild lion survival.

In May 2015, the Scientific Authority of South Africa issued a NDF in respect of *Panthera leo*. It stated that there 'are currently no major threats to wild lion populations in South Africa, although the management of re-introduced wild lions needs to be improved' (2015, p. 1). It further notes that very few wild lions are hunted for trophies each year, and that stock is largely provided by captive populations. The NDF only considered wild and re-introduced wild populations of the African lion and did not consider captive bred populations. It does, however, quote an estimate (from Taljaard, 2009) that between 3,600 and 6,000 lions were being kept in captivity across at least 174 breeding or captive facilities. This number is at odds with more recent estimates, and again demonstrates that the industry is not being regulated. The Taljaard study is unpublished and unavailable online. Interestingly, the NDF also indicates that 'illegal trade in captive bred lions within North West Province is suspected to take place, as this industry is large and a challenge to regulate' (Scientific Authority of South Africa, 2015, p. 8). Overall, the NDF demonstrated that legal local and international trade (in lions and their derivative parts) posed only a low to moderate, but non-detrimental risk to the species in South Africa. The authority stated that it had no concerns relating to the export of lions in accordance with Article IV of CITES.

One of the members of South Africa's Scientific Authority, however, Dr Paul Funston (Senior Director of Panthera's lion programme and lead author of South Africa's Lion Biodiversity Management Plan), condemned the quota for 800 lion skeletons (issued by the South African government in 2017) as having 'absolutely no grounding in science' (Panthera, 2017). In other words, the NDF did not provide grounds on which to establish the quota; it only found that – as of 2015 – there were no major threats to wild lion survival in South Africa, and it did not explicitly examine the link between captive breeding and its potential future impact on wild lion conservation. Dr Funston stated that it was irresponsible to

establish policy that could further imperil wild lions – already in precipitous decline throughout much of Africa – when the facts are clear; South Africa’s lion breeding industry makes absolutely no positive contribution to conserving lions and, indeed, further imperils them’ (Panthera, 2017).

Panthera cites anecdotal data to substantiate its assertions. First, they note that in 2016 alone, 90% of carcasses from illegally killed lions in Limpopo National Park, Mozambique, had their skulls, teeth and claws removed. Second, the rates of poisoning of lions specifically to retrieve body parts have increased dramatically in Niassa National Reserve in Mozambique. Third, a 6kg consignment of lion claws and teeth was found in an illegal rhino horn confiscation in Maputo in 2016. Finally, 42% of lions killed illegally in Namibia in 2016 had their heads, feet, tails, skin and claws removed (Panthera, 2017).

A newer NDF was gazetted in early 2018, which included reference to captive bred populations. It stated that South Africa’s healthy wild populations exist alongside ‘a large captive population of approximately 7 000 lion kept in around 260 breeding/captive facilities...’ (Scientific Authority of South Africa, 2018, p. 5). The finding reiterates the view that the hunting of captive-bred lions poses no threat to the wild lion population and ‘it is thought that captive lions may in fact serve as a buffer to potential threats to wild lions by being the primary source of hunting trophies and derived products (such as bone)’ (Scientific Authority of South Africa, 2018, p. 5). Williams and ‘t Sas-Rolfes report that they ‘currently find no substantial evidence that legal exports of skeletons from captive-bred lions have adversely affected wild populations in South Africa to date’ but nonetheless call for an urgent investigation into the ‘extent and impact of trade in other African lion range states where vulnerable wild lion populations are likely to be adversely affected’ (2017, p. 25).

The NDF appears to ignore this caution and does not consider the probability that there are essentially two different types of hunting markets – those who will hunt only under ‘fair chase’ conditions and those who attach no value to the conditions of the hunt and will hunt captive lions in enclosed spaces from which they cannot escape at reduced prices. The logical outcome is that a parallel trade will exist; to venture the idea that captive lions will

serve as a buffer to potential threats to wild lion survival is empirically untested and possibly dangerous. To further corroborate the point, the US market for canned lion trophies, the world's major market, has been closed since 2016. No evidence thus far suggests that demand for wild lion trophies has increased as a result. If it is the case, for instance, that the demand for lion bones in East Asian trade is growing, then it is not clear that bones as a derivative from the canned hunting industry will satisfy that demand, especially as the demand for canned hunting has plummeted over the last two years. Reports are already emerging of captive bred lions being slaughtered for their bones, and Williams and 't Sas-Rolfes confirm from their questionnaire responses that breeders are signalling an intention to move into this market directly. This suggests that the 2018 NDF underestimates the size of the bone trade and is unaware that what it sees as a buffer may well prove to be a catalyst for wild lion destruction. The 2018 NDF states, similarly to the Williams and 't Sas-Rolfes (2017) report, that 'at present there is no evidence to suggest that the lion bone trade between South Africa and East-Southeast Asia is detrimental to South Africa's wild lion population' (Scientific Authority of South Africa, 2018, p. 6), but it does not determine whether this trade may prove detrimental even in the medium term. Finally, the assessment states that a quota for the export of skeletons derived from captive breeding operations must be established and revised on an annual basis. It does not mention the 2017 quota for 800 lion skeletons or the increase of that quota to 1,500 in July 2018.

The possibility that the NDF underestimates the size of the bone trade and its growth is evidenced by the findings of the interim Williams and 't Sas-Rolfes report, which shows that, since 2012, the prices of lion skeletons have increased consistently from a mean of R18,000 (male) and R17,000 (lioness) respectively in that year, to R50,000 (male) and R40,000 (lioness) respectively in 2017 (2017, p. 18 figure 4.a). The increase in prices also signals a potential outward shift of the demand curve (though the data is too shaky to state this with any great confidence), as consumer preferences for lion parts may have grown as supply has grown. Moreover, the response from questions 51 and 52 of the survey – answered by only eight facilities (skewed towards those who only sell skeletons as a by-product of the hunting industry, reveals that just three facilities exported a total of 98 skeletons between them in 2017, down from eight facilities in 2016 that exported a total of 151 skeletons (Williams & 't Sas-Rolfes, 2017, p. 20 table 11).

Prior to the established quota, 381 skeletons were exported from eight facilities alone (ibid), strongly suggesting that the 2017 quota of 800 skeletons had no grounding in an understanding of the market. Moreover, if fewer facilities are exporting fewer skeletons in 2017 than in 2016 or 2015, it is not clear why the quota increased. Of course, it is impossible to infer the extent of the market from such a limited sample size, but this again demonstrates that the DEA does not have sufficiently reliable or accurate data on which to establish a quota that is required to be grounded in science. 'Once the quota was opened, it took less than two months for it to be used up' (Williams & 't Sas-Rolfes, 2017, p. 22). 74 percent of the quota applications were to sell skeletons from euthanised lions. As Williams and 't Sas-Rolfes suggest, this is indicative of the disruption to the breeding industry as a result of reduced demand for canned hunting. Breeders that had previously banked on being able to sell to the hunting market are now supplying skeletons from slaughtered lions directly to the bone trade. The incentive to reduce breeding therefore appears limited at this stage, especially with skeleton prices having increased substantially over the last six years (though some breeders have indicated that they will reduce breeding), and with the almost doubling of the 2018 bone quota.

Captive breeding and conservation

In response to the assertion that captive lions have no conservation value, SAPA contends that 'many farmers have used money from captive-lion trophy hunting to turn dusty cattle farms into lush wilderness areas' (n.d.), which constitutes conservation value as far as the breeders are concerned. Furthermore, the organisation claims that the 'ranch lion industry have (sic) satisfied the lion bone market and so made forays by poachers into our national parks unprofitable' (SAPA, n.d.).

Panthera asserts, to the contrary, that there is 'not one shred of scientific evidence showing that canned hunting and legal lion bone exports take the poaching pressure off wild lion populations. In fact, it is increasingly clear that these practices stimulate demand for wild lion, leopard and tiger parts throughout the world' (2017). SAPA claims to have invested 'millions in research, release studies, genetic enhancement, lion censuses and bloodline

management' (n.d.). Yet, not a single study in the peer-reviewed literature appears to support the view that captive-bred lions have conservation value, or even may have that value in the future. The claim that captive-bred lions can transition to wild conditions has also not been supported in the literature.

Schroeder writes that while 'captive breeders and hunting operators have created new revenue streams by producing new forms of wildlife commodities geared toward whole new classes of wildlife consumers' (2018, p. 19), it remains unclear whether the increased demand for these goods can be saturated by captive breeding, or whether such demand will generate unintended negative downstream impacts on wild stocks elsewhere in the region.

The most comprehensive paper in the literature that addresses this question is by Lindsey et al. (2012a). In response to the claims made in the Taljaard report (that the captive predator breeding industry contributed an average annual figure of R226.7 million to the economy and supported 220 direct jobs), the authors note that while these benefits may accrue, 'ethical concerns and negative publicity associated with captive-bred lion hunting could potentially off-set gains by disrupting much larger and more economically significant industries such as ecotourism and mainstream trophy hunting' (2012a, p. 18). In their paper, Lindsey et al. treat mainstream trophy hunting as a relative conservation good, given that its absence in many contexts would result in land conversion from wildlife conservation to livestock or other agricultural activity. Survey data revealed that 20 percent of clients who had hunted captive lions previously would prefer to hunt wild lions in the future. Given the relatively large size of the South African captive hunting industry, if it were to be closed down, even a small transfer of clientele to the wild hunting industry could be significant. 'A shift of 20% of the captive-bred market could lead to an increase of 42.9% in the demand for wild hunts' (2012a, p. 19). An outward shift in the demand curve for wild hunts would, however, confer negative conservation consequences where hunting is poorly regulated. Wild hunting is only sustainable if quota adherence is credibly enforced and the quotas themselves do not exceed that which is biologically sustainable. Excessive off-take is already prevalent in Namibia, Cameroon, Tanzania, Zambia and Zimbabwe.

An interesting predictive observation – in light of the Panthera statement cited above that provides anecdotal data of a potentially negative link between predator breeding and conservation – notes: ‘An increase in demand for wild lions within South Africa could lead to an increase in hunting of the species on private and communal lands adjacent to protected areas such as the Kruger National Park and the Kgalagadi Transfrontier Conservation Area, which could create sink effects similar to those seen around Hwange National Park in Zimbabwe. Such hunting would not necessarily rely on there being viable populations in hunting grounds adjacent to parks, as lions can be easily lured with the use of baits or calls and perimeter fencing is often poorly maintained and ineffective at controlling the movement of predators’ (2012a, p. 19). This happened recently in the case of the controversial hunting of a pride male lion named Skye in the Umbabat reserve bordering the Kruger National Park (Pinnock, 2018a). Conversely, where hunting is well-managed, the closure of predator breeding for canned hunting would make wild lion hunting substantially more expensive and potentially increase the conservation value of that activity as a result. However, a substantial difficulty with this line of reasoning is that ‘lion populations are particularly sensitive to trophy harvests due to the social disruption and potential for infanticide by incoming males following removal of pride males’ (2012a, p. 11). Moreover, current quotas would have to be reduced to make the industry sustainable from a conservation perspective. This is politically near-impossible.

The relationship between captive hunting and wild hunting is therefore ambiguous for wild lion survival. If captive breeding reduces pressure on wild stock, a positive conservation effect may be present. If, however, conservation value is dependent on a large, well-managed wild hunting industry, this positive effect may be undermined as it would presumably disincentivise the retention of wildlife-based land uses. Similarly, if the captive-bred hunting industry were to be banned, the increased demand for wild hunting may have positive conservation value, but only if the qualifying condition of being well-managed is credibly met.

Beyond this ambiguous effect, the more important theoretical consideration is what kind of impact the sale of lion parts to Asia may have on the demand for wild-sourced lion parts. The consumption of lion bones is not illegal in China or the other major consuming countries

and the number of bones exported from South Africa has increased in recent years. Being listed on Appendix II means that export permits for bones can be acquired without having to sell a hunt. 'From a conservation perspective, trade in lion bones from captive institutions in South Africa to Asia would be cause for concern if it were to stimulate harvest of wild lions or other felids to supply the bone trade. The market preference in China for bones from wild, rather than captive, felids could result in such a stimulus' (Lindsey et al., 2012a, p. 20). A recent investigate report notes, for instance, that leopards are now Asia's most traded big cat: 'Trade in their bones, primarily to meet demand from Chinese consumers, is one of the drivers of this trade' (Environmental Investigation Agency, 2018a); the bone is consumed in similar ways to tiger bone. This again reinforces the proposition that a legal trade in lion bones opens channel for the laundering of other felid bones, which may place pressure on wild stocks of those felids. It also makes law enforcement challenging, as officials are unable to distinguish tiger bone from other felid bones. This point was emphasised by a delegate from Vietnam at the 2018 CITES Animals Committee meeting.

SAPA's assertion, along with that of the DEA's 2018 NDF - that the sale of captive-bred derivative parts has been shown to remove the pressure on wild stock – has not been empirically shown in any available literature. There is a distinct possibility that the stimulus mentioned by Lindsey et al. would shift the demand curve outwards. Given the sheer lack of data pertaining to the demand for specifically-wild lion bones or parts, the precautionary principle would ordinarily apply. In other words, if an activity stands a theoretical chance of increasing pressure on wild stock, the probability of a detrimental CITES finding should similarly increase. As has been observed with elephant ivory and rhino horn, criminal syndicates find it economically more attractive to source stock from the wild through paying a flat rate to poachers than to source from expensive breeding stock (Harvey et al., 2017). Breeders would have to produce stock at lower marginal costs of production than poachers, which would almost certainly mean risking the health of the gene pool.

If captive-bred lions could be introduced into the wild in a sustainable manner that ensured population growth recovery, presumably the difficulties currently associated with the relationship between captive breeding and wild lion survival would become obsolete. An important paper from 2012 examines this issue (Hunter et al., 2013). The authors'



concluding assessment is that 'reintroducing large carnivores from captivity into the wild is profoundly limited by biological, technical, financial and sociological factors' (Hunter et al., 2013a).

The importance of the Hunter et al. contribution cannot be overstated because a relatively large number of registered captive breeding facilities market themselves as explicitly contributing to conservation or research. Their revenue streams are derived from this particular premise. Therefore, if it is not true that captive bred stock can be successfully or sustainably reintroduced, the regulatory indication is that – at best – such false advertising should be immediately prohibited. The truth of this particular question also determines the relative economic significance of the industry. If it is of negligent conservation value but derives a large portion of its revenue stream from that pretext, its economic significance would presumably be diminished when that pretext is exposed as false.

Hunter et al. show that population re-establishment using wild lions has been unequivocally successful, to the extent that many reserves now employ some form of population control (Kettles & Slotow, 2009; Miller & Funston, 2014). Removals from wild prides would be problematic if they compromised the quality of the source population by increasing the probability of inbreeding; it is also illegal to remove wild animals from their natural habitats and place them in captivity (Funston & Levendal, 2015). The probability of inbreeding increases inversely to the size of the source population. In other words, small populations are at greater risk of inbreeding and are unviable options in the presence of larger and therefore more suitable candidate sources.

After addressing the conditions for successful wild re-introductions, Hunter et al. show that not only is wild translocation significantly more successful on average than captive re-introduction, the 'impoverished setting of the captive environment may lead to maladaptive behaviour' (Hunter et al., 2013a), such as inexplicable male killing of adult females and high cub mortality as a result of failing to thrive. The second, and most significant problem, with captive bred populations as a source for reintroduction is that their origin may be unsuitable. The source population should ideally be as closely genetically related to the original native stock as possible. They should also show similar ecological characteristics to

those belonging to the original sub-population. In this respect, the most significant barrier to successful reintroduction is that captive-bred lions are likely to lack important local adaptation abilities, especially if they have been exposed to novel pathogens that could contaminate wild populations. The authors contend that the long history of private ownership of lions in southern Africa from various sources has created a mongrel captive population that is unfit for release into the wild. Where the need for captive-origin lions would be greatest (West and Central Africa), the wild populations are genetically distinct and not well represented in captivity. Finally, they argue that there is little supporting evidence for 'so-called pre-release training that demands close contact between people and tame lions' (Hunter et al., 2013a). Human-socialized lions present a significant risk to people with a number having been killed. This includes a recent incident at Dinokeng Game Reserve in South Africa, where Kevin Richardson – the “lion whisperer” was taking the lion for a walk during which she killed a young woman near a tented camp on the property (Associated Press, 2018).

Hunter et al. contend that since no lions have been restored to the wild by the process of pre-release training since 1999, such programmes risk detracting attention and economic resources away from securing existing lion habitat and addressing the factors that kill wild lions and their prey.

Abell and Youlton (2013) respond to Hunter et al. by noting that no evidence exists that 'lion restoration programmes using captive-origin lions are, or will be, failures' (2013, p. 25). They question the objections raised by Hunter et al. by, for instance, arguing that not enough is known about lion disease epidemiology to promote translocation unequivocally as a more efficient and effective conservation measure than captive-bred sourcing. Sourcing from healthy populations incurs the very risk that Hunter et al. are keen to avoid (sourcing from small sub-populations that may negatively affect pride dynamics and survival). Abell and Youlton further argue that the aberrant behavioural characteristics of captive prides referred to by Hunter et al. are not typical, and may not be consequences of captivity per se. Ultimately, Abell and Youlton are of the view that Hunter et al. do not sufficiently address all the factors in question and should not condemn conservation programmes that source captive-bred stock for *in situ* conservation when wild translocations are likely to prove

ineffective in themselves to address imperilled wild lion populations. In response, Hunter et al. (2013b) essentially accuse Abell and Youldon of creating arguments that appeal to speculation at best: 'It is spurious to claim that both captive-origin and wild-born approaches can play a part when the former has wasted millions of dollars and years of effort, elevated the risk to lions and people, and has not established a single, free-ranging lion' (2013b, p. 27). It is difficult to dispute that, on the basis of the available evidence, wild lions are better candidates than captive-bred lions for reintroduction success (Slotow & Hunter, 2009). It may be true that captive operations may also contribute in the future, but objective criterion for justifying capital allocation in this direction – especially in the face of competing conservation investment priorities – seems to undermine its rationale. Furthermore, Hunter et al. express their reservations towards the encounter industry that misleads the public – and policymakers – into believing that captive-sourced reintroduction is a necessary, viable and established conservation success method.

Further corroborating Hunter et al.'s point, Dunston and others (including Abell) (2017) recently conducted a study that attempted to ascertain whether captive-bred prides would be able to thrive in the wild. After comparing the territorial and hunting behaviour of captive-origin prides with wild-born prides, the authors state that 'observed hunting behaviour by the captive-origin prides indicated their ability to hunt successfully individually, however, whether they are capable of co-operative hunting remains to be established' (Dunston et al., 2017, p. 259). While the authors contend that upon relocation to a larger reserve, captive-origin prides could become self-sufficient, it is really not clear that this follows from the evidence presented. There appear to be too many caveats and too many unlikely conditions that would have to be fulfilled before conservationists could be convinced of the merits of *ex situ* reintroduction programmes. One of the critical factors that remains unexamined, for instance, is how captive-origin prides would compete with or even respond to wild prides in the same reserve. Another study by a student of Dunston's concludes that it remains unclear whether captive-origin lions would respond appropriately to unfamiliar conspecifics in the wild post-release despite having ostensibly developed natural social behaviours (Hall, 2017), even if captivity does not impede the ability of a pride to become socially cohesive (provided a host of pre-released conditions are met to ensure the replication of 'natural' behaviour) (Dunston et al., 2016).



Captive breeding, genetic fitness and the unsustainability of 'sustainable use' doctrine

The relationship between captive breeding (and its associated practices) and its conservation value is mediated not only by whether captive bred lions can be successfully reintroduced into the wild or whether the derivative parts satisfy demand in Asia, but also by the intervening variable of genetic quality.

SAPA alleges that 'the genetics of the better lion ranch populations are much more pure (sic) than that of the typical wild lion pride' (n.d.). It further states that long-term scientific studies and analyses of breeding practices by SAPA-accredited breeders show that 'lion breeders go to extraordinary lengths to avoid inbreeding' (n.d.). These studies are not linked or referenced to the article. Moreover, the reference to ranched lions (as apparently distinct from captive-bred lions) appears to be selective in this instance, as 'ranched' lions are sourced from captive bred populations and there is no evidence to suggest that the categorical distinction is warranted. Captive-bred lions who happened to grow up on a ranch are no less captive-bred than those who grow up in a cage. The sleight-of-hand rhetoric subtly introduces the idea that 'ranched' lions are some form of wild-managed population, but the difference remains an unbridged chasm.

In a peer-reviewed assessment of the literature, Richard Schroeder notes a higher incidence of genetically derived disease among captive-bred animals and that inbreeding is a significant problem. 'The weakening of the genetic pool can have serious consequences for the general vitality of the captive-bred population' (2018, p. 8). This is especially the case for lions that are bred purely for canned hunting or the bone trade, where there is no obvious short-term requirement to focus on maintaining the genetic diversity of metapopulations.

A report commissioned by the National Council of SPCA's in 2009 raised concern over this issue too. It stated that, in addition to the welfare concerns associated with captive

breeding, 'the use of growth stimulants and genetic manipulation to try and increase the size of captive lions' (Cadman, 2009, p. 14) was equally concerning.

Cousins et al., in 2010, noted that the legal requirement for wildlife utilisation systems to be surrounded by game fencing has 'led to fragmented landscapes, causing genetic isolation of species and the disruption of migratory routes... Furthermore, many ranches are too small to contain genetically healthy predator populations' (Cousins et al., 2010). These authors further highlight eight general biodiversity conservation concerns within the private ranching industry. Pertaining to genetics specifically, they call attention to the problems of deliberate cross-breeding or hybridization of species; deliberate breeding of recessive colour variations; and the genetic pollution of wild animal populations if released into the wild from unscientific intensive captive breeding programmes. Cousins et al. note that the Department of Environmental Affairs (DEA) in 2005 recognised that such practices could deplete the genetic integrity and diversity of natural populations. New regulations introduced in 2010 appear not to have helped, partly because of tension between stakeholders over the implementation costs, and because the DEA has little to no enforcement capacity to monitor the implementation of the regulations.

Pitman et al. conclude that while game ranching has widely been heralded as a conservation success – the epitome of a devolutionary rights-based approach to natural resource management – there are significant hidden costs of local decision-making 'in the absence of adequate centralised regulation and evidence-based best practice necessary to uphold conservation objectives' (2017, p. 406). Moreover, it is not clear that the acclamation of conservation success is warranted, as intensive game-ranching practices can incentivise the persecution of ecologically important species (such as apex predators) (Pitman et al., 2017). Genetic integrity appears to be at risk even in well-managed small re-introduced wild populations, and intensive ranching of game on private ranches that would otherwise constitute lion prey in the wild has inadvertently led to the persecution of wild lions near these ranches.

Given the peer-reviewed contribution by Pitman et al. and Cousins et al., it is difficult to see why SAPA insists that 'ranch lions [bred for consumptive sustainable utilisation purposes]

have significant conservation value in terms of their genetic diversity; health resilience; reintroduction purposes; socio-economic benefits; revenue-generation; and protection of wild lions by meeting demand for trophy hunting and lion bone demand' (SAPA, 2017, p. 17). The DEA's 2018 NDF, instead of heeding the warning in various reports and academic papers that captive breeding may imperil wild populations, reflects this very view.

SAPA introduces a distinction between captive-bred lions – 'ranch' and 'working/tourism' lions – that does not exist in the National Biodiversity Management Plan for the Lion (*Panthera leo*) in South Africa (NBMPL) (Funston & Levendal, 2015) (hereafter the BMP). The SAPA management plan for captive lions then also asserts that 'working/tourism' lions (as opposed to ranch lions) have 'significant conservation value in terms of their genetic diversity...' (SAPA, 2017, p. 17). No supporting evidence is offered for the claim. The 2015 BMP notes that the National Zoological Gardens (NZG) of South Africa had been requested by SAPA to undertake a genetic survey of lions held in captive facilities. This research, however, is not yet publicly available, although it began in 2013. In a recent report, the DEA responded to the following question: 'Does the DEA have systems in place to monitor the genetic integrity of captive bred lions in South Africa?' by stating that 'The National Zoological Gardens did a project with the South African Predator Association to look at the genetic diversity in the captive populations and they should be approached for further details. The TOPS [Threatened or Protected Species] regulations do require that studbooks should be kept, where appropriate' (Born Free Foundation, 2018, p. 28). The 2018 NDF assessment states that 'According to recent data (2017) provided by DEA, this number [of lions in captive facilities] is likely to be closer to 7 000 individuals kept in approximately 260 facilities' (Scientific Authority of South Africa, 2018, p. 12). Again, however, this information is not publicly available, and numerous requests for information to the Minister of Environmental Affairs elicit responses that the DEA does not have this information.

SAPA has insisted that captive-origin ranch and working/tourism lions (if one accepts their distinction) are genetically healthy and therefore of conservation value (2017, p. 17), but its own lion management plan – in Table 27-1 - notes that in both captive-bred and managed wild lions, in-breeding is a concern, especially in the former: 'In-breeding known to occur (sic) – compromises genetic integrity and provenance (origin)' (SAPA, 2017, p. 35).

In the absence of the NGZ study being available, another 2010 paper (Trinkel et al., 2010) will have to suffice as the most authoritative word on the matter.

Since 1980, there has been a rapid increase in the number of small, fenced reserves (smaller than 1000km²) in South Africa. While reintroductions to establish wild managed lion populations in these reserves have been successful, most reintroduced populations are small and will suffer serious genetic problems from inbreeding depression unless wild stock is sourced from elsewhere. Beyond this issue, and pertaining to captive breeding more specifically, inbreeding depression is common among terrestrial predators in captivity. Inbreeding 'has deleterious consequences on all aspects of reproduction and survival' (Trinkel et al., 2010, p. 375). In Madikwe, a small reserve in South Africa, the average inbreeding coefficient of cubs born each year to reproduce increased with increasing population density due to incestuous mating. Wild lions were reintroduced to Madikwe Game Reserve specifically for eco-tourism and biodiversity conservation purposes. Trinkel et al. demonstrate that eco-tourism benefited from the reintroduction, and the translocation of excess lions provided additional income. 'However, the benefit for conservation is questionable as it is clear that substantive close breeding has occurred despite the interventionist management approach' (Trinkel et al., 2010, p. 379). Madikwe has the second-largest population of re-introduced lions, and the fourth largest overall lion population in South Africa. If inbreeding in such circumstances could not be avoided, it is difficult to see how it could be avoided among "ranchered lions". Trinkel and her co-authors are of the view that 'in the longer term, a major genetic intervention is required, such as introduction of new blood lines' (2010, p. 380). Slotow and Hunter (2009) recommend artificial takeovers, such as removing a two-male coalition and replacing them with unrelated two-male coalitions, as the most appropriate method for introducing new genes into a population. This has been successfully achieved in the Greater Makalali Private Game Reserve, for instance (Miller et al., 2013). Miller and Funston (2014) note that most managers of reintroduced lions in small reserves are not using available methods (such as artificial takeovers, recommended by Kettles and Slotow (2009) and contraception) to control population growth and ensure genetic diversity. They are simply trying to remove excess lions. Removal through translocation is now at saturation point, and euthanasia is therefore now the preferred removal approach. This has led to high levels of inbreeding,

which leads the authors to question the conservation value of the approximately 700 lions that exist in small, fenced, reserves.

If inbreeding is widespread among captive lion populations in South Africa, and there is little reason to suspect that this is not the case – the burden of proof remains on the industry to demonstrate otherwise – then the industry does not appear to be sustainable.

Sustainable Use

South Africa's constitution states that 'everyone has the right... to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that... secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development' (Republic of South Africa, 1996 section 24b, (iii)). Private game owners, including SAPA members, are of the view that the consumptive use of predators is therefore constitutionally justifiable, and the SCA judgment referenced above indicates a likely reading of the constitution in this manner.

SAPA states, for instance, that 'managed hunting is an especially revenue-rich form of utilization... those who oppose sustainable utilisation are inflicting the cost of conservation on landowners and yet denying them the benefits' (SAPA, 2017, p. 18). But this appears to be carefully-worded avoidance of how unsustainable some of the practices are – such as supplying to the canned hunting industry – that its members may be engaged in. Until such time as a full audit and transparent listing of all its members' breeding facilities is conducted, SAPA should expect public suspicion towards its claims. The 2018 NDF notes that the 2015 BMP for the African Lion included actions for how to improve the management of captive lions, one aspect of which was 'an audit of all lion keeping facilities' (Scientific Authority of South Africa, 2018, p. 14). Three years later, no such audit exists. Without this, it is difficult to see how a NDF, let alone a skeleton export quota, is justified.

The practices of the predator breeding industry therefore appear to fall short of the constitutional insistence on 'ecologically sustainable development' that satisfies the stipulation 'for the benefit of present and future generations'. The precautionary principle is

important here because it cautions that if current practices are likely to put the future viability of the wild lion population at risk, for instance, then they should be stopped.

As it stands, no lion scientists appear willing to confirm that the captive predator breeding industry has positive conservation value. To the contrary, the evidence appears to be pointing in the direction of potentially undermining wild lion conservation (Lion Conservationists, 2017; EMS Foundation & Ban Animal Trading, 2018).

If it were the case that SAPA simply insisted that captive-bred lions had no impact on conservation and are entirely separate from wild lions, the current policy equation may be different. However, at present, the Association explicitly claims that it makes unequivocally positive contributions to conservation. The evidence cited in this paper suggests that this is unlikely to be true. The industry may undermine conservation efforts both through the inadvertent stimulation of demand for lion bones in Asia (the subject of the next and final section), creating enforcement problems related to the illegal tiger bone trade, and through having to source wild stock to maintain genetic variation among the captive population.

The final consideration in this section is whether the economic revenue streams that make the predator breeding industry so lucrative are ethically viable. Ian Michler, for instance, draws attention to 'the volunteer programmes that feed revenue and free labour into many of these lion farms... They entice people, often young students who believe they are making a worthy conservation contribution, into paying substantial amounts of money to offer their services to these facilities' (Michler, 2016). A number of travel blogs also expose the deception employed by breeders. Facilities that buy or rent cubs from breeders (often on separate properties) charge tourists (many of them volunteers) to cuddle, play and take photos with cubs that have been separated from their mothers within days of birth (Peirce, 2018). This early separation, human habituation and subsequent walking with tourists renders these lions unsuitable to 'rewilding' efforts, despite farms' marketing claims to the contrary (Travelrebellion, 2018). Similarly, Adam Cruise cites the Endangered Wildlife Trust's position that captive-predator facilities give the general public the wrong impression that it is acceptable to hold carnivores in captivity (Cruise, 2017). Human-predator habituation is dangerous, as demonstrated by the fact that one of Kevin Richardson's lions recently killed a

woman on his Welgedacht farm (mentioned earlier), along with the little known fact that, for instance, '38% of all known incidents involving carnivores were attacks by captive cheetahs', the second highest attack rate after captive lions (De Waal, 2018). Richardson himself has made public statements against the cub-petting and canned hunting industry, but any human habituation may be a form of cruelty (directly or indirectly). For instance, even though a recent publication finds that the lion encounter industry may have potential conservation education value, it scores the industry negatively on animal welfare parameters (Moorhouse et al., 2015). Fair Trade Tourism has also recently published its 'Captive Wildlife Guidelines', which were developed on the grounds of research from Oxford University's Wildlife Conservation Research Unit that 'up to four million tourists per year who visit captive wildlife attractions per year are contributing to animal welfare abuse and decline in species conservation, yet 80% of them are unaware of their negative impacts' (FTT, 2018).

There are two major ethical issues in view. First, tourists are paying to do labour that would otherwise presumably pay local job-seekers. These tourists are lured under the false pretext that they are *directly* contributing to conservation. That predator breeding may have an *indirect* conservation value is a difficult argument to market convincingly, thus facilities that use captive-bred cubs resort to lying. Second, breeders are supplying the canned hunting industry and the lion bone trade, unbeknown to volunteer tourists. The canned hunting industry is also selling its hunts as 'wild' – presumably few hunters are enticed by the thought of shooting a docile, domesticated animal. The industry therefore has to resort to marketing under false pretexts.

Exposure of the practice, combined with the controversial shooting of Cecil the Lion in Zimbabwe, led to 'a 2016 US ban on the import of trophies from captive-bred South African lions' ('t Sas-Rolfes, 2017, p. 5). As indicated above, ethical trophy hunting may be of some conservation value; what is unclear is the extent to which South African hunting (99% of which is of captive-bred lions) affects the trophy hunting of wild lions or wild lion survival more generally. 't Sas-Rolfes is drawing attention to this lack of clarity and warns of the dangers on simply banning hunting altogether – it may be an inappropriate response in light of the complex interaction between informal and formal institutions, shaped by

heterogeneous hunting preferences and other factors. This is a fair point, and trophy hunting of free-range wild lions may be an important conservation tool regardless of how one may view the matter from an ethical perspective (Nelson et al., 2013). However, the backlash against hunting in general – misguided as it may be in the eyes of some scholars – has created new dynamics and practical implications for wild lion conservation and the predator breeding industry.

The backlash against canned hunting in particular has led to a split in the South African hunting industry – PHASA remains committed to the hunting of captive-bred lions and voted at their AGM on 22 November 2017 to continue hunting captive-bred lions, an apparent reversal of a previous decision (Avery, 2017), though SAPA denies this. The decision also appears to ignore SAPA's statement that 'the key issue [to have the importation of captive-bred lion trophies re-admitted to the United States] for the captive lion industry is to demonstrate that the industry does contribute to the conservation of wild lions in South Africa and beyond' (SAPA, 2017, p. 22).

In a recent Carte Blanche interview (Summers & Watts, 2018), Richard York – current spokesperson for the Professional Hunters Association of South Africa (PHASA) – admitted that there were only eight hunting ranches (among the more than 200 captive-breeding – or related facilities – in the industry) that were currently SAPA-accredited. In other words, only eight hunting ranches in the entire country have met the appropriate standard for supplying the hunting industry with captive-bred lions that have minimal human imprinting. Interviewer Derek Watts asked what implications this had for the other 192 facilities that were not yet accredited. York answered that 'small change happens in small increments' and that PHASA would work with breeders to improve their facilities. It does not appear, however, that PHASA members are under any obligation to only hunt in the eight accredited facilities. SAPA's lion management plan decries the anti-hunting lobbyists who oppose hunting on 'ideological and emotional' grounds, and states that 'managed hunting is an especially revenue-rich form of utilization, which impacts relatively little on the environment' (SAPA, 2017, p. 18). However, SAPA has failed to demonstrate that captive breeding has positive conservation value. Its claim that it reduces the impact of hunting on wild populations (2017, p. 39) has an ambiguous conservation effect at best (Lindsey et al.,

2012b). And, while PHASA explicitly recognises the problems of canned hunting and claims not to support the industry, there is no evidence that either SAPA or PHASA are taking sufficient steps to address the self-recognised issues of: the small size of the hunting area; the minute release period prior to the hunt; human imprinting on lions to be hunted; unethical hunting practices and 'the misrepresentation of facts to hunting clients' (SAPA, 2017, p. 44). The development of SAPA's norms and standards (SAPA, 2017 Appendix A) is a start, but these do not appear to be aligned with the norms and standards stipulated in the 2015 Lion BMP. Moreover, there is no recognition of the serious governance challenges associated with each province having its own disparate set of regulations pertaining to canned hunting.

The split in PHASA led to the formation of a new hunting group called 'Custodians of Professional Hunting and Conservation – South Africa' (CPHC-SA, 2018). Paul Stones, one of its founding members, recognises – in the Carte Blanche interview – that with only a small skeleton export quota (800 at the time), and 8,000 lions in captivity, combined with the backlash against canned hunting (and consequent reduced demand for canned hunts), the 'excess' lions are going to be exploited for their derivative parts. SAPA appears to support this practice, as it states that captive breeding delivers conservation benefits by meeting the demand for trophy hunting and lion derivatives (2017, p. 43). As the next section demonstrates, however, it is not clear that the legal sale of lion bones from captive-bred lions in South Africa will be able to satisfy demand in Asia; to the contrary, it may ignite demand in ways that prove deleterious to wild lion survival by generating incentives to increase poaching efforts. This is especially concerning if SAPA and PHASA members have links to criminal wildlife trafficking networks. Moreover, Safari Club International (SCI), the world's largest trophy hunting club, will no longer allow captive bred lion operators to advertise or market captive bred lions at its annual convention, and will reject all captive-bred lion entries for its record books (Bloch, 2018b). The Dallas Safari Club has made a similar ruling.

Williams and 't Sas-Rolfes point to the danger of captive lion breeders seeking alternative markets for lion derivatives in the wake of the backlash against canned hunting and the potential link to organised crime. They warn, for instance, about the potential for the rhino

poaching epidemic to be replicated in the lion domain. Indeed, the links between the known handful of South African bone traders and the criminal networks involved in the illicit rhino-horn trade are becoming increasingly well-established (EMS Foundation & Ban Animal Trading, 2018). This appears to corroborate the view that merely having an 'excess stock' of captive-bred lions may do little to prevent the large-scale poaching of wild lions.

The trade in lion bones

For SAPA to legitimise the canned hunting industry – one of the organisation's stated aims – it recognises that captive-bred lions should bear no human imprinting. Animals bred for hunting also have to look somewhat presentable, especially if they are to become a trophy. The growing bone trade, however, renders welfare concerns irrelevant from the economic perspective of breeders. 'In effect, the bone market's function is to absorb surplus animals that are often in ill health or otherwise suffering the effects of poor treatment' (Schroeder, 2018, p. 8). Beyond welfare considerations, it is not clear that exploiting surplus captive-bred lions for their derivate parts can satisfy market demand; to the contrary, legally available supply may both fuel demand and provide a laundering channel for illegal supply.

Supply and demand dynamics of illicit wildlife trade are difficult to establish without reliable data, as criminal syndicates and illegal retail outlets are not in the business of making audited financial statements publicly available. 'When it comes to the details of the money flows and economics of the lion bone trade on the South African side, very little is known' (EMS Foundation & Ban Animal Trading, 2018, p. 33). Policy decisions therefore need to be built on the best available scientific evidence, and in the absence of good economic data, the best economic theoretical considerations.

It is now well-known that the illegal trade in tiger body parts is a persistent and significant threat to wild tiger populations (EMS Foundation & Ban Animal Trading, 2018). Their bones are one of the most lucrative products sold on the illegal wildlife market. Efforts to curb this trade involve diverse strategies such as demand reduction campaigns. Confusing supply-side signals, however, like the breeding of felid substitutes (like lions) for tigers 'may be foiling efforts to curtail the market' (Williams et al., 2017, p. 4). Breeders assert that the supply of

farmed bones removes pressure on wild populations. However, the availability of a legal supply channel – given the export quota of 1,500 skeletons – may incentivise ‘poachers to target wild lions and launder their bones into these markets’ (Born Free Foundation, 2018, p. 2). The fact that lion bones were reportedly being passed off as tiger bones (and traders were not demanding to see evidence of the source) for Traditional Chinese Medicine (TCM) ingredients, made conservationists ‘nervous about the trajectory of the trade and what impact it might have on wild lion populations’ (Williams et al., 2017, p. 5). In other words, ‘the legal trade in captive bred lion skeletons and bones may be used as a cover by criminal syndicates to launder illegally obtained bones and skeletons from wild-caught animals’ (Born Free Foundation, 2018, p. 5). We also now know that ‘lion bones have been found inside containers transporting ivory and rhino horn, suggesting the same networks are involved’ (Shaw, 2017, p. 15).

The link to organised crime is important for the theoretical economics that should inform policy decisions. In June 2011, two Thai men (Phichet Thongpai and Punpitak Chunchom) were arrested for possession of lion bones. They worked for the Xaysavang Export-Import Company, based in Lao P.D.R., and confessed that the main business of the company was to trade in lion bones, supplied by the captive breeding industry. A month later, Chumlong Lemtongthai, a Thai national who worked for Xaysavang, was arrested at the same residence. Lemtongthai’s record of rhino poaching is well recorded in the literature. While Lemtongthai was sentenced to 40 years’ imprisonment for his role in the rhino horn trade, the charges against Chunchom were dropped. The court case revealed that Xaysavang Company traded in rhino horn, lion bones, teeth and claws (Williams et al., 2017). In 2013, the U.S. government offered a \$1 million reward for the dismantling of the Xaysavang network, which was said to be Asia’s largest wildlife crime syndicate (Fuller, 2013). Lemtongthai told the court that Marthinus Philippus (Marnus) Steyl – a former member of the SAPA council – had offered to supply bones to him. ‘Two other council members in 2016/17 had also previously been charged in connection with illegal rhino hunting and associated activity’ (Born Free Foundation, 2018, p. 6). Steyl is indeed in the business of trading lion bones, and sought a court order against the Free State Department of Economic Development, Tourism and Environmental Affairs on 23 June 2017 to compel them to allow him to export bones even prior to the finalisation of the export quota (a commitment made

by South Africa at the 17th CITES Conference of the Parties in 2016) (EMS Foundation & Ban Animal Trading, 2018, p. 40). Steyl has known links to Vixay Keosavang, the director of Xaysavang, an importer of lion bones (EMS Foundation & Ban Animal Trading, 2018, p. 45).

The Born Free report also sheds light on the influential relationship that SAPA has with the DEA in general and with the North West Provincial Government in particular. Moreover, the DEA has admitted that it has no official figures documenting the number of breeders in the country nor of the number jobs created by the industry, but instead relies on figures from SAPA, which in turn sponsors research at North West University, the most recent and relevant of which — Van Der Merwe et al. (2017) — was interrogated at the beginning of this paper. To other enquirers, the DEA has stated that it has requested the information from the provincial authorities, but the provincial authorities themselves deny ever having received such requests (EMS Foundation & Ban Animal Trading, 2018).

The picture that emerges from the above story is twofold. First, it is not clear that the legally available supply of lion bones from 'excess' captive-bred stock can satisfy demand for tiger bone products in Asia. Conversely, it may signal to the market that the trade is legitimate, thereby increasing demand and placing pressure on wild lion and tiger stock and undermining demand-reduction effects. If the supply-side signal shifts the demand curve outwards, the captive breeding industry may not be able to satiate new demand. Evidence that the demand curve for lion bones may indeed be shifting outwards is contained in a recent report that shows that — in China — lion bone is being sold at three times the price of wild tiger bone (Environmental Investigation Agency, 2018b). A similar concern exists with the arguments in favour of rhino breeding to satisfy the Asian horn market (Crookes & Blignaut, 2015; Crookes, 2017; Harvey, 2017). Williams et al. conclude that 'while there is minimal evidence to suggest that the East-Southeast Asian bone trade is presently adversely affecting wild lions in protected areas in South Africa, the extent of this specific trade in other lion range states still requires urgent proactive monitoring and evaluation to substantiate and clarify these impacts and also those resulting from the trade in lion body parts for other purposes' (2017, p. 18). This is especially the case in Mozambique, where law enforcement and anti-poaching efforts suffer from inadequate execution capacity.

Second, the links between SAPA council members and organised criminal syndicates is concerning, especially given their apparent influence over policymaking. Karl Amman, independent undercover wildlife market researcher, found – during his last (2018) research field trip to Asia– that none of the SA lion skeleton export permits he was given could be reconciled to legitimate import addresses (email correspondence). This corroborates the view that the primary destinations for lion bones and skeletons from South Africa are countries with poor records of addressing illegal wildlife trade (Born Free Foundation, 2018; EMS Foundation & Ban Animal Trading, 2018). Increasingly, it appears that SAPA’s objective is not to contribute to conservation – though that serves as an expedient marketing cover – but to generate revenue streams from supplying the canned hunting industry (supported by PHASA) and the illicit tiger bone product trade. It is one thing to claim that the industry’s activities are indirectly removing pressure on wild lion stocks; it is another thing entirely to wilfully create legal channels through which to launder supply to an illicit industry.

Concluding remarks

This review has examined four major aspects of the predator breeding industry in South Africa.

First, it examined the literature that claims to have evaluated the economic significance of the industry by interrogating the paper produced by van der Merwe et al. in 2017. In this study, qualitative interviews with 22 of SAPA’s 146 registered members were employed to obtain quantitative expenditure information. The results were extrapolated to generalise to all 297 facilities that the study specified were in existence. Through the application of a social accounting matrix, the study demonstrated that the industry supported roughly 1,200 jobs and generated revenue of approximately R500 million per year. The review found that it is not clear how accurate or reliable the data is, nor whether 22 qualitative interviews constitutes an adequate sample size from which to extrapolate and generalise. The relative lack of research into the economic contribution of the industry is concerning, and that SAPA, which supports this type of research, does not itself have a publicly available database of all its members and their relevant expenditures. The Taljaard study from 2009 is not publicly available, and the only other available study is by Cadman, also from 2009. No peer-

reviewed research yet exists that quantifies the opportunity costs and potential negative externalities generated by the industry. It therefore remains unclear whether this controversial industry is economically warranted, especially if it may produce adverse wild lion conservation consequences.

Second, the review assessed the claims of the industry regarding its conservation contribution. It found startling contradictions pertaining to claims over genetic integrity. SAPA's lion management plan, for instance, claimed conservation benefit through genetic integrity among the captive-bred population but in the same plan noted significant known inbreeding problems. Genetic impairment may undermine the sustainability of the industry and incentivise the illegal acquisition of wild stock to diversify the gene pool, though SAPA explicitly forbids this practice under its suggested norms and standards. Beyond genetic impairment, it is yet to be scientifically established that captive-bred lions can be successfully reintroduced to the wild, therefore undermining the claims of direct conservation value. The argument over indirect conservation value through supplying the captive-bred trophy hunting industry, and thus taking pressure off wild lion hunting, is ambiguous at best. Hunters willing to shoot captive-bred lions are in all likelihood not in the same market category as those who are committed to 'fair-chase' wild hunts. This may also be why there is no empirical evidence to suggest that eliminating canned hunting would result in greater demand for wild hunts, which would place adverse pressure on wild lion populations.

Third, precisely because the industry markets itself under conservation pretexts, this review examined the ethical dubiousness of supplying a hunting industry that explicitly sells its hunts as 'wild' whereas they are evidently 'canned'. Even if lions are 'ranched' with minimum human imprinting, they are still of captive origin, managed by humans and lack the skills of escape that would characterise a 'fair chase' hunt. The fact that one of the eight SAPA-accredited ranches baits its lions (discussed in detail in the next section of the report) is further evidence of the disregard for the 'fair chase' principle. The SCA ruling that it is arbitrary to stipulate that time must be given to lions to habituate into their hunting enclosures is reasonable. A lion born in captivity, habituated by human imprinting, is not likely to provide a 'fair chase', whether one hunts it in 500m² or 12,000 hectares, and the



time to become accustomed to its death-habitat is immaterial. PHASA encourages its members to only work with the eight SAPA-accredited facilities as currently meeting its standard but will not explicitly condemn canned hunting. This has caused a split within South Africa's lion-hunting industry. SAPA stipulates voluntary norms and standards that avoid any human imprinting, but reports are widespread that breeding facilities lure volunteer tourists in on false conservation pretexts, extract the cubs from lioness mothers within hours of birth, bottle-feed them, graduate them to walking with tourists, and then sell them for canned hunting and the bone trade thereafter. It is not clear that SAPA is taking any steps to curb this extensive practice. The newly formed CPHC-SA recognises the untenable position of the SAPA-PHASA alliance and is unequivocal in its prediction that most of South Africa's 8,000 lions in captivity will be disembowelled and their derivative parts sold directly to the lucrative illicit 'tiger bone' trade. A number of reports confirm that this is already occurring. With reduced demand for canned hunting, and an arbitrary annual skeleton export quota, it is difficult to see what else lion farmers are going to do with their 'excess' stock (expensive to maintain). This section highlights that an overly narrow reading of the 'sustainable utilisation' doctrine in Section 24 of South Africa's Constitution – one that ignores future ecological wellbeing and next-generation benefit – may produce a highly unsustainable industry that generates large rents in the short term but produces adverse long-term conservation consequences. It may also produce adverse wild tourism outcomes if it damages South Africa's brand value, which would place further pressure on existing wild populations.

Finally, the review briefly assessed the recent literature on the relationship between predator breeding and the illicit trade in tiger derivatives. It is not promising that SAPA's credibility has been brought into question in respect of some of its members having known links to criminal syndicates involved in lion bone and rhino horn trafficking. The DEA has permitted the legal export of 1,500 lion skeletons with no grounding in science, and with the available evidence suggesting that it has been unduly influenced by SAPA. Two major conservation concerns persist. First, there is no reliable data with which to assess whether the illicit demand for tiger and lion derivative parts will shift the demand curve up or down. If the legal export of 1,500 lion skeletons has no impact on consumer tastes, then – theoretically – an increase in supply will reduce the price, increasing the quantity demanded



but potentially not creating incentives for higher supply at lower prices. However, if it changes consumer tastes for tiger and lion derivatives and pushes the whole demand curve up (which appears to be happening), then legal supply may be incapable of satiating that demand unless the breeding industry is prepared to further undermine animal welfare and genetic integrity. The most likely outcome would be the poaching of wild stock, for which there is growing anecdotal evidence. Given the volume of unknown variables, the precautionary principle suggests that South Africa should be cautious about permitting the export of any lion derivatives and move to a zero export quota. This should also temper the enthusiasm with which the DEA has received the non-detriment finding for South African lions.

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Section 2: The opportunity costs of South Africa's predator breeding and visitor-interaction industry

Introduction

Cost-benefit analyses (CBAs) are typically employed to evaluate the trade-offs entailed in policy decisions. For instance, if a major oil refinery was proposed on land near urban areas or coastal dunes, an evaluation of the latent impact should be undertaken. This is different from an environmental impact assessment, which would generally be limited to describing the environmental effects of building infrastructure such as a hydropower dam or a new uranium mine. Licenses are then distributed, or not, on the grounds of what the assessment reveals. CBAs are normally undertaken to attribute some kind of theoretically derived monetary value to the area or piece of land that is likely to be destroyed or at least negatively affected by the proposed development. In the case mentioned above, for instance, the refinery might damage an irreplaceable species of Fynbos in the coastal dune system or reduce the value of house prices in the area. If people vacate the area as a result, economic activity may be reduced, resulting in higher crime rates due to fewer employment opportunities. These negative effects are what economists call 'externalities' – the difference between private returns and social costs. Another example of an externality is pollution, in which the polluting firm does not pay for its emissions, but the costs are offloaded onto the affected society. One way that externalities can be addressed is through taxing the offending firm. An optimal tax rate depends, however, on the value of whatever entity is being harmed in the process of production.

Some are of the view that because CBAs demand 'that the advantages and disadvantages of a regulatory policy be reduced, as far as possible, to numbers, and then further reduced to dollars and cents' (Ackerman & Heinzerling, 2002, p. 1553), the entire practice is not only cold but 'a little crazy as well' (ibid). While the practice is laden with value-attribution difficulties, especially when it comes to valuing something with specifically non-pecuniary value, difficulties and inadequacies are not sufficient reason to ignore CBAs altogether. They can shed light on project externalities. Moreover, it is not practical to argue that all parts of the natural environment should be conserved because it is priceless. While one may assent

to that principle, it provides little decision-making criteria for choosing between two competing options, which is the dilemma-laden world facing the policymaker. A recent paper, for instance, wisely noted that invoking the 'infinite value' argument makes it difficult to motivate conservation management decisions that lead to better environmental outcomes (Colyvan et al., 2010).

CBA's employ various methods, all of which contain difficulties. For instance, evaluating people's stated willingness to pay (WTP) for preserving the Okavango Delta may be wildly divergent from the revenue such preservation may generate for the country through tourism. Assessing payment for ecosystem services (PES) is another method that has become recently fashionable (Hiedanpää & Bromley, 2014), but also contains difficulties.

I do not attempt to employ any one of these methods per se in this report, largely because there is insufficient information about the industry from which to run a WTP survey. Even then, the negative effects of the industry may be relatively removed from potential survey respondents, therefore skewing the results. Instead, I provide a framework for assessing two claims typically offered by the predator breeding industry in South Africa:

1. The industry argues that it is economically significant. In other words, the existence of the industry is justified because it has a multiplier effect on the regional economy in which it is embedded, supporting not only immediate jobs, but also other industries. These other industries, in turn, also generate income and employ people, and so the multiplier effects are varied.
2. The industry claims that it offers significant conservation value. There is some variety to this line of argument, normally along two strands. First, private game ownership in South Africa has ostensibly preserved land that would otherwise have been given over to agriculture, livestock farming or some other economic activity. Biodiversity preservation is thus incentivised through private ownership. Second, breeders often argue – or at least use this argument to convince paying volunteer tourists – that captive breeding allows the reintroduction of vulnerable or endangered species into the wild.

The report argues that these claims are flawed. In response to the first, it suggests that the claims of economic significance are insufficiently substantiated at present. There are no

counterfactuals; neither is consideration given to the value that may be generated by alternative investments of similar levels of capital. To the contrary, on the basis of the current evidence, this report suggests that the presence of the captive predator breeding industry may undermine the total potential economic value of South Africa's tourism sector. Moreover, because of the extensive utilisation of paid volunteers (lured under false conservation pretexts), local jobs that would be created by alternative industries are potentially foregone.

On the second, it is not clear that private game ranches necessarily contribute to conservation. In fact, what matters for conservation is less the total amount of land that is conserved than the quality of the wilderness landscape preserved (preferably large and unfragmented). A proliferation of small reserves, as the literature review revealed, may have contributed to the genetic unviability of many elephant populations in South Africa. Private game ranch ownership, contrary to popular discourse, may be an important source of fragmentation which reduces migratory options and limits genetic variation and viability. Mere total land size therefore matters relatively little for species sustainability. Additionally, the re-introduction of captive-origin lions into the wild has yet to occur successfully³. This is not to say that it will never be successful, but a number of conditions have to be met simultaneously, an unlikely proposition. Moreover, re-introduction efforts are costly, largely funded by well-meaning volunteer tourists who may not be well informed. This report argues that capital allocation towards preserving large, unfragmented wilderness landscapes (that aid large predator and mammal migration) would be far preferable to preserving a host of small private ranches.

³ SAPA claims, [in a 2016 article](#), that two lions introduced to the Warthog ranch have 'proved' that captive breeding allows easy re-introduction to the wild. But Warthog is an accredited hunting ranch, and it is not clear that anything about the introduction of these two lions has contributed to conservation. Certainly, there is no follow-up scientific research showing the progress of these two particular lions. What the article seems to miss, too, is that while a lion may preserve the instinct to hunt, this is hardly the only criteria by which successful reintroduction is measured.



In summary, this report aims to demonstrate that the opportunity costs⁴ of the predator breeding industry in South Africa, and its negative externalities⁵, provide a cogent foundation on which authorities should reconsider their support for the industry. This is further strengthened by the fact that – at present – the industry is almost entirely unregulated. Written answers to parliamentary questions (Appendix B) reveal that between the national and provincial environmental authorities, no governing body has a database of existing breeding facilities. Even SAPA does not have a publicly available list of its members and features only seven ‘accredited’ ranches on its website that hunt lions. PHASA lists eight SAPA-accredited ranches in its 2017 AGM minutes (https://phasa.co.za/wp-content/uploads/2018/05/PHASA_40th_AGM_PHASA_LETTER.pdf). These accredited ranches hunt captive-bred lions that have minimal human imprinting and in enclosures that have to be larger than 1000ha. This still gives the hunter an improper advantage over the lion and in no way constitutes fair chase. In fact, ‘one facility’ explicitly states that it baits white lions to guarantee a successful hunt for the client. It is therefore unclear how accreditation makes canned hunting more ethically acceptable, if that is indeed SAPA’s attempted purpose behind accreditation.

Methodology

This section of the report provides an economic assessment of the economic and conservation value of the ‘visitor-interaction’ (or pre-hunting/bone trade) dimensions of the predator breeding industry supply chain to South Africa. It is informed by a comprehensive review of the literature and findings are derived from a database compiled by the researcher (appendix A). The database aimed to be as comprehensive a list as possible of the number of outlets in South Africa that offer any kind of human interaction with captive-origin predators. The database does not cover the intensive breeding element of the

⁴ Economists use the concept to show that economic activities do not have value primarily in the revenue that they generate, but in generating *more* overall revenue (private returns minus social costs) than the next-best available alternative. In other words, a refinery in a residential area may generate revenue *x* and employment *y* but impose a significant social cost burden on the area through negative human health effects which may be more than *x* and *y* combined.

⁵ Negative externalities are the difference between private returns and social/environmental costs.

industry directly, as breeding has zero value in itself – breeders only make money from three revenue streams (or some combination of them):

- selling or renting to 'interaction' facilities,
- selling to canned hunting facilities, or
- selling directly into the bone trade.

It is not methodologically plausible at this stage to trace or evaluate what kind of money the breeders are making, or how many facilities source from specialist breeders versus breeding themselves⁶. Suffice to note that lions are being exploited at every part of the supply chain. The research value addition of this report is derived from focusing on the little-known element of cub and pre-hunting/bone trade exploitation.

The academic journal article by van der Merwe et al. (2017) purported to show the economic significance of the predator breeding industry. However, as the literature review suggested, it is not clear that telephonic interviews with 22 of an estimated 297 facilities constitutes a sufficiently large sample size nor accurate and reliable data from which to conduct a multiplier analysis and infer economic significance. Therefore, the current database was built only with publicly available information or data obtained via email (everything is recorded in written rather than spoken form). It contains the following information:

- The name of the facility. The facility was only included in the database if there was evidence that it offered human interaction with captive-bred predators (either photographs showing this, or it being explicitly advertised). There is a spectrum of 'interaction', from bottle-feeding cubs that have been removed from their mothers only a few hours after birth to walking with lions to viewing them from a distance. True sanctuaries were excluded from the database. These are defined as facilities that do not breed predators in captivity, care as well as possible for predators that have been rescued from exploitation, injury or impairment that cannot be released back into the wild, and do not allow any human interaction whatsoever. Those

⁶ The incredibly low response rates in the Van der Merwe et al. interviews and the Williams & 't Sas-Rolfes surveys provides some substantiation for how challenging it is to obtain accurate and reliable data.

facilities included in the database – the non-sanctuaries – were found through the following methods: internet searches; from a list compiled by the EMS and BAT; mentioned as potentially exploitative in Peirce (2018); from the Facebook Page ‘Volunteers Beware’ (where caution is offered); and from various lists held by the HSI, Blood Lions Campaign or the Campaign Against Canned Hunting.

- The relevant website pages from which most of the information was obtained.
- What kind of experience is being offered. This ranges from feeding to petting to walking to general ‘interaction’.
- The costs of a day visit per person converted to US dollars.
- The cost of volunteering at the facility for one week (most facilities offer the opportunity to stay for up to four weeks at slightly reduced rates per extra week).
- Annual number of day visitors – built on an assumption either generalised from similar facilities or from Tripadvisor review frequency or reasonable informants in books like Peirce’s.
- Annual number of volunteers – this is also built on assumptions explicitly articulated in the ‘assumptions’ column.
- Total revenue. From highly conservative estimates, the annual volunteer number is multiplied by the volunteer cost/week, and the annual day visitor number is multiplied by the cost of the day visit. The estimates are highly conservative because they do not include accommodation fees, or any activities only indirectly linked to the predators. Hunting is excluded. In other words, while the final figures are not derived from audited financial statements, they are an understatement, and therefore of sufficient validity to inform policy decision-making.
- Location. This could aid in GIS mapping in future studies to ascertain what alternative economic opportunities may exist in each area.

As it currently stands, the database consists of 81 named facilities. Data about revenue is publicly available or was privately obtained (via email request) for 47 of those. In other words, revenue data is missing for 33 of the facilities in the database. The researcher did not obtain information via telephone, as written data is more reliable. The sample size of 47 is already more than double the size of interview respondents in the Van der Merwe et al. study and about seven times larger than the respondent sample in the Williams and ‘t Sas-

Rolfes report.⁷ The Van der Merwe et al. study stated in the abstract that 'lion breeders contribute R500 million (US\$42 million) annually to the South African economy' (2017, p. 314), but the authors did not indicate how this figure was calculated and it does not appear again in the article.

Preliminary results and related methodological notes

Based on verifiable data in the database attached in Annexe 1 - from 47 facilities that generate cashflow from exploiting predators in one form or another (excluding hunting and bone-processing facilities) - the figure is \$28.5 million in annual gross revenue, which equates to about R380.9 million a year. The average revenue per facility is calculated at \$606,459. The range is incredibly wide, however, with a minimum gross revenue figure of \$88,560 a year and a maximum of \$5.1m a year.

It is challenging to ascertain how many of these facilities that offer petting or walking (or both) breed the animals themselves. It appears, from the available literature, that a large number of facilities buy or rent cubs from specialist breeders located elsewhere and then either sell them forward (to hunting or the bone trade) or give them back to the breeders (once they've outlived their usefulness for that particular exploitation). It also appears that a very small number of companies might breed, pet, hunt and export to the bone trade - a vertically integrated model - but use different locations for each activity. Others may breed on the very same property as petting or walking or hunting takes place (the SAPA criteria for gaining accreditation require, for instance, that breeding facilities be kept at least 1 km away from the hunting enclosure, which seems to presuppose that many hunting outfits often breed on the same property).

Because of this variation in business model and supply-chain complexity, the gross revenue figures above are only sourced from facilities that offer petting or walking or viewing of

⁷ The database (on which this report is built), the Van der Merwe et al. interviews (with SAPA members) and the Williams & 't Sas-Rolfes (WtSR) survey questionnaire all cover slightly different respondents (in that some of the facilities listed in the database or the WtSR study may not be SAPA members or breed lions on their facilities per se).

enclosures (without direct interaction). Though this does not preclude the possibility of breeding on the same property, the revenue figures for selling and/or renting cubs is not captured in the database. An average revenue figure for the entire industry is therefore difficult to calculate, as insufficient knowledge exists about revenues from direct breeding activities to make relevant assumptions.

Based on an average figure of \$606 459 in gross annual revenue for 47 facilities and if the other 250 facilities (assuming 297 facilities in the entire industry) generate similar average revenue⁸, the total gross revenue value is probably closer to \$180 million per year, about R2.67 billion a year.⁹ If the industry only employs 613 people directly and supports an additional 700 (if one takes the Van der Merwe et al. figures for the sake of evaluation), the results suggest that there is an enormous amount of money accruing to facility owners, quite possibly at the expense of South Africa's reputation as a tourism destination. The revenues, while large, are only a fraction (roughly 1.85%, depending on exchange rate values) of the country's total tourism value (estimated at R144.3bn in 2016) (Statistics South Africa, 2018, p. 3).¹⁰ Furthermore, gross revenues of this magnitude do not warrant the lack of ethics, the opportunity costs and negative externalities that characterise the industry.

This report does not employ a social accounting matrix to ascertain significance through multiplier effects in other sectors, as the Van der Merwe et al. paper did. Rather, it shows that the economic significance of the industry is limited – the gross revenues are large, but the industry's clandestine nature, likely damage to wild lion populations, and tourism brand value damage mean that support for it is risky. The report makes its evaluation by showing the opportunity costs of the industry under the following main points:

⁸ This seems a reasonable assumption and is possibly an understatement. Not all of the estimated 297 facilities are earning revenue from exploiting predators for human interaction but it is reasonable to assume that the breeders are earning revenue either from selling to facilities that do so or selling to the bone trade or the canned hunting industry (or some combination thereof). Those that sell directly to the bone trade appear to be charging between R30,000 and R50,000 per skeleton (farm gate prices) (Williams & 't Sas-Rolfes, 2017; EMS Foundation & Ban Animal Trading, 2018), making revenue figures potentially an order of magnitude larger than the estimates offered here.

⁹ At an exchange rate of \$0.067 to R1, as at 17 August 2018.

¹⁰ Not all elements of the industry are tourist-facing per se, as obviously bone trading is not a tourism enterprise. However, the existence of the industry at every point in the supply chain is likely to have a negative effect on conservation and on South Africa's overall tourism brand value.

- Volunteer tourists pay to do jobs that facility owners would otherwise have to pay local labour to undertake.¹¹ Alternative economic activities would likely be at least as labour-absorptive as predator exploitation and would have more conservation value.
- False pretexts undermine the integrity of South Africa's tourism brand and therefore the potential revenue generated by tourism as consumers become increasingly ethically conscious.
- Legally breeding lions that directly and indirectly supply the Asian bone trade may ultimately imperil wild lion (and other wild felid) survival.
- Connections between some operators in the industry and transnational organised crime poses threats to wildlife conservation and national security and raises questions of corruption between governing authorities and traders.

The report begins with descriptive statistics derived from the database. These show the heterogeneity of revenue potential and product offerings. Almost all of the listed facilities market themselves as having some kind of conservation value, normally through educating tourists about predator behaviour in the wild. The report then details the opportunity costs listed above and the overall economic impact that each may have on South Africa's tourism industry and on wild lion survival (on which the region's tourism industries largely depend).

Descriptive statistics

Of the facilities that offer day visitors interactive experience with their predators, the least expensive (aside from a zoo), Moreson, charges \$4.92 for cub petting. Richard Peirce observed that within 15 minutes of arriving at this particular facility, 23 people had visited the lion cubs (2018, p. 98). There were 11 cubs held in closures of 6 X 5 metres. Assuming 80 visitors an hour (a conservative estimate as Peirce's observations were outside of peak times), 6 hours a day for 300 days a year, this amounts to annual revenue from the cubs

¹¹ It is important to note, however, that the work is designed for volunteer tourists, and the load is probably not so burdensome that each volunteer is carrying the load of a potential full-time employee. Some of the jobs are also specifically designed around volunteer tourists being subject to misinformation (like bottle-feeding 'orphaned cubs'). If human interaction and petting/walking exploitation were to stop, then of course this whole argument would become irrelevant. The more relevant argument at that stage would be to consider what the labour absorptivity of alternative economic opportunities might look like.

alone of \$708 480. The most expensive lion interaction in South Africa for day visitors is \$170 (Bagamoya). Assuming 100 visitors a day for 300 days of the year, this facility earns \$5.1 million a year. They also have a volunteer programme, but the facility did not respond to my cost enquiry¹². The price range and the product differentiation are notable. Average day prices are \$33.65, and the median is \$14.76, suggesting most business models use scale for keeping profit margins high. This is likely to have a negative effect on animal welfare, as cubs are forced to interact with tourists beyond their stress limits.

Table 1: Price range and product offering of captive-breeding facilities (or associates)

Least expensive	Most expensive	Product offering	Average Price
\$4.92	\$170	Cub-feeding and petting; walking with predators.	\$33.65

Source: Database (Appendix A), compiled by researcher.

A problematic element of the predator breeding industry is the number of volunteers who pay large sums for the privilege of working at the facilities. Almost all are lured under the pretext of working towards conservation. A few examples will suffice. One facility states, in its vision and mission, that it is not affiliated to any parties that partake in canned hunting. 'Almost all of the cubs that we nurture in the park belong to other predator breeders who are also not involved in hunting'. The facility admits to hand rearing cubs, something it claims as essential because the cubs are occasionally 'neglected by their mothers due to the following: the mum does not have milk to feed them or the litter is simply too big for the mum to handle'. The reality is more brutal, as the stories in Peirce (2018) and Blood Lions (2015) reveal. Cubs are often removed from their mothers within hours of birth, causing the mother to become deeply distressed but ready to breed again far sooner than she would in the wild. In captivity, lionesses can produce 5 litters in the space of two years, whereas in the wild they would only produce one litter every 18 months (range 1.3 to 2.02 years). The

¹² Email sent on 5 June 2018.

particular facility mentioned above further claims that its aim is to inform and educate. However, it is unclear what tourists are being informed or educated about per se.

Another facility 'offers you an opportunity to work/interact with the wild animals and gain experience like cleaning, building enclosures, feeding, and more with the wild animals, as well as the opportunity to unwind...' This facility passes itself off as a sanctuary but has been implicated as an integral part of the breeding industry. Even the facilities that provide excellent care for their animals and limit human exposure entirely are not contributing to conservation, as no captive-origin lions have yet been demonstrated to be able to survive or thrive in truly wild conditions. For instance, one facility aims to re-introduce lions to the wild through first being trained by human walkers to hunt. But human habituation has repeatedly proved dangerous. The programme still has no conservation success and admits in academic papers published by researchers working at its facilities that there is extensive uncertainty over how captive-origin lions would socialise in the wild (Dunston et al., 2016).

The least expensive volunteer tourism price is \$143.50 a week, but this is for day volunteers. Most facilities require a minimum of two weeks per volunteer and generally include meals and accommodation. The most expensive price is \$1,750 a week. Again, this is a vast range. \$143.50 is relatively anomalous, and the facilities that accommodate volunteers on a longer-term basis tend to start at approximately \$250. On average, volunteer tourists can expect to pay \$624.79 a week. The median is \$434.01 per week, which suggests that the average is being pulled up by a few outliers that are especially expensive.

Table 2: Volunteer prices variation

Minimum price	Maximum price	Average price	Number of volunteers per year
\$143.50	\$1,750	\$624.79	360

Source: Database (Appendix A)

While a small number of people may be employed to service these facilities, the business model is designed to outsource the labour requirements. Volunteers maintain the infrastructure and the animals. This is work that would possibly otherwise be supplied by

the local labour force.¹³ Instead, volunteers are paying – on average – \$624 a week. Profits accrue to facility owners while suppressing the potential labour absorptiveness of the industry. Lured under false pretexts, foreign tourists are inadvertently crowding out local labour. Based only on publicly available information, at least 12 facilities openly advertise volunteer tourism packages. Each of these facilities accommodate on average 360 tourists a year – based on a conservative estimate of about 7 per week (assuming a 50-week year). That equates to potentially as many as 84 (12 by 7) direct jobs that facility owners would otherwise presumably have to support¹⁴. Every direct job in a context of high unemployment is likely to support several dependents, though these are jobs that would disappear if the industry was exposed and collapsed.

Van der Merwe et al. estimated that the predator breeding industry supported 613 direct jobs and a further 700 or so indirect jobs through the multiplier effect (2017). They argued that this is significant in a context of high unemployment, especially as rural unemployment is even higher than the country average (currently at over 27% on a narrow reading). What they failed to note was potentially as many as 84 potentially permanent jobs were being provided by volunteer tourists.

The analysis above indicates that volunteer tourism is crowding out local labour opportunities. In all likelihood, however, if volunteers recognised that predator breeding invariably has no conservation benefit, and that they were contributing instead to owners' profit at the expense of the animals' welfare, the industry in its tourist-facing form might collapse. If canned hunting and predator breeding do collapse, either through consumer preferences shifting away from unethical activities or by legislative design (or some combination thereof), there will still be at least 7,000 lions alone in captivity in South Africa whose owners will probably slaughter them for direct sale into the bone trade (Williams & 't

¹³ See the explanatory footnotes above and below.

¹⁴ The difficulty here, of course, is that if the revenue from volunteers disappeared (which it will, eventually, as more become aware of how they are unwittingly being exploited), so would the large revenues, and therefore the ability of facility owners to employ local full-time staff. However, the demand from day visitors may still be sufficient to warrant local employment. This is not an endorsement of the idea that the industry could employ more locals. Rather, it is simply noting that, at present, at least some jobs that could be supplied locally are being done by volunteer tourists who pay for the privilege! In other words, some parts of the industry, far from creating local employment, are taking jobs away from locals (assuming that day visitor demand increased to compensate for at least some of the revenue lost from unwitting volunteers).



Sas-Rolfes, 2017). As it is, predator cubs that outgrow their tourism usefulness are likely being sold to the canned hunting industry, and thereafter into the bone trade, or directly into the bone trade given declining demand for canned hunting. These dynamics will be dealt with in a later section.

Alternative economic opportunities foregone

The next variable to consider in this section is what kind of employment opportunities could be created by alternative economic activities. If the captive predator breeding industry were to collapse, the question is whether alternative activities could provide more labour-absorptive activities. There are no counterfactuals, and therefore the exercise is one of informed conjecture and reasoned calculation.

The first assumption is that lion-breeding facilities or facilities that exploit captive-origin lions for any range of purposes are not likely to be preserving irreplaceable biodiversity except perhaps inadvertently, due to the highly fragmented camp/enclosure system it supports. The argument that the land would otherwise revert to livestock farming or some other form of agriculture is not an argument in favour of the predator breeding industry. Even if the land did revert to agriculture, the resultant local employment benefit may well exceed the current employment benefits of the predator breeding industry. However, estimating alternative employment provision is challenging. Nonetheless, it is crucial.

A study by Taylor et al. (2016) estimates that approximately 6% of South Africa's total wildlife ranching acreage is under 'intensive breeding' (all species), but only one of the entire sample of private ranches surveyed admitted to breeding lions (for live sale). Fewer than 20% of the total number of wildlife ranches surveyed (251) had large carnivore populations (lions, cheetahs, and spotted hyaenas), and these correlated only with the largest properties. The authors estimated that there were 8,979 wildlife ranches in South Africa, covering a surface area of approximately 170,419km², and employing in the region of 65,000 people. None of these ranches are likely to be included in the database developed



for this project.¹⁵ However, a number of those properties that do not have wild-managed lions (but do offer predator hunting) may source their lions or other large carnivores from the facilities that are listed in the database built for this project. Estimating the total land size associated with captive predator breeding is therefore extremely difficult, especially because there are normally other activities offered to tourists on the same premises as well. For instance, it is not as if researchers can extrapolate an average ranch size from among those that have lion populations and multiply that number by 297 (the estimated total number of breeding facilities). Predator breeding facilities do not require large tracts of land due to the intensive camp/enclosure system that house multiple lions, and are therefore relatively small, except in the rare instances where predators are bred more extensively and with minimum human habituation. Moreover, intensively bred cubs tend to be sold to places like Moreson before being sold either into canned hunting or to the bone trade or back to the supplier. It is a lucrative trade per square metre of ground required.

Despite the difficulties of estimating the acreage currently consumed by the predator breeding industry and how labour-absorptive alternative economic activities might be, it may be reasonable to assume the following:

- Because many predator breeding facilities occur in relatively close proximity to one another (they are heavily concentrated in the North West and Free State provinces), a large proportion could feasibly be joined up (theoretically) to provide more ranching surface area.
- Joining up with other farms is not restricted only to those that also do predator breeding. A search on Google Earth, for instance, reveals that there are a number of facilities in close proximity to each other on land that looks as if it could feasibly be connected to form large protected areas.¹⁶

¹⁵ The database for this project only included facilities that offered cub petting, walking with predators, or the viewing of predators in small enclosures (like zoos, but not limited to zoos). This likely precludes ranches of any description, and hunting facilities were specifically excluded from this report.

¹⁶ See Google Earth for the Lion and Cheetah Sanctuary: <https://earth.google.com/web/@-25.4685062,28.4539555,1170.55448405a,1057.26239235d,35y,0h,45t,0r/data=ChcaFQoNL2cvMTFjMjBmOHY1cBgCIAEoAigC>, and follow the 'places near' tab in the top right of the screen. 'Flying' in to each of these places reveals vast areas of land that could presumably be joined up to form wilderness landscapes that would offer real conservation value.

- Transformed into larger ranches, there would be greater carrying capacity for wild-managed lions (instead of captive-origin) and an ethical, eco-tourism offering which may be less lucrative but more labour-absorptive and sustainable than captive predator exploitation.
- A conservative average farm size of 2,000 hectares. For instance, one farm (Sondela) at Bela Bela is 4,767 ha, which is on the larger end of the spectrum.
- Following Taylor et al.'s calculations (2016, p. 3), the labour absorptivity of wildlife ranching in South Africa is approximately 0.0038/ha (the median number of permanent employees per hectare on surveyed wildlife ranches).

If the land currently supporting 81 of South Africa's predator breeding facilities (those listed in the database) were joined up to form separate wilderness landscapes (perhaps 3 or 4), assuming a farm size of only 2,000 hectares each, the total land area that could be transformed would be in the region of 160,000 hectares. At present, the average wildlife ranch in South Africa is about 18.97km² (170,419 divided by 8,979), which equates to 1,897ha. A further 160,000ha towards genuine conservation could yield 608 direct permanent jobs (160,000 multiplied by 0.0038). As it stands, the van der Merwe et al. calculation of 613 jobs is an extrapolation from 22 breeders applied across the 297 estimated to exist. The calculations above suggest that 608 direct permanent jobs could be created from only 81 of those 297 facilities being joined up to offer ecotourism value. With a multiplier effect of only 3, which seems reasonable in the light of a relatively conservative inclusion of only 81 facilities, the total number of jobs that could be created through alternative land use would be 2,400 (1,800 over and above the 608 direct jobs). In other words, the labour absorption potential of alternative economic opportunities (such as ecotourism) appears to be of an order of magnitude higher than what is currently offered through predator breeding.

Predator breeding and Brand South Africa

An important consideration in the economics of the predator breeding industry is whether its existence undermines South Africa's tourism brand value. SAPA ridicules this idea by stating that the 'only reason that the ranch lion industry has any blemish on its reputation is

because people like Mr Bell and the “Blood Lions” gang are unceasingly using misinformation, slander, downright lies, innuendo, false accusations, tarnishing by association, hysteria and deception to stain the captive-bred lion industry’ (SAPA, n.d.). Its substantiating evidence for this claim is that opponents of the industry are guilty of selection bias and have used only the most obviously unethical examples to tarnish an entire industry and have failed to examine the best facilities and what they have to offer. For example, SAPA claims that eight (of the total estimated facilities of more than 200) ‘lion-breeding and hunting facilities accredited [by SAPA] are world class operations’.

This polemic is undermined by its inability to demonstrate with any scientific evidence that this is true or that captive-origin lions have any conservation value, as repeatedly claimed. No criteria or parameters are given to determine what constitutes ‘world class’. There are only eight SAPA-accredited facilities, a paltry 2.6% of the total estimated number of breeding facilities in South Africa, and a tiny proportion of the 146 SAPA members (which are not listed on SAPA’s own website). One of these eight accredited ranches, Tinashe Outfitters, baits lions for hunts:

‘Experience the thrill of white lion hunting in South Africa, and go home with one of the most prized trophies on any hunter’s wishlist. Tinashe Outfitters will prepare you for the white lion safari, and our hunting team will place bait around the area in which the lions typically hunt. We will ensure that it is slightly challenging to give you the best possible opportunity at a successful shot’ (Tinashe Outfitters, n.d.).


Another accredited ranch, De Klerk Safaris, was exposed in 2016 for conducting an illegal canned hunt sold to the client as a ‘wild’ hunt (Mercer & Park, 2016). In 2011, Tienie Bamberger, the owner of Warthog Safaris, also SAPA-accredited, organised a pseudo rhino-hunt for Chris van Wyk on a farm called Leshoka Thabang, owned by Johan van Zyl (Rademeyer, 2011). Van Zyl has since been exposed as a lion bone trader with links to wildlife trafficker Nguyen Tien Hoan (the listed client for the 2011 pseudo rhino hunt who did not shoot the animal but left Bamberger’s wife and father-in-law to do so; he is linked to the DKC network too) (EMS Foundation & Ban Animal Trading, 2018, p. 84). DKC Trading was named after Chu Đăng Khoa, and he is the sole member. It operates as ‘DKC Outdoor Furniture’ in South Africa and is not listed in the White Pages. Chu Đăng Khoa is a wealthy

Vietnamese businessman who has 'used CITES trophy hunting permit loopholes to export rhino horn for trade' (EMS Foundation & Ban Animal Trading, 2018, p. 70). He was arrested in Limpopo in 2011, found guilty, fined R40,000 and deported for illegally being in possession of five rhino horns. According to the EMS/BAT report, his business has been allowed to grow without interference from South African law enforcement agencies.

These accredited ranches are among the best of what captive-bred hunting facilities have to offer. The practices are clearly unethical by the standards of the international hunting profession. Baiting certainly violates the 'fair chase' requirement. The criteria that have to be fulfilled to be accredited by SAPA are not clear, though. SAPA's own lion management plan states that 'the released lion should be alert, well adapted to its environment and able to evade the hunting party. Hunting should only be permitted once a captive-bred lion has become self-sustaining' (2017, p. 45), but these criteria may be arbitrary, as self-sustenance does not avoid the mental and physical constraints that characterise enclosed hunting or habituation, even if it is limited. Moreover, a number of its own accredited ranches have violated the norms and standards stipulated in its management plan.

While a certain proportion of hunters are likely to continue canned hunting of lions, many are by now aware of the unethical nature of hunting captive-origin lions in South Africa. This is not attributable to 'misinformation' peddled by anyone opposed to the industry; it is more likely to be attributable to the decisions of Safari Club International (SCI) and the Dallas Safari Club (DSC) to no longer recognise South African lion trophies on its books, decision that have emanated from within the hunting industry itself. Moreover, as the SCA (2010) ruled, it is arbitrary to expect that a large enclosure or a longer habituation period is of any practical value in making the hunt more ethical as human imprinting is unavoidable in captive-origin lions and the mental and physical barriers to escaping the hunters' bullet are inherent by definition.

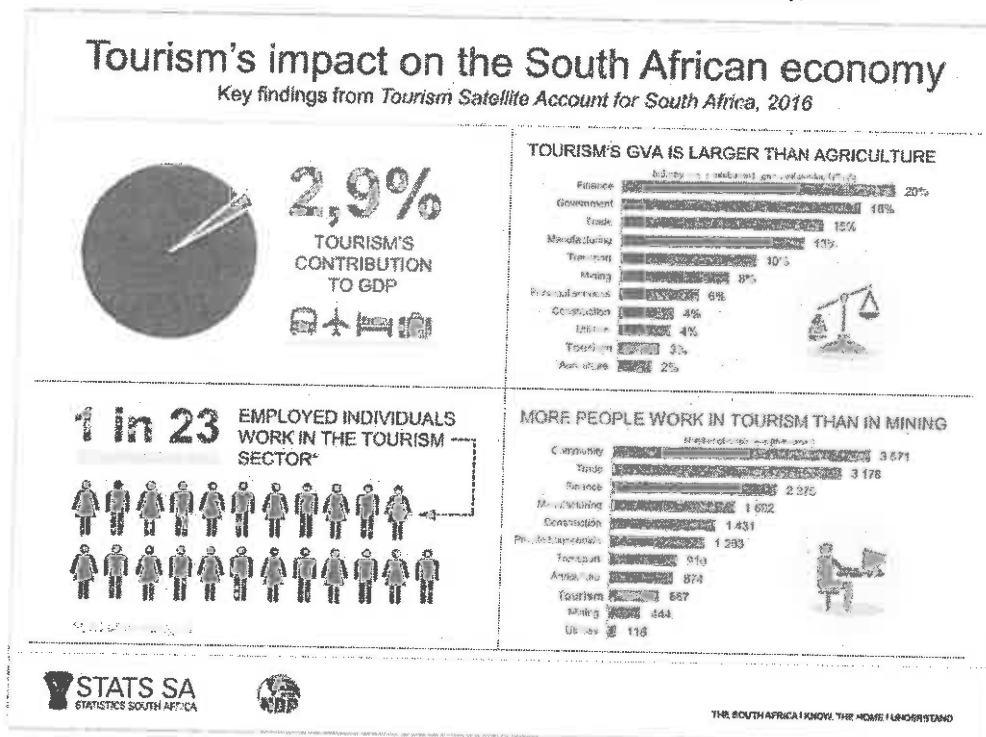
Strongly related to canned hunting is the breeding industry, which has been the focus of this report. Many tourists, especially volunteer tourists, are invariably unaware that they are contributing to the perpetuation of an industry that generates revenue off false pretexts and deprives the local labour force of employment opportunities in the process. Increased



recognition of the fact that so many predator cubs are hand-reared for subjection to extensive human interaction, and then likely sold into the hunting industry or directly into the bone industry, can only undermine South Africa's tourism brand value.

Tourism in South Africa is estimated to have contributed at least 2.9% directly to gross domestic product (GDP) in 2016. As the figure below demonstrates, more people are employed in tourism than in mining – it now accounts for at least 4.4% of total employment in the country. At least one in every 23 people in the labour force are employed in tourism, and it is one of the few sectors in the country that has continued to grow over the last few years. While agriculture provides 874,000 jobs, tourism is not far behind with 687,000. Moreover, agriculture and mining are likely to become increasingly mechanised, whereas tourism is likely to be less susceptible to the labour displacing effects of new technologies. A major part of tourism's value proposition is the engagement with people instead of machines. In an employment-scarce country such as South Africa, then, every policy effort should be made to protect South Africa's reputation as an ethically responsible tourist destination.

Figure 1: The impact of tourism on the South African economy, 2016.



Source: STATISTICS SOUTH AFRICA (2018) Economic Analysis. In Tourism Satellite Account for South Africa. Statistics South Africa, Pretoria.

SAPA draws a distinction between lions reared for 'ranch' hunting with minimal human imprinting and those that are 'working' lions for interaction with humans. It is dubitable as to whether either category is of any conservation value, and marketing the industry as a contributor to conservation is therefore unethical. While SAPA works hard to avoid negative perceptions towards its industry and to market itself as having conservation value (the phrase alone is mentioned 273 times in its management plan), it cannot escape the *empirically* warranted conclusion that lions are being exploitatively bred under false pretexts, whether 'working' or 'ranch'. Volunteers are often lied to about the origin of cubs that they hand-rear, bottle-feed, cuddle and so forth (that they are wild-orphaned, for instance, or that the mother could no longer look after them) (Peirce, 2018). Many hunters, similarly, do not realise that the lions they are going to hunt have no chance to escape (Mercer & Park, 2016; Michler, 2016; Summers & Watts, 2018).

With Peirce's exposure, including the employment of under-cover 'volunteers'; a Facebook group called 'Volunteers in Africa Beware'¹⁷; the Blood Lions campaign; the Carte Blanche interview (Summers & Watts, 2018); website Green Girls in Africa¹⁸; and the Born Free 'Cash Before Conservation' report (2018), awareness of the lack of ethics in the industry is certainly growing. This is perhaps most formally recognised in the 2018 guidelines published by Fair Trade Tourism (FTT, 2018), which will likely have a wide awareness-ranging effect.

There is no hard-science method for estimating the monetary value of the damage that is being wrought on South Africa's critical tourism sector through the captive predator breeding industry. It would be possible, however, to run a large sample-size survey of tourists that have previously travelled to South Africa and ask them whether knowing about this clandestine industry would influence their destination preferences. This is a study that should be commissioned by the Department of Tourism. It may also help to convince the Department of Environmental Affairs (DEA) that perceptions matter in the tourism game,

¹⁷ <https://www.facebook.com/volunteersbeware/posts/743189072395258>, accessed 27 June 2018.

¹⁸ <https://greengirlsinafrika.com>, accessed 29 June 2018.

and that continuing to allow the proliferation of an unregulated industry may have severely detrimental effects on the tourism sector in a world increasingly characterised by ethically conscious consumption. As it may lead to a reduction in government revenue (tourism expenditure is taxed through VAT), it would also lead to a reduction in the DEA's budget. This is especially true if the sale of South Africa's lion bones into Asian markets shifts out the demand curve and results in the increase of wild lion poaching – a scenario explored in a later section. If wild lion survival were to be imperilled because of the captive predator breeding industry, one of the key pillars supporting South Africa's tourism industry would collapse (Di Minin et al., 2012)¹⁹. The consequent socio-economic effects would be significantly welfare-reducing.

In the absence of hard data, it is worth sketching a scenario for illustrative purposes under a 'business-as-usual' trajectory (unregulated predator breeding; unscientifically-based lion skeleton export quotas; habitat destruction and fragmentation; depletion of prey species; and human/predator conflict). I make the following assumptions:

1. Lions in the wild (unfenced reserves) will be extinct within ten years (in South Africa) due to the cumulative effect of the threats to their survival mentioned above.
2. Wild-managed lions in fenced reserves may maintain population stability and attract tourists, but only if properly managed (the evidence at this stage suggests that there is insufficient use of the replacement effect in these populations).
3. Wealthier tourists – who currently have a significant game-viewing preference for the 'big-five', especially lions – are likely to become increasingly more well-informed about the prevalence of the predator breeding industry in South Africa (and its attendant latent negative impacts). This does not necessarily mean that they would choose to avoid South Africa as a destination – they may simply choose not to visit

¹⁹ The authors make the crucial point that charismatic megafauna potentially have high ecotourism value even when populations are not viable and only few individuals are present (that can be easily seen, especially by wealthier, less experienced, tourists). Of specific importance for assumption 2 is that artificially managing small populations within electrified fences may maximise economic returns but this is 'conservation for ecotourism' instead of 'ecotourism for conservation'. However, these populations – at high levels for tourism consumption – may not be viable. The authors suggest that policies governing protected areas in South Africa may need to be revised to enhance species persistence through addressing, for instance, the important conservation issues facing wide-ranging carnivores (and others) by specifying larger areas. Ultimately, ecotourism and biodiversity conservation objectives should be more aligned, as the former fundamentally depends on the latter in the long-run.



facilities that practice unethical exploitation. However, tourism is a highly competitive industry and heuristics (simple decision-making criteria informed by some level of evidence) can play a decisive role for tourists in choosing between different high-cost destinations.

4. If assumption 1 materialises in reality, wealthy tourists – some of whom may already be avoiding South Africa in the light of assumption 3 – will no longer visit South Africa, especially if the variable determining their destination of choice is the presence of (and likelihood of seeing) the big five.

The implications are as follows:

1. If the assumptions above obtain in reality, and 44.9% of the international tourist market is lost as a result²⁰ over the next decade, then South Africa's number of non-resident visitors (15,121,328 in 2016) will potentially fall to only 8,331,852 by 2026. This will, in turn, result in revenue losses of R54.51 billion, bringing the total international expenditure to R66.89 billion in 2026 (down from its current level of R121.4 billion) (Statistics South Africa, 2018, p. 15).
2. Even if only a small proportion of implication 1 is realised, the losses are still significant. They are especially significant because of the direct negative revenue impact on protected areas, which are already budget-starved. Without lions, these areas' value offering to tourists will be undermined. Biodiversity conservation without apex predators would also become exceptionally challenging.
3. The calculations in implication 1 are relatively conservative, as they do not consider the losses that would accrue from domestic demand reduction (Statistics South Africa, 2018, p. 3)). The extrapolation from Di Minin et al. therefore seems reasonable if not strictly scientific.

²⁰ This figure is an extrapolation from the Di Minin et al. study of 2012, where 519 surveys were completed, 303 of which were international tourists (58.4%). Of those 303, a striking 44.9% 'found charismatic megafauna to be of most interest' (Di Minin et al., 2012, p. 5). These are the tourists that are well-educated, earn relatively more than local tourists, stay for longer and spend more, and are more likely to contribute to conservation. Their willingness to pay (WTP) to see lions (among those who considered themselves 'safari novices') was estimated at \$120 (lion adult male), for instance (only slightly lower than seeing an adult male elephant).

The economics of the lion bone trade

A recent report by the Environmental Investigation Agency opens with the line that 'Asia's massive unchecked demand for skins, bones, teeth and claws continues to drive poaching of wild tigers. This demand is exacerbated by the supply of huge volumes of African lion bone, teeth and claws, sold as tiger parts to less-discerning consumers in Asia' (Environmental Investigation Agency, 2017, p. 2). Absent DNA analysis, distinguishing between tiger and lion bone and other parts is nearly impossible. Tiger breeding in South Africa is unregulated as the DEA responds that it is an exotic species and therefore outside of the department's regulatory ambit. None of South Africa's tiger breeding facilities are CITES-registered, though, and exports of tigers and tiger parts from these facilities for commercial purposes would be a violation of CITES, since the tiger is listed on CITES Appendix I. However, the lion is listed on CITES Appendix II and, as noted earlier, South Africa is expressly permitted by CITES to export captive-bred lion skeletons. For the purpose of this report, it is important to understand what impact continued legal sales of lion bone skeletons to Asia might have on wild lion survival prospects. In other words, the contention is that the sale of lion bones from South Africa may undermine both wild tiger and wild lion survival for as long as lion bone masquerades as tiger bone in Asian consumption markets.

A few important priors²¹:

- It only makes economic sense to regulate a legal international trade in wild animal parts if it can be shown beyond reasonable doubt that such trade will not undermine species survival prospects.
- In order to establish reasonable doubt in respect of the above, the conditions articulated by Tensen (2016) should all be met simultaneously, and the onus is on those in favour of trade to demonstrate that those conditions can and will be met.
- In the absence of reliable and accurate demand data (for tiger bones, for instance), it generally does not make sense to establish a legal quota for how many lion bone skeletons, for instance, can be exported based on the current number of captive lions. The scientific basis for doing so is demonstrably absent. Moreover, it is a

²¹ These are taken, in part, from various publications including (Nadal & Aguayo, 2014; Crookes & Blignaut, 2015; Aiden & Harvey, 2016; Tensen, 2016; Harvey, 2016, 2017; Harvey et al., 2017)

distinct possibility that the supply-side signal from South Africa may exacerbate demand in Asia, thereby undermining demand-reduction campaign efficacy and eroding any stigma effect that may currently be in operation among potential consumers.

- While the legal export of lion skeletons from South Africa's captive-bred facilities may theoretically satisfy the demand for tiger bones in Asia (as forced breeding for this purpose is technically viable – more so than with rhinos or elephants), it is not clear that it can do so at lower operating costs than poaching syndicates²². This would render both captive-bred and wild lions susceptible to poaching. Legally regulated breeders and traders would be competing with illicit syndicates for market share, a battle they are likely to lose on cost grounds alone.
- As with all proposals to regulate international trade in the products of vulnerable species, the practical transaction costs tend to be ignored in favour of theoretical possibilities. One major transaction cost in this respect is that legal trade channels provide convenient cover for illegal product supply (Environmental Investigation Agency, 2017; Born Free Foundation, 2018; EMS Foundation & Ban Animal Trading, 2018). Moreover, law enforcement officials cannot reasonably be expected to distinguish, at each relevant port of entry or arrival, or even in a final form in retail sale (such as 'cake'²³), between legal and illegal supply, and between different species (Outhwaite, 2018). There is also little reason to expect that DEA, which has demonstrated that it cannot regulate the captive predator breeding industry in South Africa (or canned hunting), is likely to be able to effectively regulate the legal export of lion bone skeletons for which it has set apparently arbitrary quotas in 2017 and 2018. This raises significant questions about why such a trade has been allowed in the first instance.

²² This is very important, and the discussion in the EMS/BAT (2018) report about 'farm gate' prices for bones demonstrates the point effectively. Capital overheads for breeders are higher than they are for poachers. And breeders require high prices in consumer markets to incentivize investment in security and maintenance. This necessarily undermines the efficacy of demand reduction campaigns designed to reduce the price of lion derivatives (and thus the incentive to poach).

²³ "Tiger 'jelly'/'cake'/'glue' (Cao in Vietnamese) is made by boiling cleaned bones for several days to condensing down the gelatine. The bone pieces are removed, and the remaining liquid is gradually reduced to a glue-like consistency which hardens into an odourless cake. It is normally cut into squares for sale and generally consumed by dissolving small pieces into medicinal wine (Nowell, 2000)." (<https://cites.org/sites/default/files/eng/com/ac/30/Inf/E-AC30-Inf-15x.pdf>, p. 5)

- Because of the risks of illegal supply entering legal product channels, and the likely relative inability of legal breeders to compete with syndicates, the incentive emerges for legal breeders to collude with illicit syndicates to share rents instead of competing for them, as is already occurring (Shaw, 2017; EMS Foundation & Ban Animal Trading, 2018). The incentives that animate such collusion are the same incentives that have generated relationships between rhino breeders and organised crime networks to smuggle rhino horn illegally (Aucoin & Deetlefs, 2018).

It is therefore difficult to understand why the authors of South Africa's 2018 NDF ventured to state that the presence of the captive predator breeding industry may act as a buffer against threats to the wild lion population. The presence of canned hunting has not led to an alleviation of demand for wild lion hunting, and there are strong theoretical grounds for assuming that they are two different markets in any event. This is demonstrated perhaps most aptly – if anecdotally – in the controversial recent case of a wild lion called Skye hunted in Umbabat on the border of Kruger National Park (Cruise, 2018; Pinnock, 2018b). The presence of an extensive domestic breeding industry has not resulted in a decline in poaching of wild lions, who increasingly have their claws, teeth and bones removed. This suggests that, as with other species such as abalone, a parallel market may emerge – one for captive-bred bones and one for wild bones. It is one thing for the NDF to claim that there is no current evidence of detriment to wild lions through the sale of lion skeletons from South Africa. It is another thing altogether – dubious too – to claim that the presence of captive breeding (especially as it is unregulated) may buffer wild lions from poaching or over-hunting threats. There is no evidence to suggest that this is true, and there are therefore cogent grounds on which to reconsider the decision to set the skeleton export quota to 1,500. Until better evidence is available, a zero quota would be advisable.

Organised crime and predator breeding

Simon Bloch, in a recent article, accused South Africa's Minister of Environmental Affairs, Edna Molewa, of being 'blissfully content to rubber-stamp the battery-breeding farms when lion cubs are ripped from their mothers after two or three days, legitimise unethical captive lion hunts and the export of lion bones to criminal wildlife trade networks in Asia, all under

the guise of “sustainable use of a natural resource” (Bloch, 2018a). He also quoted a former crime intelligence officer who stated that the pseudo-hunting of South African rhinos started with the export of lion bones to the Xaysavang Trading Company, directed by Vixay Keosavang, widely considered to be one of the world’s most prolific wildlife traffickers (Vira et al., 2014; Miller et al., 2015). The connection between captive lion breeding and organised crime has been well documented (Environmental Investigation Agency, 2017; Shaw, 2017; Williams et al., 2017; Born Free Foundation, 2018; EMS Foundation & Ban Animal Trading, 2018).

The government’s failure to act in response to these concerns, in addition to animal welfare problems (EMS & BAT, 2018; Endangered Wildlife Trust; Centre for Environmental Rights, 2018) and incidents involving human victims, may suggest a lack of capacity or a questionable relationship with the captive breeding and hunting industry (or some combination thereof). A recent investigation covered by Carte Blanche, for instance, suggests the willingness of government officials to apparently turn a blind eye to the gun-running at the root of South Africa’s rhino poaching epidemic (Schwendenwein & Austin, 2018). Organised criminal syndicates clearly do not have an interest in the conservation of South Africa’s wildlife. Its presence poses a serious security risk to the country, in addition to exacerbating the problem of illicit financial flows.

Conclusion

This report has shown that 47 facilities – that exploit predators bred in captivity for human interaction – for which revenue figures are available plausibly generate \$28.5m in gross revenue per year. On the assumption that each of the other 250 estimated facilities that benefit from captive breeding (either through human interaction, selling to the canned hunting industry or the bone trade, or some combination thereof) earn average revenue (\$606,459 a year) the captive predator breeding industry in South Africa is worth potentially as much as \$180m a year in gross revenue terms. It is worth considering this figure as a proportion of the total economic value of tourism to South Africa, not because each facility

is directly comparable in every instance²⁴, but because of the damage that the industry may inflict on South Africa's tourism brand value. The revenues, while large, are only a fraction (roughly 1.85%, depending on exchange rate values) of the country's total tourism value (estimated at R144.3bn in 2016). It is also probably reasonable to assume, given the links between bone traders and organised crime, that there is much revenue that is unaccounted for. The figures in this report are based only on verifiable, publicly available information and rational extrapolations.

The main findings are as follows:

- There is no evidence that the captive predator breeding industry is of any conservation value. It is therefore purposefully exploitative to various degrees. There is, in other words, heterogeneity in the extent of exploitation, ranging from extremely high levels of human interaction from within a few hours of birth to minimal human imprinting (the latter supplying accredited SAPA ranches with lions for canned hunting).
- There are high levels of variation in the prices charged to tourists for animal interaction, ranging from a mere \$4.90 per session to \$170 at the highest end. The average price offering is about \$33.
- A number of facilities are geared up for attracting volunteer tourists, a particularly lucrative form of exploitation where mostly foreign tourists are convinced to pay large sums of money to contribute to conservation in Africa. Again, there is variation in the levels of deceit and prices charged. The least expensive facility charges \$143.50 per week, while the most expensive charges \$1,750 per week. The average is \$624.79. Most importantly, the database suggests that there are about 360 volunteers per year, or 7 per week present on any given facility. If we assume, conservatively, that only 11 facilities offer 'voluntourism', then there are potentially as many as 84 permanent jobs that would otherwise be provided by members of the local labour force. We therefore have the beginning of evidence that paid

²⁴ Those that sell directly to the bone trade obviously have nothing to do with tourism per se, but every other element of the industry (from human interaction to hunting) does constitute a form of tourism if one counts canned hunting as a tourism activity).



- volunteering crowds out local labour, thus undermining the argument advanced by van der Merwe et al. that the predator breeding industry is a significant employer.
- Using a highly conservative labour-absorption figure from the wildlife ranching industry and applying that to only 81 of the known predator interaction facilities (some of which breed on the premises), this report estimates that 608 alternative direct jobs could be created through transforming those facilities into larger pockets of wilderness landscapes amenable to ecotourism offerings. The multiplier coefficient is unknown, but the figure is at least comparable to the 613 direct jobs estimated by van der Merwe et al. (though their figure is an estimate derived from all 297 facilities). Using a multiplier of three, alternative industry could support in the region of 1,800 jobs. Again, we have the beginning of evidence here, subject to further research, that suggests that supporting captive breeding does not necessarily contribute to job creation that could not otherwise be obtained through more ethical and conservation-enhancing activities.
 - The opportunity costs and negative externalities associated with the predator breeding industry may – along with other threats facing wild lion survival – undermine South Africa’s brand attractiveness as a tourism destination by up to R54.51bn over the next decade. Even if it were only a small proportion of this, the losses would be significant, especially as much of this revenue currently aids conservation objectives in large wilderness landscape such as the Kruger National Park and the KZN reserves.
 - The lion bone trade may be particularly lucrative, and breeders who now may find it difficult to sell their lions to human interaction facilities or into canned hunting may be likely to sell bones directly into the Asian trade where they often masquerade as tiger bones. This poses a threat to both wild lion and wild tiger survival, as the evidence does not suggest that the presence of a legal trade is doing anything to disincentivise the poaching of lions in the wild. It is also not clear that the South African government, which does not regulate predator breeding, can reasonably regulate a legal export of lion skeletons. This raises the risk of illegal supply being laundered through legal channels. Moreover, there is no scientific evidence that supports the quota figure of 800 (2017) or 1,500 (2018) lion bone skeletons a year as a conservation-supporting number. The lack of science and regulation is

concerning, and some conservationists have reasonably raised concerns of corruption.

- Further supporting the view that corruption should be investigated is the documented link between bone traders and organised crime. Questions have been asked, for instance, as to why known kingpins in the rhino-horn trafficking debacle have not been arrested despite damning evidence (Schwendenwein & Austin, 2018).

In closing, it is clear that the predator breeding industry has no conservation value and attracts both day visitors and high-paying volunteer tourists under false pretenses. Furthermore, the revenues that it generates – while highly lucrative for the owners – constitute a tiny proportion of South Africa's tourism industry, one of the biggest employers in the country. The damage to South Africa's brand that the predator breeding industry is causing, and may continue to cause in the future, may undermine tourism revenue potential significantly. There are other high-cost destinations that offer more ethical opportunities to observe the 'big five' in the wild, which continues to be among the most important drawcards to attract tourists to South Africa. If South Africa loses its share of high-income tourists who visit South Africa specifically to observe the big five (and are educated, ethically conscious and conservation-minded), it will simultaneously lose the revenue it requires to fund the conservation of large wilderness landscapes. Without these large landscapes, charismatic megafauna will be imperilled because the sustainability of predator populations on fenced reserves is increasingly questionable.

From this research alone, there are strong grounds on which to propose, very simply, that the predator breeding industry in South Africa be closed down. It is not an irreplaceably valuable industry. At worst, it is a highly unethical industry that is damaging to conservation, socio-economic welfare and South Africa's tourism brand value.

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Appendix A

Please find the online database here:

<https://docs.google.com/spreadsheets/d/1ypURpOaG2a7hOpTddLDbFv97Y2LMW-V1CPjfCwbJ0/edit?usp=sharing>

Appendix B



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

Ref:02/1/5/2

MINISTER

QUESTION NO. 1189 FOR WRITTEN REPLY: NATIONAL ASSEMBLY

A draft reply to **Mr R K Purdon (DA)** to the above-mentioned question is enclosed for your consideration.

**MS NOSIPHO NGCABA
DIRECTOR-GENERAL**

DATE:

DRAFT REPLY APPROVED/AMENDED

**DR B E E MOLEWA, MP
MINISTER OF ENVIRONMENTAL AFFAIRS**

DATE:

NATIONAL ASSEMBLY

(For written reply)

QUESTION NO. 1189 {NW1283E}

INTERNAL QUESTION PAPER NO.12 of 2018

DATE OF PUBLICATION: 20 April 2018

Mr R K Purdon (DA) to ask the Minister of Environmental Affairs:

What is the government's position on the relationship between captive-bred predators and the survival of wild predator populations in southern Africa? NW1283E

A handwritten signature in black ink, appearing to be 'R. Purdon', is located at the bottom right of the page.

1189. THE MINISTER OF ENVIRONMENTAL AFFAIRS REPLIES:

The Non-Detriment Finding made by the Scientific Authority of South Africa as published in the Gazette on 23 January 2018 states that the trophy hunting of lion poses no threat to the wild lion population of South Africa and it is thought that captive lions may serve as a buffer to potential threats to wild lions by being the primary source of hunting trophies and derivatives such as lion bones. It must be noted, however, that the captive bred lions and the wild lions are bred in different environments and managed differently. The department is finalising its compliance assessment of breeding facilities as part of what will inform the future position on captive lion breeding in South Africa.

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environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

Ref:02/1/5/2

MINISTER

QUESTION NO. 1187 FOR WRITTEN REPLY: NATIONAL ASSEMBLY

A draft reply to **Mr R K Purdon (DA)** to the above-mentioned question is enclosed for your consideration.

MS NOSIPHO NGCABA
DIRECTOR-GENERAL

DATE:

DRAFT REPLY APPROVED/AMENDED

**DR B E E MOLEWA, MP
MINISTER OF ENVIRONMENTAL AFFAIRS**

DATE:

A handwritten signature in black ink, appearing to be the name 'B. E. Molewa', is written over the page number.

NATIONAL ASSEMBLY

(For written reply)

QUESTION NO. 1187 {NW1281E}

INTERNAL QUESTION PAPER NO.12 of 2018

DATE OF PUBLICATION: 20 April 2018

Mr R K Purdon (DA) to ask the Minister of Environmental Affairs:

What (a)(i) is the total number of predator breeding facilities in the country and (ii) is the detailed breakdown of the number of the specified facilities registered with the (aa) SA Predators Association and (bb) other associations, (b) are the names of each of the other associations and (c)(i) is the type of each predator and (ii) is the number of each type of predator found at each of the specified facilities?



1187. THE MINISTER OF ENVIRONMENTAL AFFAIRS REPLIES:

- (a) (i) The current estimate is that there are 300 lion breeding facilities in South Africa. This is based on reports provided by the provincial issuing authorities.
- (ii) (aa) the lion breeding facilities register with the Provincial Authorities as competent Authorities; hence the data referred to in (a) (i) (the Department, therefore, does not have information on the detailed breakdown of the number of the specified facilities registered with SA Predators Association and other associations. Such information on the registration aspects to respective associations can be sourced from associations themselves;
- (bb) As indicated above, information on any other associations is also not available to DEA.
- (b) Information on the names of other associations is not available to DEA. However, DEA works, or cooperates, with a number of associations individually or through various forums, depending on issues at hand.
- (c) (i) Information on the type of each predator is not available to DEA and are closely connected with and under the control of the Provincial Issuing Authorities
- (ii) Information on the number of each type of predator found at each specified facilities is not available to DEA and are closely connected with and under the control of the Provincial Issuing Authorities.

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**IN THE HIGH COURT OF SOUTH AFRICA
(GAUTENG DIVISION, PRETORIA)**

Case No: 86515/17

In the matter between:

**NATIONAL COUNCIL OF SOCIETIES
FOR THE PREVENTION OF CRUELTY
TO ANIMALS**

Applicant

and

THE MINISTER OF ENVIRONMENTAL AFFAIRS

First Respondent

**THE DIRECTOR-GENERAL,
DEPARTMENT OF ENVIRONMENTAL AFFAIRS**

Second Respondent

SOUTH AFRICAN PREDATOR ASSOCIATION

Third Respondent

CONFIRMATORY AFFIDAVIT

I, the undersigned,

DR PAUL JOHN FUNSTON

do hereby make oath and state as follows:

1. I am Dr Paul John Funston, currently employed at the NGO Panthera Corporation as the Regional Director: Southern Africa. I am a world-respected scientist who has worked in the field of lions for 28 years. I am also a member of the International Union for Conservation of Nature's ("IUCN") Cat

Specialist Group.

2. I am also a consultant advisor to SANBI when needed.
3. Except where the contrary is expressly stated or appears from the context, the facts in this affidavit are within my personal knowledge, my experience, and on widely recognised and established scientific data, which I am familiar with. To the best of my knowledge, they are true and correct.
4. In what follows, I address the following in turn:
 - 4.1 My experience and expertise;
 - 4.2 The work of Panthera;
 - 4.3 The nature of the IUCN;
 - 4.4 The current status of lions in the wild;
 - 4.5 Whether the captive-bred lion industry has conservation value;
 - 4.6 The impact of South Africa's regulated trade in lion bone on wild lion and other large cat populations in South Africa and other African range states;
 - 4.7 The 2017 and 2018 quotas for the exportation of lion bone; and
 - 4.8 The Scientific Authority's non-detriment findings.

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My experience and expertise

5. I am an internationally recognized large carnivore biologist, with a strong interest in how ecosystems function and how these can be maintained in the face of human development.
6. I was born in South Africa. From 1986-1988 I obtained a BSC Zoology and Botany at the University of Natal. My post-graduate studies were completed at the University of Pretoria's Mammal Research Institute, where I completed my Phd in 1999. My PhD work focused on predator-prey relationships and territorial behavior of African lions in South Africa's Kruger National Park. It was entitled "Predator-Prey relationships between lions and large prey: the role of male lions".
7. I have spent many years (21) in the field as a post-doctoral researcher and consultant, managing multi-disciplinary research programs contributing to the management of large national parks in southern Africa. This included three-years (1998 – 2001) managing the Kgalagadi Transfrontier Lion Project in South Africa/Botswana.
8. From 2002 – 2012, I was an Associate Professor at Tshwane University of Technology, Department of Nature Conservation, where I developed a range-wide lion conservation program.
9. From 2013 to date I was the Senior Director of Panthera's Lion and Cheetah programs with my role changing to Regional Director: Southern Africa in 2018.
10. From 1999, I have been a member of the IUCN's Cat Specialist Group.

11. I have published over 60 scientific papers, numerous reports, two books, and I scripted several documentary films, in some of which I have also appeared as a wildlife expert.
12. A copy of my *curriculum vitae* is attached and marked "PF1".

Panthera Corporation

13. As detailed on Panthera's website (<https://www.panthera.org>):
 - 13.1 Panthera Corporation ("Panthera") is the only organisation in the world that is devoted exclusively to the conservation of the world's 40 wild cat species and their ecosystems;
 - 13.2 Utilizing the expertise of the world's premier cat biologists, Panthera develops and implements global strategies for the most imperiled large cats: tigers, lions, jaguars, snow leopards, cheetahs, pumas and leopards;
 - 13.3 Representing the most comprehensive effort of its kind, Panthera partners with local and international NGOs, scientific institutions, local communities, governments around the globe and citizens who want to help ensure a future for wild cats;
 - 13.4 Panthera's range-wide conservation strategies are focused on the world's largest, and some of the most imperiled cats: tigers, lions, jaguars, snow leopards, leopards, pumas and cheetahs. Every program is founded on the best available science and is tailored to suit each cat's behavior and ecology, the unique threats they face, the various landscapes they depend on, and the human communities they live

alongside. By collaborating with governments, corporations, local communities and other NGOs, we have amplified our conservation efforts as they relate to genetic research, education, and human health and livelihood;

- 13.5 In Africa Panthera leads the globe in initiatives to conserve and repopulate lion populations in protected areas where they have become depleted due to the range of anthropogenic mortalities they are exposed to. This has resulted in >90% reduction in human lion conflict in areas such as the Mudumu Complex, Zambezi Region, Namibia, and communal areas surrounding Hwange National Park “NP”, Zimbabwe. Panthera has established Community Game Guard anti-poaching patrol units in Kafue NP, Zambia, Luengue-Luiana NP, Angola, the western Okavango Delta, Botswana, Hwange NP, and importantly Banhine and Limpopo NP’s, Mozambique (where they are being active hunted for body parts, including bones). At all sites we have evidence of increased poaching levels that track the rate of increase of legal lion bone export from South Africa.

The IUCN

14. As detailed on the IUCN’s website (<http://www.icun.org>):
- 14.1 The IUCN is uniquely composed of both government and civil society organisations. It provides public, private and non-governmental organisations with the knowledge and tools that enable human progress, economic development and nature conservation to take place together;
- 14.2 It was created in 1948. Since then, it has evolved into the world’s largest and most diverse environmental network. It harnesses the

experience, resources and reach of its 1,300-member organisations and the input of some 13,000 experts;

14.3 The IUCN is the global authority on the status of the natural world and the measures needed to safeguard it. Its experts are organised into six commissions dedicated to species survival, environmental law, protected areas, social and economic policy, ecosystem management, and education and communication;

14.4 One of these commissions is the “*Species Survival Commission*” (“SSC”). One of the SSC’s Specialist Group’s is the Cat Specialist Group (“CSG”). The CSG is dedicated to the conservation of vulnerable and endangered big cat species, which include lion and tiger. As set out above, I have been a member of the CSG since 1999;

14.5 My role within the CSG at the IUCN is to give guidance and professional expert opinion on especially lion biology and conservation, specifically on the effects of human caused mortality of lions, which includes trade;

14.6 I address relevant resolutions/findings of the IUCN below.

The importance of lion for ecosystems

15. The lion is a keystone species in savannah ecosystems acting as the most efficient wildlife manager, reducing ungulate populations that might grow too large and thus destroy the ecosystem. This key function, of wild lions, which captive lions cannot be taught, is vital to all forms of life. This includes ours as humans, as we need healthy functioning ecosystems for the vital ecosystem services they deliver (such as clean air and water), but also for the huge socio-

economic opportunities they provide for rural, African communities.

16. Without wild lions and their prey, the opportunities for ecotourism to contribute to the upliftment of the lives of rural people are strongly limited. Killing wild lions for any form of body part, is just one of the many threats facing lions, and thus savannah ecosystems and rural, African communities. It should consequently be legally outlawed and discouraged.

The current status of lions in the wild

17. In 2016 the IUCN released its 'Red List' of Threatened Species classifies lions as "vulnerable" – not yet "*endangered*" but worse than "*near threatened*".
18. In population terms, it found that "*we have greater confidence in an estimate of closer to 20,000 lions in Africa than in a number over 30,000.*" In addition, that the "*lion population is inferred to have undergone a reduction of approximately 43% over the past 21 years.*"
19. While some populations have grown, others have declined rapidly. The 16 African fenced subpopulations have grown by 29% since 1993. Unfenced populations have done less well. Thus, whilst the overall qualification was "vulnerable", "*it is of great concern that the vast majority of the population is inferred to have declined at a rate that meets the criteria for endangered*".
20. A copy of the 2016 IUCN Red List is attached and marked "PF2".
21. I am a member of the IUCN's committee that reviewed the status of the African lion, as population survey techniques and assessing populating trends of lions is one of my areas of expertise.

Whether the captive-bred lion industry has conservation value


22. Based on my knowledge and experience, including of established, recognised scientific data, the captive-bred lion industry has not been shown to have any conservation value. Rather, it is likely to damage the ability of many nations to conserve their dwindling lion populations.
23. Proponents of the captive-bred lion industry argue that it has conservation value for one or more of the following reasons: (1) reducing hunting pressure on wild lions, (2) conservation of genetic diversity, (3) ability to restock wild lion populations with captive-bred lions and (4) regional socio-economic development.
24. My response is as follows:
- 24.1 There has been no reduction in the demand for trophy hunting opportunities to hunt wild lions since the inception of captive lion hunts. Lindsey et al. (2012; South African Journal of Wildlife Research 42, 11 – 22) found that different clientele drive the respective markets between wild and captive lion hunting. Thus, the suggestion that hunting captive lions reduces the pressure on wild lion populations is false;
- 24.2 There is no concern given to the retention and preservation of the genetic lineages and geographic locations of source lions in the captive-bred lion industry. Lions are bred for one characteristic solely – the volume and colour of their manes;
- 24.3 Therefore, while it is likely that captive lions retain genetic links to their source populations in Southern Africa, captive-bred lion breeders

do not pay attention to the retention of genetic diversity. No extensive genetic studies have been done on the captive-bred lion populations in South Africa (Miller et al., 2014 Journal of Heredity doi:10.1093/jhered/ esu054). Thus, the suggestion that breeding captive lions contributes to conserving genetic diversity of lions is false;

- 24.4 There are no successful cases of captive-bred lions being successfully released into the wild. All efforts to date have resulted in failure, death of the lions, human death or injury (Hunter et al., 2012 doi:10.1017/ S0030605312000695), and/or livestock depredation;
- 24.5 Captive bred lions should consequently not be introduced into the wild, as the risks to humans and livestock are just too great, and indeed to the lions themselves. Thus, the suggestion that breeding captive lions will allow their reintroduction into the wild is false.
25. It is relevant in this regard that in 2016, the IUCN passed a resolution calling on South Africa to terminate its breeding of lions for the purposes of “*canned hunting*” and for commercial, non-conservation purposes. It is clear from the resolution that the basis of it was because the IUCN considered such practices to have no conservation value and to be unethical. A copy of the resolution is attached and marked “PF3”.

The impact of South Africa’s regulated trade in lion bone on wild lion populations in South Africa and other African range states

26. Since 2007, the South African government while allowing the trophies of canned lions to go to the West has for sometime allowed the remaining body parts – bones, teeth and claws and even meat to go to South-East Asia (Williams et al., 2017 PLoS ONE 12: e0185996 <https://doi.org/>

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[10.371/journal.pone.0185996](https://doi.org/10.371/journal.pone.0185996)). There is now a lucrative new market for lion bones (and teeth and claws) mostly in Vietnam but also in Laos and China.

27. This is a recently established market, with the products that have evolved either replacing those from tigers or masquerading as tiger products. Conservationists fear that this has increased poaching levels on large cats around the world to replace the body parts acquired from tigers, and in fact is re-stimulating the pursuit of wild tigers from poaching syndicates (Williams et al., 2015 Nature 523: 290 <https://doi.org/10.1038/52390a>). Tigers are critically endangered and no nation in the world should want to be seen to be conspiring towards their demise.
28. In China alone, there are literally thousands of tigers in captivity (Nowell et al, 2010 Tigers of the World, Academic Press p 463 – 475) just as there are thousands of lions in South Africa. In fact, there are far more of the respective species in captivity than each country's wild populations respectively. But neither can meet the demand; the demand is un-checked, it far exceeds numbers available from captive sources and tragically places a premium on wild animals (Nowell 2000, Far from a cure: The tiger trade revisited, Cambridge: Traffic International). Under such circumstances, captive breeding cannot meet the demand and allowing it to be legal further incentivises the illegal hunting and trade.
29. On the issue of teeth and claws, the DEA and the Scientific Authority suggest that they only legally sanction the export of bones, yet much of hunting of wild lions is for teeth and claws. Trade analysts assert that it is all the same; it stimulates demand for trade in body parts, most of which are acquired through poaching rather than legal channels. Teeth and claws are traded openly on social media sites in Vietnam and China, is socially acceptable and there is a huge demand, with trade levels vastly outweighing seizure records (Fuller 2014, Trading on the endangered but shielded in Laos: Law enforcement

officers and trail of records depict a ring from Africa to Asia, <http://www.lexisnexis.com/Inacui2api/api/version1>). Furthermore, there is virtually no effort at law enforcement and demand-reduction in South-East Asia in relation to the big cat trade. As a result, wild tigers, lions, jaguars, leopards, snow leopards and even clouded leopards are paying the price.

30. Although the cause and effect of links are hard to prove there are just too many parallels between the sources and ultimate destinations of both legally and illegally acquired lion bones, teeth and claws for it to be possible to believe that South Africa's legal export of lion body parts is not impacting lions in the wild. This is not only fuelling the poaching of lions in other African countries, it is also likely to be complicit in increases in poaching rates for other large cats worldwide.

31. We at Panthera have our own data from two sites in Mozambique, close to the Kruger National Park at Banhine and Limpopo National Parks, which was collected using combinations of camera trapping, spoor and call-up surveys and satellite GPS collaring exercises. The recorded data establishes the following:
 - 31.1 Between October 2011 and May 2018, we documented 49 lion deaths in these parks caused by humans;

 - 31.2 Across both parks, 61% of the lions killed had body parts removed;

 - 31.3 In 2014, we recorded the first incident of targeted lion poaching. Since 2014, we have recorded an average of four lions killed through targeted poaching annually;

 - 31.4 In total, targeted poaching of lions accounted for 17 of the 49 or 35%

of all recorded lion deaths in the study period;

- 31.5 All targeted poaching lion poaching incidents involved lion being lured to poisoned meat or lured into snares or traps;
 - 31.6 In 58% of these cases, wild ungulates were first killed and then used as bait and in 42% of these cases the remains of a poached elephant were used as bait;
 - 31.7 There was also a relationship between retaliatory killings of lions due to livestock depredation and the removal of lion body parts. Thus, 48% of lions killed due to livestock depredation had body parts harvested;
 - 31.8 Of all the recorded lion deaths (49), 61% of lion were poisoned, 33% were snared or trapped and 6% were shot. There was a noticeable increase in the poison being used to kill lions from 2013 onward;
 - 31.9 Lions are now extinct in Banhine NP and we estimated that the targeted poaching of lions alone has, in some years, removed 26% of the total lion population in Limpopo NP;
 - 31.10 Lions will have to be reintroduced to Banhine NP as there are no immediate source populations;
 - 31.11 This source of mortality is additive to conflict related deaths and by itself far exceeds sustainable off-take levels.
32. This data is recorded in a paper that we have submitted for scientific publication. A copy of it is attached and marked "PF4".

33. Similarly, in northern Mozambique in the Niassa Reserve the status of lions and large carnivores is not positive with worrying indications of poisoning and lion bone trade (Begg 2016). Since 2011, 49 lions have been killed with 30 carcasses being used for the trade in lion trade in skins and meat (9), bones (2), teeth and claws (19)(C Begg unpublished data). Of the 49 lions killed 17 were due to poaching specifically for body parts (targeted poaching), and 25 were killed because of conflict with livestock of which 13 had parts removed. The first record of a poacher caught with lion bones was in 2016. In 2016 on the outskirts of Niassa Reserve, two lionesses were killed and deboned, and within the reserve a poacher was caught with lion bones in the same year (Begg 2016). Most lions were poisoned (30) either using natural prey (12) or poached elephants (7); the remainder were caught in snares (16) or shot (3). A full set of lion teeth and bones now fetches poachers \$1000-\$1500. This is similar to prices offered in the rest of Mozambique and regionally in Zimbabwe. Although a new threat, this is already leading to population declines in Niassa Reserve, with some areas inside the protected area becoming increasingly “empty” of carnivores (Begg 2016). A table detailing this information is attached and marked “PF5”.
34. There is currently a ban on the import of captive-bred lion hunt trophies from South Africa to the USA. This has precipitated the down-scaling of the lion trophy hunting industry in South Africa to the point that lion breeders are sitting on stockpiles of thousands of skeletons for which they have no legal export opportunity.
35. No doubt breeders may move their skeletons illegally. It would not be difficult for them to engage with the same traders who deal in poached rhino horn or elephant ivory and add lion bones, teeth and claws to these consignments. Indeed, the EMS/BAT Report confirms strong links between the handful of lion breeders who sell lion bone and organised transnational criminal syndicates.

36. A number of busts in Mozambique by port authorities have already found lion bones, teeth and claws in amongst consignments of rhino horns. Six kilograms of teeth and claws was found in one specific consignment. These could be from wild lions poached for their parts or from captive bred lions raised in South Africa smuggled across by poaching syndicates exporting out of Mozambique. Even in Senegal, in West Africa, which is geographically far from South Africa and Mozambique, there are now reports of large volumes of trade in lion bone, skin, teeth and claws. These are unlikely to come from wild lions in West Africa, which are already depleted to the point that the subpopulation is classified as critically endangered. In addition, 42% of lions killed illegally in Namibia in 2016 had their heads, feet, tails, skin and claws removed.
37. I refer to the following public reports in this regard:
- 37.1 July 2015, <https://www.usnews.com/news/world/articles/2015/08/04/swiss-customs-seize-578-pounds-of-ivory-en-route-to-china> (“The suitcases also contained 1 kilogram (2.2 pounds) of lion fangs and claws – 21 fangs and 35 claws”).
- 37.2 November 2015, <http://www.oscap.co.za/mozambique-nabs-vietnamese-for-rhino-poaching> (Police in Mozambique have arrested a Vietnamese national at Maputo International Airport. The suspect was reported to be carrying 59 lion claws and 49 teeth believed to be from a lion).
- 37.3 December 2015, <http://allafrica.com/stories/201512300067.html> (“The Mozambican police report large amounts of illicit wildlife products seized between August and December in Maputo port and at Maputo International Airport...2.6 kilos of lion claws were incinerated.”)

- 37.4 March 2016, <http://www.poptel.org.uk/mozambique-news/newsletter/aims526.html> (Under “Police seize rhino horn at airport” – “The Mozambican police, in coordination with customs, seized two suitcases containing 76.6 kilograms of rhinoceros horn and six kilograms of lion claws and teeth)
38. Whether the DEA and SANBI are willing to listen or not, lion bones and other body parts from South African lions are now part of syndicated global wildlife trade.

DEA’s determination of the 2017 and 2018 quotas for the exportation of lion bone

39. There is no scientific rationale for the DEA’s original quota of 800 skeletons or its 2018 quota of 1500 skeletons. Rather, at best, the quotas were simply based on the average number of lion skeletons that the DEA believes to have been exported prior to the implementation of the CITES quota.
40. In addition to having no basis in science, the quotas were established without the DEA following adequate (2017) or any (2018) public consultation processes. To the extent that there was public consultation (2017), the views of conservationists, including Panthera, were ignored. In addition, what the world did not know and what has become public knowledge only recently, is that prior to the exportation of lion bone coming under CITES sanction in 2017, the DEA had already exported more than 6 000 lion skeletons since 2007.
41. In addition, the DEA and SANBI appear to rely on the fact that South African wild lion populations are stable. While this may be so at present, we do not know whether it will remain so in the face of a growing demand for lion bone. The SANBI Interim report does not even consider what may happen to South Africa’s lion populations even in the medium term as a result of the regulated trade in lion bone.

42. We have only to look at what has happened to our rhinos to know that once a tipping point is reached it will be irreversible and we will be unable to protect our wild lion populations (as we have been unable to protect our rhinos). The SANBI Interim Report confirms this.
43. In addition, the status of South African wild lions is only the beginning of the inquiry. South African reserves are far better resourced and thus far better protected than reserves in other African range states. Thus, reserves in other African range states are far more likely to be vulnerable to an increased demand for lion bone. The SANBI Interim Report recognises this too.
44. Thus, it was irresponsible for the DEA to establish a policy that could further imperil wild lions – already in precipitous decline throughout much of Africa – when the facts are clear; South Africa’s lion breeding industry makes absolutely no positive contribution to conserving lions and indeed, further imperils them.

The Scientific Authority’s non-detriment findings

45. In May 2015, the Scientific Authority of South Africa issued a non-detriment finding (“**2015 NDF**”) in relation to lions. I was a member of the Scientific Authority when it established the 2015 NDF.
46. The 2015 NDF stated that there “*are currently no major threats to wild lion populations in South Africa, although the management of re-introduced wild lions needs to be improved*” (2015, p 1). It also noted that very few wild lions were hunted for trophies each year and that captive populations largely provided the stock for such. The 2015 NDF only considered wild and re-introduced wild populations of the African lion and did not consider captive bred populations.

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47. The 2015 NDF demonstrated that overall, the legal local and international trade (in lions and derivative parts) posed only low to moderate but non-detrimental risk to lions in South Africa. It stated that it had no concerns relating to the export of lions in accordance with Article IV of CITES.
48. However, the 2015 NDF did not in any way provide a scientific basis for the determination of an export quota of 800 skeletons. It only found that – as of 2015 – there were no major threats to wild lion survival in South Africa and it did not explicitly examine the link between captive breeding and its potential future impact on wild lion conservation.
49. An updated NDF was established on 23 January 2018. I was not involved in the determination of this NDF. It included reference to captive-bred populations. It states that South Africa’s healthy wild populations exist alongside a “*large captive population of approximately 7 000 lions kept in around 260 breeding/captive facilities...*” (2018 NDF, p 5).
50. The 2018 NDF states that at present there is no threat to the wild lion populations and “*it is thought that captive lions may in fact serve as a buffer to potential threats to wild lions by being the primary source of hunting trophies and derived products such as bone.*” As I have set out above, there is absolutely no scientific evidence or basis for this conclusion. Indeed, the data that Panthera has collected, which is set out above, suggests the contrary – that since the DEA allowed the export of lion bone, the targeted poaching of lions and the trade in lion body parts has increased.
51. In addition, the SANBI Interim report, on which the 2018 NDF was reportedly based, in fact states that wild lion populations in other African range states are “*likely*” to be “*adversely affected*” and that this requires urgent investigation. The 2018 NDF simply ignored this finding.

52. In addition, as in the case of the SANBI Interim Report, the 2018 NDF only states that South African lion populations are stable “at present”. It does even consider what impact the trade in lion bone is likely to have on them in the medium term. It also in no way provides a basis for the revised 2018 quota of 1500 skeletons. Rather, it simply states that a quota for the export of skeletons derived from captive breeding operations must be established and revised on an annual basis.

A scientific study for the purposes of establishing a quota for the export of lion bone

53. The Scientific Authority would have to research how South Africa’s export of lion bone has affected the demand for lion and tiger bone in South East Asia. Thus, a study of the distribution and demand sides of the trade since 2007 would have to be undertaken by economists.
54. The Scientific Authority would also have to study whether the rate of targeted poaching of lions (poached for derivative body parts) and in African range states had increased since South Africa began exporting lion body parts (2007). In addition, it would also have to establish whether lions that have been killed for other reasons (for example, conflict/competition with local communities) also had body parts missing. As set out above, the data collected by Panthera indicates that both have increased.

Welfare concerns

55. I am also of the view that there are serious welfare concerns with the captive predator breeding industry in South Africa. The first major concern in this regard is that there are no legislated standards for the keeping of predators in captivity. In addition, there have been numerous reports of lions being kept in inhumane and cruel conditions without sufficient space, adequate diets or

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sufficient stimulation and exercise opportunities.

Conclusions

56. My conclusions are as follows:

- 56.1 The captive lion-bred industry has no conservation value;
- 56.2 On the contrary it is likely to make it even more difficult for African range states to conserve their dwindling wild lion populations;
- 56.3 There was/is no scientific basis or rationale for DEA's original quota of 800 lion skeletons or its new quota of 1500 lion skeletons and also no proper public consultation;
- 56.4 Neither the 2015 NDF nor the 2018 NDF constituted a scientific basis for the 2017 and 2018 lion bone quotas;
- 56.5 It was irresponsible of DEA to determine quotas for the exportation of lion bone when there is a risk that doing so will further imperil wild lion (and other wild cat populations) and the captive predator breeding industry has no conservation value;
- 56.6 There are serious welfare concerns in relation to the keeping of lions in captivity; and
- 56.7 It is both my and Panthera's objective stance that DEA must, as an immediate priority, terminate the exportation of lion bone. At the very least, until a proper scientific study (as set out above) has been conducted in relation to the impact of South Africa's exportation of

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DEPONENT

I hereby certify I certify that the deponent has acknowledged that he knows and understands the contents of this Affidavit which was signed and sworn to before me at on this the 12th day of September 2018 and that the provisions of the Regulations contained in Government Notice R1258 of 21 July 1972 (as amended) and Government Notice R1648 of 19 August 1977 (as amended) have been complied with.

COMMISSIONER OF OATHS



Paul John Funston, PhD

Objective

Large carnivore conservation across multiple African landscapes with meaningful benefits accruing to the rural poor

Experience



2018-Present Regional Director, Southern Africa, Panthera

2013-2018 Senior Director, Lion and Cheetah Programs, Panthera

- Senior Director of Panthera's Lion and Cheetah Programs leading its initiatives in Policy Intervention, Human-Wildlife-Conflict, Law Enforcement and Population Surveys

2002-2013 Associate Professor Department of Nature Conservation, Tshwane University of Technology

- Lion conservation and management in smaller reserves
- Coordinator Venetia Limpopo Lion Project
- Advice to National Cheetah Management Program and North-West Parks
- Lecturing in Game Ranch Management and Nature Conservation and supervising post-graduate students
- Member IUCN Cat Specialist Group and African Lion Working Group

1998-2001 Endangered Wildlife Trust, Coordinator Kalahari Transfrontier Lion Project

- Ecological study of the lions with the KTP including population status, dynamics and home-range characteristics
- Investigating human-lion conflict with neighbouring communities and developing mitigating measures through participative workshops
- Compilation of final report and 10 papers manuscripts and presentation at International Thereological Congress

1996-1997 South African National Parks, Kruger National Park Coordinator Northern Plains Project

- Investigating declines of roan antelope population with a focus on lion predation studies
- Multi-disciplinary ecological study to assess ecosystem response to the closure of artificial waterpoints
- Producing 3 reports, abstracts, manuscripts and presentations

Biography

Panthera's Senior Lion and Cheetah Program Directors, Dr. Paul Funston is an internationally recognized large carnivore biologist, with a strong interest in how ecosystems function and how these can be maintained in the face of human development. Born in South Africa, Paul studied Zoology and Botany at the University of Natal and completed his PhD at the University of Pretoria's Mammal Research Institute. Paul's PhD work focused on predator-prey relationships and territorial behavior of African lions in South Africa's Kruger National Park.

Paul spent many years in the field as a post-doc researcher and consultant, managing multi-disciplinary research programs contributing to the management of large national parks in southern Africa, including three years spent managing the Kgalagadi Transfrontier Lion Project in South Africa/Botswana, before a decade in academia. He was Associate Professor at Tshwane University of Technology, Department of Nature Conservation, where he developed a rangewide lion conservation program. Paul has published

over 50 scientific papers, numerous reports, two books, and scripted several documentary films, some of which he has also appeared in as a wildlife expert.

Selected publications in the last eight years:

Lindsey, P.A., Funston, P.J., et al. 2018. More than \$1 billion needed annually to secure Africa's protected areas with lions. PNAS in press.

Lindsey, P.A., Funston, P.J., et al. 2017. The performance of African protected areas for lions and their prey. *Biological Conservation* 209: 137–149.

Buk, K.G., van der Merwe, V.C., Marnewick, K., & Funston, P.J. 2017. Conservation of severely fragmented populations: lessons from the transformation of uncoordinated reintroductions of cheetahs (*Acinonyx jubatus*) into a managed metapopulation with self-sustained growth. *Biodiversity and Conservation* <https://doi.org/10.1007/s10531-018-1606-y>.

Durant, S.M., Funston, P.J. et al. 2017. The global decline of cheetah *Acinonyx jubatus* and what it means for conservation. PNAS 114: 528–533.

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Maruping-Mzileni, N.T., Funston, P.J. & Ferreira, S.M. 2017. State-shifts of lion prey selection in the Kruger National Park. *Wildlife Research*, <http://dx.doi.org/10.1071/WR16090>.

Miller, J.R.B., Funston, P.J. et al. 2016. Aging traits and sustainable trophy hunting of African lions. *Biological Conservation* 201: 160–168.

Miller, S.M., Harper, C.K., Bloomer, P., Hofmeyr, J. & Funston P.J. 2015. Fenced and Fragmented: Conservation Value of Managed Metapopulations. *PLoS ONE* 10(12): e0144605. doi:10.1371/journal.pone.0144605

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Miller, S.M., Harper, C.K., Bloomer, P., Hofmeyr, J. & Funston, P.J. 2014. Evaluation of Microsatellite Markers for Populations Studies and Forensic Identification of African Lions (*Panthera leo*). *Journal of Heredity*, DOI:10.1093/jhered/esu054

Miller, S.M. & Funston, P.J. 2014. Rapid growth rates of lion (*Panthera leo*) populations in small, fenced reserves in South Africa: a management dilemma. *South African Journal of Wildlife Research* 44(1):43-55.

Miller, S.M. Tambling, C.J. & Funston, P.J. 2014. GrowLS: Lion (*Panthera leo*) population growth simulation for small reserve management planning. *African Journal of Wildlife Research* 45(2):169-177. DOI: <http://dx.doi.org/10.3957/056.045.0169>

Young-Overton, K.D., Funston, P.J. & Ferreira, S.M. 2014. Rainfall driven changes in behavioural responses confound measuring trends in lion population size. *Wildlife Biology*, 20:344-355, DOI: <http://dx.doi.org/10.2981/wlb.00015>

Miller, S.M., Bissett, C., Burger, A., Courtenay, B., Dickerson, T., Druce, D.J., Ferreira, S., Funston, P.J., Hofmeyr, D., Kilian, P.J., Matthews, W., Naylor, S., Parker, D.M., Slotow, R., Toft, M. & Zimmermann, D. 2013. Management of reintroduced lions in small, fenced reserves in South Africa: an assessment and guidelines. *S. Afr. J. Wildl. Res.* 43: 138– 154.

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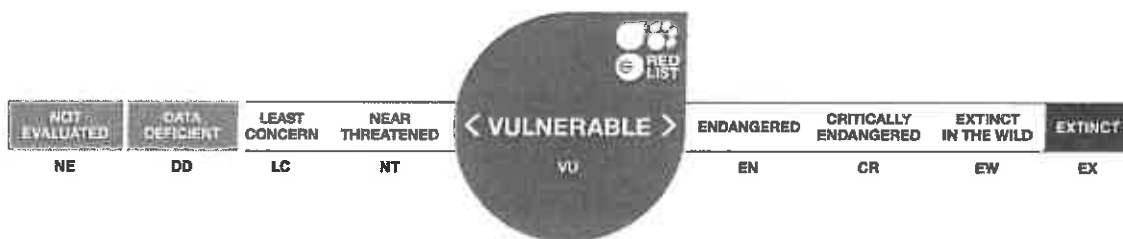


PF2

Panthera leo, Lion

Errata version

Assessment by: Bauer, H., Packer, C., Funston, P.F., Henschel, P. & Nowell, K.



View on www.iucnredlist.org

Citation: Bauer, H., Packer, C., Funston, P.F., Henschel, P. & Nowell, K. 2016. *Panthera leo*. *The IUCN Red List of Threatened Species 2016*: e.T15951A115130419.

<http://dx.doi.org/10.2305/IUCN.UK.2016-3.RLTS.T15951A107265605.en>

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Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Mammalia	Carnivora	Felidae

Taxon Name: *Panthera leo* (Linnaeus, 1758)

Synonym(s):

- *Felis leo* Linnaeus, 1758

Regional Assessments:

- Mediterranean

Infra-specific Taxa Assessed:

- *Panthera leo* (West Africa subpopulation)
- *Panthera leo ssp. persica*

Common Name(s):

- English: Lion, African Lion
- French: Lion d'Afrique
- Spanish: León

Taxonomic Notes:

Taxonomy currently used by the IUCN SSC Cat Specialist Group:

Panthera leo persica—Asian subpopulations

Panthera leo leo—African subpopulations.

The latest published phylogeographical study of lions shows that the traditional split between Asian and African Lions as distinct subspecies is untenable (Barnett *et al.* 2014). Based on Barnett *et al.* (2014) the Cat Classification Task Force of the IUCN SSC Cat Specialist Group has provisionally proposed a different split into two subspecies, *P. l. leo* of Asia and West, Central and North Africa, and *P. l. melanochaita* from South and East Africa. However, Barnett *et al.* (2014) is based only on mtDNA and could reflect female philopatry. In conjunction with the African Lion Working Group, Laura Bertola and colleagues are preparing a taxonomic paper, which will include reference to new molecular data from current studies, including complete mitochondrial genomes, microsatellites, and autosomal SNPs, which strongly support this taxonomic arrangement and recognize several management units within these revised subspecies. Given the poor conservation status of some regional Lion populations, it is important that this new taxonomic arrangement is immediately available for use by the IUCN Red List to support the next stages in developing a conservation strategy for the Lion based on coherent and sound science (Barnett *et al.* 2006a,b, 2014; Bertola *et al.* 2011, submitted; Dubach *et al.* 2005, 2013).

Note: This is an amended version of the assessment to replace the range map with a corrected version and to add some additional explanatory text to Table 3 in the Supplementary Information.

Assessment Information

Red List Category & Criteria: Vulnerable A2abcd ver 3.1

Year Published: 2016

Date Assessed: June 20, 2014

Justification:

The Lion population is inferred to have undergone a reduction of approximately 43% over the past 21 years (approximately three Lion generations, 1993-2014).

We infer a decline of 43% based on time trend analysis of census data for 47 relatively well monitored Lion subpopulations. These subpopulations approximately totalled an estimated 7,500 Lions in 2014 and comprise a substantial portion of the total species population, so that we feel confident in applying observed trends to the species as a whole as well as on a regional basis.

The overall classification of the Lion as Vulnerable masks a dichotomy: we observe that sample Lion subpopulations increased by 12% in four southern African countries (Botswana, Namibia, South Africa and Zimbabwe) and in India, while an observed decline of 60% in sample subpopulations outside these countries is inferred for the remainder of its African range. In other words, in the majority of its range the Lion meets the A2 criterion for Endangered with the inferred rate of decline over 50% in three generations, but this trend is numerically mitigated by a small number of subpopulations in a restricted geographical range.

This dichotomy is reflected in listings of the species in different Red Lists: in South Africa, the Lion will be categorized as Least Concern on the national Red List in preparation (Child *et al.* In prep.), whereas in India it is Endangered (as subspecies *P. l. persica* on the global IUCN Red List: Breitenmoser *et al.* 2008) and in the region of West Africa meets the criteria for Critically Endangered (Henschel *et al.* 2014, 2015). The range state list in Table 1 (attached Supporting Material) further illustrates the high threat levels across the species' broad geographic range, as Lions have been recently extirpated in 12 African countries and we suspect possible recent extirpation in another four.

Among the causes of decline, the most important are indiscriminate killing in defence of human life and livestock, habitat loss, and prey base depletion. Prey base depletion is partly linked to habitat loss, but more importantly to poaching and bushmeat trade (Becker *et al.* 2013). An emerging threat is trade in bones and other body parts for traditional medicine, both within Africa and in Asia (IUCN 2006a, b; Riggio *et al.* 2013). Furthermore, although trophy hunting contributes positively to Lion conservation, improvements in management practices have been recommended (Lindsey *et al.* 2013b, Hunter *et al.* 2013, Edwards *et al.* 2014), as when poorly regulated, it also contributes to population declines (Packer *et al.* 2009, 2011; Croes *et al.* 2011, Rosenblatt *et al.* 2014). While attention is currently focused on Lion hunting reforms to ensure sustainability, the leading causes of population decline are more difficult to address and are likely to continue. The observed and inferred reductions are based on direct observation; appropriate indices of abundance; declines in area of occupancy, extent of occurrence and habitat quality; and actual and potential levels of exploitation.

Several subpopulations have been stable, among them the only remaining subpopulation in Asia (surviving in the Gir Forest area of Gujarat, India) and several subpopulations in southern Africa.

Subpopulations appear to be stable where management is properly funded; fencing is one of several effective conservation management techniques (Packer *et al.* 2013). However, many Lion subpopulations occur in areas where management budgets are low, leading to local decline and even extinction, for example in West Africa (Henschel *et al.* 2014). Little is known about Lion subpopulations in Angola, Central African Republic and South Sudan, but we fear drastic declines especially for the latter two.

In conclusion, we assess the Lion as Vulnerable based on criterion A, more specifically A2abcd. Lion range and abundance exceed the Vulnerable thresholds for criteria B, C and D, respectively, so these criteria do not contribute to the present assessment, whilst criterion E was not applied. Vulnerable A2abcd is the same listing as the previous assessment but with a different underlying method. Previous assessments were based on a suspected decline of the total estimated number of Lions, which necessarily included low quality data. In the present assessment we did not use total Lion estimates, because we had a better alternative. We now have enough good quality data for a representative subset of Lion subpopulations to calculate an observed decline, from which we infer a decline for the species as a whole.

For further information about this species, see [Supplementary Material](#).

Previously Published Red List Assessments

2016 – Vulnerable (VU)

<http://dx.doi.org/10.2305/IUCN.UK.2016-1.RLTS.T15951A97162455.en>

2015 – Vulnerable (VU)

<http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T15951A50658092.en>

2015 – Vulnerable (VU)

<http://dx.doi.org/10.2305/IUCN.UK.2015-4.RLTS.T15951A79929984.en>

2012 – Vulnerable (VU)

2008 – Vulnerable (VU)

2004 – Vulnerable (VU)

2002 – Vulnerable (VU)

1996 – Vulnerable (VU)

Geographic Range

Range Description:

Outside sub-Saharan Africa, the Lion formerly ranged from Northern Africa through Southwest Asia (where it disappeared from most countries within the last 150 years), west into Europe, where it apparently became extinct almost 2,000 years ago, and east into India (Nowell and Jackson 1996, Sunquist and Sunquist 2002). Today, the only remainder of this once widespread northern population is a single isolated subpopulation in the 1,400 km² Gir Forest National Park and Wildlife Sanctuary. Lions are extinct in North Africa, having perhaps survived in the High Atlas Mountains up to the 1940s (Nowell

and Jackson 1996, West and Packer 2013).

Lions are found in most countries of sub-Saharan Africa. The last assessment of extant Lion range is provided by Riggio *et al.* (2013); they identified 67 Lion areas comprising 3.4 million km², which is 17% of historical range or about 25% of savanna Africa. We took those layers as a starting point, but made a few modifications to reflect the cautionary approach used by the IUCN Red List. Like with population numbers (see Population section), Riggio *et al.* (2013) copied old layers in the absence of new information. *De facto*, this means that large swathes of land are classified as Lion range based on the group exercises led by the Wildlife Conservation Society (WCS) and the IUCN SSC Cat Specialist Group; they found 86 Lion Conservation Units (LCUs) covering 4.6 million km² or 22% of historical range (IUCN 2006a,b; Bauer 2008). Henschel *et al.* (2010, 2014) found that many of these LCUs in West and Central Africa no longer contained Lions, and the range map was adapted accordingly for this assessment. Similarly, the survey and mapping unit at Panthera conducted further range updates based on new survey results and other properly documented information from other regions. Furthermore, some of the mapped LCUs are located in areas where armed conflict may have had an impact on lion persistence (e.g. Central African Republic and South Sudan). Until proof of the contrary, and based on the lack of recent data to confirm Lion presence, we therefore classified such areas as Possibly Extinct but maintained Protected Areas inside them as Lion range (including many large hunting concessions, such as in the Central African Republic). Some of the areas currently mapped as Possibly Extinct could contain relict Lion subpopulations, and should be prioritized for field surveys aimed at establishing Lion status.

Areas where we consider Lion populations Possibly Extinct total 1,811,087 km², over half (52%) of the range classified as extant by Riggio *et al.* (2013). We estimate extant Lion range, areas where we are reasonably confident that lions persist, based on recent records, at 1,654,375 km², or 8% of historical range. This range reduction reflects a combination of recent known and inferred decline, as well as improved knowledge.

Country Occurrence:

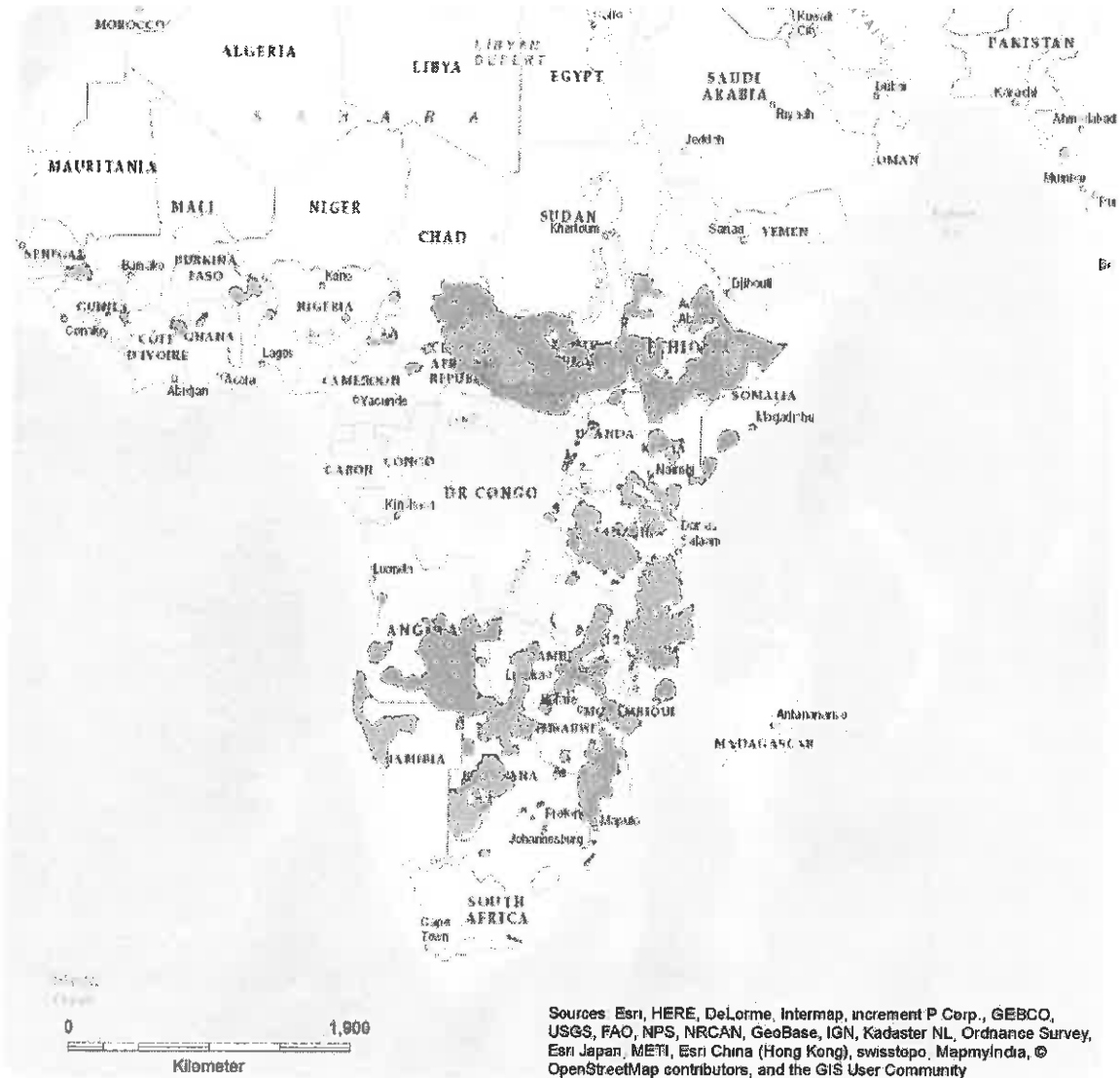
Native: Angola; Benin; Botswana; Burkina Faso; Cameroon; Central African Republic; Chad; Congo, The Democratic Republic of the; Ethiopia; India; Kenya; Malawi; Mozambique; Namibia; Niger; Nigeria; Senegal; Somalia; South Africa; South Sudan; Sudan; Swaziland; Tanzania, United Republic of; Uganda; Zambia; Zimbabwe

Possibly extinct: Côte d'Ivoire; Ghana; Guinea; Guinea-Bissau; Mali; Rwanda; Togo

Regionally extinct: Afghanistan; Algeria; Burundi; Congo; Djibouti; Egypt; Eritrea; Gabon; Gambia; Iran, Islamic Republic of; Iraq; Israel; Jordan; Kuwait; Lebanon; Lesotho; Libya; Mauritania; Morocco; Pakistan; Saudi Arabia; Sierra Leone; Syrian Arab Republic; Tunisia; Turkey; Western Sahara

Distribution Map

Panthera leo

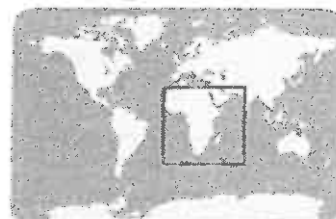


Range

- Extant (resident)
- Possibly Extinct

Compiled by:

Panthera and WCS



The boundaries and names shown and the designations used on this map do not imply any official endorsement, acceptance or opinion by IUCN.



Population

Population Trend

This assessment is based on a time trend analysis of census data from relatively well-studied Lion subpopulations (Packer *et al.* 2013, plus additional unpublished data provided by contributors). Census estimates were obtained by scientific research methods including total count, individual identifications, total or sample inventory using calling stations, radio telemetry, photo databases, spoor counts and density estimates based on direct observations corrected for patrol effort. These methods are rated as producing the most reliable type of Lion population estimates by background papers for the 2006 IUCN regional Lion workshops (Table 5 in Bauer *et al.* 2005a, b). We did not include population estimates for sites which were based on extrapolation of Lion densities obtained by research in other areas, or informed guesstimates by researchers. The minimum number of census surveys per site over the assessment time period is two, but some sites have been more regularly monitored (Table 3 - Data Points column, in Supplementary Material). In some cases census methodology varied between years, and for some surveys accuracy may have been low, but the complete data set shows an obvious trend that is unlikely to be an artefact of methodological insufficiencies.

IUCN Red List Criteria define three generations as the relevant time span for trend assessment. Lion Generation Length (GL) is based on the formulation of Pacifici *et al.* (2013):

$$GL = R_{\text{span}} * z + AFR$$

Where AFR = Age of first reproduction = 3.5 yrs (Packer *et al.* 1998)

$R_{\text{span}} = 15.5$ (the age when 95% of females are no longer reproductive) - AFR = 12 yrs (Packer *et al.* 1998)

$Z = 0.29$ (a constant “depending on survivorship and relative fecundity of young vs. old individuals in the population” (IUCN 2014), calculated as the slope of the linear regression between GL and Rspan for 221 mammalian species (Pacifici *et al.* 2013)

Thus $GL = 12 * 0.29 + 3.5 = 6.98$ yrs

To fill gaps between censuses conducted in non-consecutive years, we interpolated population sizes, assuming a linear change between years. For surveys conducted for only a few years between 1993 and 2014, we extrapolated to the beginning and end points based on an exponential rate of change taken from the observed growth rate for each respective subpopulation. However, all extrapolations are capped by the estimated carrying capacity for each reserve so that subpopulations that experienced dramatic population change were not assumed to have been at implausibly high totals in either 1993 or 2014. Subpopulations were first categorized according to whether or not the reserves were surrounded by a fence; unfenced subpopulations were further categorized according to geographical location with the exception of Niassa Reserve (Mozambique), treated as an outlier as discussed below.

In graph form (Figures 1-4 in the Supplementary Material) we summarize the repeated censuses of 46 different African Lion subpopulations using all available repeat-survey data. Figure 5 (in the Supplementary Material) addresses the 47th Lion subpopulation in our analysis, the only Asian

subpopulation.

Outside parts of southern Africa, Lions in 23 unfenced reserves in 11 countries are estimated to have dropped by 62% between 1993 and 2014 (see Figure 1 in the Supplementary Material). Although these totals only included about 4,600 Lions in the year 1993, several surveyed areas are restricted to the best-protected portions of much larger ecosystems (e.g., the phototourism areas of Selous and Serengeti).

In contrast, the total number of Lions in six unfenced reserves in Botswana, Namibia and Zimbabwe only declined by about 11% (Figure 2, Supplementary Material). Note that the overall stability in southern Africa masks considerable heterogeneity: between 1993 and 2014 the monitored Lion subpopulation in a portion of the Okavango ecosystem is estimated to have declined by 46%, whereas the much smaller subpopulations in Gonarezhou and Kunene have increased dramatically.

The striking contrast between these three countries in southern Africa and the rest of the continent is probably related to the equally striking differences in human population densities (Packer *et al.* 2013) in Namibia (2.5/km²), Botswana (3.4) and Zimbabwe (26) vs. Benin (78), Burkina Faso (57), Cameroon (40), Cote d'Ivoire (64), Ghana (102), Kenya (67), Nigeria (189), Rwanda (420), Senegal (68), Tanzania (48), Uganda (137) and Zambia (45).

The unfenced Niassa subpopulation is estimated to have increased by over 250% since 1993 (Figure 3, Supplementary Material); despite severe bushmeat poaching the Lions are still recovering from excessive prey depletion during civil war. In addition, on a shorter time scale, Lions have benefited from extensive ivory poaching, which has provided them with sizeable quantities of elephant meat (Colleen Begg pers. comm. 2014). Human population density in Mozambique is 74/km² with sizeable numbers of people living inside Niassa Reserve, so unless management is further strengthened, this unfenced Lion subpopulation may soon experience declining food supplies and increased human-lion conflicts. These arguments strongly suggest that the 'boom' in the Niassa Lion subpopulation has stopped and is unlikely to be repeated in the future. We therefore consider Niassa to be a special case and treat it as an outlier in our analyses, we believe that this offers a better understanding of trends, but we note that this does not alter the assessment (with Niassa included, the assessment would still be Vulnerable A2abcd).

The 16 fenced African subpopulations (10 in South Africa, and all but one in southern Africa) have grown by 29% since 1993, most having already reached their presumed carrying capacities by 2013 (Figure 4, Supplementary Material). Note that although these numbers now total over 3,226 lions, our data come from the great majority of fenced reserves in Africa and that little further growth can be expected in these subpopulations.

Asia is home to a single contiguous subpopulation in the Indian state of Gujarat (Figure 5, Supplementary Material). While the population has stabilized inside the Gir Reserve, the so-called "satellite" population in the surrounding countryside has expanded by ~400% in the past 21 years.

The 47 sample Lion subpopulations totalled an estimated 9,615 lions in 1993 (excluding Niassa, which is treated as an outlier as described above); that number shrank by 22% to 7,455 lions in 2014 (Table 2, Supplementary Material). However, as described above, there are significant regional differences evident in population trend, and we use these to inform our inferences about population trend for the

species as a whole. Table 2 (Supplementary Material) groups the sample subpopulations by region in Africa, following the IUCN (2006a, b) regional Lion conservation strategies, but combining West and Central Africa due to a small sample size for Central Africa. In Southern Africa, the sample population grew by 8%, while in sharp contrast, sample populations declined by 59% in Eastern Africa and 66% in West and Central Africa.

Table 3 (Supplementary Material) shows the estimated Lion population size in 1993 and 2014 for each of the 47 sample subpopulations with percentage change, and it can be seen that most countries had a declining trend for sample Lion subpopulations, with only four countries (India, Namibia, South Africa and Zimbabwe) seeing a growth trend. Table 4 (Supplementary Material) groups these countries with Botswana, which had a relatively low average rate of decline for its sample populations; two out of three sample subpopulations increased; the decline documented in the Okavango subpopulation was restricted to only part of the protected area; and overall 2012 estimates for the national population suggest that it has increased since 2003 (C. Winterbach unpubl. data). Mozambique is not included in this group as the increasing trend in its Niassa subpopulation is treated as an outlier in this analysis. The sample Lion population in five countries (Botswana, India, Namibia, South Africa, Zimbabwe) grew by an estimated 12%, whereas the Lion population in the remaining African range countries declined by an estimated 61% (Table 4, Supplementary Material).

We infer population trend for the total Lion species population based on these two rates of change, as follows. In 2002, two separate country compilations of population estimates for Lions in Africa estimated the number of Lions in Botswana, Namibia, South Africa and Zimbabwe to comprise between 1/4 to 1/3 of the total African Lion population, as shown in Table 5 (Supplementary Material). We suspect that this proportion was somewhat lower in 1993, given that the number of Lions is inferred to have increased in these countries while decreasing in the remainder, and use a figure of 1/4 or 25% for our species population trend calculation. If 25% of the Lion population increased by 12%, and 75% decreased by 60%, this results in an inferred trend of $(0.75 \times -60\%) + (0.25 \times 12\%) = -43\%$ between 1993 and 2014 (Table 6, Supplementary Material).

This qualifies the Lion as Vulnerable, but it is of great concern that the vast majority of the population is inferred to have declined at a rate that meets the criteria for Endangered. Since our sample subpopulations were all monitored, we suspect an even greater average rate of decline for unmonitored unfenced subpopulations across much of Africa, since lack of monitoring could suggest lack of conservation effort.

Abundance

For this assessment, we do not aim to provide a new estimate of total Lion numbers, we present no new data. A recent paper summarized and updated efforts to estimate the population size of the African Lion leading to the most recent estimate of 32,000 lions in 67 Lion areas (Riggio *et al.* 2013). The paper presents some recent data, but where no new data were available it included unaltered numbers from earlier sources, such as Bauer and Van der Merwe (2004) and Chardonnet (2002). As a consequence, Riggio *et al.* (2013) include numbers from 2002 and 2004 for areas where we believe the downward trend described above occurred. We therefore consider these sources to be insufficiently precautionary for our purpose and feel that an assessment on numbers is less robust than our assessment based on trends. Considering the difficulty in interpreting Lion numbers and the availability of an alternative (see above), we decided not to use total Lion numbers for the present assessment

However, we do attempt to correct for outdated sources in the Riggio *et al.* (2013) estimate by application of the regional trends we found (Table 3, Supplementary Material) to the 2002 population size estimates within the respective regions (Bauer and Van der Merwe 2004, Chardonnet 2002). These are two largely independent and reasonably comprehensive sets of estimated numbers that were coherent in time. Rather than presenting these numbers as in any way current, we look at how they might be expected to have changed. We calculated estimated present Lion numbers per region (Table 7, Supplementary Material) by applying the observed trend over the subsequent 12 years, except that numbers for West Africa were taken from a comprehensive recent survey (Henschel *et al.* 2014) because of their greater precision. As a small modification from Chardonnet (2002) we moved the estimate for Selous ecosystem to Eastern Africa to be consistent with the regional divisions used here. The two 2002 estimates were compared in detail (Bauer *et al.* 2005a,b), showing the ALWG study (Bauer and Van der Merwe 2004) was more conservative and stricter on data quality. Most notably, Bauer and Van Der Merwe (2004) lacked data for Ruaha and Tarangire which may hold close to 5,000 Lions. With all these considerations, we have greater confidence in an estimate of closer to 20,000 Lions in Africa than in a number over 30,000.

Approach to Uncertainty We do not have sufficient confidence in earlier or recent species population estimates to employ them to estimate trend and for this assessment have used groupings of scientific time series site estimates as a proxy. Although these data are more numerous for Lions than for other big *Panthera* cats, there is still considerable uncertainty inherent in both the data (Bauer *et al.* 2015) and our treatment of it to estimate species population trend. Guidelines for Using the IUCN Red List Categories and Criteria (IUCN 2014) state that, "All attitudes (towards uncertainty) should be explicitly documented. In situations where the spread of plausible values (after excluding extreme or unlikely values) qualifies a taxon for two or more categories of threat, the precautionary approach would recommend that the taxon be listed under the higher (more threatened) category."

As noted in Table 2 (see Supplementary Material), if the species trend is inferred directly from the total sample population trend, the result, a decline of 22%, would qualify the species as Near Threatened rather than Vulnerable. However, considering the demonstrated significant regional differences such an approach would be inappropriate.

We treated Mozambique's Niassa subpopulation trend as an outlier and removed it from our trend analysis for reasons described above, but we also documented the effect of the exclusion. Some contributors proposed a second outlier: Tanzania's Katavi subpopulation. Katavi has been consistently and repeatedly monitored, but the survey methodology was imprecise (vehicle transects: Caro 2011), this yielded a significant decline rate approaching 100% in a large population of over 1,100 estimated lions in the study site portion of the park in 1993 (Table 3). If Katavi would have been treated as an outlier and excluded from the analysis, inferred rate of decline would be 33%, and the rate of decline for Lions in East Africa would be 37%. Lions are still extant in Katavi (as shown in our map), although well below carrying capacity (Kiffner *et al.* 2008). Rather than using an arbitrary low value, we used the value documented by surveys (zero); Lions are extant but at a density so low as not to be detected. While the methodology is imprecise, it has proved reliable for carnivore monitoring in the Serengeti (Durant *et al.* 2011). Furthermore, the extent of decline may have been measured with lack of precision, but population decline remains uncontested. Since it is one of only two long-term monitoring programmes in Tanzania (Caro 2011) we decided that it was important to include these data and decided that there was insufficient ground to treat it as an outlier.

Another uncertainty that needs to be documented is our treatment of small fenced reserves in southern Africa. Most of the population increases have occurred in these areas where intensive management

practices include translocations, stocking, contraception and euthanasia. Such management is atypical, and as pointed out by Hayward *et al.* (2015) the Red List Guidelines are ambiguous as to the inclusion or exclusion of fenced areas. Their exclusion from the analysis would raise the inferred Lion decline rate to 49%. Following through on our supposition that unmonitored Lion populations have undergone an even higher rate than our monitored sample, this could potentially have been interpreted as a suspected rate of decline over 50%, qualifying the Lion as Endangered. However, we did not exclude fenced populations from our assessment. Hayward *et al.* (2015) state that such decisions should consider the 'type, scale, frequency and effects of the suite of management interventions' and could be taxon specific. We consider that management of Lions in the concerned areas aims to mimic natural processes, aims to retain adaptive potential and follows a meta-population management approach. We further consider that fences have been documented as effective tools in Lion conservation (Packer *et al.* 2013). We find this sufficient justification for inclusion of these reserves.

National estimated rates of population change are most meaningful in practice, and these are given in Table 3 in the Supplementary Material. We did not use national rates to gauge species decline, as the sample sizes are generally small and estimates of national Lion populations imprecise.

For further information about this species, see [Supplementary Material](#).

Current Population Trend: Decreasing

Habitat and Ecology (see Appendix for additional information)

The Lion has a broad habitat tolerance, absent only from tropical rainforest and the interior of the Sahara desert (Nowell and Jackson 1996). There are records of Lion to elevations of more than 4,000 m in the Bale Mountains and on Kilimanjaro (West and Packer 2013). Although Lions drink regularly when water is available, they are capable of obtaining their moisture requirements from prey and even plants (such as the tsama melon in the Kalahari desert), and thus can survive in very arid environments. Medium- to large-sized ungulates (including antelopes, zebra and wildebeest) are the bulk of their prey, but Lions will take almost any animal, from rodents to a rhino. They also scavenge, displacing other predators (such as the Spotted Hyaena) from their kills.

Lions are the most social of the cats, with related females remaining together in prides, and related and unrelated males forming coalitions competing for tenure over prides. Average pride size (including males and females) is four to six adults; prides generally break into smaller groups when hunting. Lions tend to live at higher densities than most other felids, but with a wide variation from 1.5 adults per 100 km² in southern African semi-desert to 55/100 km² in parts of the Serengeti (Sunquist and Sunquist 2002). Pride ranges can vary widely even in the same region: e.g., from 266-4,532 km² in the Kgalagadi Transfrontier Park of South Africa (Funston 2001).

In India, the habitat of the Asiatic Lion is dry deciduous forest. The Gir National Park and Wildlife Sanctuary is surrounded by cultivated areas and inhabited by the pastoralist Maldharis and their livestock (Meena *et al.* 2014). Domestic cattle have historically been a major part of the Asiatic Lion's diet, although the most common prey is the Chital Deer. Mean pride size, measured by the number of adult females, tends to be smaller than for African Lions: most Gir prides contain an average of two adult females (Nowell and Jackson 1996).

Systems: Terrestrial

Use and Trade

For information on Use and Trade see under Threats.

Threats (see Appendix for additional information)

The main threats to Lions are indiscriminate killing (primarily as a result of retaliatory or pre-emptive killing to protect human life and livestock) and prey base depletion. Habitat loss and conversion has led to a number of subpopulations becoming small and isolated (Bauer *et al.* 2008). Furthermore, trophy hunting has a net positive impact in some areas, but may have at times contributed to population declines in Botswana, Namibia, Tanzania, Zimbabwe (Packer *et al.* 2009, 2011, 2013), Cameroon (Croes *et al.* 2011) and Zambia (Rosenblatt *et al.* 2014).

Conflict

The economic impact of stock raiding can be significant: Patterson *et al.* (2004) estimated that each Lion costs ranchers in Kenya living alongside Tsavo East National Park US\$290 per year in livestock losses. Likewise, annual losses of cattle to Lions in areas adjacent to Waza National Park in Cameroon comprised only about 3.1% of all livestock losses, but were estimated to represent more than 22% of financial losses amounting to about US\$370 per owner (Bauer 2003). Consequently, Lions are persecuted intensely in livestock areas across Africa; their scavenging behaviour makes them particularly vulnerable to poisoned carcasses put out to eliminate predators. Little actual information exists on the number of Lions killed as problem animals by local people, even though this is considered the primary threat to their survival outside protected areas. Implementation of appropriate livestock management measures, coupled with problem animal control measures and mechanisms for compensating livestock losses, are some of the primary responses to resolving human-Lion conflict (Frank *et al.* 2006, Bauer *et al.* 2010, Hazzah *et al.* 2014).

Prey depletion

Lion population density across the species' range is known to track the biomass of principle Lion prey species; large wild herbivores (Van Orsdol *et al.* 1985, Hayward *et al.* 2007). The latter are increasingly under threat from an unsustainable and increasingly commercialized bushmeat trade, leading to collapses in prey populations across large parts of savanna Africa (Lindsey *et al.* 2013a). Regional Lion population trends reported in this assessment, are closely mirrored by time series data on main Lion prey species from 78 herbivore populations monitored between 1970 and 2005 in West, Eastern and Southern Africa; while herbivore population sizes increased by 24% in Southern Africa, they declined by 52% in Eastern Africa and by 85% in West Africa (Craigie *et al.* 2010).

Use of Lion bones and body parts and derivatives for traditional medicine

Illegal trade in Lion body parts for medicinal purposes is considered a threat to African Lion subpopulations (according to the regional Lion conservation strategies, which call on countries to prohibit [IUCN 2006a] and control [IUCN 2006b] trade in Lion bone and other parts and products) as well as to the small subpopulation in India's Gir Forest (M. Ventraman pers. comm. 2014). In West and Central Africa, Sogbohossou (2006) found many reported uses for Lion skins and bone in Benin (with fat and bones being most commonly utilized: N'Diaye 2014), and a survey carried out around Nigeria's Yankari National Park found more than 22 Lion parts considered to be of medicinal value, with most of the over 200 interviewees saying they had used Lion parts in the past, and half within the past three years (Born Free Foundation 2008). The widespread prevalence of fakes in the traditional medicinal

market is indicative of a continued demand. While fakes may replace items in the market that otherwise would be illegally sourced from the wild, they could perpetuate demand and poaching when consumers aspire to the genuine wild item rather than making a conscious choice of an (often cheaper) alternative (Nowell 2014).

There appears to be increasing interest in the use of African Lion bone in Asia. There is no history of Lion bone being used in traditional medicine there, but China has permitted the use of bones from captive Lions to make medicinal wines traditionally containing Tiger bone. South Africa has reported the export of large quantities of Lion bone sourced from captive animals to China, the Lao People's Democratic Republic and Viet Nam. Legal international trade in bone reported as from captive-bred Lions could serve as a cover for illegally wild-sourced Lion (and other big cat) parts (Nowell and Pevushina 2014). There is also concern that wild Lion parts from eastern and Southern Africa could be drawn into the large illegal wildlife trade to Asia centred around elephant ivory.

Trophy hunting

Trophy hunting is carried out in a number of sub-Saharan African countries and is considered an important management tool for conserving wild land providing financial resource for Lion conservation for both governments and local communities. However, there is concern that management regimes have not always been sufficient to deter unsustainable offtakes (Packer *et al.* 2006). A sustainable offtake level of one male lion per 2,000 km² has been recommended (Packer *et al.* 2011), but offtake has been higher in many areas, which suggests that it is potentially a threat (Lindsey *et al.* 2013b). Trophy hunting can thus be a tool for conservation but also a threat, depending on how it is regulated and managed (Whitman *et al.* 2004, Loveridge *et al.* 2007, Packer *et al.* 2011). Hunter *et al.* (2013) cautioned that regulatory measures which reduce the profitability of Lion trophy hunting could have widespread negative impacts for wildlife-based land use, anti-poaching and tolerance of Lion outside protected areas.

Other

Disease has also been a threat to Lion subpopulations (Munson *et al.* 2008, Trinkel *et al.* 2011). In parts of southeastern Tanzania there have been alarmingly high incidences of people killed by Lions, with up to 400 human Lion-related fatalities recorded from 1997-2007 (Ikanda and Packer 2007).

Conservation Actions (see Appendix for additional information)

Since 1975 *Panthera leo* has been included in CITES Appendix II, and the Endangered Asiatic Lion subspecies *P. leo persica* in CITES Appendix I. CITES listing of the Lion is currently undergoing a Periodic Review process to evaluate whether this accurately reflects the present situation, with a final recommendation of the Animals Committee expected at its 28th meeting in 2015. The Animals Committee also noted recent information regarding possible changes in the nomenclature of Lions and requests its nomenclature expert to review this information (CITES AC27 WG8).

In Africa, Lions are present in a number of large and well-managed protected areas, and remain one of the most popular animals on the must-see lists of tourists and visitors to Africa. Most range states in East and Southern Africa have an infrastructure which supports wildlife tourism, and in this way Lions generate significant cash revenue for park management and local communities and provide a strong incentive for wildland conservation.

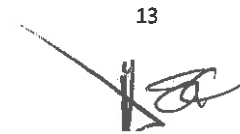
Regional conservation strategies have been developed for Lions in West and Central Africa (IUCN 2006a) and Eastern and Southern Africa (IUCN 2006b). By setting out common priorities to guide action on both national, community and landscape levels, the regional conservation strategies have the potential for broad and significant improvement of Lion status and management (Nowell *et al.* 2006). These regional strategies have been used in many countries to develop Lion Conservation Action Plans. While all these documents show awareness of the threats and recognition of solutions, the continued decline in Lion range and numbers show that political priority and funding are not sufficient (Packer *et al.* 2013).

Credits

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External Resources

For [Supplementary Material](#), and for [Images and External Links to Additional Information](#), please see the Red List website.

Appendix

Habitats

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

Habitat	Season	Suitability	Major Importance?
1. Forest -> 1.5. Forest - Subtropical/Tropical Dry	Resident	Suitable	Yes
2. Savanna -> 2.1. Savanna - Dry	Resident	Suitable	Yes
3. Shrubland -> 3.5. Shrubland - Subtropical/Tropical Dry	Resident	Suitable	Yes
3. Shrubland -> 3.7. Shrubland - Subtropical/Tropical High Altitude	Resident	Marginal	-
4. Grassland -> 4.5. Grassland - Subtropical/Tropical Dry	Resident	Suitable	Yes
4. Grassland -> 4.7. Grassland - Subtropical/Tropical High Altitude	Resident	Marginal	-
8. Desert -> 8.1. Desert - Hot	-	Unknown	-

Threats

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

Threat	Timing	Scope	Severity	Impact Score
1. Residential & commercial development -> 1.1. Housing & urban areas	Ongoing	Whole (>90%)	Rapid declines	High impact: 8
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		
2. Agriculture & aquaculture -> 2.1. Annual & perennial non-timber crops -> 2.1.1. Shifting agriculture	Ongoing	-		
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		
2. Agriculture & aquaculture -> 2.1. Annual & perennial non-timber crops -> 2.1.2. Small-holder farming	Ongoing	-		
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		
2. Agriculture & aquaculture -> 2.3. Livestock farming & ranching -> 2.3.1. Nomadic grazing	Ongoing	-		
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		
2. Agriculture & aquaculture -> 2.3. Livestock farming & ranching -> 2.3.2. Small-holder grazing, ranching or farming	Ongoing	-		
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		

5. Biological resource use -> 5.1. Hunting & trapping terrestrial animals -> 5.1.1. Intentional use (species is the target)	Ongoing	-	*	*
	Stresses:	2. Species Stresses -> 2.1. Species mortality		
5. Biological resource use -> 5.1. Hunting & trapping terrestrial animals -> 5.1.2. Unintentional effects (species is not the target)	Ongoing	-	*	*
	Stresses:	2. Species Stresses -> 2.1. Species mortality		
5. Biological resource use -> 5.1. Hunting & trapping terrestrial animals -> 5.1.3. Persecution/control	Ongoing	-	*	*
	Stresses:	2. Species Stresses -> 2.1. Species mortality		
5. Biological resource use -> 5.3. Logging & wood harvesting -> 5.3.5. Motivation Unknown/Unrecorded	Ongoing	-	-	*
	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation		
6. Human intrusions & disturbance -> 6.2. War, civil unrest & military exercises	Ongoing	-	*	*
	Stresses:	2. Species Stresses -> 2.2. Species disturbance		
9. Pollution -> 9.3. Agricultural & forestry effluents -> 9.3.4. Type Unknown/Unrecorded	Ongoing	-	*	*
	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation		

Conservation Actions in Place

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

Conservation Actions in Place
In-Place Land/Water Protection and Management
Occur in at least one PA: Yes
In-Place Species Management
Harvest management plan: Yes
Successfully reintroduced or introduced benignly: Yes
Subject to ex-situ conservation: Yes
In-Place Education
Subject to recent education and awareness programmes: Yes
Included in international legislation: Yes
Subject to any international management/trade controls: Yes

Conservation Actions Needed

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

Conservation Actions Needed
1. Land/water protection -> 1.1. Site/area protection
1. Land/water protection -> 1.2. Resource & habitat protection
2. Land/water management -> 2.1. Site/area management
2. Land/water management -> 2.3. Habitat & natural process restoration
3. Species management -> 3.1. Species management -> 3.1.1. Harvest management
3. Species management -> 3.1. Species management -> 3.1.2. Trade management
3. Species management -> 3.1. Species management -> 3.1.3. Limiting population growth
3. Species management -> 3.2. Species recovery
3. Species management -> 3.3. Species re-introduction -> 3.3.1. Reintroduction
3. Species management -> 3.4. Ex-situ conservation -> 3.4.1. Captive breeding/artificial propagation
4. Education & awareness -> 4.2. Training
4. Education & awareness -> 4.3. Awareness & communications
5. Law & policy -> 5.1. Legislation -> 5.1.2. National level
5. Law & policy -> 5.1. Legislation -> 5.1.3. Sub-national level
5. Law & policy -> 5.4. Compliance and enforcement -> 5.4.1. International level
5. Law & policy -> 5.4. Compliance and enforcement -> 5.4.2. National level
5. Law & policy -> 5.4. Compliance and enforcement -> 5.4.3. Sub-national level

Research Needed

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

Research Needed
1. Research -> 1.2. Population size, distribution & trends
1. Research -> 1.3. Life history & ecology
1. Research -> 1.5. Threats
1. Research -> 1.6. Actions
2. Conservation Planning -> 2.1. Species Action/Recovery Plan
2. Conservation Planning -> 2.2. Area-based Management Plan
3. Monitoring -> 3.1. Population trends

Additional Data Fields

Distribution
Lower elevation limit (m): 0
Upper elevation limit (m): 4200
Population
Number of mature individuals: 23000-39000
Continuing decline of mature individuals: Yes
Population severely fragmented: No
Habitats and Ecology
Generation Length (years): 6.98

Errata

Errata reason: This errata assessment has been created because the map was accidentally left out of the version published previously.



The IUCN Red List Partnership



The IUCN Red List of Threatened Species™ is produced and managed by the IUCN Global Species Programme, the IUCN Species Survival Commission (SSC) and The IUCN Red List Partnership.

The IUCN Red List Partners are: Arizona State University; BirdLife International; Botanic Gardens Conservation International; Conservation International; NatureServe; Royal Botanic Gardens, Kew; Sapienza University of Rome; Texas A&M University; and Zoological Society of London.

WCC-2016-Res-013-EN**Terminating the hunting of captive-bred lions (*Panthera leo*) and other predators and captive breeding for commercial, non-conservation purposes**

NOTING the prohibition by the South African Government on the capture of wild lions for breeding or keeping in captivity;

CONCERNED that the continued breeding of lions for the specific purpose of pseudo-hunts, also referred to as 'canned lion hunting' or 'canned lion shooting', by sectors of the wildlife ranching industry in South Africa under the guise of sustainable utilisation has escalated;

FURTHER CONCERNED by the limited scope of legal options by the South African Government to terminate 'canned lion shooting';

AWARE that most lion hunts in South Africa are conducted in enclosed areas or using captive-bred lions;

MINDFUL that professional hunting associations within South Africa and internationally oppose the practice known as 'canned shooting', where the animal is physically unable to escape from a restricted enclosure and/or is captive bred and mentally disinclined to escape due to humanisation as a result of hand-rearing, petting of young animals and close human contact in captive facilities;

NOTING that the great majority of hunters regard 'canned shooting' as an ethically repugnant embarrassment;

CONSIDERING that most South African captive lion breeding facilities do not conform to or comply with the standards of the Pan African Association of Zoos and Aquaria (PAAZA) or the World Association of Zoos and Aquaria (WAZA);

ACCEPTING the value of wildlife and wildlife ranching as a resource that may be utilised in a sustainable, legal and ethical manner, and which is of extreme importance for biodiversity conservation, tourism, and the gross domestic product of tourist destinations;

UNDERSTANDING that sustainable, legal and ethical hunting is a human activity, which generates income and supports human livelihoods in areas where other farming practices are less viable;

UNDERSTANDING that the threats to wild lions include: habitat fragmentation, lack of suitable habitat, human-carnivore conflict, snaring and poisoning; and

ACKNOWLEDGING that captive breeding of lions has not been identified as a conservation action in any African lion conservation planning programme;

The World Conservation Congress, at its session in Hawai'i, United States of America, 1-10 September 2016:

1. REQUESTS the Director General and IUCN Commissions to encourage specifically the South African Government, as well as all other southern African Governments, to support this initiative by drafting and enacting legislation by 2020 and giving reasonable time frames to:
 - a. terminate the practice of breeding lions in captivity for the purpose of 'canned shooting' through a structured, time-bound process;
 - b. restrict captive breeding of lions to registered zoos or registered facilities whose documented mandate is as a recognised, registered conservation project;
 - c. develop norms and standards for the management of captive-bred lions in South Africa that address welfare, biodiversity and utilisation aspects, taking into account Threatened or Protected Species (ToPS) regulations, legislation and IUCN guidelines governing this activity; and
 - d. legally prohibit the hunting of captive-bred lions under any conditions; and

2. REQUESTS the Director General and IUCN Commissions to:

- a. take the necessary actions to provide the guidance, leadership, support and international lobbying that may be required by the South African Government to enact this Resolution; and
- b. to encourage and provide support for other Member States in southern Africa to follow this initiative.

State and agency Members of the United States abstained during the vote on this motion (and with amendment) for reasons given in the U.S. General Statement on the IUCN Motions Process.



1 The targeted poaching of lions for body parts in Mozambican National Parks; evidence of a further emerging
2 threat to lion conservation.

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1
2 **Abstract**

3 The African lion, *Panthera leo*, has, like many of the world's megafauna, become threatened with extinction over
4 the past century. Loss of habitat and prey, persecution in retaliation of livestock depredation, unsustainable trophy
5 hunting, by-catch by bushmeat poachers and genetic impoverishment due to population isolation are all
6 documented anthropogenic caused threats to lions. In this study we present lion abundance and mortality data

7 from an area within the Greater Limpopo Lion Conservation Unit of southern Africa obtained from field surveys
8 between 2011-2018. Our results show that the sub-populations of lions which are exposed to poaching and
9 pastoralism have declined by up to 68 % during this time. Targeted poaching of lions for body parts was the
0 greatest single cause of death removing up to 26.2 % of the population annually from one National Park. The use
1 of poison was the most common means of killing lions. We found associations between lion poaching and
2 elephant poaching and between lion-livestock conflict and a trade in lion body parts. Teeth and claws were the
3 most sought-after body parts with evidence pointing to Vietnam as the source of demand. Our documented
4 changes in the abundance of lions and causes of mortality indicate the emergence of an additional threat to lion
5 conservation being the targeted poaching of lions for their body parts to supply foreign and local demand. This
6 pressure threatens the viability of the species in our study area and the success of current conservation initiatives.

7 1. Introduction

8 The African lion, *Panthera leo*, has, along side many of the world's megafauna, become threatened with
9 extinction over the past century (Ripple et al. 2014, Bauer et al. 2017). Lion populations are estimated to have
0 declined by approximately 43 % over the past 21 years (Bauer et al. 2017) with an estimated 32 000 remaining
1 across Africa, while lion range has declined by 75 % over the past 50 years (Riggio et al. 2013). Persecution, loss
2 of prey and loss of habitat have been the primary drivers of these declines (Bauer et al. 2017). Lions are regularly
3 killed in retaliation of livestock depredation, a pressure which is expected to rise with Africa's growing cattle
4 herds (IUCN 2006, Hazzah et al. 2014). Widespread illegal bushmeat hunting is responsible for decimating prey
5 populations across Africa, thus reducing habitat suitability for lions (Lindsey et al. 2013). Lion numbers are also
6 impacted directly by bushmeat poaching through mortalities as by-catch in wire snares set for bushmeat (Becker
7 et al. 2013). Available habitat for lions and their prey is rapidly declining in the face of expanding small-scale
8 subsistence agriculture, increasing livestock herds, and climate change (Wilfried et al. 2006, Riggio et al. 2013,
9 Bauer et al. 2015). The hunting of lions for sport has also led to declines of several populations due to
0 unsustainable quotas and the harvesting of under age animals (Packer et al. 2011, Creel et al. 2016). In addition
1 to each of these well documented drivers of lion population declines, the targeted poaching of lions for body parts

2 may emerge as yet another significant threat to the viability of lions, as it has for several other big cat species.
3 The targeted poaching of tigers (*Panthera tigris*) for bones and skins is one of the most significant threats to tiger
4 population viability (Chapron et al. 2008, Dinerstein et al. 2007, Goodrich et al. 2008) as is the poaching of
5 leopards (*Panthera pardus*) for skins (Hunter et al., 2010, Raza et al. 2012), the poaching of snow leopards
6 (*Panthera uncia*) for skins and bones (Hussain 2003, Li & Lu 2014) and the poaching of jaguars (*Panthera onca*)
7 for skins (Kelly 2018).

8 From 2011 to 2018 we studied the population ecology of lions in the Greater Limpopo Lion Conservation Unit,
9 which includes South Africa's Kruger National Park, Zimbabwe's Gonarezhou National Park and Mozambique's
0 Limpopo, Banhine and Zinave National Parks (IUCN 2006), using combinations of camera trapping, spoor and
1 call-up surveys and satellite GPS collaring exercises. In this study we present data obtained from several of these
2 surveys which details the extent and impacts of the targeted poaching of lions for body parts. We quantified
3 changes in lion abundances and causes of death and conclude that the pressures of targeted poaching of lions
4 threatens the viability of the species in our study area. The demand for lion body parts may also undermine lion
5 conservation initiatives including lion-livestock conflict mitigation programmes and bushmeat poaching
6 reduction programmes.

8 2. Methods

9 2.1. Study area and population

0 This study reports on data collected from Mozambique's Limpopo National Park (LNP), Banhine National Park
1 (BNP), adjacent community lands and the northern half of South Africa's Kruger National Park (KNP), which
2 together covers much of the Greater Limpopo Lion Conservation Unit (Fig. 1). The region consists of open
3 woodland savannah, bushlands and wetlands (Stalmans et al. 2003, 2004) and receives approximately 500 ml of
4 precipitation annually (Gertenbachm 1980). LNP includes 18 communities with a human population of
5 approximately 7000 in the central park and a further 20 000 in the buffer zone (Massé 2016). Approximately 36
6 000 cattle (*Bos Primigenius*) graze within the park (Grossmann et al. 2014) with higher numbers outside. BNP

7 includes two communities and 5000 residents within the boundaries
8 (<http://www.biofund.org.mz/en/database/platform-of-the-conservation-areas/>) grazing at least 500 cattle
9 (Stalmans & Peel 2012) and a near continuous band of communities with livestock along its edges (Everatt
0 2015). LNP and BNP are each impacted by widespread subsistence and commercial poaching for wild meat
1 (bushmeat), commercial poaching for elephant ivory, rhino horn and lion parts (Everatt et al. 2014; Everatt
2 2015). KNP contains no cattle, has relatively high levels of wildlife protection and supports lion and other
3 wildlife at or near carrying capacity (Lindsey et al. 2017). KNP likely acts as natural source habitat to LNP. In
4 addition, approximately 4500 ungulates were translocated from KNP to LNP between 2011-2014 (LNP
5 management). Overall wildlife densities in both Mozambican parks are well below carrying capacity following
6 high losses of the larger species during years of war between 1964 - 1992 and subsequent years of
7 overexploitation for meat, ivory and rhino horn (Hatton et al. 2001; Baghai et al. 2018).

8 2.2. Study design

9 Between October 2011 and May 2018, we collected data on the population status of and causes of mortalities
0 faced by a lion sub-population in LNP, BNP and adjoining lands. In order to examine trends in lion status and
1 threats to lions over the past seven years we collated abundance data from published and unpublished call up
2 surveys, lion mortality data and illegal wildlife trading data. The sources of data included a call-up survey of LNP
3 in 2017 (this study, see below), a published call-up survey of LNP conducted in 2012 (Everatt et al. 2014),
4 minimum counts of lions in BNP from a lion-collaring exercise in 2017 (Supporting Information) and spoor
5 survey in 2015 (Everatt 2015) as well as published lion abundance estimates from call-up surveys of KNP in 2005
6 - 2006 (Ferreira & Funston 2010) and 2017 (S. Ferreira SANParks, *pers coms*). The 2017 call-up survey of LNP
7 was a near repeat of a 2012 survey by Everatt et al. (2014) (87% of the same sample sites). A total of 47 sites
8 were sampled using call up techniques during September and October 2017. Assuming a detection radius of 2.5
9 km (Ferreira & Funston 2010) the total sampling effort covered approximately 2 300 km² or 29 % of available
0 lion habitat in LNP. At each sampling site, the distress call of a buffalo calf was broadcast from loudspeakers
1 (<https://www.primos.com/products/predator-calls/alpha-dogg/>) for repeated sessions of five minutes on and five

2 minutes off for one hour. Approaching carnivores were detected using night vision equipment
3 (<http://bushnell.com/tactical/night-vision/6x-50mm-equinox-z>) and numbers, sex and age classes were recorded.
4 Sites were located approximately 5 km apart, beginning from a random starting point. Specific locations for sites
5 (± 1 km) were chosen based on relative visibility and presence of linear features or habitat edges such as roads,
6 trails and rivers, which might be used by lions. Sampling was conducted between 18:00 - 22:00 or 04:00 - 06:00
7 on nights with little or no wind (≥ 5 on the Beaufort scale).

8 We collated all available data on lion mortalities in the region, including evidence for cause of death such as
9 natural, snared, trapped, poisoned, or shot and when possible the motive behind the killing including retaliatory,
0 by-catch, or targeted poaching (with body parts removed). We defined the targeted poaching of lions as a human
1 caused mortality event where there was a) no evidence of human-lion conflict i.e. incident far from livestock /
2 village areas, b) evidence indicating attempts to lure lions to the concerned area, i.e. bait laid with poison and / or
3 strategically placed snares, and / or makeshift traps / enclosures, and c) body parts were removed. These mortality
4 data were obtained as additional data collected during extensive spoor and camera trapping surveys of the region
5 (Everatt et al. 2014, Everatt 2015) and from anti-poaching patrol reports (LNP management 2011-2018, Greater
6 Limpopo Carnivore Programme, Limpopo Lion Protection Unit 2017-2018). In order to reduce bias associated
7 with the differences in survey area coverage between 2011 - 2013 surveys (approximately 3500 km²) (Everatt et
8 al. 2014) and 2014 - 2015 surveys (approximately 20 000 km²) (Everatt 2015) we presented all data on annual
9 mortality sources, means and body parts removed as percentages of yearly documented totals (Figure 1). In
0 addition, we collated available information on the illegal trafficking of lions in Mozambique. This included
1 information on specific lion body parts being traded and on the source of the demand for these illegal body parts.
2 Data on sources of demand for body parts were obtained from the Mozambican governing authority of National
3 Conservation Areas.

4 Finally, we considered the impact of the additive mortalities from targeted lion poaching on the population of
5 lions in LNP. Due to the inherent covert nature of poaching activities (Everatt et al. 2014), we assume that the
6 number of lion carcasses discovered, poached for body parts, is an underrepresentation of the actual number of

7 events. In order to eliminate this bias and estimate the actual number of lions poached per year we therefore
8 multiplied the number of carcasses found annually by 0.165, which represents the probability of detecting
9 poaching events in LNP (Everatt et al. 2014). We then estimated a discreet yearly abundance of lions in LNP by
0 assuming a linear population change between the 2012 and 2017 lion call up survey results and divided this
1 estimated yearly abundance by the estimated yearly number of lions poached in LNP. To estimate the annual
2 proportional offtake from the Limpopo NP lion population (AP) through targeted poaching we defined:

$$AP = \frac{NP - (NP, NPp) + NP}{\frac{N^1 - N^2}{Y}}$$

5 where NP is the minimum number of poached lions, NPp is the probability of detecting lion poaching events, N
6 is the estimated lion population in year i , and Y is the number of years between surveys.

7 3. Results

8 3.1. Changes in lion abundance

9 A total of three lions responded at two of 43 call-up stations in the LNP during 2017 giving a mean of 0.07 lion
0 responses per station. Considering a probability of response obtained from calibration experiments in adjoining
1 KNP (Ferreira & Funston 2010), a total population estimate of 21 lions was calculated for LNP in 2017.
2 Comparative to 2012 results of 66 lions (Everatt et al. 2014) this indicates a population decline of 68 % over the
3 past five years. Similarly, minimum counts obtained during spoor surveys in 2014 (Everatt 2015) and from anti-
4 poaching patrols indicate that the Banhine lion sub-population suffered a decline of approximately 50 % between
5 2014 and 2017 from eight to four animals. In the case of the BNP lions, this followed a single livestock conflict
6 incident which saw all presumed members from one of the only two resident prides in the park killed. In contrast,
7 the KNP lion population has shown an 18.7 % increase over this same period of time (S. Ferreira SANParks,
8 Skukuza, *pers coms*).

9 3.2. Lion mortality

0 Between October 2011 and May 2018, we documented 49 lion deaths caused by humans (Table 1). The
1 demographics included; 10 % adult females, 18 % adult males, 12 % sub adult females, 32 % sub adult males and
2 24 % unknowns (incidents where carcasses had decomposed to such an extent that sexing and ageing were not
3 possible). Across the study area 61.2 % (n = 30) of all lion deaths involved lions being killed illegally and their
4 body parts removed. In 2014 we recorded the first incident of targeted lion poaching and since 2014 we have
5 recorded an average of 3.75 lions killed through targeted poaching annually. In total, targeted poaching of lions
6 accounted for 17 of the 49, or 34.7 % of all recorded lion deaths in the study period (Table 1; Fig. 2). All targeted
7 lion poaching events involved lions being lured to poisoned meat or lured into snares or traps. In 58 % of these
8 cases wild ungulates were first killed and then used as bait and in 42 % of the cases the remains of a poached
9 elephant were used as bait.

0 The body parts removed from lions, across the full study period, included; heads / faces (36.5 %), paws (38.5
1 %), skeletons / bones (7.7 %), meat / skin (19.2 %) (Table 1). There was a noticeable shift over the years in the
2 body parts being taken with the skin and meat being the only parts taken prior to 2014, while from 2014
3 onwards the heads / faces and feet accounted for the majority of body parts removed. The paws and heads were
4 removed from all six of the cases thus far in 2018 (January – May). Skeletons were taken from two lions in
5 2017 (Fig. 3).

6 We also documented a relationship between retaliatory killings of lions due to livestock depredation and the
7 removal of lion body parts where 48 % of all lions killed as a result of lion-livestock conflict also had body parts
8 harvested (Fig. 2).

9 Of all recorded lion deaths (n = 49) 61.2 % of the lion were poisoned, 32.7 % were snared or trapped and 6.1 %
0 were shot. There was a noticeable increase in the use of poison to kill lions from 2013 onwards (Fig. 4).

1 Using an assumed linear decline in lion abundance in LNP between the 2012 and 2017 estimates we derived
2 discrete yearly population estimates (Table 2). Considering a probability of detecting poaching events in LNP
3 from Everatt et al. (2014) we estimated that an additional 2 to 3 lions were poached annually beyond those which

4 we documented. By dividing the annual lion population estimate by the annual estimate of lions poached, we
5 estimated that the targeted poaching of lions, alone, has in some years removed between 11.5 % – 26.2 % of the
6 total lion population of LNP (average 16.6 %) (Table 2). This source of mortality is additive to conflict related
7 deaths and by itself far exceeds sustainable off-take levels (Chapron et al. 2008, Creel et al. 2016).

8 3.3. Sources of demand

9 We found reports of four cases where lion body parts were confiscated in Mozambique between 2013 - 2017.
0 Of these known cases canine teeth and claws were confiscated twice, skin, meat and fat once and a full skeleton
1 once. Both of the shipments of teeth and claws were confiscated by Mozambican government authorities during
2 2016 at an international airport and were destined for Vietnam, with one of the seizures including a combination
3 of lion parts and elephant ivory. The skeleton was confiscated by LNP authorities during 2016 and destined for
4 the capital city, Maputo, with the final destination unknown. The skin, meat and fat were discovered by the lead
5 author in 2013 and were being sold locally for traditional medicinal use.

6 4. Discussion

7 This study presents data on the nature and extent of anthropogenic caused mortalities and subsequent impact on
8 a lion sub-population in southern Africa. In this system, the targeted poaching of lions for body parts has created
9 unsustainable rates of mortality and has become the single greatest direct threat to the viability of this lion
0 population. These data clearly describe an important yet less known additive threat to the conservation of wild
1 lions and present a novel contribution to the science of ecological responses of apex predators to anthropogenic
2 pressures.

3 We estimated that the lion population of Limpopo National Park has declined by 68 % and that the targeted
4 poaching of lions has annually removed 12 – 26 % of this population over the past four years. This level of
5 mortality likely far exceeds a sustainable offtake levels (Chapron et al. 2008, Creel et al. 2016) and likely explains
6 the dramatic population decline. Furthermore, this source of mortality is additive to other human caused deaths
7 experienced by lions in this population, including retaliatory killings of lions following livestock conflict events
8 and deaths associated with by-catch from bushmeat poaching. While these estimates are based on limited data

9 sets the results are meaningful enough to warrant concern over the viability of this lion population faced with
0 these threats.

1 The estimated number of lions killed by targeted poaching was derived from the minimum known number of
2 lions annually lost to targeted poaching multiplied by a probability of non-detection borrowed from a previous
3 survey of the same park (Everatt et al. 2014). We defend the applicability of this approach based on the intimate
4 knowledge of the study area, where poachers are able to evade detection due to the relatively low number of roads
5 and low patrol and monitoring presence in the park. The impacts of these deaths on the lion population would
6 extend beyond a simple decrease in abundance depending on the demographics of the lions killed. For instance,
7 we recorded that in at least one case in BNP an entire pride of lions was killed, and in several other cases in LNP
8 one or more breeding age females were killed, events which may have resulted in the loss of other established
9 functional prides. The loss of an entire pride or loss of several or all of the breeding females from a pride has
0 disproportionate impact on the viability of the sub-population compared to the loss of young dispersing males. In
1 the cases where an adult pride male was killed this loss may result in a more rapid turnover of pride males and
2 consequent infanticide of cubs (Whitman et al. 2004), with greater detrimental effects to the population.

3 Natural recolonization of lions is hindered by the poor female dispersal ability, particularly through 'high risk'
4 habitat (Elliot et al. 2014). The western edge of LNP is contiguous to a healthy source population in KNP and
5 therefore benefits from a greater probability of receiving female dispersers than areas further east. As such, the
5 western edge of LNP probably functions as sink habitat, which itself has important conservation value by
7 contributing to regional lion abundance and range. However, lions dispersing into LNP may also encounter and
3 select for cattle as prey, leading to retributive killing, or may select for areas containing wild prey but where the
4 targeted poaching of lions and / or bush-meat poaching has become prevalent. In these circumstances LNP no
5 longer functions as a sink habitat and instead becomes an ecological trap with detrimental impact to the regional
6 viability of lions (Battin 2004, Everatt et al. 2016). It is crucial that the drivers leading to these areas becoming
7 ecological traps are mitigated. The regional conservation of lions would be improved by increasing the habitat
8 quality and protection in LNP in order to mitigate ecological traps and to transform a sink habitat into a source

4 habitat. Eliminating the targeted poaching of lions, reducing encounter rates of cattle (ie. keeping cattle in secure
5 enclosures at night) and securing prey populations from bush-meat poaching are all necessary steps to preserving
6 this lion population.

7 BNP and the eastern parts of LNP are not adjoining source populations, are separated by high risk agro-pastoralist
8 impacted lands, and therefore have much a lower chance of being naturally re-colonized by lionesses following
9 the loss of breeding females or of entire prides. In these cases, the augmentation of females or reintroduction of
0 lions, within a managed meta-population approach (Akçakaya et al. 2007), may be necessary. It would however
1 be imperative that before any translocations are conducted, adequate steps are taken to mitigate the threats which
2 contributed to the extirpation of lions from these areas in the first place, including targeted poaching and livestock
3 conflict.

4 The cause of the increase in targeted poaching of lions for body parts is still poorly understood. A local demand
5 for traditional medicinal / ceremonial use of lion parts has likely been present in the area for some time. Skin /
6 meat and possibly fat were the only body parts known to be harvested from lions killed between 2011 – 2013
7 (Figure 4). These particular killings were non-targeted poaching incidents (Table 1) and therefore the harvesting
8 of body parts may have been opportunistic. Fat has been documented as the most prevalent lion derivative in
9 some known *muti* markets in southern Africa (Williams et al. 2015). The harvesting of paws and heads / faces
0 was first recorded with the emergence of targeted poaching of lions in 2014 (Table 1), and all subsequent
1 targeted poaching victims have had these body parts removed. The same body parts were also harvested from
2 several retaliatory killings, post 2014. This rise in the removal of paws and heads / faces indicates a specific
3 demand for canine teeth and claws. We assumed the heads / faces and paws are removed at the scene rather than
4 individual canine teeth and / or claws simply for efficiency at the crime scene.

5 While the findings we present here are among the few quantitative descriptions of targeted poaching of lions for
6 body parts, they do confer with the previous finding of Hazzah and Gudka (2010) who documented a trade in
7 lion parts sold as trinkets to tourists in Kenya. There, predominantly Chinese tourists were fueling a demand for
8 lion teeth and claws, supplied with lions often killed in conflict situations by Masai herdsman, while other body



9 parts such as pieces of skin, were sought for local demand. The situation we present from Mozambique is
0 similar to the situation documented in Kenya other than the demand coming predominantly from Vietnam.
1 During 2017 there has also been reported increases in the poaching of lions for teeth and claws in the Niassa
2 reserve in northern Mozambique (C. Beggs Niassa Lion Project *pers coms*) and captive lions in the Limpopo
3 province of South Africa (K. Marnewick Endangered Wildlife Trust *pers coms*) as well as cases where lions
4 killed for conflict in the Caprivi region of Namibia now also had teeth and claws removed (L. Hansen Kwando
5 Carnivore Project *pers coms*).

6 The legal export of lion parts, most notably bones, from captive lion breeders in South Africa may also fuel an
7 illegal trade in wild lion bones and other derivatives to be used within Traditional Chinese Medicine markets
8 (Williams et al. 2017). Although evidence linking the legal trade in captive sourced lion parts from South Africa
9 to the targeted poaching of wild lion populations has to date been scant (Williams et al. 2015), there is
0 reasonable concern of a link (CITES 2016). It is also possible that established rhino and elephant poaching
1 syndicates and traders already operating in the region have simply added lion parts to their list of illegal wildlife
2 products. This hypothesis is supported by correlations we documented between lion and elephant poaching
3 which included the use of poached elephants as bait to kill lions and a seized shipment containing a mix of
4 elephant ivory and lion teeth and claws destined for Vietnam.

5 5. Conclusion

6 The illegal wildlife trade poses an unprecedented threat to global wildlife biodiversity (Rosen et al. 2010) and
7 poaching is a major threat to many of the world's large carnivores (Ripple et al. 2014). The loss of apex predators
8 can have cascading impacts through lower trophic levels leading to ecological state shifts and ecological collapse
9 (Estes et al. 2011). The loss of charismatic megafauna from protected areas can also result in substantial loss of
0 potential revenue from tourism (Naidoo et al. 2016). The results presented here cast a frightening picture of the
1 viability of a lion population now faced with the additional threat of targeted poaching.

2 We strongly recommend that African governments, protected area managers, conservation organizations and
3 researchers be vigilant of and quick acting towards addressing this emergent and serious threat to wild African



4 lions and adopt holistic and collaborative approaches to prevent targeted poaching and the trade in lion body parts
5 for both local and foreign demand sources. We also recommend that concerted and meticulous efforts be made to
6 monitor and investigate possible links between the legal trade in captive lion body parts from South Africa, the
7 illegal poaching of wild lions elsewhere, and the possible driving role the trade in lion parts may play in human-
8 lion conflict incidence.

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9 *Panthera leo* bones from Africa to East-Southeast Asia. *Plos One* **12**: e0185996.



2 Table 1. Documented illegal killings of lions including reasons for killing lions, body parts removed from lions
 3 and methods of killing lions in LNP and adjoining lands between 2011-2018.

Year	No. documented lion mortalities	No. with body parts removed	No. of documented lions killed by reason					No. times specific body parts removed from lions			No. of documented lions killed by method				
			Targeted poaching	Bushmeat poaching bi-catch	Livestock conflict body parts not removed	Livestock conflict - body parts removed	Unknown	Head / face and paws	Skeletons / bones	Skin / meat	Snares or traps	Poison	Shot	Wild prey used as bait	Poached elephant used as bait
2011	3	1	0	2	0	1	0	0	0	1	3	0	0	0	0
2012	2	1	0	1	0	0	1	0	0	1	1	0	1	0	0
2013	7	1	0	1	5	1	0	0	0	1	2	5	0	0	0
2014	3	3	3	0	0	0	0	3	0	0	0	3	0	3	0
2015	9	8	4	0	1	4	0	4	0	4	4	5	0	0	4
2016	10	7	4	1	3	2	0	3	2	2	4	4	2	3	2
2017	9	3	4	0	4	0	1	3	0	0	2	7	0	4	1
2018*	6	6	2	0	0	4	0	6	0	0	0	6	0	2	0
Total	49	30	17	5	13	12	2	19	2	9	16	30	3	12	7
Average	6.125	3.75	2.125	0.625	1.625	1.5	0.25	2.375	0.25	1.125	2.0	3.8	0.4	1.5	0.9

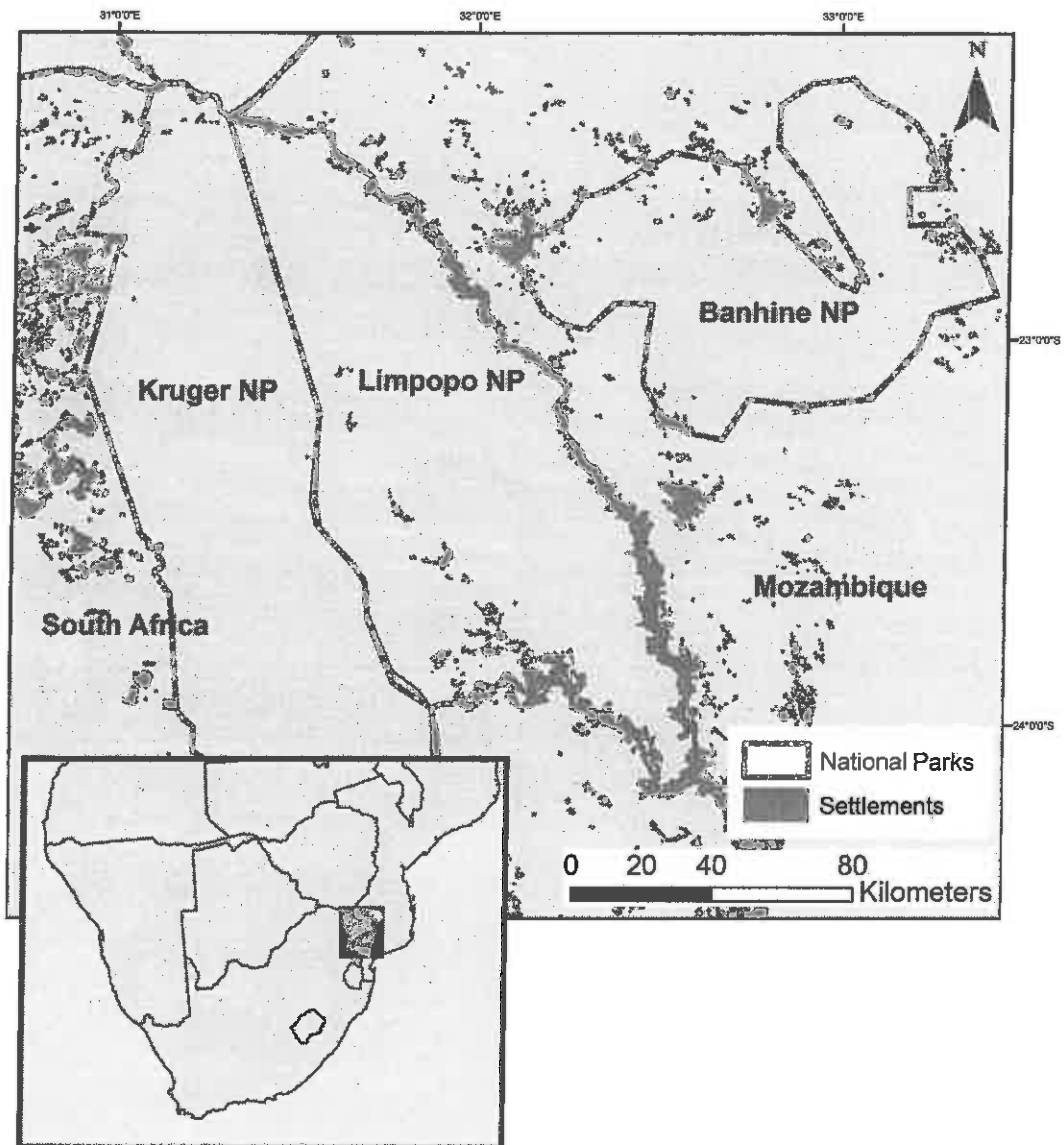
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7 Table 2. Numerical impact of targeted lion poaching on the population of lions in LNP.

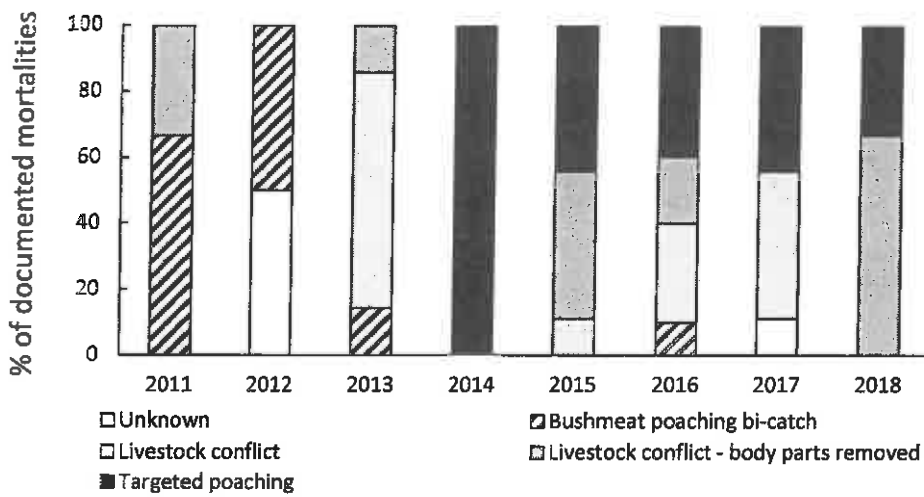
Year	Population estimate	No. documented lions poached	Estimate total poached*	% of population
2012	66	0	unknown	unknown
2013	57	0	unknown	unknown
2014	48	3	6	11.5
2015	39	0	unknown	unknown
2016	30	2	4	12.2
2017	21	3	6	26.2
Annual average				16.6

8 ^a Estimate from call-up survey, ^b estimate from assumed linear change between call-up surveys,
 9 ^c = No. documented – (No. documented x probability of detection (n=0.165 (Everatt *et al.*, 2014))) + No.
 0 documented.

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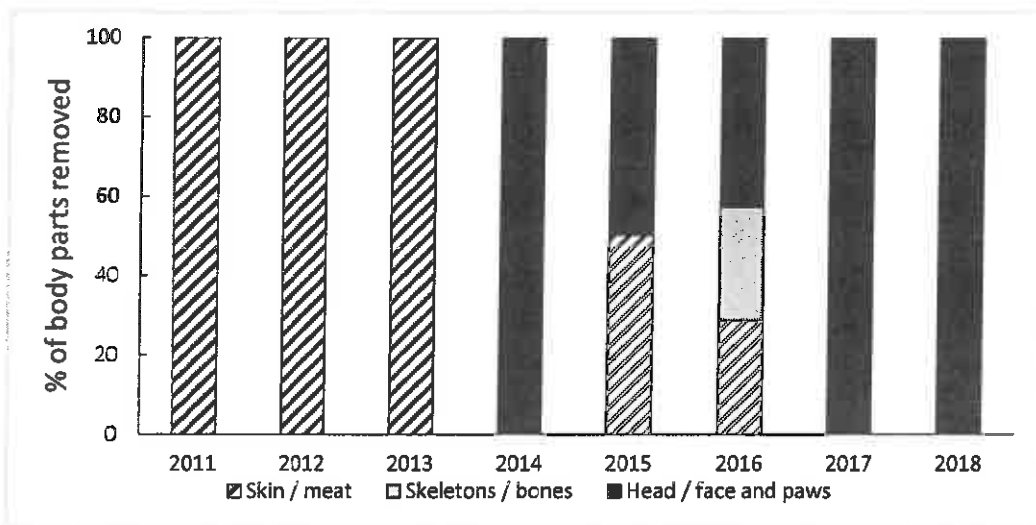
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7 **Figure 1.** Study area and regional placement.
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5 **Figure 2.** Relative reasons for documented lion mortalities across full study area by year.

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8 **Figure 3.** Proportion of different body parts taken from illegally killed lions across full study area by year.

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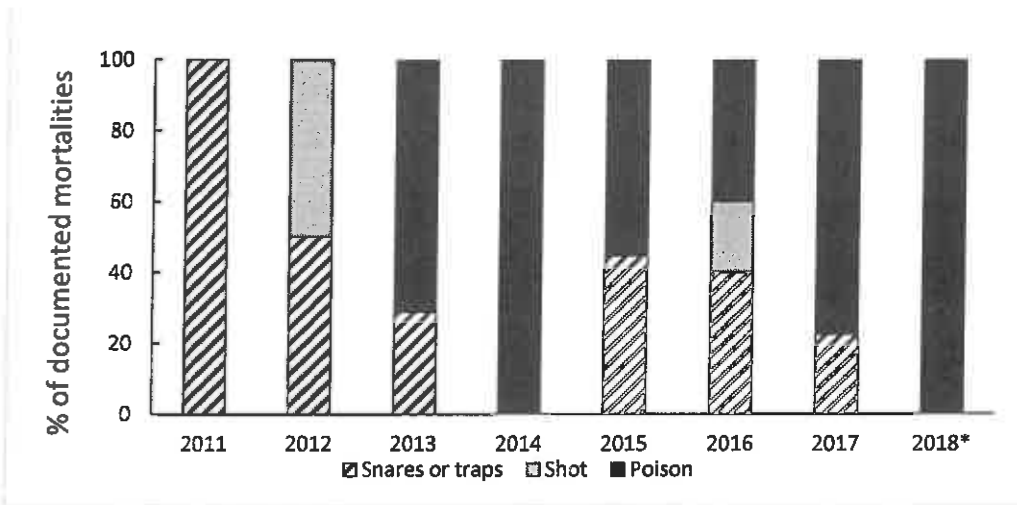


Figure 4. Relative means used to kill lions across full study area by year.

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Table 1. Documented illegal killings of lions including reasons for killing lions, body parts removed from lions and methods of killing lions in LNP and adjoining lands between 2011-2018.

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2012	2	1	0	1	0	0	1	0	0	1	1	0	1	0	0
2013	7	1	0	1	5	1	0	0	0	1	2	5	0	0	0
2014	3	3	3	0	0	0	0	3	0	0	0	3	0	0	0
2015	9	8	4	0	1	4	0	4	0	4	4	5	0	0	4
2016	10	7	4	1	3	2	0	3	2	2	4	4	2	3	2
2017	9	3	4	0	4	0	1	3	0	0	2	7	0	4	1
2018*	6	6	2	0	0	4	0	6	0	0	0	6	0	2	0
Total	49	30	17	5	13	12	2	19	2	9	16	30	3	12	7
%	61.2	34.7	10.2	26.5	24.5	4.1	38.8	4.1	18.4	32.7	61.2	61.2	6.1	24.5	14.3
Average	6.125	3.75	2.125	0.625	1.625	1.5	0.25	2.375	0.25	1.125	2.0	3.8	0.4	1.5	0.9

**IN THE HIGH COURT OF SOUTH AFRICA
(GAUTENG DIVISION, PRETORIA)**

Case No: 86515/17

In the matter between:

**NATIONAL COUNCIL OF THE
SOCIETY FOR THE PREVENTION OF
CRUELTY TO ANIMALS**

Applicant

and

THE MINISTER OF ENVIRONMENTAL AFFAIRS

First Respondent

**THE DIRECTOR-GENERAL,
DEPARTMENT OF ENVIRONMENTAL AFFAIRS**

Second Respondent

SOUTH AFRICAN PREDATOR ASSOCIATION

Third Respondent

**MEC: DEPARTMENT OF ECONOMIC
DEVELOPMENT, ENVIRONMENT AND
TOURISM (LIMPOPO PROVINCE)**

Fourth Respondent

**MEC: DEPARTMENT OF
ECONOMIC DEVELOPMENT, ENVIRONMENT,
CONSERVATION AND TOURISM
(NORTH WEST PROVINCE)**

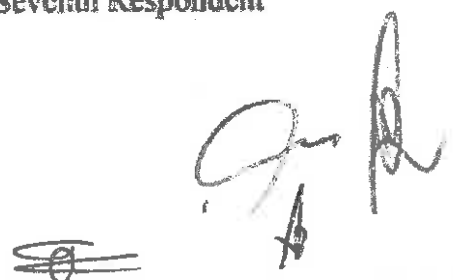
Fifth Respondent

**MEC: DEPARTMENT OF AGRICULTURE
AND RURAL DEVELOPMENT (GAUTENG PROVINCE)**

Sixth Respondent

MEC: DEPARTMENT OF

Seventh Respondent



**ECONOMIC DEVELOPMENT,
TOURISM AND
ENVIRONMENTAL AFFAIRS (FREE STATE PROVINCE)**

CONFIRMATORY AFFIDAVIT

I, the undersigned,

Ioanna Smaragda Louw

do hereby make oath and state as follows:

1. I am the director of Ban Animal Trading ("BAT").
2. Except where the contrary is expressly stated or appears from the context, the facts in this affidavit are within my personal knowledge. To the best of my knowledge, they are true and correct.
3. BAT is a registered non-profit company (NPC number: 2015/047319/07), which is based in Gauteng:
 - 3.1 BAT focuses on local investigations into various forms of animal abuse and neglect. BAT also deals with educational outreach to help South Africans understand animal rights. BAT does not support illegal activism.
 - 3.2 BAT is committed to confronting and eradicating animal exploitation



and abuse in all industries that benefit from the misery and suffering of sentient creatures. "*Compassion in Action*" is the slogan we live by, and our varied campaigns serve to provide our passionate and heroic supporters with a platform upon which to become directly involved in taking action and, in so doing, bringing about change to prevailing norms and standards as well as to outdated and inappropriate legislation.

3.3 BAT views ongoing educational initiatives as the most crucial mechanism by which to achieve real progress and maintain real change.

4. I am one of the two researchers and drafters of the report "*The Extinction Business: South Africa's 'Lion' Bone Trade*", which BAT published with the EMS Foundation in July 2018 ("EMS/BAT Report").

5. The other researcher/drafter of the EMS/BAT Report is Michele Pickover, who is a director of the EMS Foundation. Her confirmatory affidavit is attached and marked "SL1".


6. I have read the affidavits of Este Kotze (in support of the urgent application and in reply to the third respondent in the review application). I confirm its contents in so far as it refers to me, BAT and the EMS/BAT Report.

7. I confirm that in researching and drafting the EMS/BAT Report, we used the following research methodology:

7.1 We conducted a review of the scientific and "grey" literature pertaining to predator breeding in South Africa and lion conservation and big cat conservation more broadly:

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- 7.2 In March 2017, we submitted PAIA requests under the Promotion of Access to Information Act 2 of 2000 ("PAIA requests") to the various provinces requesting copies of permits issued for the export or re-location of lions;
- 7.3 In or around May 2017, we received responses from Limpopo and Gauteng to our PAIA requests;
- 7.4 We also used social media sites to gain information about the persons listed on the export permits as both exporters and importers. In addition, we received information from informants;
- 7.5 We attempted to locate the addresses listed on the export permits as the destination addresses on Google Maps. When this proved impossible, we decided that I would travel to China, Laos and Vietnam in order to try and track down the addresses, which were listed on the export permits;
- 7.6 I accordingly travelled to China, Laos and Vietnam, in January – February 2018, and I attempted to track down each address, with the assistance of local guides and translators. As appears from the report, some of the addresses were non-existent. Photographic evidence was taken of each location, as is evident from the report.
8. On the basis of our research, we reached the following conclusions:
- 8.1 The lion bone trade is not a by-product of the canned lion hunting industry but an entirely separate industry (page 4);
- 8.2 The regulated trade in lion bone does not serve as a buffer against the



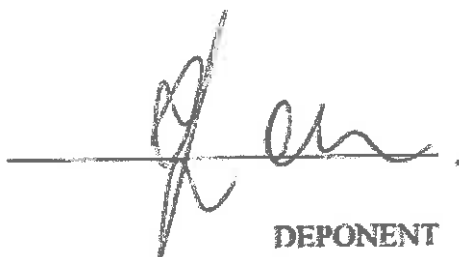
poaching of wild lions. On the contrary, it serves to fuel a demand for both tiger and lion bone, with the consequent risk of the poaching of wild tigers and wild lions. South Africa's determination of a quota for the exportation of lion bone consequently undermines international efforts to conserve these species and further imperils them (pages 7 – 12, 27 – 32, 43 – 44, 67 (second paragraph));

- 8.3 There are strong connections between South Africa's captive-lion breeding industry (including members of SAPA) and illegal wildlife traffickers) (pages 11 (second paragraph), 21 – 27, 45 – 59, 121 (second paragraph));
- 8.4 DEA is incapable of regulating the export of lion bone in order to ensure that illegally sourced lion and tiger bone are not exported under cover of the legal trade (pages 37 – 38);
- 8.5 In relation to the 2017 quota, DEA did not honour its undertaking to CITES to place a moratorium on the export of lion bones until a quota had been established (pages 39 – 40);
- 8.6 In relation to the 2017 quota, at least two to three times as many lion skeletons were exported than what was declared and it is possible that tiger bones were included in the consignments (pages 40 – 44);
- 8.7 Only a small group of people benefit from the industry. Indeed, in 2017, there were four traders from South Africa (Sandra Linde Taksidermie, Stephanus Jacobus Alberts, Herman de Jager and Gavin Oberholzer) exporting "lion" bone to five importers via CITES permits (pages 44 – 45);

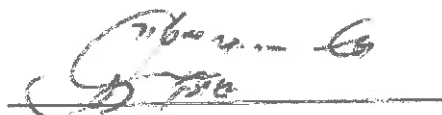
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8.8 There are huge welfare concerns in relation to the captive bred lion industry (pages 59 - 64).

9. I request that the EMS/BAT Report be read as if incorporated into this affidavit. A copy thereof is annexed as "SL2":


DEPONENT

I hereby certify I certify that the deponent has acknowledged that she knows and understands the contents of this Affidavit which was signed and sworn to before me at *Pretoria* on this the *12th* day of September 2018 and that the provisions of the Regulations contained in Government Notice R1258 of 21 July 1972 (as amended) and Government Notice R1648 of 19 August 1977 (as amended) have been complied with.



COMMISSIONER OF OATHS

SOUTH AFRICAN POLICE SERVICE
STATION COMMANDER
12-09-2018
CLIENT SERVICE CENTRE
PARKVIEW
SOUTH AFRICAN POLICE SERVICE



**IN THE HIGH COURT OF SOUTH AFRICA
(GAUTENG DIVISION, PRETORIA)**

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Applicant

and

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**THE DIRECTOR-GENERAL,
DEPARTMENT OF ENVIRONMENTAL AFFAIRS**

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Fifth Respondent

**MEC: DEPARTMENT OF AGRICULTURE
AND RURAL DEVELOPMENT (GAUTENG PROVINCE)**

Sixth Respondent

DS.M

**MEC: DEPARTMENT OF
ECONOMIC DEVELOPMENT,
TOURISM AND
ENVIRONMENTAL AFFAIRS (FREE STATE PROVINCE)**

Seventh Respondent

CONFIRMATORY AFFIDAVIT

I, the undersigned,

MICHELE PICKOVER

do hereby make oath and state as follows:

1. I am Michele Pickover. I am a director of the EMS Foundation ("EMS Foundation").
2. Except where the contrary is expressly stated or appears from the context, the facts in this affidavit are within my personal knowledge. To the best of my knowledge, they are true and correct.
3. The EMS Foundation was established as a Trust in November 2014 (registration number: IT 222949/14). It has Not for Profit Organisation ("NPO") status (registration number: 168-304NPO) and it is a Public Benefit Organisation ("PBO") with section 18(a) status. Its PBO

MP

D.S. M

[Signature]

Reference Number is 930053286.

4. The EMS Foundation's mission is the advancement and protection of the rights and general welfare of wild animals, children, elderly persons and other vulnerable groups in South Africa and Africa. It aims to alleviate suffering and disrupt inequality in all of its forms, raise public awareness, empower and provide dignity.
5. I have read Smaragda Louw's affidavit and the affidavits of Este Kotze (in support of the urgent application and replying to the third respondent). I confirm the contents of these affidavits in so far as they refer to me, the EMS Foundation and the EMS/BAT Report.
6. I request that the EMS/BAT Report be read as if incorporated into this affidavit.



DEPONENT

I hereby certify I certify that the deponent has acknowledged that she knows and understands the contents of this Affidavit which was signed and sworn to before me at on this the 12th day of September 2018 and that the provisions of the Regulations contained in Government Notice R1258 of 21 July 1972 (as amended) and Government Notice R1648 of 19 August 1977 (as amended) have been complied with.



DJ-M



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SIK BONGA

COMMISSIONER OF OATHS

SUID-AFRIKAANSE POLISIEDIENS
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12 SEP 2018
CLIENT SERVICE CENTRE
SOUTH AFRICAN POLICE SERVICE

SIK BONGA
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SL2

July 2018

THE EXTINCTION BUSINESS

South Africa's 'Lion' Bone Trade



**EMS
FOUNDATION**
compassion • synergy • social justice

info@emsfoundation.org.za

**BAN
ANIMAL TRADING
ANIMAL TRADING**

Compassion in Action

emaraada@bananimaltrading.org

Em. M.

Table of Contents

PREAMBLE	2
RECOMMENDATIONS.....	5
THE DEPARTMENT OF ENVIRONMENTAL AFFAIRS VS. BRAND SOUTH AFRICA	6
Introduction	6
Free-Reign: The Extent of the Captive Big Cat Industry in South Africa	12
The 2017 ‘Lion’ Bone Quota	16
Linking South Africa’s Lion Bone Trade to the Illegal Trade	21
FARMING TIGERS AND LIGERS: SOUTH AFRICA’S CALAMITOUS ROLE IN THE ASIAN BIG CAT BONE TRADE	27
“BONES FOR SALE, BONES FOR SALE”: SHOW US THE MONEY!.....	32
Mindmap	33
The need for Forensic Investigations	33
Not Adding Up: What the Bone Traders Declare	35
Taking the Gap: Exploiting the Severe Flaws in the Oversight Process	37
Weak Procedures.....	37
What Moratorium?	39
QuotaShmota: Why Worry About Weights and Quantities?	40
THE PREDATORY ELITE: WHO’S WHO IN THE BODY PARTS TRADE ZOO.....	43
UNLEASHING HELL: THE RISE OF LION BONE SLAUGHTERHOUSES, FACTORY FARMING AND THE	59
MASS KILLING OF LIONS	59
GOING ASTRAY: CITES SUPPORT FOR DODGY DESTINATIONS.....	64
Introduction: a severe lack of oversight from importing countries	64
Joining the Syndicate Dots	67
Lao PDR	93
Ainthaphone Trading (See Also Vannaseng).....	98
Lilavadi International Import and Export	100

Vannaseng Trading Company (See Also: Ainthaphone).....	102
Somok Phaimany.....	106
JDT Imports (Johan Du Toit).....	107
KNT Trading.....	108
Development Agriculture Industry	109
Vietnam	111
Vinh Phu-Cmt Joint Stock Company.....	113
Son Long Investment and Development Co. Ltd.....	116
Thanh Manh Hung Company Ltd	116
Bao Huy Import-Export Trading Co. Ltd	116
Hoan Van Dien	117
Trans Giang	117
Thailand	117
Natakorn Yuennan	119
International Logistics.....	120
Limited Partnership Boonchai.....	120
Lisa Lion Import Export	120
INFOGRAPHICS.....	120

PREAMBLE

For more than a decade, South Africa has been actively supporting and growing the international trade in big cat bones, despite local and international outrage and condemnation from conservation and protection organisations, lion scientists, and experts.

In 2017, South Africa’s Minister of Environmental Affairs, Edna Molewa, controversially, and in the face of vociferous opposition and robust arguments against this trade, set the annual export quota at 800 lion skeletons. Even more alarmingly, Molewa, without stakeholder participation, took the incomprehensible decision to almost double the quota in 2018 to 1,500 skeletons. On July 11th 2018, the person in charge of the quota at the DEA told us categorically that no quota had been set for 2018. A few days later the DEA was forced to make a public announcement about the 2018 lion bone quota following a public outcry when a letter from Molewa, dated June 7th 2018, informing the provinces of the new quota allocation, was leaked. The undeclared

reasons behind government's decision to conceal this information from interested and affected parties needs to be brought to light and interrogated.

The Department of Environmental Affairs (DEA) justified its decision to dramatically increase the quota on a single government commissioned interim study which, from the get-go guaranteed a skewed outcome, particularly because of the inclusion of outspoken pro-trade economist, Michael 't Sas-Rolfes, in the small research team. The report itself admitted that the findings were based on insufficient data and that "further avenues need to be explored". By no stretch of the imagination can this interim study translate into a conclusive scientific justification for a lion bone quota, and even less, an increase of the quota. Notably, some of the researchers involved in this study have distanced themselves from the decision-making process around the 2018 quota, stating that all the decisions were made by the Scientific Authority and the DEA, and that the researchers provided no input on what the quota should, or should not, be. They specifically added that "The wording of that quota letter via NW [NorthWest] is a bit unclear concerning our involvement...we provided no input on what the quota should, or should not, be. We correctly excluded ourselves from this process."

In the last 18 months, the EMS Foundation and Ban Animal Trading have been gathering extensive information and investigating South Africa's international 'lion'¹ bone trade. This data has provided the basis of our Report, *The Extinction Business: South Africa's 'Lion' Bone Trade*.

The South African captive big cat industry is a pariah and it is under severe local and *international* scrutiny. Hunting associations that support the trophy killing of captive bred lions have been sidelined by international hunting associations and organisations. Instead of working with all the stakeholders to limit and close down the industry, South Africa is steadfastly supporting it. It is facilitating its conversion into an even crueler industry: captive breeding and farming lions so they can be slaughtered solely to feed the problematic big cat bone trade in Southeast Asia. This is evidenced by the emergence of lion slaughterhouses in South Africa as well as the fact that we have clear evidence that 91% of the 'lion' skeletons exported from South Africa in 2017 included skulls.² Thus showing that South Africa's lion bone trade is not a by-product of

¹ Throughout this Report the word lion, when it relates to the international bone/skeleton trade is written in inverted commas - 'lion' - because it is not clear whether the bones/skeletons exported from South Africa are in fact only lion bones.

² Lions killed for hunting trophies always include their skulls.

an existing industry (i.e. trophy hunting) but an entirely separate industry. Consequently, a trade in wild animal body parts, with links to international criminal networks, in countries where they are attempting to lower demand for big cat body parts, is being stimulated.

Alarming, the Minister is unpersuasively attempting to argue that this abhorrent and destructive industry is a sustainable, and ethical alternative to trophy hunting. By doing so, true conservation efforts that should benefit wild animals in this country, as well as its citizens, are being undermined. A ban on the captive breeding of lions and tigers will bring an end to this unacceptable and brutal South African industry. The DEA, however, refuses to recognise this and instead, for inexplicable reasons, chooses to intensify its support for an industry that is tarnishing Brand South Africa's image. South Africa's tourism industry is suffering reputational damage, and this will, in turn, have a negative impact on South Africa's economy and job creation. A vast number of individuals rely on continued employment in the tourism sector, and their livelihoods are in the firing line in order to benefit only the few predatory elite in the 'lion' bone trade.

When it comes to the economics of the 'lion' bone trade on the South African side – after all, this is what is driving the trade – there is almost nothing in the public domain about the modalities of the industry and/or the processes and mechanisms of how the money flows along the entire supply chain. Access to this information and transparency is crucial, not only to understanding the nature of the trade, but in gaining insights into the illegal trafficking links. The South African government urgently needs to open up this industry, and its participants, to public scrutiny so that it can be fully and accurately interrogated, understood, and the money trail monitored.

The illegal trade in wild animals, which is not only devastating animal communities and consuming huge financial resources, cannot be adequately tackled without addressing the significant loopholes in the existing legal trade multilateral agreements, i.e. CITES. Drawing upon hundreds of CITES export permits, issued by South Africa's conservation agencies³, this Report examines and investigates substantial problems and endemic loopholes in the CITES permitting, enforcement and oversight system. It further demonstrates the failings of South Africa's national policies and

³ Gathered through responses to Promotion of Access to Information Act (PAIA) requests from the Gauteng province and data received from other provinces in South Africa.

procedures, all of which translate into a convergence of the legal and illegal trade in wild animal. Systemic weakness in the international wild animal trade permitting regimen, particularly in South Africa and Asia as illustrated in this Report, not only add to wild animal trafficking, but also undermine any efforts to address the illegal trade. It is also clear that transnational wild animal trafficking networks and crimes perpetrated against wild animals cannot be disrupted without examining the legal and regulated trade, and the supply and demand chain thereof. Indeed, the critical mechanism to disrupt transnational organised wildlife crime is to critique and amend the legal trade.

Our findings reveal that:

- There are substantial loopholes in the CITES permitting system itself;
- Merely complying with the CITES Treaty is insufficient and is a threat to wild animals and biodiversity. Countries need to do more in the context of their own national legal frameworks to protect wild animals caught up in the international trade;
- There is a lack of verification, one example of this is that more than the 2017 set quota of 800 skeletons went out of South Africa with legal CITES permits;
- There is a lack of required due diligence by the CITES Management authorities on both the exporting and importing side, in profiling and authenticating exporters, importers, addresses and destinations;
- There are major oversight problems in South Africa and in the countries of import.

This has created a situation where the legal trade in 'lion' bones is fueling the illegal trade in lion and tiger bones and providing laundering opportunities for tiger bones in Asian markets. This is brewing into a toxic mix, particularly when it is placed in the context of the widespread overlap between those involved in international lion trade, trade in tigers and other CITES-listed species, and the routine leakage of imported lion products into illegal international trade.

RECOMMENDATIONS

The evidence provided in this Report makes it abundantly clear that South Africa should immediately:

1. Place a zero-export quota for lion and other big cat body parts for commercial purposes, including from captive sources.
2. Undertake a forensic investigation into the financial affairs of all lion breeders and 'lion' bone traders.
3. Restrict the keeping and breeding of big cats.
4. Review and improve animal protection and welfare legislation.
5. Ensure that animal protection, welfare, care and respect is included in the appropriate environmental legislation, particularly in relation to the issuing of permits for the keeping, sale, hunting and exporting of wild animals and their body parts.
6. Convene a stakeholder meeting to discuss the dismantling of the captive big cat industry, including experts from the fields of animal welfare, sanctuary management and forensics, as well as NGOs. NGO Coalition tried this in 2009 with no response from DEA
7. Undertake targeted intelligence-led enforcement operations in cooperation with China, Laos, Thailand and Vietnam in order to dismantle the criminal networks involved in the transnational lion and tiger trade.
8. Ensure transparency and assist monitoring by placing copies of CITES permits in the public domain and that NGOs monitoring the wild animal trade have access to permit applications so that they can object if and when appropriate and where there is non-compliance.
9. Address any CITES legal oversights and amend the relevant gaps in regulation by strengthening national legislation, and the enforcement thereof.

THE DEPARTMENT OF ENVIRONMENTAL AFFAIRS VS. BRAND SOUTH AFRICA

Introduction

South Africa has been trading in and exporting lion bone, claws, teeth, skulls and skeletons sourced from both wild and captive lions. The contentious, unworkable and unenforceable decision taken by CITES Parties in 2016 allowing South Africa to continue to trade in lion parts from captive lions is heaping misery on lions and tigers held in captivity in South Africa. This decision directly facilitates the illegal trade in tiger

body parts and is accelerating their extinction. It is also threatening Africa's wild lion populations, particularly because increasing demand is leading to a rise in illegal killings.

Controversially, South Africa is *the* largest exporter in the world of 'lion' skeletons, bones and other body parts to countries that are at the nexus of the illegal wild animal trade. These illegal trade organisations feature prominently in the trafficking of rhino horn, tiger bones and other wild animal body parts. The Department of Environmental Affairs (DEA) has repeatedly stated that it believes the breeding of lions in captivity for trophy hunting and trade in live lions and skeletons and bones is compatible with the concept of promoting the "Green Economy". Yet, they also acknowledge that they are unable to show whether captive breeding provides any conservational value. The DEA further concedes that it has no scientific evidence to demonstrate that this trade in bones will in fact protect wild lions in Africa or tigers in Asia. There is no data to support South Africa's whimsical notion that providing lion bones to Southeast Asia would reduce demand for tigers. To the contrary, the NGOs working on the ground in these countries have found that the demand for tiger body parts is not dissipating.

Tigers are listed as endangered because the population of mature individuals may be fewer than 2,500 individuals in the wild. According to the International Union for the Conservation of Nature (IUCN), the tiger population fell by 50% in just 16 years, with an estimated remaining population of just 3,500.⁴ According to the Environmental Investigative Agency (EIA), tigers are becoming "functionally extinct in Cambodia, Vietnam and Laos, and as few as seven wild tigers estimated in China".⁵ The global lion population has declined by 43% in just 21 years (3 generations) with high threat levels across the species' broad geographic range, and they are extirpated in 12 African countries and probably in another 4.⁶

It is within this shocking context that the market for lion bone is growing, to what South African Professor Mark Shaw has described as "epidemic proportions."⁷ At

⁴ <http://www.iucnredlist.org/details/15955/0>.

⁵ *The Lion's Share. South Africa's trade exacerbates demand for tiger parts and derivatives*. Environmental Investigation Agency, July 2017. <https://eia-international.org/wp-content/uploads/The-Lions-Share-FINAL.pdf>.

⁶ According to an IUCN Red List of Threatened Species Assessment conducted in 2016.

⁷ Mark Shaw. *Africa's changing Place in the Global Criminal Economy*. ENACT Continental Report 01/September 2017, p.14.

the same time the legal wildlife trade is enhancing the power of organised crime. It is well-documented that the trade in tiger bones is a substantial threat to wild tigers in Asia and that it catalysed negative consequences for lions and other big cats.⁸

The use of big cat bones to produce 'tonic' wines is a major driver of illegal trade as well as the poaching and killing of tigers, leopards and other big cats. The *Environmental Investigation Agency* (EIA) estimates that there are between 7000 and 8000 tigers in tiger farms, zoos and smaller facilities in Thailand, Laos, Vietnam and China.⁹ The farming of tigers in these countries, promotes demand and provides cover for the trafficking of wild tiger parts, and is leading to the extirpation of wild populations. The Worldwide Fund for Nature (WWF) says that the closure of tiger farms will help protect wild tigers because sales of bones from these facilities has promoted the belief that it is acceptable to use products made from them: "They undermine efforts to protect wild tigers and to halt the illegal trade by complicating enforcement activities, and by normalizing and legitimizing the sale of tiger parts and products, which in turn drives up demand...Many tiger range states have devoted considerable resources to conserving their wild tigers – efforts that are being undermined by the existence of these farms...Closing tiger farms will help countries to achieve the ambitious goal of doubling wild tiger numbers by 2022."¹⁰

⁸ See: Vivienne L. Williams¹, Andrew J. Loveridge, David J. Newton, David W. Macdonald. A roaring trade? The legal trade in *Panthera leo* bones from Africa to East-Southeast Asia. PLOS ONE, October 24, 2017; K. Nowell. Tiger farms and pharmacies: the central importance of China's trade policy for tiger conservation. pp. 463±475 and MJ. `tSasRolfes MJ. Tigers, economic and the regulation of trade pp.477±400. In: Tilson RL, Nyhus PJ, editors. Tigers of the World. The Science, Politics and Conservation of *Panthera tigris*, 2nd edition. San Diego: Academic Press; 2010; Gratwicke B, Mills J, Dutton A, Gabriel G, Long B, Seidensticker J, et al. Attitudes toward consumption and conservation of tigers in China. PLoS ONE. 2008; 3: e2544.

⁹ <https://eia-international.org/international-tiger-day-zero-demand-zero-poaching>.

¹⁰ WWF press statement published on international Tiger Day, 29 July 2016. <https://www.worldwildanimals.org/press-releases/wwf-tiger-farming-in-asia-must-end-us-has-role-to-play>



A miserable lion waits to be killed for its bones at the *Wag'n Bietjie* farm in the Free State, South Africa. Lions were held in very small crate for days before being slaughtered. Picture: Netwerk24 9 May 2018.

This view is supported by the EIA who states that, “...trade in captive tiger parts and products stimulates demand for tiger products – be it from wild or captive tigers – and undermines enforcement efforts by making it difficult to know whether seized tiger products come from wild or captive tigers.”¹¹ The EIA also makes a case against South Africa’s trade in African lion parts into Asia, along with the trade in captive-bred tiger parts, because it, “frustrates enforcement efforts and undermines the limited demand reduction efforts to end tiger trade. At the heart of the lion trade is South Africa, the world’s largest exporter of lion bone, teeth and claws, and also an exporter of captive tiger parts. The Government, in sanctioning and setting an export quota of 800 lion skeletons in 2017 to generate profits for lion farmers, has failed to take into account the wider impact of such a decision on endangered wild tigers.”¹²

In the past three years African lions being killed across the continent has spiked to satisfy demand in China and Southeast Asia. The results of a 2017 survey of the pan-African trade in lion body parts, together with an increase in reports of lion poisonings and killings in Mozambique, Zimbabwe, South Africa, Uganda and Tanzania show there is an escalating trend in the trade of lion body parts, the result of which is an impending threat to some national populations.¹³

According to a report briefing released by Animal Defenders International (ADI) in July 2018 on *Captive Big Cat Poaching in South Africa: Media Accounts of Incidences 2016-2018*, “Since 2016 there has been a dramatic increase in the poaching of big cats, predominantly lions, from captive environments in South Africa. Nearly all captive lion and tiger poaching incidents identified have occurred in Limpopo province, with a few recent reports of captive lion and tiger poaching in the surrounding regions. Captive environments, classified as places where animals are fenced in and rely on humans for food, and from which these animals have been poached, include sanctuaries and game farms which breed big cats. Lions are typically killed with the use of poisoned meat and various parts of their bodies taken, including heads, paws and skin.

- A total of 65 captive lions and tigers have been killed in South Africa since 2016, with at least 5 additional lions subjected to attempted killings.

¹¹ July 2016. See <https://eia-international.org/international-tiger-day-zero-demand-zero-poaching>.

¹² *The Lion’s Share. South Africa’s trade exacerbates demand for tiger parts and derivatives*. Environmental Investigation Agency, July 2017. <https://eia-international.org/wp-content/uploads/The-Lions-Share-FINAL.pdf>.¹³ VL Williams, AJ Loveridge, DJ Newton, DW Macdonald DW. Questionnaire survey of the pan-African trade in lion body parts. 2017. PLoS ONE 12 (10): e0187060. <https://doi.org/10.1371/journal.pone.0187060>.

- Of the total 65 animals, 60 lions and 5 tigers were killed.
- Some incidences in which all lions survived attempted poaching, the number of lions affected is unknown so could not be added to the figures.
- A total of 22 captive lion and tigers were killed or subjected to an attempted killing in 2016.
- A total of 27 captive lion and tigers were killed or subjected to an attempted killing in 2017.
- A total of 21 captive lion and tigers have been killed in 2018 to date.”

Organised elephant and rhino trafficking groups, because they have the existing killing and smuggling infrastructure in place, can, and have, extended their activities to wild lions. These same syndicates are producing processed lion "cake" and tiger "jelly"/"cake" in South Africa from tigers and lions in the South African big cat captive industry. There are reports that these body parts are shipped out to Southeast Asia in cargo ships and through military/diplomatic channels.¹³ They are also leaving the country in parcels and luggage to other African transit countries (and then presumably from there on to Southeast Asia). For example in 2017 fifty-one lion claws and nineteen lion teeth were confiscated at the OR Tambo International Airport in a parcel destined for Nigeria.¹⁴ Another recent seizure (2016) which shows that African lion body parts are being shipped illegally is the arrest of a Vietnamese national who was in possession of 680 suspected tiger claws brought from Lao PDR to Vietnam. Later DNA analysis showed that the claws were in fact lion claws.¹⁶

The IUCN coordinator of the "red list" for big cats, Kristin Nowell says that South Africa's legal trade is stoking Asian demand for lion parts as stand-ins for tiger parts and is fuelling a growing illegal trade in the teeth and claws of wild lions, further reducing their numbers. According to Nowell, confiscations and NGO research shows that some sellers are passing off lion teeth and claws as tiger parts. She states that, "unless you're a big cat expert, knowing what's actually on offer is anyone's guess: What's sold as tiger could be lion. And if the lion teeth on display are in fact just that, there's no telling whether they're from wild lions...or captivebred lions from South

¹³ Outhwaite, Willow. TRAFFIC. The Legal and Illegal Trade in African Lions: *A study in support of Decision 17.241 e*). Preliminary findings for AC30. 16 May 2018. <https://cites.org/sites/default/files/eng/com/ac/30/E-AC30-25.pdf>.

¹⁴ <https://kempstonexpress.co.za/161469/lion-rhino-parts-found-at-airport/>.¹⁶ <https://www.tienphong.vn/content/ODcxMTk3.tpo>.

Africa.”¹⁵ These alarming trends should be sufficient evidence for the DEA to close down its ‘lion’ bone trade. Yet South Africa’s Ministry and the DEA are resolutely and recklessly adding to this problem. They are enabling a similar fate for Africa’s wild lions through their support of the captive big cat industry in South Africa.

Lion body parts from South Africa are being passed off as tiger and thus stimulating demand. Of enormous concern is that the South African government has allowed the lion and tiger breeding industry to literally grow out of control, allowing the various tiger species and lion species to share enclosures and inter-breed. The bone trade industry will surely take advantage of this. Moreover there are proven links between syndicates smuggling rhino horn and those involved in the tiger/lion bone trade. The same syndicates, some of whose members were arrested in South Africa in 2011 for dealing in rhino horns, were also dealing in lion bones. For example, in June 2011 Pichet Thongphai and Punpitak Chunchom were arrested for lion parts found at a house in Edenvale in Johannesburg. Lion bones have been found inside containers transporting ivory and rhino horn, suggesting the same networks are involved.¹⁸

According to the EIA, “in China and South-East Asia, organised criminal networks involved in lion trade are also trading tiger and other Asian big cats. A criminal network operating from Tianjin city in northern China was convicted in 2015 for trade in seven tiger skeletons, 31 lion skeletons and nearly half a tonne of ivory. The Tianjin case involved the organised transportation in convoys of skeletons over a thousand miles from Guangxi in southern China, bordering Vietnam, to Tianjin.”¹⁶

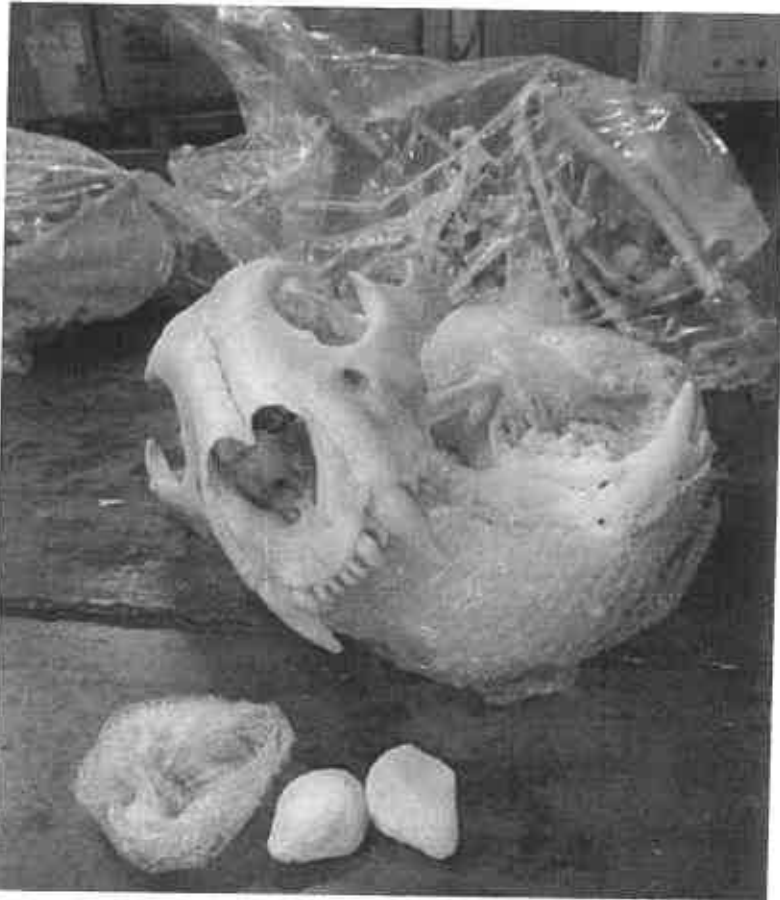
Free-Reign: The Extent of the Captive Big Cat Industry in South Africa

In South Africa, the captive breeding of lions commenced in earnest in the 1990s, and by 1999 there were about 1000 lions in the industry. The number of lions and other big cats in the industry is unknown. Some publications cite the figure of 8,000 (lions only). In 2015, the Traffic/Wildcru *Bones of Contention* report estimated that there were more than 9,100 lions in South Africa, of which approximately 68% were in

¹⁵ <https://news.nationalgeographic.com/2018/06/wildlife-watch-illegal-trade-lions-teeth-claws-poaching/>. ¹⁸ John R Platt, A growing threat to lions: Illegal trade in their bones, *Scientific American*, 30 June 2016, <https://blogs.scientificamerican.com/extinction-countdown/>.

¹⁶ *The Lion's Share. South Africa's trade exacerbates demand for tiger parts and derivatives*. Environmental Investigation Agency, p.8 July 2017. <https://eia-international.org/wp-content/uploads/The-Lions-Share-FINAL.pdf>.

captivity, i.e. 6,188. In 2017, researchers from the University of the North-West made a claim, based on inadequate extrapolations, that there are 297 lion breeding facilities in South Africa.¹⁷ In a presentation to the South African Parliamentary Portfolio Committee on Environmental Affairs, the DEA said that there were “just over 300 captive breeding facilities.”²¹ Essentially, this is all mere conjecture and cannot be verified, either by independent researchers, national or provincial government or even the industry itself. Our findings show that the number of lions and other African and Asian big cats in the industry and the number of places breeding them - including Ligers, x-brown with white lions, x-Siberian and Bengal Tigers and everything inbetween - is substantively higher than any of these estimates. The truth, however, is that the number of lions (and other African and Asian big cats) in captivity in South Africa is officially unknown.



Photograph: Vivienne Williams.

The South African authorities should be reigning in this recalcitrant, cruel and renegade industry and should at the very least be prohibiting:

¹⁷ Peet Van der Merwe, Melville Saayman, Jauntelle Els and Andrea Saayman. The economic significance of lion breeding operations in the South African Wild animals Industry, Vol. 9(11), pp. 314-322, *International Journal of Biodiversity and Conservation*, November 2017. DOI: 10.5897/IJBC2017.1103. ²¹ 23rd May 2017, <https://pmg.org.za/committee-meeting/24431/>.

- Any further captive breeding of big cats by private owners; □ The sale of live big cats both locally and internationally.

Instead, however, they are deliberately enabling and encouraging its existence and growth, while at the same time being extremely lax at sufficiently regulating or controlling these private breeders and their spin-off industries. It stands to reason, therefore, that, as a result, the population of near-factory-farmed big cats in South Africa must be increasing exponentially. Given the move by hunting organisations internationally¹⁸ to expel South Africa's main hunting associations (PHASA and CHASA) for defending and supporting canned lion hunting, in contravention of their international policies, the obvious re-focus of this industry must be on the bone trade.

Furthermore, the DEA and most of the relevant provincial authorities either refuse to provide information relating to the extent of the industry, or the players involved, when requested to do so through the *Promotion of Access to Information Act (PAIA)* applications. On April 13th 2017, the EMS Foundation requested from the DEA, via a formal PAIA application:

- A list of Predator Breeders, including names, addresses and name of the provinces; and
- A list of Predator Bone Traders and middlemen, including names, addresses and province.

Both the PAIA Request and the subsequent appeal (in terms of PAIA) were refused by the DEA, because they argued that "this requested information does not fall within the ambit of the responsibility of the Department" and it was transferred to the provinces. Given the controversy around the industry and the lion bone trade (which falls under the national Department) it seems irrational and unconscionable that the DEA could not or would not provide this information, particularly since the DEA, representing national government, signs international treaties which relate to the oversight and monitoring of the captive predator industry and the lion bone trade which it vocally supports.

¹⁸ Such as Europe's International Council for Game and Wildlife Conservation (CIC), Safari Club International, Dallas Safari Club, Boone and Crockett, The Wild Sheep Foundation, Custodians of Professional Hunting South Africa (CPHSA) Namibian Professional Hunters Association (NAPHA) and Operators and Professional Hunters Associations of Africa (OPHAA).

The Parliamentary Portfolio Committee also expects the DEA to have this information and to be accountable for it. At the DEA Briefing to Parliament on the May 23rd 2017, the Chairperson asked the DEA staff member, Thea Carroll, if they had any information on the breeding facilities, to which she replied that the DEA did have the information and that “who the owners were, and the exact location of the facilities, should be requested through PAIA.” Ms Frances Craigie (Acting Deputy Director General: Legal, Authority and Compliance Enforcement, DEA), also replied that the DEA did have a project focussing on compliance-monitoring at the breeding facilities, and that information could be made available. The DEA also told Parliament that “there were just over 300 captive breeding facilities for lions in the country, mostly in the North West, Free State and Limpopo.”¹⁹ How would the DEA know this if it does not have a list of these facilities?

Although the PAIA request was transferred to the provinces (and despite several follow up emails from the EMS Foundation to the provinces), only three provinces (Gauteng, Northern Cape and Western Cape) have provided information. Also of concern, is the uneven and patchy responses to PAIA requests from the provinces as a whole, as well as the incompleteness of their responses when they do respond.

Alarmingly there appears to be no control or interest by South African authorities on the breeding, inter-breeding (also across species) and keeping of lions and tigers or the conditions under which they are kept. The DEA does not have a national database on lions in captivity and has not conducted a national audit into the numbers of lions held at these facilities. The DEA also does not have a national database of tigers in captivity and has not conducted a national audit into the numbers of tigers held at these facilities. So who has them, who is breeding them, how many there are or where they are remains a mystery.

¹⁹ For the minutes of this Briefing see: <https://pmg.org.za/committee-meeting/24431/>.



In-breeding at Letsatsi la Africa (Free State).

Image: EMS Foundation (September 2017).

The 2017 'Lion' Bone Quota

Appetite for profit propels the captive-bred big cat industry in South Africa and it fits comfortably within the current South African government's wild animal ideology of "sustainable use". An ideology which is vociferously pro-trade and pro-trophy hunting. South Africa is a key player in advancing the commercial trade in African lions at CITES meetings. This, together with political 'horse-trading' has meant that the African lion, via a split listing, is the only big cat listed on Appendix II. The South African government is clearly placing the greed and profits of a marginal and problematic grouping before sound and ethical conservation management. This poses a direct reputational threat to Brand South Africa and the tourism industry.

There was no public consultation for the sale of an estimated 6058²⁰ 'lion' skeletons between 2008 and 2016. One of the requirements of setting the quota of 800 skeletons in 2017 was that the DEA should convene a meeting with all stakeholders. However, the first stage that most stakeholders and the general public heard about

²⁰ <https://www.timeslive.co.za/news/sci-tech/2017-10-31-a-roaring-trade-6000-sa-lion-skeletons-shipped-toasia/#>.

specific figures was at a meeting convened at short notice on January 21st 2017. At the meeting, the DEA said that, along with SANBI, it had calculated that a quota of 800 skeletons was appropriate. Stakeholders were given two weeks from the date of the meeting to make submissions on the matter. This despite South African law specifying a 30 day minimum period to make submissions. In June 2017, five months after the January stakeholder meeting, the Minister announced that the 800 skeleton quota had been approved.



Puruma Pride Lion Farm (Free State).

Image: EMS Foundation September 2017.

Civil society has raised a number of concerns in relation to the trade and the quota.

These include:

- An absence of scientific evidence showing the conservation value of captive breeding of lion, including potential impacts on wild populations;
- Failure to adopt the precautionary principle approach which suggests that no major policy decisions (in this case regarding the lion skeleton quota) should be made unless it can be proved that the decision will not have harmful consequences to wild lion populations;
- Inadequate official scrutiny of the welfare of captive predators;

- Concerns over provincial capacity (funding and skills) to effectively monitor trade, for example the capacity to differential between lion and tiger bones or between bones from wild lions and captive bred lions;
- Impact of legal trade from South Africa on illegal trade, particularly with regard to wild lions and tigers;
- Absence of independent research of market dynamics with regard to lion-tiger bone trade;
- The DEA's failure to respond in a constructive way to the threat of reputational damage caused by the captive breeding controversy to South Africa's international image as a responsible custodian of wild animals and the environment. This is damaging Brand South Africa and the tourism industry;
- A lack of information as to how, in the light of the involvement of organized criminals in the ongoing poaching of rhino and the difficulties in controlling this activity, South Africa will prevent laundering and other illegal activities with regard to the lion bone trade;
- Lack of consultation with anyone apart from traders and SAPA;
- A misunderstanding of the role of the DEA in conserving wild animals, and not driving the trade in its body parts when no conservation value at all can be proven.

None of the stakeholders who had opposed the quota were told why their submissions had been rejected. On August 16th 2017, the EMS Foundation put in a PAIA Request to the DEA requesting: All records, including minutes of meetings, relating to the receipt, filing, treatment, perusal, consideration, and/or assessment of the public submissions on the lion bone export quota received by the DEA pursuant to its call for public comment on 25 January 2017, including the recordal of the reasons why any submissions were or were not taken into account. On the 9th February 2018 the EMS Foundation received a letter from the SANBI CEO saying that:

- The component that related to minutes of the Scientific Authority meeting in which the recommendation for the lion bone export quota was made was transferred from the DEA to SANBI as the Secretariat for the Scientific Authority, and received on 18 January 2018.

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- The request was processed by SANBI as part of its obligations to provide administrative support to the Scientific Authority.
- The allocation of the 2017 lion bone quota was discussed at the 13th meeting of the Scientific Authority, held from 22-23 February 2017 and the request therefore refers to the summary record of this meeting.

The response was provided via a document titled "Addendum: Summary record for Agenda item 8.6 from the 13th Meeting of the Scientific Authority". The entire item is reproduced below:

Record of discussion

The CITES CoP17 annotation to the Appendix II listing of the African lion provides for annual export quotas for the trade in captive lion bones from South Africa to be established. The annotation was based on a situation where captive breeding facilities have been trading in bone and there was no basis on which to prohibit this trade. However the trade should be regulated through a quota to ensure that it does not impact negatively on wild lion populations.

Towards establishing the current annual sustainable supply, MP²¹ consulted the TRAFFIC report on the lion bone trade and the SADC Trade Analysis, as well as information provided by DEA and SAPA. Data on trophy export numbers and trends show that South African CBOs can sustainably produce in excess of 800 lion skeletons annually - about 10% of the captive lion population in 2016. It is difficult to determine whether a quota of 800 lions would meet export demand, but exports ranged between 720 and 1 300 in 2015/16. A 3-year project on *Analysing and monitoring the lion bone trade In South Africa* will be initiated by SANBI in collaboration with DEA, NZG, the University of the Witwatersrand and Oxford University. The project will generate reliable information on the captive lion breeding industry and bone trade, and thus assist in determining sustainable annual quotas. In the public consultation process, DEA received over 1 000 emails with comments on the proposed quota. Mpho Tjiane (MT) presented a summary of these, which ranged from organisations and individuals opposed to hunting to members of the industry opposed to a quota. Issues raised included the ethics of hunting and of the lion bone trade; lack of transparency; inadequate research; lack of community beneficiation; animal cruelty; lack of monitoring capacity in government; and impact on wild populations of lion and other large cats. These important issues were raised and considered, although many were related to policy and management issues that are beyond the remit of the Scientific Authority.

The meeting discussed a proposed quota and the issue of demand and supply. While trophy hunting is a relatively small and stable industry, the demand for lion bone is much bigger and breeders may even try to grow the market. A limited quota could discourage breeders from euthenasing a large number of lions and selling bones in the short term but then creating an unsustainable demand that impacts on wild lion. However, a low initial quota could also lead to an increase in export applications for

²¹ Michele Pfab (SANBI).

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live lions or meeting existing demand from wild lion populations. The SA was advised that the SA²² and MA²³ should not try to exercise too much control over the market, but rather gain a better understanding of its dynamics through the monitoring project. The key is to be adaptive: 800 lions was considered to be a reasonable baseline due to past trade patterns and this should be reviewed as more and better information becomes available.

Decisions

- The members agreed on a quota of 800 lion skeletons for the first year, to be reviewed when more information is available through the lion bone trade monitoring project.

There has been a tsunami of domestic and international criticism against South Africa, both locally and globally, with many conservation bodies, scientists and NGOs affirming that the DEA's unfettered support for this globally rogue predator breeding industry cannot be supported scientifically or from a tourism, conservation, ethical or welfare perspective. Calls to stop the captive breeding of lions, hunting and killing of these animals, live sales and the sale of their bones and skeletons, have been widespread and made by organisations including, the International Union for Nature (IUCN)²⁴, carnivore scientists, wild animals NGOs, hunting associations, The Minister of Environment in Namibia, the Minister of Environment, Conservation, Natural Resources and Tourism in Botswana, a former South African Minister of Tourism, scientists, and political parties.

In March 2017, scientist Dr Paul Funston of Panthera (an organisation specialising in the study of wild cats including lions), stated that "The government's proposed quota of 800 lion skeletons for legal export has absolutely no grounding in science. It is irresponsible to establish policy that could further imperil wild lions – already in precipitous decline throughout much of Africa – when the facts are clear; South Africa's lion breeding industry makes absolutely no positive contribution to conserving lions and, indeed, further imperils them...It is confounding that a country whose iconic wild lions are such a source of national pride, not to mention tourist revenue, would take such risks as to sustain a marginal captive breeding industry that is condemned globally for its shameful practices."²⁹

²² Scientific Authority.

²³ Management Authority.

²⁴ IUCN Resolution 13 (2016) called on the South African government to terminate the hunting of captive-bred lions. ²⁹ <https://www.pressreader.com/south-africa/business-day/20170320/281663959826019>.

On March 22nd 2018, the Inkatha Freedom Party, one of the opposition parties in South Africa, put out a press release condemning the continued lion bone trade and captive lion breeding in South Africa. IFP Chief Whip in Parliament, Mr Narend Singh, MP, said “Despite no credible basis in science, or socio-economic benefits to the South African people, our government persists in what can be justifiably argued as the decimation of our wild lion populations through allowing the continued commodification of this iconic African apex predator, the African Lion. These appalling policy initiatives by government, which fly directly in the face of international best conservation practice, beggar all belief and raise serious questions as to the motivations that inform them. A growing body of evidence...suggests not only no legitimate ‘science’ in support of the determination of lion bone quota trade quotas, but also absolutely no conservation value in the practice. The practice is nothing more than a commodification of an apex African predator for the pecuniary benefit of a small handful of people, at great and distressing expense to brand South Africa.”

Linking South Africa’s Lion Bone Trade to the Illegal Trade

South Africa’s intimate involvement with Southeast Asia’s big cat trade means that it cannot be separated from the illegal market for tiger (and other big cat) body parts. It is in fact stimulating it and obstructing international efforts to stop the tiger trade. It has also meant that lions (and conceivably also Asian big cats) in South Africa are being killed specifically for ‘tiger wine’ and the bone trade in Southeast Asia. The DEA’s peculiar (and many would argue incomprehensible) interpretation of ‘sustainable use’ means the industry is *de facto* fully supported by the State, despite widespread opposition to the practice which is considered extremely cruel, linked to international criminal networks, a threat to Africa’s wild animal populations and run by a small monopoly of operators purely for financial gain.

According to TRAFFIC no legal trade in lion body parts has been reported between Vietnam, Lao PDR, China or Thailand.²⁵ These countries, however, show illegal cross-border trade (e.g. of skeletons, claws). This presents the potential scenario of lion bone items being imported legally into the region, but then re-exported (either in the raw form or as processed products) illegally to neighbouring countries. Currently it is

²⁵ *The Legal and Illegal Trade in Africa Lions. A Study in Support of Decision 17.241 E.* CITES Thirtieth meeting of the Animals Committee Geneva (Switzerland), 16-21 July 2018. African lion (*Panthera leo*). Document submitted by the CITES Secretariat at the request of TRAFFIC in relation to agenda item 25.

not clear which countries are acting as processors or consumers, and how the products are moving across borders. Little open trade was observed in the three countries surveyed, it appears that trade takes place through existing networks or is arranged via social media, making it very difficult to monitor.” It is likely that the legal trade in captive bred ‘lion’ skeletons and bones is being used as a cover by criminal syndicates to launder illegally obtained bones and skeletons from their wild caught counterparts. The link between rhino horn and ‘lion’ bone trafficking syndicates and the legal ‘lion’ bone trade in South Africa was already established and in the public domain as far back as 2011 with arrests in South Africa of *Xaysavang Network* syndicate members.

According to the US Department of State Bureau of International Narcotics and Law Enforcement Affairs, “The Xaysavang Network, an international wild animals trafficking syndicate, facilitates the killing of endangered elephants, rhinos, pangolins, and other species for products such as ivory and rhino horn. Vixay Keosavang, a Lao national, is believed to be the leader of the network. Xaysavang associates smuggle illegally taken wild animals from countries in Africa and Asia into Laos, and then export them to countries such as Vietnam and China. Affiliates are suspected to be active in South Africa, Mozambique, Thailand, Laos, Malaysia, Vietnam, and China. The Xaysavang Network has been linked to several major seizures of wildlife products. The U.S. Department of State is currently offering a reward of up to \$1 million for information leading to the dismantling of the Xaysavang Network.”²⁶ According to the Freeland Foundation, Vixay Keosavang, “from his base in Paksan, western Laos, Keosavang was sucking in animals...and illegally churning out body parts at up to ten tonnes a week, investing his profit in hotels and a transport business.”²⁷

A boss of the Xaysavang Network involved in rhino poaching and trafficking, Chumlong Lemtongthai (a Thai national)²⁸, was also in South Africa to source ‘lion’ bones for shipping to Southeast Asia, along with Phichet Thongphai and Punpitak Chunchom (also Thai nationals). Chumlong Lemtongthai was also involved with international wildlife traffickers and dealers, ‘Fatty’ (Leuthai Tiewcharoen) and the Bach brothers, Bach Mai (also known as ‘Boonchai’) and Bach Van Limh. The Bach brothers are key players in the smuggling gateway from Thailand into Laos. Although they are

²⁶ <https://www.state.gov/j/inl/tocrewards/c60273.htm>.

²⁷ <https://www.theguardian.com/environment/2016/sep/26/bach-brothers-elephant-ivory-asias-animaltrafficking-network>.

²⁸ See J. Rademeyer. *Killing for Profit*. Cape Town: Zebra Press; 2012.

active in Thailand, the brothers are originally Vietnamese and have networks in both countries. Apart from the export of wild animals and their body parts through Laos, Thai police intelligence reports also link Boonchai with the importing of drugs from Laos into Thailand. According to Vietnamese police, Bach Van Limh is involved in running prostitutes and smuggling cars as well as wild animals and their body parts. He also owns a hotel, a café and legitimate businesses trading gold and placing migrant workers.²⁹

After a 10-year long investigation, in December 2017, Boonchai Bach was arrested in Thailand's northeastern border province of Nakhon Phanom for his involvement in the smuggling of 14 rhino horns worth over \$1 million from Africa into Thailand in December 2017. The arrest happened after Thai customs ran a routine Xray inspection of cargo on an Ethiopian Airlines flight, which originated from South Africa, and found rhino horns in luggage destined for the Chaiyamat family (relatives of Boonchai Bach). Also arrested was an associate of Bach's, Nikorn Wongprajan³⁰, an official at Suvarnabhumi Airport. Nikorn Wongprajan is linked to Chumlong Lemthongthai and the trafficking of rhino horns from South Africa. In 2011 he was one of the traffickers who used CITES trophy hunting permit loopholes to export rhino horn for trade.³¹ Wongprajan is also linked to Pisit Pakawan, a live animal smuggler/breeder/dealer who was also the recipient of 'lion' bones from South Africa. According to an in-depth *Guardian* newspaper investigation, "Chumlong commissioned the killing of hundreds of lions and supervised the boiling of their corpses to separate the bones from the flesh. He then parceled up the bones in ten-kilo bags - roughly one bag for each dead animal - and shipped them back to the Bach's and to Keosavang, who...sold them onwards to Vietnam and China."³²

The Xaysavang/Bach Network set up a scheme with professional hunter Marthinus Philippus (known as Marnus) Steyl³³, who helped to procure the rhinos and trophy hunting permits, and assisted in shooting some of the animals. Steyl initially

²⁹ The Crime Family at the Centre of Asia's Animal Trafficking Network, *Guardian*, 26 September, 2016. <https://www.theguardian.com/environment/2016/sep/26/bach-brothers-elephant-ivory-asias-animal-traffickingnetwork>.

³⁰ Also known as Nikon Wongchan.

³¹ North West province list of rhino hunts, 2009 – 2013. The 'professional' hunter was Harry Claasens and the hunt took place on Steyl's farm Aurora.

³² The Crime Family at the Centre of Asia's Animal Trafficking Network, *Guardian*, 26 September, 2016. <https://www.theguardian.com/environment/2016/sep/26/bach-brothers-elephant-ivory-asias-animal-traffickingnetwork>.

³³ Companies Steyl has include: Steyl Game, Bon Accor Safaris and Steyl Endurance Racing and Stud Farm (Mandalay Farm).

appeared alongside Lemtongthai but charges were later dropped because of a plea bargain. Lemtongthai told the courts that Steyl had also offered to supply lion skeletons. “Invoices also revealed the rate at which he was commissioning the death of lions: 327 of them during one two-year period, roughly one every couple of days.”³⁴ Forensic investigator Paul O’ Sullivan, who had been working on the case, said that he was “leaked a copy of an order form allegedly sent to Marnus Steyl for 50 rhinos as well as 300 sets of lion bones. The order is signed by Chumlong – the alleged kingpin.”³⁵

Steyl, a prominent member of the lion breeding and trophy hunting industry, was, between late 2016 and October 2017 a council member of the South African Predators Association (SAPA). The SAPA council helps set policy and administers the affairs of the organisation which has been a vocal proponent of lion breeding, the trophy hunting of captive bred lions and trade in lion bones. Two other SAPA council members have also previously been charged in connection with illegal rhino trophy hunting.³⁶ It appears that the relationship between the South African bone dealers and the Bach network continues. In 2016, *The Guardian* surveillance team photographed multiple visits to the Bach brothers’ offices in Nakhon Phanom (Thailand) by two South African lion bone merchants with whom Chumlong Lemthongthai was working. The investigators also identified a Thai courier, known as ‘Jimmy’, at the office in Nakhon Phanom. ‘Jimmy’ worked for Boonchai Bach and was caught at OR Tambo airport at the time of Chumlong’s arrest. He was convicted for attempting to bring undeclared cash into the country.³⁷

The 2012 court case against Phichet Thongphai and Punpitak Chunchom³⁸ revealed that contact with the *Xaysavang/Bach Network* wild animals trafficking syndicate was initiated by members of the South African big cat captive-breeding industry.³⁹ How would they know how to contact a wild animals trafficking syndicate?

³⁴ The Crime Family at the Centre of Asia’s Animal Trafficking Network, *Guardian*, 26 September, 2016. <https://www.theguardian.com/environment/2016/sep/26/bach-brothers-ivory-asias-animal-traffickingnetwork>.

³⁵ <https://rhinofriendlyriders.wordpress.com/2011/11/09/rhino-files-iii-carte-blanche-documentary/>.

³⁶ Cash before Conservation: An overview of the breeding of lions for hunting and bone trade. 2018. Born Free.

³⁷ The Crime Family at the Centre of Asia’s Animal Trafficking Network, *Guardian*, 26 September, 2016. <https://www.theguardian.com/environment/2016/sep/26/bach-brothers-ivory-asias-animal-traffickingnetwork>.

³⁸ Thongphai and Chunchom were arrested for being in possession of lion bones, fined and their 5-year sentence suspended if they left the country.

³⁹ See: Vivienne L. Williams, Andrew J. Loveridge, David J. Newton, David W. Macdonald. A Roaring Trade? The legal trade in *Panthera leo* bones from Africa to East-Southeast Asia. PLOS ONE, pp.5, October 24, 2017. <https://doi.org/10.1371/journal.pone.0185996>.

Any reasonable person would be aware that Vixay Keosavang and the Bach brothers were wild animal crime kingpins and that they were trafficking wild animals and their body parts. This, and the fact that the South African CITES Management Authorities continue to issue export permits for 'lion' skeletons to addresses in Laos and elsewhere possibly linked to traffickers, highlights the concern that the big cat captive breeding industry could be associated with illegal wild animal trafficking.

In addition, research by Williams *et al.* (2017) submitted that "Xaysavang's involvement in the lion bone trade precedes their involvement in the rhino horn trade, and that the company started legally procuring lion bones from farmers c. February 2008 when the first CITES export permit was issued."⁴⁰

BAT and the EMS Foundation went to Southeast Asia to investigate the supposed destinations in Southeast Asia as provided on the CITES permits which were sanctioned by CITES and the ratifying parties. Our inspections showed that most of the addresses and the actual and/or final destinations of the skeletons could not be properly verified and are not known. It is widely accepted that trade on the Southeast Asian side is not transparent, properly understood or identified, and is associated with wild animal trafficking, poaching and the demise of tigers. Given this knowledge, it highlights a particularly worrying trend and literally means that governments on the supply and demand side, and the CITES Secretariat by implication may be, unknowingly, aiding and abetting criminal activities.

As Williams *et al.* noted in 2015, "since wild animal trade often makes use of the same established networks and supply lines, the Lion bone trade may have piggybacked on existing wild animals routes in Lao PDR, Viet Nam, China, Thailand and possibly Myanmar...If Lion bones are being traded between countries in East-Southeast Asia, then the trade is presumed to be mainly illicit given the absence of CITES export/import permit records to legitimize the trade."⁴¹

According to written answers to questions in the South African Parliament, the first legal trade in lion bones and skeleton from South Africa began in 2008⁴² when lion

⁴⁰ Vivienne L. Williams, Andrew J. Loveridge, David J. Newton, David W. Macdonald. A roaring trade? The legal trade in *Panthera leo* bones from Africa to East-Southeast Asia. PLOS ONE, pp.6, October 24, 2017. <https://doi.org/10.1371/journal.pone.0185996>.

⁴¹ Williams, V.L., Newton, D.J., Loveridge, A.J. and Macdonald, D.W. (2015). *Bones of Contention: An Assessment of the South African Trade in African Lion Panthera leo Bones and Other Body Parts*. TRAFFIC, & WildCRU, p.x, 2015.

⁴² https://www.environment.gov.za/sites/default/files/parliamentary_updates/question2935.pdf.

bones began to be used as a substitute for tiger bones in the making of fortifying “wine” and other “medicinal” products used in some Southeast Asian communities. Lion bones are sometimes substituted for tiger bones without the knowledge of consumers.⁴³ From the outset, as with much other record keeping relating to wild animals, there were serious permit inaccuracies. The 2015 TRAFFIC & WILDCRU joint report showed that “Destinations” were recorded as Vietnam instead of Lao PDR and the quantities recorded as “bones” instead of full skeletons.

Williams *et al.* found that the trade in lion bones from South Africa to Southeast Asia has risen consistently since 2008. They also estimated that the total number of skeletons legally exported from the whole of Africa to Southeast Asia for the period 2008±2016 is around 6058 skeletons and that 64% (3877) were exported from 2014±2016.⁴⁴ Information gathered by BAT and the EMS Foundation estimates that from 2014±2017 South Africa exported approximately 2945 skeletons of which 46.4% went to Lao PDR, 38.6% to Vietnam and 15% to Thailand. Lao PDR and Vietnam are South Africa’s main trading partners, with 85% of all ‘lion’ skeletons collectively exported to them. It is of serious concern that South Africa’s major trading partners are countries listed by global conservation and law enforcement agencies as having weak law enforcement and high levels of corruption and therefore key conduits for the massive illegal trade in wild animals.⁴⁵

Moreover, South Africa’s 2015 *Biodiversity Management Plan for the African Lion* also justified its support for the trade, as follows “the controversial trade in lion bones for the Asian market appears to be supplied by bones obtained as a legal by-product of the trophy hunting industry where the lions are almost exclusively captive-bred.”⁴⁶ If the industry was merely a by-product of the trophy hunting industry the skull, jaw and clavicles would be absent from the skeleton exports. However, our research shows that 91% of the skeletons that went out in 2017, after the quota was initiated, had skulls present. It can therefore be concluded, contrary to claims from government, that South Africa’s ‘lion’ bone trade is not simply a by-product of the canned trophy hunting industry. In South Africa, big cats are being killed specifically for their bones.

⁴³ www.wildcru.org/wp-content/uploads/2015/07/Bones_of_contention.pdf.

⁴⁴ Williams VL, Loveridge AJ, Newton DJ, Macdonald DW (2017) A Roaring Trade? The legal trade in *Panthera leo* bones from Africa to Southeast Asia. *PLoS ONE* 12(10), p.18. <https://doi.org/10.1371/journal.pone.0185996>.

⁴⁵ www.wildcru.org/wp-content/uploads/2015/07/Bones_of_contention.pdf.

⁴⁶ Gazetted 2 December 2015 (No. 39468), p.28.

The CITES endorsement of South Africa's lion bone trade and the allocation of a quota is fast becoming a primary enabler of the commercial breeding of lions and tigers.

FARMING TIGERS AND LIGERS: SOUTH AFRICA'S CALAMITOUS ROLE IN THE ASIAN BIG CAT BONE TRADE

In South Africa tigers are classified as 'exotics' and thus, afforded limited and inadequate legal regulation and protection. Consequently, tigers are being bred and inter-bred in private breeding facilities and urban back yards. According to WWF's species policy expert, Leigh Henry, this situation threatens the work that has been done to conserve wild populations in Asia. "A patchwork of regulations governs these tigers, meaning no agency can say how many there are, when they are born, when they die and what happens to their valuable parts when they do. Illegal trade in tiger parts remains the primary threat to tigers in the wild, and the last thing we want is parts from captive tigers helping sustain or even fuel this black market."⁴⁷

Despite the CITES minimum standards that the breeding of tigers as Appendix I animals, needs to be regulated and at the very least, the organisations/businesses that breed tigers need to be registered with CITES through the national authority, South Africa has not listed one breeding operation with CITES. As a result:

- No national audit of tigers has been undertaken so who has them, who is breeding them, how many there are or where they are is not known.
- There is no reliable data on the numbers of tigers that are trophy hunted in South Africa as generally a permit is not required to hunt a tiger;
- There are no regulations governing trade in tiger parts and derivatives within the country;
- No one needs to account for how tiger body parts are "disposed of".

⁴⁷ <https://www.theguardian.com/environment/shortcuts/2018/jun/20/more-tigers-live-in-us-back-yards-than-in-the-wild-is-this-a-catastrophe>.



Mystic Monkeys and Feathers (Limpopo).

Image: EMS Foundation (September 2017).

South Africa's pugnacious, pro-sustainable use ideological framework and the consequent lax and/or non-existent regulations as well as inadequate enforcement of the captive breeding and farming industry (and particularly because a large number of lion breeders in South Africa also breed tigers) means that the tiger/lion bone traders and criminal networks could easily take advantage and exploit it. It may also provide fertile ground for the bone industry to launder tiger bones into the market. As a recent article in the *Daily Maverick* noted, "an irony at the heart of the tiger bone trade is that, in Asia, lion bones are being used in fake tiger bone wine, while in South Africa tiger bones are being faked as lion bones because the DEA has licensed lion bone export."⁴⁸

By allowing tigers to be bred for international trade, South Africa could be in violation of the country's commitment to CITES, specifically CITES Resolution Conf. 12.10, which requires registration of Appendix I breeding facilities operating for commercial purposes. CITES Decision 14.69 may also apply as it requires such facilities to "implement measures to restrict the captive population to a level supportive only to conserving wild tigers; tigers should not be bred for trade in their parts and

⁴⁸ <https://www.dailymaverick.co.za/article/2018-04-23-tigers-being-bred-in-gauteng-backyards-for-petting-andbone-export/#.Wt7gNi5ubX4>.

derivatives.” Resolution Conf. 12.5 (Rev. CoP16) also urges “Parties and non-Parties on whose territories tigers and other Asian big cat species are bred in captivity to ensure that adequate management practices and controls are in place to prevent parts and derivatives from entering illegal trade from or through such facilities”.

In February 2018, BAT and the EMS Foundation wrote to the CITES Secretariat with regard to facilities/individuals keeping Asian big cats (mainly tigers) in captivity in South Africa pointing out that we are very concerned that South Africa’s lax and unregulated approach is contributing directly to the demise of tigers and their illtreatment and the growth of the tiger bone industry. South Africa’s management practices and controls are totally inadequate for such facilities and as a consequence there is nothing to prevent Asian big cats from entering the illegal trade from or through the breeding and keeping facilities in South Africa, including the ‘disposal’ of their body parts. There are also a number of individuals in South Africa that are breeding and keeping Asian big cats in their backyards in city suburbs.

Since early 2016, including in the recent past (3 October 2017 and 14 December 2017) BAT and EMS have asked the DEA whether they know the number of Asian big cats in South Africa and whether they monitor and audit the South African facilities. The DEA have continuously and consistently replied that they do not make any attempt as Asian big cats are ‘exotics’ and therefore, it is not their responsibility. This, despite the fact that they are CITES Appendix I animals.

During a conversation on 3rd October 2017 with Mr Mpho Tjiane Deputy Director: CITES Policy Development and Implementation, Biodiversity and Conservation (DEA), we asked:

Question: *Are people allowed to hunt tigers in South Africa?*

DEA Reply: *I don’t know, you must ask the provinces. We don’t regulate hunting of tigers here.*

During another meeting with Mr Mpho Tjiane, on 14th December 2017 in relation to South Africa’s procedures *vis-à-vis* the lion bone quota, we asked:

Question: *....So there is a possibility that I could replace the lion bones that you’ve now put the tag on with tiger bone, and hope for the best, that you don’t pick it up. I mean, that’s possible.*

DEA Reply: *Yes. I can send a piece of anything in South Africa and stick something in, you won't know.*

In terms of CITES regulations, all facilities breeding Appendix 1 animals (whether indigenous or exotic) need to be registered with CITES by the National Authority. However, South Africa does not have a single facility listed with CITES for any Asian big cats, despite the fact that there are many places that are breeding them in South Africa and South Africa has a burgeoning international trade in live tigers to Southeast Asia.

Another problem is that the South African authorities are allowing tigers to breed with lions as well as with other sub-species of tigers. Very often these predators are kept in the same enclosures.

Aware that under Decision 17.229⁴⁹ taken at COP 17, held in South Africa in September 2016 the CITES Secretariat was directed to conduct a review of the number of facilities keeping Asian big cats in captivity in the territories of CITES Parties and the number of Asian big cats kept in these facilities, on the 24th January 2018 we wrote to the DEA as follows:

Question: *We are aware that under Decision 17.229, the CITES Secretariat is directed to conduct a review of the number of facilities keeping Asian big cats in captivity in the territories of CITES Parties and the number of Asian big cats kept in these facilities. The EMS Foundation understands that the Secretariat has issued a Notification to the Parties to seek such information from the Parties. Does DEA have this information? If so please can it be provided to ourselves? If DEA does not have this information, how does it plan on obtaining it and what is the timeline?*

We received no reply and we sent a reminder email to the DEA on 16th February 2018, to which we received this brusque reply from Mpho Tjiane, Deputy Director: CITES Policy Development and Implementation, Biodiversity and Conservation, Department of Environmental Affairs:

DEA Reply: *Yes email received and we will be communicating with Secretariat on how we will deal with this matter as you can appreciate that there are 9 Provinces in South Africa*

⁴⁹ <https://cites.org/eng/node/48653>.

and we have to coordinate the information. We have no time lines to achieving this goal as we have not planned.

In answer to Parliamentary Question (No. 2688, 8 September 2017): What is the total number of (i) registered breeders of tigers, (ii) tigers in captivity and (iii) tigers that have been hunted in South Africa since 1 January 2017 and (b) what is the breakdown of the numbers for each province? The Minister of Environmental Affairs replied: Tigers are alien in South Africa and are kept for among others zoological and breeding purposes. Tigers are not regulated in terms National Environmental Management Biodiversity Act (Act No. 10 of 2004) or Threatened & Protected Species Regulations (TOPS). The national Department of Environmental Affairs, therefore, does not keep statistics on numbers of registered breeders, tigers in captivity, and hunting in South Africa as it is done with the key indigenous big mammals (Rhino, Elephants) as well as other big cats (Lions and Leopards). Provincial Authorities may have statistics on a number of registered captive facilities and hunting as such may be regulated through respective provincial legislation.

In terms of Schedule 4 of South Africa's Constitution, Environment is a shared competency between national and provincial governments. We are concerned by the DEA's apparent strategy of obfuscating its responsibility by blaming the provinces when it comes to the provision of information in relation to the implementation and fulfilment of South Africa's obligations in term of international treaties it is a signatory to, such as CITES. This appears to be a possible tactic on the DEA's part to deflect from its lack of compliance, oversight and implementation, particularly as there are established government forums represented by all the provinces, the DEA and SANBI which meet regularly and where information is supposedly shared.

In a meeting between ourselves and the Limpopo province Director for Wild animal trade and Regulation, Mr. Sam Makhubele and his team, on the 22nd February 2018, we asked if their department had ever received a request from the DEA in relation to Asian big cats, specifically: Species concerned; Name of establishment; Address of establishment; Date of establishment of the facility and last known date on which it was still in operation; Source of information about the existence of the facility. Their reply was one of surprise, stating categorically that no request to the Limpopo province from the DEA had ever been received.

The 2015 TRAFFIC/Wildcru report, *Bones of Contention*, also raised serious concerns about the growing trade in tigers and their parts and products from South Africa, and that tiger bones from South Africa may be laundered as Lion bones using CITES Appendix II. Limitations in the South African legislation applying to endangered exotic animals have made it possible for an unregulated domestic trade in Tigers. The report also flagged the lack of transparency by the government and the industry on the matter.

In 2015, the *Bones of Contention* Report estimated that there were more than 280 tigers (mainly Bengal) in at least 44 facilities in South Africa. In January 2018 we conducted preliminary, and mainly Internet, research to try to identify 'facilities' that had tigers in South Africa. Our research showed that the industry has grown and there are now more facilities and more tigers. It also clearly showed that inbreeding in many of these facilities is rampant. We identified 56 'facilities' (this figure does not include individuals who keep tigers in urban suburbs)⁵⁰:

Free State – 15.

North-West – 14.

Limpopo – 10.

Gauteng – 8.

Eastern Cape – 5.

Western Cape – 2.

KwaZulu Natal – 1.

Our list of 'facilities' can be accessed from our [Website](#).

This list is by no means exhaustive, as the number of facilities/individuals and number and species of Asian big cats is not known, regulated or quantified in South Africa.

“BONES FOR SALE, BONES FOR SALE”: SHOW US THE MONEY!

⁵⁰ Since the publication of our list we have identified an additional 3 tiger facilities in South Africa

Mindmap

Please follow the link to our [Mindmap](#). It identifies the linkages between exporters and importers of 'lion' bones from 2014-2017.

The need for Forensic Investigations

South Africa's so-called legal bone trade is far from transparent and virtually nothing about how the industry functions, the make-up of the industry, or the key actors involved has been placed in the public domain by the State or the industry. Of concern is that the key question of how local actors become linked into and integrated into the Asian side of the trade, and the foreign criminal networks and operations is undocumented. The South African environmental agencies appear to be issuing 'lion' bone permits willy-nilly without doing due diligence or proper appraisal and evaluation of the traders in South Africa - particularly in relation to who they are, how they become involved in the trade or how they became connected to the mainly illicit networks in Southeast Asia.

Through PAIA responses from the Gauteng province (GDARD), interviews and investigations, BAT and the EMS Foundation have been able to piece together some elements of the so-called legal trade, including the traders/agents involved (on both the supply and demand side), the supposed destinations, as well as a few of the big cat owners who sell the skeletons on to the traders/agents. However, when it comes to the details of the money flows and economics of the 'lion' bone trade on the South African side - after all, this is what is driving the trade - very little is known. Given the links of the big cat bone trade to illegal activities, criminal syndicates and tax evasion, it seems incredulous that a government department whose key mandate is conservation and biodiversity is given the exclusive responsibility on decisions on whether to trade or not and what to trade in, based solely on a highly contested and deeply-flawed and ideological interpretation of "sustainable use". If the DEA's policies fail to prevent corruption, criminality and suffering, then it follows that it should be held legally liable.

There are clear links of the big cat bone trade to trafficking (which goes hand-in-hand with tax evasion, corruption and money laundering) and that the bones for tigers and other big cats hold the most value on the international black market. Yet, there is very little in-depth analysis of the money flows for this industry. Much more needs to be understood about: the actors involved and their credentials; the structures of the

industry; and mechanisms and physical movement of money along the trade chain. It is also important to probe their financial networks, i.e. who may be bankrolling them or why and if they may be fronting for other entities. Who is providing the high-level planning, organization and financial resources along the transactional trade chain, including sourcing, purchasing, killing, processing, storing, packaging and shipping?

It is crucial to unpack how the South African traders come into contact with the traders in Southeast Asia, what networks they are linked into within South Africa and what relationships they have with the predator breeders and the South African Predator Association. How do the South African exporters receive payments from the buyers in Lao PDR, Vietnam and Thailand? Can the South African government give the assurance that money laundering is not being facilitated and that the movement of significant illicit financial flow is not involved? How do the customers in Southeast Asia transfer funds to their South African suppliers? Can the South African government give the assurance that bones/skeletons that are exported to Lao PDR are not illegally exported to and traded in Vietnam? South Africa as a Party to CITES is obligated to take preventative action to stop these illegal activities. Moreover, South Africa has ratified the United Nations Convention Against Transnational Organized Crime (UNTOC) and the United Nations Convention Against Corruption (UNCAC).



Boskoppe Lion and Tiger Reserve.

Image: EMS Foundation (September 2017).

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Access to, and analysis of, this information and transparency is crucial, not only in understanding the nature of the trade but in gaining insights into its links into illegal trafficking. The South African government urgently needs to open this murky industry (and its participants) to public scrutiny so that it can be fully and accurately interrogated and understood and the money trail thoroughly monitored. Particularly given that this is a highly lucrative trade and that our investigations of the destinations on the demand side bring into question the *bona fides* of the recipients as well as their possible links to illegal traffickers. What needs to be publicly investigated is how the South African traders (breeders/suppliers/etc., middlemen and exporters) make and receive payments, from and to whom, how much and where they have bank accounts. Their payments to the South African Revenue Services (SARS) also needs to be urgently examined and all their paperwork and invoices scrutinised to check whether they may be producing 'shadow' invoices for the purposes of non-disclosure to SARS. Indeed the entire industry needs to be investigated by the Auditor-General.

Not Adding Up: What the Bone Traders Declare

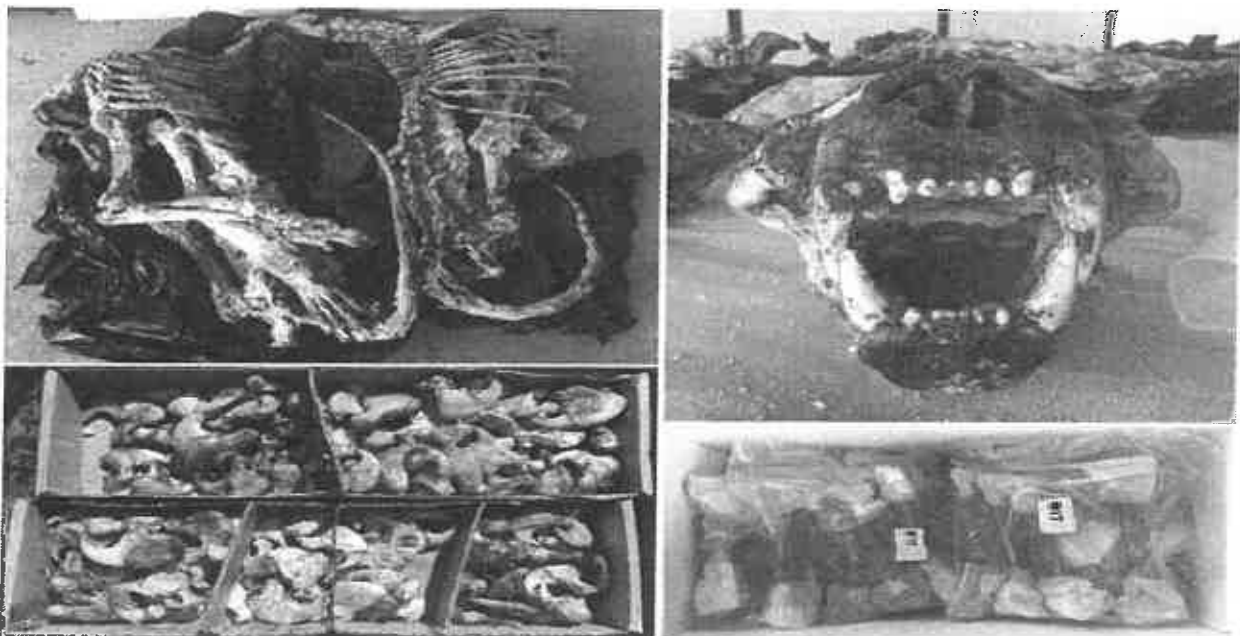
BAT and EMS have had access to documents that show what some of the bone traders supposedly charged for their 2017 shipments to Southeast Asia, i.e. transaction amounts as provided to South African authorities. The inconsistencies related to these amounts raise serious concerns. It should be noted that traders had to pay ZAR550 per skeleton for DNA tests, which presumably was built into the charged amount. Examples include:

- ZAR615,039 for 26 skeletons (R23,655 per skeleton) to Lao PDR.
- USD86,000 for 40 full skeletons, i.e. with skulls etc. (USD2,150 – approximately ZAR26,000) per skeleton to Lao PDR.
- USD49,000 for 32 skeletons (USD2,150 each for 10 full skeletons, i.e. with skulls etc. and USD1,250 each for 22 skeletons) to Lao PDR.
- USD8,750 for 7 skeletons (USD1,250 per skeleton) to Lao PDR.
- ZAR34,600 for 5 skeletons (ZAR6,920 per skeleton) to Lao PDR.
- ZAR4,000 for 4 skeletons (ZAR1,000 per skeleton) to Lao PDR.
- ZAR31,000 for 31 skeletons (ZAR1,000 per skeleton) to Vietnam.
- ZAR29,000 for 29 skeletons (ZAR1,000 per skeleton) to Vietnam.



- ZAR29,600 for 37 skeletons (ZAR800 per skeleton) to Thailand. □ ZAR 27,000 for 54 skeletons (ZAR500 per skeleton) to Vietnam.
- ZAR28,500 for 57 full skeletons – 53 with skulls and 4 without (ZAR500 per skeleton) to Vietnam.
- ZAR11,000 for 22 full skeletons, i.e. with skulls etc. (ZAR500 per skeleton) to Vietnam.
- ZAR6,000 for 12 skeletons (ZAR500 per skeleton) to Thailand.
- ZAR2,000 for 4 skeletons (R500 per skeleton) to LAO PDR.

As stated in the TRAFFIC & WildCRU 2015 *Bones of Contention Report*, in 2013 local South African traders bought complete skeletons from the industry for a maximum of about ZAR20 000 and that prices escalated along the trade chain and were several times higher when the skeleton reached dealers in Southeast Asia.⁵¹ While according to interviews conducted in 2017 with a number of South African professional trophy hunters the price at “the breeding farm gate” the price was ZAR30,000 to ZAR50,000 a skeleton, depending on the size and whether it had a skull, teeth and claws.⁵⁷ If, indeed, the current price “at the breeding farm gate” is between ZAR30,000 to ZAR50,000 then, since it is all about profit, it is also very plausible that illegally killing wild lions for the bone trade may be cheaper than sourcing bones from the captive-breeding industry.



Bones ready for export from South Africa to Southeast Asia.

Image: Vivienne Williams.

⁵¹ www.wildcru.org/wp-content/uploads/2015/07/Bones_of_contention.pdf.⁵⁷ Interviews conducted by Mike Cadman, 2017.

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Williams *et al.* (2017) found that the bone traders buy skeletons from multiple sources in different provinces, consolidate the shipments, and then usually apply for CITES export permits from their home province. Our research shows that since the establishment of the quota this is not always the case. Of the twenty-seven CITES export permits issued in 2017, 13 were issued by Gauteng, eight by Free State, five by North West and the origin of one is unknown. Of the four traders who exported 'lion' bones in 2017, three are domiciled in Gauteng and one is in the Free State.

Taking the Gap: Exploiting the Severe Flaws in the Oversight Process

Weak Procedures

Information obtained from the DEA revealed the following procedures for 2017:

1. The DEA runs the quota and allocates it per application.
2. The provinces check/count the skeletons before permits are issued or before the skeletons/sets of bones are tagged.
3. The origin/source of the individual skeletons/bones or how and where the lion was killed is not recorded. This is a major shortcoming as there is therefore no way to check where the lions come from and where or how they were killed. This obviously also has major welfare implications.
4. Each tag is supposed to be individually numbered, e.g. 1/800 2017(one of 800) and so on, and this number must be listed on the CITES export permit Addendum.
5. Before the skeletons/sets of bones are packed a DNA sample is taken per set of bones (per skeleton) and sent to the National Zoological Gardens for testing. DNA tests would not be able to distinguish between wild or captive lions as it only identifies species.
6. The traders/exporters pay approximately R550 upfront per skeleton.
7. A huge flaw in the system is that the traders take the bones after the DNA sample and then pack them. This is where tiger bones could be swapped for lion bones and smuggled out of the country. The TRAFFIC/WILDCRU Joint Report, Bones of Contention also identified that there is a serious risk of tiger bone, teeth and

claws from South Africa being laundered and exported as legal lion specimens using CITES export permits.⁵²

8. A random DNA sample may be taken at the airport, however if it does occur only one item per consignment would be tested. This is because DNA costs (at this stage of the process) are paid for by State and only a limited budget has been allocated for this purpose. (The LAB-IN-A-BOX portable DNA barcoding kit, which makes species identification possible for port officials within a few hours was only presented to South Africa on 20 November 2017.⁵⁹ The information we found is that these kits have not yet been rolled out in South Africa. Port officials would also need to be trained to use the kit.) As the majority of the skeletons left South Africa before the 20th November, DNA samples, if taken at ports of exit, would have had to be sent to a laboratory for testing and this would have taken days if not weeks, by which time the consignments would have already left the country.



Photograph taken by Vivienne Williams.

⁵² www.wildcru.org/wp-content/uploads/2015/07/Bones_of_contention.pdf.⁵⁹
<https://www.sciencedaily.com/releases/2017/11/171120085428.htm>.

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What Moratorium?

It is important to note that CITES export permits were issued in 2017 before 19 June (when the quota was set) and at least 50 skeletons were exported before June as a result in 2017⁵³. This also means that they were not subjected to the above procedures, despite the fact that they were part of the 2017 quota and that the DEA had publicly stated it had placed a moratorium on the export of 'lion' bones until the quota had been set and even although in a press release dated 28 June 2017 announcing the quota the Minister stated that "This announcement is in line with the commitment made earlier this year by the Minister that no lion bones or other derivatives would be exported from South Africa from January 2017 until a quota has been set, and a determination made as to how the process will be managed." However, the DEA only sent an email dated 20 January 2017 instructing the Provinces to withdraw all permits dealing with lion bones until the quota has been established. As this email was retracted by the DEA in February 2017, South Africa did not comply with its commitment to CITES.

On the February 2nd 2017, 'lion' bone trader Andries Van Tonder legally disputed the CITES annotation (that an annual quota must be established before any bones can be exported and which came into effect on 2 January 2017). It was settled out of court as the DEA, in response, decided to retract its email to the Provinces on 20 January 2017 and validate the export permits. This situation arose because the Gauteng Department of Agriculture and Rural Development (GDARD) issued a number of permits to traders *after* the decision was taken at CITES COP17 on 2 October 2016, including two permits in October 2016 to Van Tonder to export 60 skeletons to Son Long Investments in Vietnam. GDARD continued to issue permits in November and December 2016 and January and February 2017. Shipments also went out of the country in January and February 2017.

Manus (Marthinus Philippus) Steyl also lodged an Application against the Free State Department of Economic Development, Tourism & Environmental Affairs (Case No.: 2841/17, Bloemfontein) on 23 June 2017. Steyl was seeking an order "compelling the Province to consider the applications submitted by the applicant for the exportation of any bones, bone pieces, bone products, claws, skeletons, skulls and teeth of Lions derived from captive breeding operations". Steyl argued that the Province had not

⁵³ According to information we have obtained using PAIA.

considered his applications for permits because of the decision at CITES COP17 in 2016 to set a quota. His Motion was that the Province can still consider the applications and allow Steyl to trade pending the finalization of the quota.⁵⁴

QuotaShmota: Why Worry About Weights and Quantities?

The DEA set and allocated the 2017 quota at 800 lion skeletons. But our research, which also gave us access to the CITES export permits, damningly shows that the DEA, who were running the quota nationally, oversaw the issuing of CITES permits for 870 skeletons and signed-off on their export. The DEA cannot argue that all these permits may not have been used, as we have verified every one of them against actual exports. Moreover, some of the allocated numbers were issued/used twice.⁵⁵

As if all of this is not worrying enough, our investigations reveal that if one analyses the weights of the big cat skeletons that were exported in 2017, many more than 870 were actually exported. In fact, it could mean that at least twice or three times as many lion skeletons were exported than what was declared and it could also mean that tiger bones could have been included in the consignment.

There are mounting concerns that the legal sale of lion bones is masking an illegal trade. In addition, given that the captive breeding of tiger and ligers in South Africa is unregulated and growing, and that provincial conservation authorities are aware that the demand to “euthanize” tigers is dramatically increasing⁵⁶, the probability is high that bones from CITES Appendix I tigers, and/or ligers, bred in captivity in South Africa are being laundered as lion bones using CITES Appendix II permits. This can be achieved by fraudulently falsifying the quantities of skeletons declared on CITES export permits. Researchers Williams, Loveridge, Newton and Macdonald developed a method for the authorities to detect “mis-declarations” in the lion bone trade by using “the average mass of a lion skeleton to corroborate the numbers of skeletons declared on CITES permits, relative to the weight of the consolidated consignments stated on the air waybills”.⁵⁷ Their peer-reviewed 2015 research article, *‘Skullduggery’: Lions Align and Their Mandibles Rock!*, demonstrates that the average weight of a lion skeleton with a

⁵⁴ <https://pmg.org.za/committee-meeting/25178/>.

⁵⁵ For examples, allocated numbers: 494-497, 499, 501-508, 510, 519, 520.

⁵⁶ Werner Boing, pers. comm. 11/03/2015, quoted in Vivienne L. Williams, Andrew J. Loveridge, David J. Newton, David W. Macdonald ‘Skullduggery’: Lions Align and Their Mandibles Rock! PLoS ONE 10(11): e0135144, p.7, November 2015.

⁵⁷ Vivienne L. Williams, Andrew J. Loveridge, David J. Newton, David W. Macdonald ‘Skullduggery’: Lions Align and Their Mandibles Rock! PLoS ONE 10(11): e0135144, November 2015.

skull is nine kilograms (but can vary between six and thirteen) and that skeletons without skulls weigh between six to nine kilograms.

Given that the mean average of a full lion skeleton is 9 kilograms, our examination of a sample of 10 skeleton consignments exported in 2017 alarmingly indicates that the individual skeletons actually exported on average weighed between 11 and 30 kilograms (and before being put into cartons for shipment). Moreover, in one instance, the veterinary certificates (which have the weights as provided by the processing taxidermist) indicated that the total weight for 71 skeletons was 1,580 kilograms – an amount equal to at least double the quantity of skeletons declared.⁵⁸ This implies that the industry is trying to conceal an illegal trade in tigers, ligers and lions and that some of the traders are deliberately under-declaring the quantities/number/species of skeletons they are commercially exporting by fraudulently falsifying documentation (possibly with the help of corrupt officials) to increase their profits. It also means that the real extent and nature of this controversial, sordid and yet inexplicably legal, trade is not known.

Of grave concern is that these consignments were all stamped and approved by the DEA at the airport and attached to the CITES export permit. It is also alarming that this has not been picked up by any of the CITES authorities along the trade chain and as a result could point to corruption. Examples of some of these illegally exported bone consignments are:

- An average weight per skeleton of 20.5 kilograms (62.75% which they declared had no skulls). This is more than double the average weight of a lion skeleton with a skull and could mean that at least twice or three times as many lion skeletons were exported than what was declared and it could also mean that tiger bones could also have been included in the consignment.
- An average weight per skeleton of 18.7 kilograms (50% which they declared had no skulls). This is double the average weight of a full lion skeleton and could mean that at least twice as many lion skeletons were exported than what was declared and it could also mean that tiger and/or liger bones could have been included in the consignment.

⁵⁸ It is not known if they had already been packed in cartons when weighed.

- An average weight per skeleton of 18.3 kilograms (full skeletons). This is double the average weight of a full lion skeleton and could mean that at least twice as many lion skeletons were exported than what was declared and it could also mean that tiger and/or liger bones could also have been included in the consignment.
- An average weight per skeleton of 17.6 kilograms (50% which they declared had no skulls). This is almost double the average weight of a full lion skeleton and could mean that at least twice as many lion skeletons were exported than what was declared and it could also mean that tiger and/or liger bones could also have been included in the consignment.

In 2017, an illegal wildlife trader in Vietnam claimed that lion bone from Africa sent to Vietnam cost him USD880 per kilogram (approx. ZAR10,500).⁵⁹ If indeed this is an accurate indication, then killing lions and captive tigers and ligers for their bones is not only a dangerously lucrative endeavour but one which may serve to motivate the various actors involved to illegally fabricate the quantities (and species) of skeletons declared on CITES export permits.

Of major concern is information that has recently been brought to light by the EIA, *CITES AC30 AGENDA ITEM 25: Supplementary Information on Lion Trade, July 2018*, which shows that in China lion bone is now being sold at about three times the price of wild tiger bone. According to the EIA, rather than “serving as a ‘cheaper more readily available substitute’ to tiger in consumer markets, lion trade is exacerbating demand for tiger and other big cat products...publicly available court records from China indicate that lion parts are not traded as a cheaper substitute to tiger, and instead are sold to consumers as tiger. We are very concerned that trade in lion is exacerbating the perceived availability and acceptability of tiger products and is stimulating further demand. In eight of a total 23 seizures of lion parts in China collated by EIA..., court records specifically indicate that the item in question was being sold as tiger, and thus was not serving as a substitute product. We therefore support the alternative interpretation that lion parts are serving to augment demand for tiger. Court records also reveal that per kilogram prices for lion bone in China one step in the trade chain

⁵⁹ Grinding Rhino Operation Red Cloud, Elephant Action League Investigative Report, July 2017, p.69.
<https://elephantleague.org/wp-content/uploads/2017/07/Grinding-Rhino-July2017-Elephant-Action-League.pdf>

away from the final consumer are 2-3 times higher than those for wild-sourced tiger bone.”

EIA also revealed that the scale of illegal lion trade in China is much larger than reported and that China is a key destination country for trafficked lion parts. “EIA has collated information on seizures of lion parts and products in China from open source media, including news reports and publicly available court records” and the totals are significantly higher than those presented by CITES for the upcoming CITES Animal Committee meeting (AC30, July 2018).

Apart from the trader networks, other actors in the trade chain include airlines and shipping agents. Our investigations reveal that the airline that transported all the ‘lion’ bones to Southeast Asia in 2017 was Singapore Airlines. The shipping agents were Airline Express/U-Bag and Air Menzies.

It is also clear from permit information that South Africa’s policies are allowing and condoning the domestic trade in lion bone.⁶⁰

THE PREDATORY ELITE: WHO’S WHO IN THE BODY PARTS TRADE ZOO

Only a small group of people benefit from the industry. Indeed, in 2017 there were **four traders** from South Africa (Sandra Linde Taksidermie, Stephanus Jacobus Alberts, Herman De Jager, and Gavin Oberholzer) exporting ‘lion’ bone to **five importers** via CITES permits. Three are domiciled in the Gauteng and one in the Free State. In terms of 2017 declared quantity, Vietnam was the largest importer (Thanh Manh Hung Company and Vinh-Phu Joint Stock Company), followed by Lao PDR (Ainthaphone Trading/Vannaseng Trading and Somok Phaimany) and Thailand (Natakorn Yuennan).

It is unclear why the DEA would choose to support the business interests of a small group of people driven by the desire to make profit from the body parts of lions and other big cats at the expense of ethical conservation practice. If South Africa is to be

⁶⁰ Permit no. 000059 (GDARD) issued on 31/05/2017 to Mr Nkuna in Mpumalanga for buying and transport of lion bones from bone-trader S. J. Alberts.

regarded as a responsible and ethical custodian of wild animals, and a country that cares about wild animals in other African countries and across the globe, urgent action needs to be taken to curtail the captive breeding of lions and other big cats and the sale of their bones and skeletons.

The DEA has consistently denied the EMS Foundation access to information on the actors in the captive breeding industry, the bone traders/exporters and the actual destination addresses, i.e., the information on the CITES export permits. Without this information it is almost impossible to effectively analyse and understand the 'lion' bone industry. Fortunately for BAT and the EMS Foundation, different agencies within the State's Environment cluster interpret South Africa's access to information legislation differently, and it was a game-changer when the Gauteng Province gave us access to their permits. This information plus additional data made available to us, information in the public domain and our own investigations meant we could try to piece together information on the Traders and Destinations.

In response to Parliamentary Questions (1734 and 1343) from the Democratic Alliance in April and June 2011 requesting the names of the exporters and end recipients on export consignments to Lao PDR in 2009 and 2010, the Minister of Water and Environmental Affairs provided the following information:

South African Traders:

- Mr S. H. Rothman.⁶¹
- Mr J. P. Wapenaar / Mr S H Rothman.⁶² □ Hatari Taxidermy.
- Mr G. J. van Zyl (c/o Hatari Taxidermy).
- Mr T. Cloete.
- Sandra Linde Taxidermy.⁶³
- Mr M. P. Steyl (c/o C Williamson Savuti Taxidermy).
- Mr J. J. van der Westhuizen (Letsatsi la Africa).

Importers:

- S. Durosagham.
- Sipharpra Duarseram.

⁶¹ Note: spelling is actually Rothmann.

⁶² *Ibid.*

⁶³ Registered as *Sandra Linde Taksidermie*.

- Vixay Keosovang.
- Jacek Raczka.
- Bounpasong Paphatsalang.

This information has been published on the internet by the DEA.⁶⁴ It also linked the following 'lion' bone industry members *directly* to Vixay Keosavang⁷²:

- Sandra Linde Taxidermy.
- Sebastian Rothmann.
- Manus (Marthinus Philippus) Steyl.
- J. J. (Kobus) Van Der Westhuizen.

However, the Minister did not include reference to transactions that took place in October 2010 between Xaysavang Trading Export-Import, 174 Ban Anousonxay, Paksan District, Bolikhamxay, Lao PDR and several South African traders. This information (including copies of invoices and permits) was placed in the public domain by forensic investigator Paul O' Sullivan⁶⁵ and exposed some of the following:

- Juan Pace (Shangwari Safaris) for 17 lion carcasses.
- Steyl Game (Marnus Steyl) for 13 skeletons.
- Leeuwbosch Game Farm (Dr Deon Engelbrecht) for 45 lion carcasses.
- Letters from Steyl Game and Leeuwbosch Game Lodge "To Whom it May Concern", stating that they are registered companies that also "act as game brokers within the local wild animal trade in South Africa", that they "do trading with Xaysavang Trading in Laos regarding legal hunting and game broking in South Africa and assist with the exports of predators, wild game, antelope and exotic species (rhino, sable and roan antelope)" and "help to organize and conduct hunting for clients of Xaysavang Trading Export Import co ltd of Laos." Further they "assist the above mentioned company in the buying of wild animals and obtaining the necessary permits required for exporting to Laos."

According to investigative journalist Julian Rademeyer, "Xaysavang first came to the attention of South African authorities in September 2008, when Chunchom and four other suspects were arrested in Middelburg in Mpumalanga after they allegedly offered

⁶⁴ https://www.environment.gov.za/sites/default/files/parliamentary_updates/question1734.pdf.⁷²
Most of them remain in the live lion and lion body part business.

⁶⁵ Copies of all the original documents can be found on Forensic Investigator Paul O' Sullivan's website: <https://www.forensicsforjustice.org/portfolio-posts/rhino-poaching/> Annex. G.

an undercover policeman \$60 000 for three rhino horns. The case against Chunchom and two other suspects was later withdrawn. In July 2009 the Kenya Wild Animals Service (KWS) and customs officers seized 260kg of elephant ivory and 18kg of rhino horn at Jomo Kenyatta International Airport. The shipment was registered to Xaysavang and was destined for Laos. Officials suspected the shipment originated in South Africa.”⁶⁶ In addition, Keosavang’s role in widespread illegal wild animal trade had been noted by various law enforcement agencies in Asia from as early as 2003.⁶⁷ The fact that South Africa was issuing CITES export permits to criminal syndicates and questionable destinations *after* they had knowledge of the *Xasavang Network* speaks to the gapping loopholes in CITES permitting mechanisms.

In answer to a Parliamentary Question (NW2564, September 2017) the Minister of Environmental Affairs said that the reasons for setting the lion skeleton quota was to “avoid the creation of a monopoly in the supply of lion bones to Asia... [and to] avoid stimulating illegal trade.”⁶⁸ Yet, all the available evidence shows that it is reinforcing the existing monopoly of bone-traders in South Africa and stimulating the illegal trade in Southeast Asia.

According to Williams *et al.*, in March 2017 there were six exporters, “five from Gauteng... and...one of whom was listed in the 2011 DEA document.”⁶⁹ From our own investigations it is likely to be Sandra Linde Taksidermie, meaning that Johann Linde and his mother, Sandra have been exporting the bones of big cats to Southeast Asia since at least 2009. Our research shows that they continue to do so.

Our investigations, as well as information gathered from PAIA responses, clearly show that officially only a small number of people legally export ‘lion’ skeletons and bones; that these exporters know each other; and that at times they deal with the same importing entities. From 2015±2017 there has been an exclusive monopoly on this trade, because there appear to be only 5 key exporters, with a sixth being a smaller

⁶⁶ <https://www.news24.com/SouthAfrica/News/Bloody-rhino-poaching-trail-leads-to-SA-safari-operator20110721>.

⁶⁷ See: <https://www.theguardian.com/environment/2016/sep/27/revealed-how-senior-laos-officials-cut-deals-with-animal-traffickers>.

⁶⁸ Question NW2564 to the Minister of Environmental Affairs, 19 September 2017.

⁶⁹ Vivienne L. Williams, Andrew J. Loveridge, David J. Newton, David W. Macdonald. A roaring trade? The legal trade in *Panthera leo* bones from Africa to East-Southeast Asia. PLOS ONE, p.12, 24 October 2017.

<https://doi.org/10.1371/journal.pone.0185996>.

player.⁷⁰ All of them reside in Gauteng province except for Johann and Sandra Linde who are in the Free State province.

The South African bone exporters have other business interests as well. In one case two exporters use addresses that do not correspond with businesses operating at those premises. He also owns, or owned a company, called Spikes Computers which is listed as being located at Voortrekker Road, Krugersdorp. This is the same address this is sometimes listed for Amabula Thatching which is owned by another predator bone trader, Herman de Jager. A visit to Voortrekker Road shows that four companies occupy this address - Smoke Braai Supplies; Cupcake Connexion; Bidvest Car Rental and Philkul's Thai Massage.

Our research shows that these traders export exclusively to Lao PDR, Vietnam and Thailand. As they often send skeletons/bones to the same importing addresses, it means they are part of a shared network, and in some instances linked to illegal networks.

The key questions that need answers are:

- What mechanisms and linkages do the South African bone traders and exporters use to get in touch with the bone importers in Lao PDR, Vietnam and Thailand?
- What local networks (supply and financial) are the South African exporters part of?
- Do the South African bone exporters operate or front on behalf of other entities?

Information obtained through PAIA, public social networks and additional research disclose the following about the South African exporters:

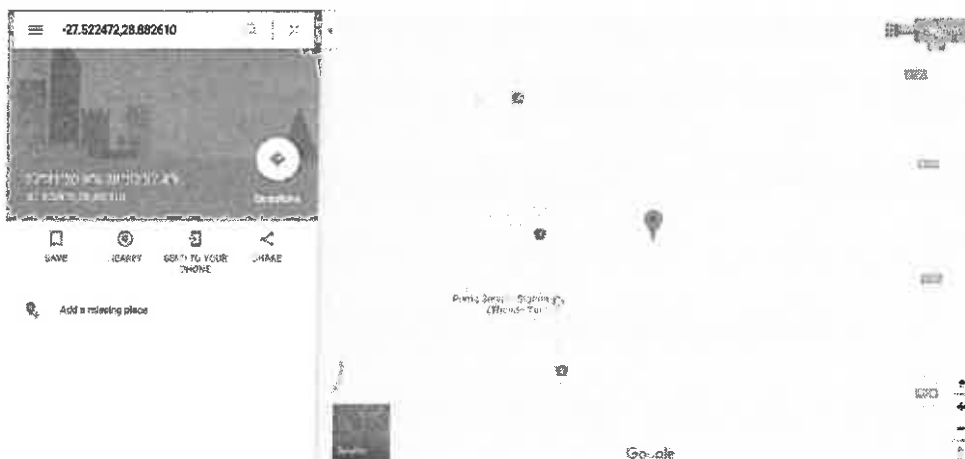
- *Hermanus Frederick De Jager*. Tarlton or Voortrekker Road, Krugersdorp, Gauteng. The address in Voortrekker Rd in Krugersdorp is also the supposed address of a company called Spikes Computers run by another big cat skeleton/bone trader: Andries VAN TONDER. However, Amabula Thatchers is not located at this address, instead Philkul's Thai Massage is.

⁷⁰ JD'T Exports/Johan Du Toit, Farm 154, Hartebeesfontein, Hekpoort, Gauteng (74 skeletons exported 2015± 2016).



Herman De Jager

- *Stephanus Johannes Alberts*. Doornpoort, Pretoria, Gauteng.
- *Sandra Linde Taksidermie*. In 2017, Johann Linde was by far the largest exporters of big cat bones from South Africa to Southeast Asia (specifically Vietnam) and is one of the first entities on record to legally export lion bones. Address: Eensgevonden Farm, Free State. Tel: 058 913 2918. Company registration number: 2008-074810-23cc. Although the business is called Sandra Linde Taksidermie, in fact it is only registered in Johann Linde's name.



Pinned Location: Sandra Linde Taksidermie.

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[Signature]



Johann Linde

- *Gavin Clifton Oberholzer (Clifton Trading)*. Bredell, Kempton Park, Gauteng. Some of the skeletons exported by Oberholzer are processed at Burns Taxidermy (Gerhard Riekert - see no.7. below).
- *Andries Van Tonder*. Krugersdorp, Gauteng. GDARD issued Van Tonder a Standing Permit (no. 20586) on 10 October 2017 (valid for three years) to possess, keep, convey, sell, buy, donate, access, transport and process lion bones/entire carcasses (with or without skulls).



Andries Van Tonder and his wife Narachon Damrongkul

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A

According to Van Tonder's Facebook page, he is the owner of Spikes Computers. The address of Spikes Computers is 278 Voortrekker Road, Krugersdorp, which is the same address that bone trader, Herman De Jager, gives as his business address. Our onsite investigations show that neither of these businesses is located at the addresses provided on the CITES permits.

What is at 278 Voortrekker Street is Philkul's Thai Massage. Andries van Tonder's Thai wife, Narachon Damrongkul is a Facebook friend of Phikul Khejornsit Kemp the owner of Philkul's Thai Massage. Narachon is also listed as one of the recipients of lion bones from Andries Van Tonder (her husband) in 2014 in LAO PDR, namely, Development Agriculture and Industry, Paksane District, Bolikhamxay, Lao PDR. This address is also in the same District linked to named wild animals traffickers Kasavang Trading and Vannaseng Trading Company. This same address was also used by other 'lion' bone traders, namely Rothmann, Riekert and De Jager (with different "front" recipients, namely, Jirapon Donyota and Seree Kongsaree.



- Gerhard Riekert, owner of Burns Taxidermy. Exported 3 skeletons in 2014. Derdepoort, Pretoria, Gauteng. The same address on the CITES export permits was used as the address for Sebastian Rothmann.

- Sebastian/Sebastiaan Hendricks Rothmann – also known as Basjan Rothmann (Exported 20 skeletons in 2014).



Source.

- Images Of Africa Taxidermists (Kevin Cooper)
Protea Ridge, Krugersdorp. Exported 2 skeletons in 2014.

According to the Minister of Water and Environmental Affairs in 2011, Rothmann was trading in 'lion' skeletons/bones since at least 2009.⁷¹ In 2009, Rothmann (Address given as 17 Howitzer Laan, Ifafi, Hartebeespoort) paid ZAR50 to get a permit to buy 53 lion carcasses from the following places: B. B. Joubert Uitspan Leeus Mareetsane, North West (5); A. K. Reinaiker, Broekskuurfarm, Tosca North West (19); J. J. Taljaard, Madiakgama Farm, Tlaskgameng North West (11); Dr Deon Engelbrecht, Leeuwbosch

⁷¹ Question no. 1734 internal question paper no. 18 nw1959e, 24 June 2011: with reference to her replies to question 1134 on 11 April 2011 and 1343 on 10 June 2011, for each export consignment to Lao People's Democratic Republic in 2009 and 2010, what is the name of the (a) exporter and (b) end recipient receiving the goods? ⁸⁰ Copies of all the original documents can be found on Forensic Investigator Paul O' Sullivan's website: <https://www.forensicsforjustice.org/portfolio-posts/rhino-poaching/> Annex. A.

Handwritten initials/signature

Game Lodge, 52 Stella Street, Stella, Olifantshoek North West (18).⁸⁰

- JDT EXPORTS/Johan Du Toit, Hartebeesfontein, Hekpoort, Gauteng. Exported 74 skeletons in 2015±2016.

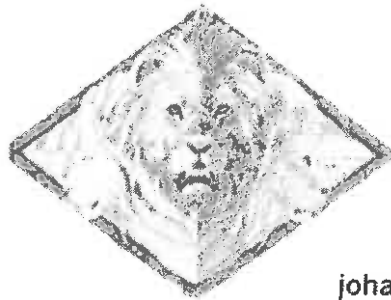


Karin Du Toit

Profile pictures · 26 September 2017 · Facebook for

Basjan Rothmann
+ 27 83 761 9602

Johan du Toit
+27 79 255 8691
+27 83 982 7729



Posbus 16
Hekpoort
1790

johandutoit@live.co.za

Source: Annex F: <https://www.forensicsforjustice.org/portfolio-posts/rhino-poaching/>

The business card above shows that JDT Exports/Johan Du Toit and Sebastian Rothmann were linked. Moreover Du Toit's wife Karin's previous surname was

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Rothmann. The 2010 Forensics for Justice/Paul O' Sullivan documents link Rothmann (and Engelbrecht) to Xasavang.⁷² Moreover, according to *Guardian* investigative journalist Nick Davies, Sebastian Rothmann and Johannes Du Toit frequently visited the offices of Boonchai Bach and his brother in Nakhon Phanom, northeast Thailand in 2016.⁸² Du Toit's Facebook page shows that he was also in Nakhon Phanom in 2014 and that he spends months at a time in Thailand and Laos. He was in Vientiane on 1 September 2017 and Paksan in October 2017 as well as 19 October 2014. Paksan is where a number of the 'lion' bones are exported to.

Du Toit's Facebook page provides evidence that he is linked to Vixay Keosavang in some way. His Facebook friends include: Randy Westraadt, Khaek Soumeexay. Soumeexay is also Facebook friends with wildlife trafficker boss Vixay Keosavang, Keosavang's wife Nong Paphutsalang, Johan Du Toit and Andries Van Tonder (South African bone dealer) and Narachon Damrongkul (the wife of Andre Van Tonder). Vixay Keosavang, Johan Du Toit and Du Toit's wife Karin are Facebook friends with Somok Phaimany (Den), a big cat bone importer. Du Toit and Keosavang are also both Facebook friends with Sutthichia Jangjumrus. Jangjumrus is also Facebook friends with Du Toit's wife Karin, Khaek Sounixay, Den Phaimany and Seree Kongsaree (see Development Agriculture Industry).

Du Toit now lives in Mkuze in the KwaZulu-Natal province. We have written confirmation from the Ezemvelo KZN Wildlife that they "have no registered predator bone traders" in the KZN province.⁷³ Could Du Toit be a bone broker (a middleman) for the South African dealers? The link between Laotian 'lion' bone importer Somok Phaimany and John Du Toit also links him to Keosavang. It also links South African 'lion' bone trader S. J. (Stefan) Alberts to Du Toit. Du Toit and Rothmann's connection to the infamous traffickers the Bach Brothers, including visits to their offices in Thailand in 2016, also links South African 'lion' bone trader S. J. (Stefan) Alberts to the Bach brothers (see shipment by Alberts to Limited Partnership Boonchai).

⁷² <https://www.forensicsforjustice.org/portfolio-posts/rhino-poaching/> Annex-C and Annex-F. ⁸² Email correspondence with Nick Davies, 05 June 2018.

⁷³ Email received from EKZN Wildlife Andrew Muir, Senior Legal Advisor dated 13 March 2018.

Somok Phaimany (@den_cfc)
 Instagram videos & photos ·
 Iimgtaram
 imgtaram.com › den_cfc

— Keosavang (@vixaykeosavang) · Tar Osm
 (@tar_osm) · ຄານ ທຸມພະອິນ (@thumphain)
 ... Tia Xayalinthong (@tiaxayalinthong) ·
 Johan Du Toit (@johan.lionsdutoit ...

IMAGES

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... (@keoviseth4477) ·
 Touktik Keoviseth (@
 touktikkeoviseth) · Tia
 Xayalinthong (@
 tiaxayalinthong) · Johan
 Du Toit (@johan.lionsdutoit) ...



Johan Du Toit

September 1, 2017 · Vientiane, Laos · 🇇🇵



Johan Du Toit x [Profile Name]

Secure · http://www.facebook.com/profile.php?id=100065102116175&sk=mp&_nc=ic&_nc_cat=100001001413501

Johan Du Toit

Check-Ins

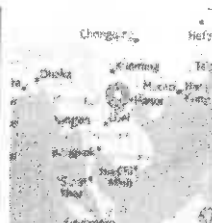
Places Cities Recent



Mkuzo, KwaZulu-Natal
 Visited on May 31, 2018



Nong Khai
 Visited on October 17, 2017



Pakxane, Bolikhamxai, Laos
 Visited on October 4, 2017



Reitana's Smile Dees
 Visited on September 24, 2017

DSM



□ In 2014 three skeletons with skulls were exported to the USA as hunting trophies.
The importer was Siu-Ming HONG, Midlothian Virginia.

The details of the Gauteng 'lion' bone traders/exporters was confirmed in a written response from GDARD in May 2018, see below. It includes Casper Jan Hendrik Van Wyk who, according to GDARD, although registered in 2016, has not as yet exported.

Number	Name of lion bone traders	Province
1.	Gavin Clifton Oberholzer	Gauteng
2.	Hermanus Frederick de Jager	Gauteng
3.	Andries van Tonder	Gauteng
4.	Casper Jan Hendrik van Wyk	Gauteng
5.	S.J. Alberts	Gauteng
6.	J.H. du Toit	Gauteng

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Part One South African **big cat skeleton** traders 2014 - 2017

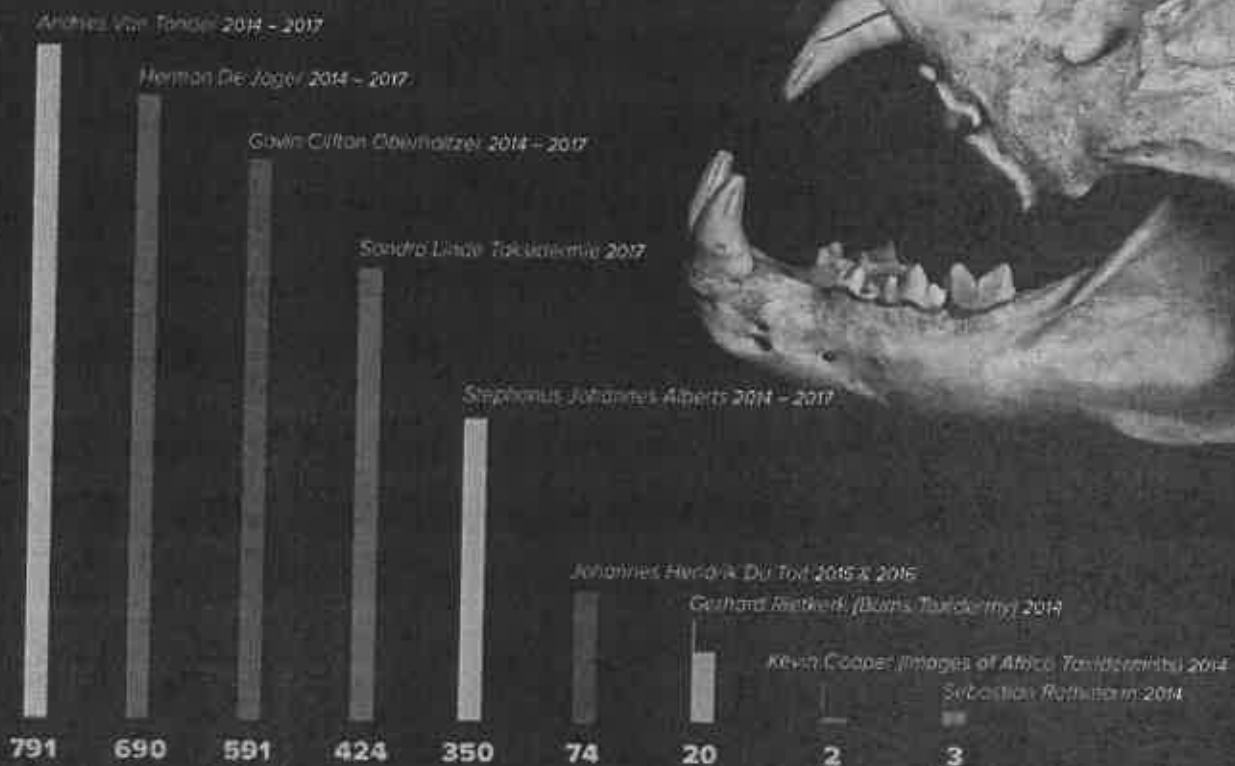
Not Just a by-product of the *trophy hunting* industry

91 % of the skeletons exported in 2017 had skulls present.
In South Africa **Big Cats** are being killed specifically for their bones.

Total number of **skeletons** exported 2014 - 2017

2,945

Traders and Number of Skeletons



BAN
BANNING
SABOTAGE
NATIONAL
TRADE
ACTIVISTS

EMS
FOUNDATION

† Based on research and PAA information gathered as CITES report on its work in 2017

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The confirmed declared 2945⁷⁴ skeletons exported from 2014 to 2017⁷⁵ (which BAT and the EMS Foundation are aware of and can account for) were exported as follows:

TRADER	NUMBER OF SKELTONS
Andries VAN TONDER	791 (2015 – 2016)
Herman DE JAGER	690 (2014 – 2017)
Gavin Clifton OBERHOLTZER (Clifton Trading)	591 (2014 – 2017)
Sandra LINDE Taksidermie	424 (2017)
Stephanus Johannes ALBERTS	350 (2014 – 2017)
Johannes Hendrik DU TOIT	74 (2015 and 2016)
Gerhard RIEKERT (Burns Taxidermy)	20 (2014)
Sebastian ROTHMANN	3 (2014)
Kevin COOPER (Images of Africa Taxidermists)	2 (2014)

A breakdown of where each trader sent the skeletons and the quantities declared is as follows:

TRADER	COUNTRY	IMPORTER AS PER CITES PERMIT	SKELETONS	YEARS
<i>VAN TONDER, Andries</i>	Vietnam	Son Long Investments	484	2015-2017
	Lao PDR	Vinasakhone	128	2016
	Vietnam	Bao Huy Import- Export Trading	101	2015
	Lao PDR	Empt-Import - Export Lao LTD	48	2015
	Lao PDR	Development Agriculture & Industry	25	2014
	Thailand	Lisa Lion Import Export	5	2015
<i>DE JAGER, Hermanus F</i>	Lao PDR	Ainthaphane Trading	408	2016, 2017
	Lao PDR	SVT Trading	112	2015, 2016
	Vietnam	Son Long Investments	49	2016

⁷⁴ It is likely that this number is considerably higher given the evidence of illegally falsified “misdeclarations” of skeleton quantities.

⁷⁵ Based on information gathered by BAT and the EMS Foundation. Note that totals per year are based on the exports of permits issued in that year.

	Vietnam	Bao Huy Imp -Exp	39	2015
	Vietnam	Trans Giang	39	2015
	Lao PDR	Phonsavanh Trading	32	2015
	Lao PDR	Development Agriculture & Industry	10	2014
	Thailand	International Logistics	1	2015
OBERHOLZER, Gavin Clifton (Clifton Trading)	Thailand	Natakorn Yuennan	383	2015,2016 - 2017
	Lao PDR	Vannaseng Trading	112	2014
	Lao PDR	Wattanasook Trading	67	2014
	Lao PDR	Johanny Pakxam	29	2014
SANDRA LINDE TAKSIDERMIE	Vietnam	Thanh Manh Hung Co.	251	2017
	Vietnam	Vinh Phu - CMT Joint Stock Company	173	2017
ALBERTS, Stephanus Johannes	Lao PDR	Somok Phaimany	110	2017
	Lao PDR	Sinthavy Import- Export Co	75	2016
	Lao PDR	Lilavady (correct sp. Lilavadi)	53	2016,2017
	Lao PDR	KNT Trading LTD	46	2015,2016
	Thailand	Lisa Lion Import Export	21	2015
	Thailand	Limited Partnership Boonchai	20	2016
	Lao PDR	CNP Import- Export LTD	16	2015
	Lao PDR	Vinasakhone	9	2016
DI TOFF, Johannes Hendrik (JDT Exports)	Lao PDR	Jtkplecheep (or Jtkplechcep) Ning	50	2015
	Lao PDR	JDT Imports	12	2016
	Thailand	Lisa Lion Import Export	12	2015

RIEKERT, Gerhard <i>(Burns Taxidermy)</i>	Lao PDR	Development Agriculture and Industry	20	2014
ROTHMAN(N), Sebastian	Lao PDR	Development Agriculture and Industry	3	2014
COOPER, Kevin (Images of Africa Taxidermists)	Vietnam	Hoan Van Dien	2	2014

UNLEASHING HELL: THE RISE OF LION BONE SLAUGHTERHOUSES, FACTORY FARMING AND THE MASS KILLING OF LIONS

On the April 25th 2018, a whistleblower, Armand Gerber, a manager at *Predator's Pride* (a captive predator business located in Hartbeespoort in the North West province), told members of the animal protection community and the media about the existence of a lion slaughterhouse in the Free State province established for the sole purpose of killing lions for their skeletons to sell into the tiger/lion bone trade in Southeast Asia.



Elite Trofee & Aanteel WILDVEILING

VERWELKOM U BY DIE WILDVEILING

Bale welkom by Choice Wildlife Group se veiling in Boshof - ons verbou dat jy die dag saam met ons sal geniet.

Die Vrystaat is die ideale habitat vir gesonde wldtelling. Wldboere het gevind dat die wld vanuit die Vrystaat besonder sterk en maklik aanpasbaar is.

Choice Wildlife Group is in 2013 deur Randy Westraadt en André Steyn gestig nadat hulle besef het van Suid-Afrika se voorste wldboere tip p hul drumpele deur om by hulle wld te koop. Hulle wld is baie gesog verwee die gehalte van die wld asook die diversiteit van die spesies en hul gene.

André en Randy boer reeds vir meer as tien jaar met wld op hul onderskeie plase in die Vrystaat. André het meer gefokus op wldtelling op die Wag 'n Bietjie Privaat Natuurreservaat en Randy het op die jagmark gefokus. Randy is aan die stuur van die suksesvolle Choice Africa Safaris op die Choice Ranches.

Hulle boer gesamenlik op ongeveer 7 300 ha wldgrond. Sowat 3 600 ha is tussen Brandfort en Bloemfontein geleë en die meeste van die wldtelling vind hier plaas. Die ander 3 700 ha is tussen Boshof en Kimberley aan die Vrystaat-kant geleë en hier word op jag gefokus. Randy en André glo albei dat daar in die totale wldbedryf baie moet word en daarom speel die jagaspek ook 'n baie groot rol in die groep se bestuursplan.

Hulle pas top-gehalte genetiese in teelsters toe om sodoende oor die langtermyn goeie troppeondheid te bereik. Hoewel gemiddelde hornlengtes van die diere belangrik is, stel die groep meer belang om die speerpersentasie en liggaamsbou van die troppe te verhoog.

Choice Wildlife Group beskou hulself as 'n alles-in-een-besigheid. Hier bedien hulle die beginner en ervare wldboer met gehaltesiee en advies. Die biltongjagter en beroepsjagter word ewe belangrik gesag en hulle glo dat eerlikheid, integriteit en gehalte die belangrikste is. Verreke van hul wld word op veilings en privaat bemark met meer as 100 jagters besoek jaarliks die plase. Hier sal kopers die SUPERIOR DIVERSITY eenheids sian en ervaar.

Randy is genomineer as een van die finaliste vir die WRSA Wldboer van die Jaar 2017

WELCOMES YOU TO THE GAME AUCTION

Welcome to Choice Wildlife Group's auction in Boshoff - we trust that you will be enjoying our day.

The Free State is the ideal habitat for healthy wildlife production. Game ranchers have found that game from the Free State is very strong and easily adaptable.

Choice Wildlife Group was founded by Randy Westraadt and André Steyn in 2013 after they realized leading ranchers from South Africa's are all the time on their threshold to shop for game. They game is very popular because of the quality of the game, the diversity of species and their genes.

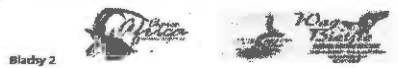
André and Randy has been farming for more than ten years with wildlife on their respective farms in the Free State. André focused more on wild breeding on Wag 'n Bietjie Nature Reserve and Randy focused on the hunting market. Randy is looks after the successful Choice Africa Safaris on the Choice Ranches.

They farm together about 7 300 ha wildlife land of which 3,600 hectares located between Brandfort and Bloemfontein where you find most of the game breeding farm. The other 3,700 hectares located between Boshoff and Kimberley on the Free State side and here the focus is on hunting. Randy and André both believe that you need to invest in the entire game industry and therefore the hunting side also play a major role in the group's management plan.

They use top quality genetics in breeding animals to achieve the long-term good herd health. Although average horn lengths of the animals is important, the group focus more on increasing wearing percentages and physique of the herds.

Choice Wildlife Group sees itself as an all-in-one business. Here they serve the novice and experienced game farmer with quality animals and advice. The biltong hunter and professional hunter are considered equally important, and they believe that honesty, integrity and quality are the most important values. They sell the game at game auctions and to the private market. Annually more than 100 hunters visit the farms. Here buyers will experience SUPERIOR DIVERSITY first-hand.

Randy is nominated as a finalist for the WRSA Game farmer of the year 2017.



The slaughterhouse is located on the farm *Wag 'n Bietjie* in the Glen district outside of Bloemfontein and owned by Andre (Andreas Jacobus) Steyn (47).⁷⁶ Steyn a former *SA Predator Association* council member⁷⁷ is also a co-owner of the Choice Wildlife Group, along with Randy (RC) Westraadt (owner-manager of Choice Africa Safaris, which owns Montague Private Nature Reserve). In 2017, Steyn was issued with a CITES permit to export eight live lions to Bangladesh. This illustrates an association between the live animal traders and the big cat bone traders. Westraadt was also one of the professional hunters involved in the rhino horn trafficking enterprise where CITES trophy hunting permit loopholes were used to export rhino horn for trade by Vietnamese criminal syndicates linked to Chu Dang Khoa.

Predator's Pride, which is jointly owned by J. J. (Kobus) Van Der Westhuizen, (also the owner of *Letsatsi la Africa*), and Johan Willem Pio (the previous owner of Otavi Lion Park - now called Kimba Game Lodge) sell their lions to the *Wag 'n Bietjie* slaughterhouse. Gerber went public because he had formed an attachment with two of the lions - *Jabula* and *Star*, both of whom - along with twenty others - were sold by Predator's Pride into the bone trade on the 22nd April, held in small transport cages for three days and then killed. According to Reinet Meyer from the Bloemfontein SPCA, she was at *Wag 'n Bietjie* on April 24th when these two lions - and a number of others - were

⁷⁶ Steyn is also a director of Blockpave.
⁷⁷ <https://conservationaction.co.za/media-articles/two-sa-hunting-organisations-expelled-over-canned-lion-hunts/>

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killed right in front of her. The day she went to investigate twenty-six lions were killed and on another day that week twenty-eight were killed in the *Wag 'n Bietjie* slaughterhouse. She said that week 80 lions were waiting there to be killed. Andre Steyn breeds lions and has 264 lions on his farm.⁷⁸ Lion farmers also told journalist Marietjie Gericke in an article published on May 9th 2018, that there are also more lion slaughterhouses in the Free State – including one in the Winburg district - and that at least 400 lions have been killed in the Free State slaughterhouses in the last year.⁸⁹

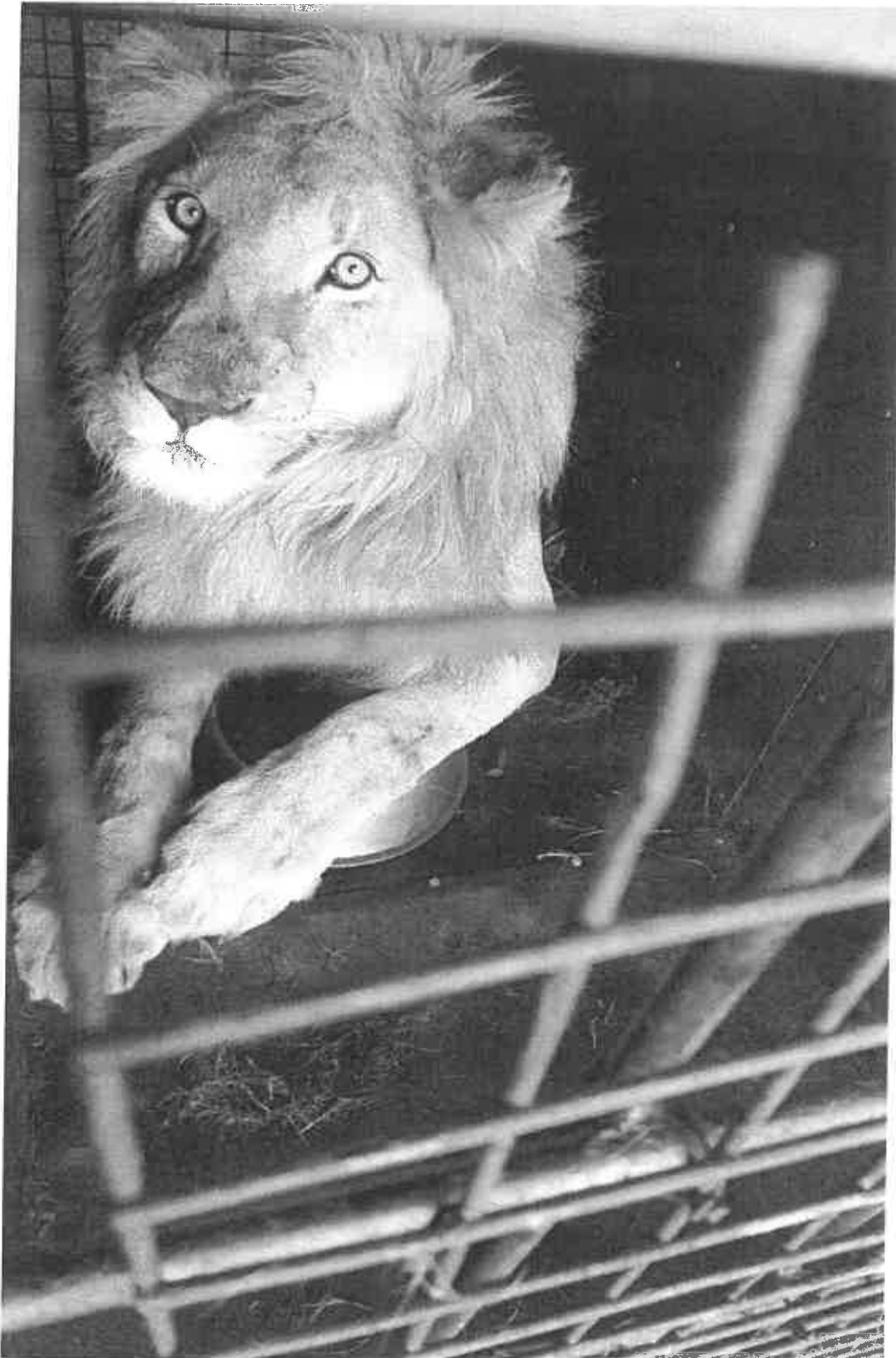
Sandra Linde Taksidermie is currently, without a doubt, the largest big cat skeleton trader, and is based in the Free State. Therefore, it seems compelling that the lions killed in the slaughterhouses in the Free State are being killed for international big cat skeleton exports by Sandra Linde Taksidermie. And as far as we are aware she is also the only international bone exporter in the Free State. When a *Netwerk 24* journalist spoke to Johann Linde, who is also works with her in the taxidermy business, he blatantly lied and denied that they were involved in the lion bone export business. Linde said they only clean the lion bones. And when asked if it was true that he handled all 400 lions in the last year he said, “Nee, waar hoor jy dit? Ek het geen kommentaar nie.” [No, were did you hear that? I have no comment].⁷⁹ Unanswered questions remain in relation to the lion slaughterhouses in the Free State: is there a bigger network of people involved and who are they? Does Steyn work for Linde? Does Linde export skeletons/bone on behalf of other parties? Who pays who and how much?

The crux of the matter is that despite the public outcry, the cruelty and brutality involved and the links of the big cat bone trade to their demise in the wild and crime syndicates and networks, the existence of these lion slaughterhouses is something the South African government sanctions and approves through its permitting system. Steyn had a permit from the *Free State* Department of Economic Development, Tourism and Environmental Affairs to kill lions. And it has only been temporarily withdrawn while the department investigates his other permit-related infringements, such as moving the lions from Predator’s Pride to *Wag'n Bietjie* without a transport permit. It is therefore likely that they will not investigate the actual practice. According to spokesperson, Festy Nyamate, “DESTEA can confirm that permits were issued for the authorization of lions

⁷⁸ Die Burger, 7 May 2018. ⁸⁹ Beeld, 9 May 2018.

⁷⁹ <https://www.netwerk24.com/Nuus/Omgewing/nog-leeuslagplase-in-vs-lewer-bene-vir-ooste-20180508>.

at the farm Wag 'n Bietjie based on a decision taken by the DEA and CITES in 2017, to allow a quota of lions to be slaughtered per annum, and products to be exported.”



Jabula – who waited in this small cage for days before being killed for his bones.

Disingenuously, but unsurprisingly, the spokesperson for the Department of Environmental Affairs, Albi Modise, said that “the welfare of captive-bred lions was not their concern as it fell under the mandate of the Department of Agriculture and Fisheries”⁸⁰. The Minister of Environmental Affairs and her Department, are solely to blame for the existence of, and rise in, lion bone slaughterhouses. Indeed, their policy serves to guarantee them. We would argue that it is not only the owners of these slaughterhouses, or the people who have instructed these owners to kill lions for their bones, that need to be charged under the Animal Protection Act, it is the Minister herself, particularly since the DEA, because it runs the lion bone quota process is fully aware that most of the skeletons being exported (91%) include skulls and therefore they are killed specifically for their bones.



⁸⁰ Louzel Lombard Steyn. How our Lions are Cruelly Slaughtered – With government consent. May 2018. <http://conservationaction.co.za/media-articles/opinion-how-our-lions-are-cruelly-slaughtered-with-governmentconsent/>.

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South Africa's conservation authorities provide permits and oversight for the transportation, captivity, exportation and killing of nonhuman animals but they currently ignore the Animals Protection Act because they argue that their existing environmental legislation does not include animal welfare issues. Although the DEA promised to address the issue almost a decade ago, to date they are still dragging their feet. Notwithstanding this, the DEA and the provincial conservation agencies cannot be immune from compliance with existing legislation such as the Animals Protection Act, and if they are issuing permits that endorse and facilitate cruelty and suffering they need to be held to account.

GOING ASTRAY: CITES SUPPORT FOR DODGY DESTINATIONS

Introduction: a severe lack of oversight from importing countries

South Africa exports big cat skeletons and bones exclusively to Lao PDR, Vietnam and Thailand. It is of serious concern that South Africa's major trading partners are countries listed by global conservation and law enforcement agencies as having weak law enforcement and high levels of corruption and therefore key conduits for the massive illegal trade in wild animals. The Wildlife Crime Scorecard Report by the World Wildlife Fund identified China, Thailand, and Vietnam as the primary destination countries in Asia for illegal wildlife.⁸¹ While, according to researcher Adam Cruise, South Africa (along with Mozambique), Vietnam and Lao PDR, have become a nexus of an international criminal network that rivals drugs, arms and human trafficking in both scale and profitability and...are doing little to combat the criminal networks involved in the flood of wildlife products out of Africa."⁸²

Transparency International's 2017 Corruption Perceptions Index, which ranks 180 countries and territories by their perceived levels of public sector corruption according to experts and business uses a scale of 0 to 100, where 0 is highly corrupt and

⁸¹ WWF 2010.

⁸² <https://www.traveller24.com/Explore/Green/wildlife-trafficking-the-sordid-southern-african-south-east-asianconnection-20170116>.

100 is very clean. South Africa: 43 (ranked 71 out of 180 countries); Thailand: 37 (ranked 97 out of 180 countries); Vietnam: 35 (ranked 107 out of 180 countries); and Lao PDR: 29; (ranked 135 out of 180 countries). According to the United Nations Office on Drugs and Crime, corruption “is a major facilitator of all types of transnational organized crime. However, compared with other crime types, wildlife crime represents an opportunity with much lower risk and higher rewards for criminals. The very high profits also enable traffickers to bribe low-paid public officials to reduce their risks even more.”⁹⁴

These high levels of corruption, inadequate enforcement, fragmentation, and party political agendas craft and support a pro-wild animal trade position. It also means that there is a lack of political will to disrupt the trade – both legal and illegal - in most source and consumer countries. Crucially, and in practice, it also means that transnational criminal networks are being incentivised and fostered by these governments. The CITES permit system is designed to facilitate trade of wild animals, and their parts, across international borders. Given this, and all the regulatory and enforcement loopholes inherent in the permitting system, as well as gaping local inefficiencies in the supply and demand countries, it is obvious that criminal networks will also exploit the permitting system to their advantage.

Our analysis of the CITES permits for big cat skeletons and bones reveals that although the official CITES export permits contain a name and address of the supposed exporter and a name and address of the supposed importer many of the destination addressees’ and addresses could not be satisfactorily verified, have little or no public profile and in some cases may be linked to illegal activities. Moreover, there are no telephone numbers or identification or passport numbers on the permits which makes it even harder to authenticate or validate. This makes verification untenable, as one cannot analyse whether, in terms of CITES export permits, a destination is ‘acceptable’ when the stated address on the permit is problematic or is not in fact the final destination, but instead that of a middleman.

Given our findings, which clearly show that there is, at the very least, uncertainty in terms of the destinations/addresses of the CITES export permits, the responses to

⁹⁴ Criminal Justice Response to Wildlife Crime in Thailand: A Rapid Assessment. United Nations Office on Drugs and Crime, June 2017.

https://www.unodc.org/documents/southeastasiaandpacific/Publications/2017/Thai_Assessment_13_16_May_2017.pdf

email questions from Leon Lötter, Deputy Director, Directorate of Nature Conservation, Gauteng Department of Agriculture and Rural Development (GDARD)⁸³ are confusing and clearly show significant loopholes in the CITES export procedures:

Q: *Does GDARD check on the address of the exporter for legitimacy?*

A: The address on the application form often is the address where the animals are kept so when we do the inspection the address is verified.


Q: *If the wild animals or bones etc. are exported to an individual how does GDARD check their credentials and/or suitability of the destination etc.?*

A: We check the destination as far as is possible through Google searches. Sometimes we ask DEA to contact the management authority to verify the destination and give their support. Often the application is accompanied by an import permit from the country of destination in which case we accept the permit of the destination country. We sometimes ask DEA to verify the permit with the destination country. For example for CITES I the destination country has to issue the import permit first. We will not issue an export if the destination country has not issued an import permit first for CITES I listed animals.

To adequately monitor the contentious wildlife trade in order to inform policy and enforcement, access to up-to-date, accurate and comprehensive data is crucial. Through its CITES Trade Database, CITES is failing essential democratic principles to which most governments subscribe, i.e. accountability, transparency and access to information. The Database is hugely problematic because it is incomplete, vague and the information is not-up-to-date. Our investigations have shown that it is vital that, at the very least, the Trade Database must provide detailed information, which needs to include:

1. Permit application requests (so that civil society can object if necessary)
2. All the information on the permit – and more: detailed information on the sender and receiver (including contact details, registration details, valid address); complete details of the intermediary (if there is one); conservation justification; detailed and accurate species information: type, number, age, sex, microchip number.
3. We must know that the information above has been properly verified on both the import and export side. We must know where the animals and their body parts

⁸³ Sent on December 15th 2017.

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come from and where they are going. Not only do the addresses need to be verified by the countries officials but they also need to physically check on them.


The decision by the Department of Environmental Affairs to issue CITES permits for the exportation of 'lion' bones and skeletons without first having undertaken any indisputable and conclusive research into the negative impacts of the industry, or providing scientific evidence of the trade in lion bones to conservation is inexplicable and cannot be condoned. To aggravate matters, this decision is promoting wild animals trafficking as the primary destination countries for 'lion' bones and skeletons from South Africa have extremely poor wildlife protection reputations and in some cases, even promote illegal wild animal trade through neglect, inefficiency and/or corruption. Moreover, the inherent problems with the CITES permit process and the permits themselves literally means that most of the big cat skeletons from South Africa are going into a black hole, one that is not reducing demand for tigers but increasing and driving demand for tigers. It is extremely likely that the availability of South African 'lion' bone is flooding the market, thereby increasing and sustaining the demand and desirability of tiger bone, particularly because it is often marketed as tiger bone and consumers then believe that supply is not a problem.

Joining the Syndicate Dots

Individuals, and some companies operating in these countries to whom South Africa is sending 'lion' skeletons and bones, have been, and still are, the recipients of many of the rhino horns taken from animals killed by South African/Southeast Asian syndicates. They are also linked to the illegal trade in tigers. As Onkuri Majumdar, a programme officer from the Freeland Foundation has pointed out, "These syndicates have tentacles all over Africa and Southeast Asia. They are responsible for the slaughter of thousands of endangered animals including rhinos and elephants. And let's not forget rangers in Africa who have died, killed by poachers financed by [them]." ⁸⁴

The Chumlong Lemtongthai (Xasavang and Bach syndicates) rhino poaching and fraud trial (2012) confirmed that the South African CITES authorities were issuing CITES export permits without checking (much less scrutinizing) the destinations, addressees, destination addresses or the senders. In addition, some of the Vietnamese hunters were killing more than one rhino each despite the fact that South Africa was supposedly

⁸⁴ <http://www.chicagotribune.com/lifestyles/pets/sns-bc-as--thailand-wildlife-smuggling-20180120-story.html>.

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limiting each hunter to just one rhino kill per year. This, despite the fact that, between 2009 and 2011 hundreds of CITES permits were issued for the killing (hunting) of rhinos (200 by the North West province alone) and the export of their horns to Southeast Asia. As forensic investigator, Paul O’Sullivan, said at the time:


“Without a doubt the permit office in North West Parks should be picking up on it. Someone must have thought: *‘Well hang on, what’s going on here?’*⁸⁵ If the South African permitting authorities had been doing proper due diligence in the issuing of these permits and properly checking the credentials of the permit applicants – loud alarm bells would have been ringing.

There is no doubt that Lemtongthai and his cohorts are criminals and that they used the CITES export permits to legally ship rhino horn internationally for commercial purposes/trade (it is supposedly illegal to trade internationally in rhino horn). However, what needs to be interrogated further is that the CITES permit system – then and now - has so many inherent flaws and loopholes which effortlessly aid wildlife traffickers and also allows live wild animals to be sent to dubious dealers and middlemen.

In the Lemtongthai case, it is not just that the CITES permits were supposedly “abused” because the South African CITES authority put an “H” (i.e. hunting) when in fact the rhino horns were being sold off for profit. The real issue is that the South African government is not doing the required due diligence when issuing export permits for wild animals and their body parts. We would argue that they need to be much more proactive, thorough and conscientious, and cannot merely implement the lowest common denominator, i.e. the highly flawed and detrimental CITES procedures. One of the obvious problems with merely following the bare bones of the CITES permitting system, as the Lemtongthai case has shown, is that the government authorities use the CITES permitting system to hide behind, do the bare minimum, and to avoid sanction.

Had the South African authorities, both provincial and national, been more attentive that would have connected the obvious dots, particularly in relation to the destinations and names provided on the CITES permit application. For example, a Vietnamese wildlife trafficker, Nguyen van Hai, appeared in the Hatfield court in April 2009 after the police raided what the press called an “illegal abattoir” in Brooklyn, an upmarket suburb in Pretoria. The Vietnamese Embassy is also located in Brooklyn.

⁸⁵ <https://rhinofriendlyriders.wordpress.com/2011/11/09/rhino-files-iii-carte-blanche-documentary/>.

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Police found 'lion' bones and rhino horn "all over the house" while more was hidden in containers and bags. They also confiscated foreign currency of about ZAR1million. At the time this story was reported nationally in the media. Alarmingly, a year later the South African CITES authority in the North West province issued Van Hai with a CITES permit (No. 17115, dated 07 July 2010) to hunt rhino.⁸⁶ According to Douglas Hendrie, Director of Enforcement and Investigations at Education for Nature-Vietnam, Van Hai is currently a major wildlife trafficker in Vietnam.

An official list/register of rhino hunts/hunters provided by the North West Department of Agriculture, Conservation and Environment to the Democratic Alliance in 2012, shows Van Hai's name along with other wildlife traffickers and individuals linked to Chu Đăng Khoa/DKC Trading/Voi Lodge (in the North West province) and the Xasavang Network.⁸⁷ Indeed, this list itself seems to point to a likely link, connection and overlap between Chu Đăng Khoa/DKC Trading/Voi Game Lodge and Xasavang/Keosavang. It also links the rhino horn syndicates to the big cat bone trade. In addition, according to Hendrie, Chu Đăng Khoa and his underlings have been involved in lion bone trade, shipping it legally directly into Vietnam.

When examining some of the actual CITES permits,⁸⁸ many of them had different addressees **but** the same address in Lao PDR, i.e. Ban Anousonxay, Paksan District, Bolikhamxai Province. This is the address given for Vannaseng Trading Company,¹⁰¹ a very controversial importer of big cat bones from South Africa. One of the addressees to this address was Vixay Keosavang, thereby creating a possible link between Keosavang to the Vannaseng Trading Company. In addition, there are other big cat bone traders close by in this area, namely, Somok Phaimany (House 037, Paksan District) and Development Agriculture and Industry (House no.210, 43 Paksane District).

Chu Đăng Khoa, aka Michael Chu, a wealthy Vietnamese businessman from Nghệ An, used CITES trophy hunting permit loopholes to export rhino horn for trade. In this context, he was the 'hunting client' of 'professional' hunter from Mossel Bay, Christiaan

⁸⁶ We cannot find any court records linked to the Van Hai arrest. However it may be that he was merely told to leave the country. Even if there was a court judgement, in the main the trend is to fine (instead of jail sentence) and then send out of the country instead of sending to jail.

⁸⁷ Carnie, Tony, *Bogus Rhino Hunters*, *Wildside*, p. 27, Autumn, 2012.

⁸⁸ <https://www.forensicsforjustice.org/portfolio-posts/rhino-poaching/>.¹⁰¹
Lao yellow pages <http://www.laoyellow.com/loc.php>.

(Chris) Van Wyk. Chu was arrested in Limpopo in 2011, found guilty, fined R40,000 and deported for illegally being in possession of five rhino horns.⁸⁹ Despite this, his activities (and those of his associates) have been allowed to continue and grow without interference from South African law enforcement agencies and with the continued endorsement of national and provincial CITES management authorities.

In 2005, Chu Đãng Khoa established a company in South Africa called *DKC Trading* (registration number B2005/185716/23), it was named after himself and he is the sole member. Its business description is “trade and investment in various commodities”. It may be coincidence that 2005 was also the year Chumlong Lemthongthai came to South Africa because, according to *The Guardian* newspaper, “he was having trouble supplying his customers from the dwindling sources of wildlife in South East Asia, and he decided to move to the biggest potential source in the world, South Africa.”⁹⁰ DKC Trading is still in business and has lodged regular annual returns. The accountant for DKC is Louis Munro in Port Elizabeth. According to Rademeyer, DKC operates as DKC Outdoor Furniture. DKC Outdoor Furniture is not listed in the South African White Pages and the number listed on the website - 021 552 8101 – according to Truecaller is for *Richard Jones*. The website does not give a physical address,¹⁰⁴ however according to their Facebook page the address is Unit 4, 3 Drill Avenue, Montague Gardens, Cape Town.



In 2010 and 2011 DKC Trading bought two farms (Rhenosterspruit and

⁸⁹ <https://www.businesslive.co.za/fm/fm-fox/2016-07-15-the-crooks-behind-rhino-slaughter/>.

⁹⁰ The Crime Family at the Centre of Asia’s Animal Trafficking Network *The Guardian*, 26 September, 2016. ¹⁰⁴

See: <http://www.easyinfo.co.za/html/custom/dkcoutdoor/contacts.htm>.

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Syferfontein) in the Klerksdorp area of the North West province, (close to rhino farmer John Hume's, Buffalo Dream Ranch) and these together became the 924-hectare hunting and breeding farm called Voi Game Lodge. Here rhinos, lions and tigers (and a number of other animals) are breed and hunted.



Co-ordinates.

Allegations have been made that bones obtained from captive tigers from Voi Game Lodge have been fraudulently exported as lion bones.⁹¹ As far back as 2015, the Traffic/Wildcru Report, *Bones of Contention* called for an investigation of “the

⁹¹ Tipping Point: Transnational organised crime and the “war” on poaching. Part 1 of a 2-part investigation into rhino horn trafficking in Southern Africa, J. Rademeyer, 2016, July, The Global Initiative Against Transnational Organised Crime and <https://conservationaction.co.za/resources/reports/failure-prosecute-mixed-messages-southafrica-can-single-handedly-lose-second-rhino-war/>.

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Vietnamese-owned tiger facility in North West”, a clear reference to Voi Game Lodge. “...little is known about the actual activities being conducted on this farm. If Tigers are being bred on this facility for international trade in their parts and derivatives, then this would be in contravention of CITES *Resolution Conf.12.10* (Rev. CoP15) for the “Registration of operations than breed Appendix I animal species in captivity for commercial purposes”, due to its non-registered status, and CITES Decision 14.69 which states that “Parties with intensive operations breeding tigers on a commercial scale shall implement measures to restrict the captive population to a level supportive only to conserving wild tigers; tigers should not be bred for trade in their parts and derivatives” (CITES, 2009). Furthermore, Resolution Conf. 12.5 (Rev. CoP16) urges “Parties and nonParties on whose territories tigers and other Asian big cat species are bred in captivity to ensure that adequate management practices and controls are in place to prevent parts and derivatives from entering illegal trade from or through such facilities”.

Although aimed primarily at Tiger range States, this Decision clearly also applies to South Africa.”⁹²

According to Rademeyer, DKC Trading is closely linked to the Vingroup.⁹³ In 2015 DKC Trading was the key entity in sourcing and supplying South African wild animals (including approximately 100 rhinos) to the Vingroup’s Vinpearl Safari Park (a theme park zoo based on Phú Quoc Island).⁹⁴ Vinpearl has been accused of **causing the deaths** of thousands of animals and purchasing animals of questionable and illegal origin.⁹⁵ Between September 2015 and February 2016, South Africa issued CITES export permits for 130 animals, including 20 tigers and 23 lions as well as monkeys, baboons, servals, caracals, pythons, hyenas, zebra and reptiles, to be sent to Vinpearl Safaris and/or Tourism Development.¹¹⁰ The animals apparently flew via Emirates Airline.

⁹² https://www.wildcru.org/wp-content/uploads/2015/07/Bones_of_contention.pdf p.74.

⁹³ One of Vietnam’s largest companies.

⁹⁴ <https://www.corruptionwatch.org.za/wp-content/uploads/2017/02/Global-Initiative-Tipping-Point-Part1-july2016.pdf>.

⁹⁵ <https://tuoitrenews.vn/society/33403/cites-vietnam-authorities-say-rhinos-at-vinpearl-safari-of-legal-origin>. ¹¹⁰ <https://www.businesslive.co.za/fm/fm-fox/2016-07-15-the-crooks-behind-rhino-slaughter/>.



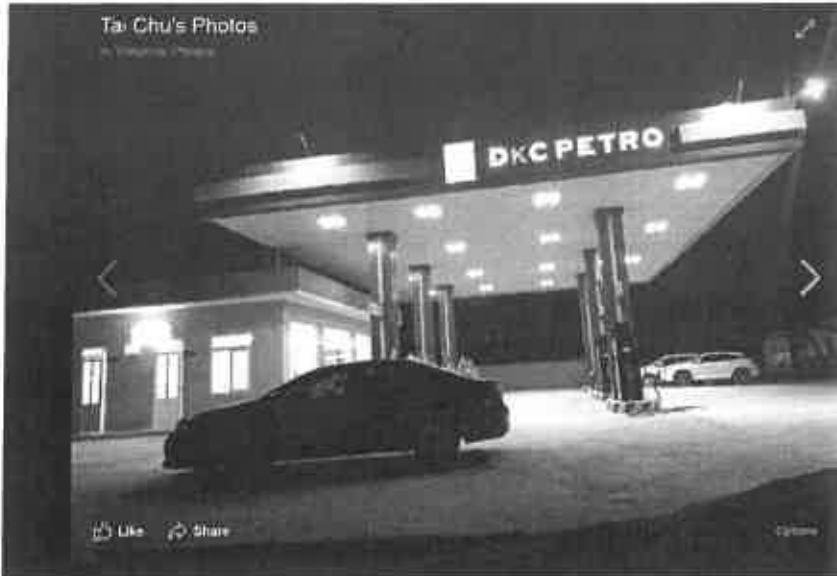
Source: <http://bluevn.info/chu-dang-khoa-ty-phu-sung-te-giac-trong-tam-ngam.html>. Reproduction of picture taken by Chu Đăng Khoa's ex-wife *Le Van Anh*.

Chu Đăng Khoa is also connected to the Thien Minh Duc Joint Stock Company. (website: dkcpetro.vn). According to Vietnam Credit the details of this company are: "Address: No. 287, Ngo Duc Ke Street, Vinh Tan Ward, Vinh City, Nghe An Province, Vietnam. Registration Number: 2900471372. Tax Code: 2900471372. Year Founded: 2001. Phone: (84-238) 3563 507/ 3582 246. E-mail: dkcpetro@gmail.com

Description: Founded in 2001 in Nghe An Province of Vietnam by the family's members...Its chartered capital is large with VND 260 billion. Ms. Chu Thi Thanh is the biggest shareholder, holding 88.16% of shares, keeping Chairwoman position. The rest is owned by Mr. Chu Dang Khoa (11.27%) and Mr. Vuong Dinh Quan (0.57%)."⁹⁶ While according to a Vietnamese publication, Chu Dang Khoa's family owns one of the largest wildlife parks in the Nghe Anh province and they have expanded their business in Laos.⁹⁷

⁹⁶ https://vietnamcredit.com.vn/products/company-report/thien-minh-duc-joint-stock-company_20395, accessed on 8 April 2018.

⁹⁷ <http://enternews.vn/dai-gia-kim-cuong-chu-dang-khoa-giau-co-nao-100782.html>.



DKC South Africa "brothers". From Dang Khanh's Facebook page.

ĐD. 7
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Frikkie Jacobs poses with a dead lion. Accessed, 12 February 2018

Asian criminals cannot succeed without the participation and facilitation of private ranch owners, 'professional' hunters, and outfitters. In South Africa the private wildlife industry certainly does not equate to conservation or wildlife protection. The North West rhino hunting register/list also showed that Frikkie Jacobs from Shingalana Game Breeders and Hunting Safaris, conducted at least 48 rhino hunts between June 2009 and July 2011 with the Vietnamese traffickers who used CITES trophy hunting permit loopholes to export rhino horn for trade.⁹⁸

Shingalana and Jacobs are still very much in business, as are most of the South African professional hunters, safari outfitters and landowners [for example: Shingalana, Harry Claassens, Randy Westraadt, Brad Rolston, Ashton Crafford, Hartzview Hunting Safaris, Charl Watts, Dr Gideon (Deon) Engelbrecht/Leeuwbosch Game Lodge, and

⁹⁸ <https://www.businesslive.co.za/fm/fm-fox/2016-07-15-the-crooks-behind-rhino-slaughter>.

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Savva Englezakis) and taxidermists (Savuti Taxidermists and Marakalalo Taxidermy), which was largely used by Marnus Steyl].⁹⁹

These individuals and their companies were more than just complicit parties, they played an instrumental role in the activities of these syndicates, and without their participation the rhinos would not have been killed. Some of the North West officials who provided these dodgy permit have been promoted to the national Department of Environmental Affairs, for example, Oupa Chauke, who is now a Deputy Director (Enforcement) at the DEA.

Apart from Nguyen Van Hai, the names on the North West list included:

- P (Punpitak) Chunchum (Xasavang Network)
- T (Tool) Sriton (Xasavang Network) □ Chumlong Lemtongthai (Xasavang Network) □ Cuong Ho Viet. Linked to DKC.



- Le Hoai Nam. Linked to DKC and Voi. Currently lives in Pretoria.

⁹⁹ Names included in the official list/register of rhino hunts/hunters provided by the North West Department of Agriculture, Conservation and Environment to the Democratic Alliance in 2012.

03.11
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 **Le Hoai Nam** is at  **Voi Game lodge.**

2 Sep 2013 at 18:16 · 🌐

Hunting game



👤 9

 **Le Hoai Nam**

2 Sep 2013 at 20:52 · 🌐



👤 7

💬 2 comments

- Chu Duc Gui Lit (also known as Tai Chu gl.) and Dang Khánh (also known as Nguyen Đăng Khánh, Ba Cu Bop, Cu Bop Ho Nguyen, or Than Sau Thanh Ho). Both are linked to Voi Lodge, Chu Dang Khoa and DKC Trading. They were arrested in South Africa for rhino horn poaching and trafficking as part of an operation that targeted organized crime groups in 2012.



Chu Duc Gui Lit and Nguyen Đăng Khánh. Photo Credit: SAPS (from Rademeyer, J. p.50)

DS 3




Chu Dang Khoa with David Thai, Tai Chu and one other. All wearing Voi shirts except David Thai. From [David Thai's Facebook page](#), 3 March 2018. The post says: "boss and the hunters".



Chu Dang Khoa with Tai Chu. Vietnamese New Year, February 2018.

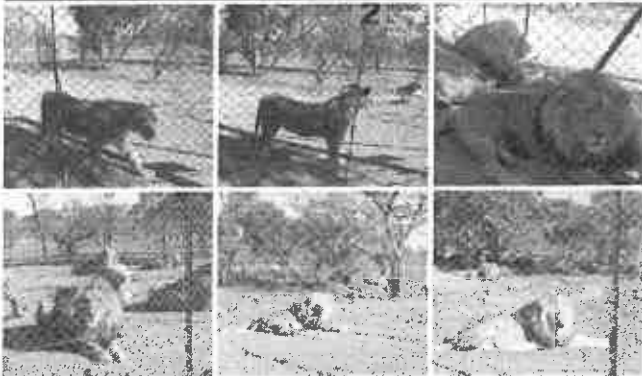
03.11
12



- Mai Van Hung (Hung Mai). Linked to Voi Lodge.



RECENTS OF HUNG MAI UPLOADS ALBUMS



From Hung Mai's Facebook page, July 2011.

DJ.M

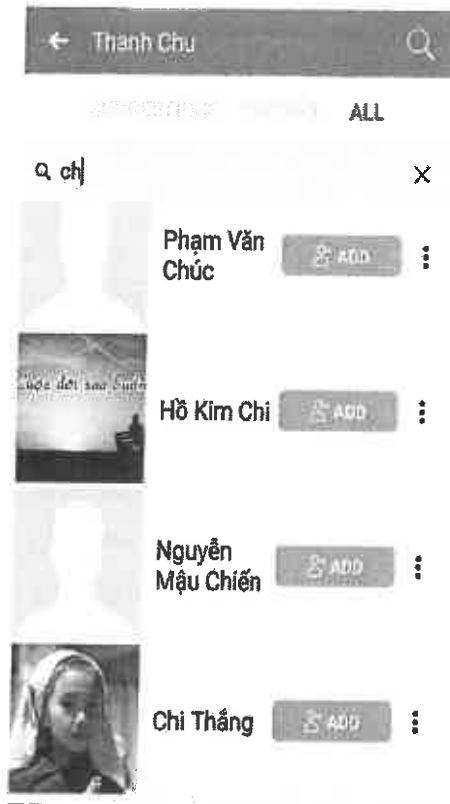
- Nguyen Mau Chien (spelled Chin on the list). Linked to Voi Lodge/DKC.

Chien is a known leader of a wildlife trafficking ring which specializes in bringing wild animals (and their body parts) from Africa. He was arrested in Vietnam in April 2017. According to the EIA, he is “the suspected leader of a major criminal network trafficking rhino horn, tigers, lion and other wildlife specimens, recovering two frozen tiger cubs and one lion skin. Chien began his business in wildlife trafficking trading fake tiger bones before establishing his own tiger farm in Vietnam. With an arrest history in Tanzania, he is just one of several Vietnamese wildlife traffickers with links to Africa”.¹⁰⁰ Education for Nature (Vietnam) say that Chien’s activities have been linked to numerous cases involving illegally trading and smuggling of wildlife since 2007, when he was caught in Tanzania and fined for smuggling wildlife products. They state that “Chien has also long been suspected of laundering tigers through his farm in Thanh Hoa Province, and has been linked to a number of tiger seizures in recent years. Over the past five years, Chien’s network has surfaced in Africa where he appeared to be expanding his operation considerably, focusing mainly on rhino horn, ivory, and pangolin scales.”¹¹⁶ In March 2018, despite the 2017 Penal Code (which came into force since January 1, 2018) which increased maximum jail sentences for wildlife crime from seven years to 15 years, Nguyen Mau Chien was only sentenced to 13-month imprisonment for his behaviour of ‘storing and transporting prohibited goods.’

- Thanh Chu. He is linked to Voi Lodge and is a Facebook friend of Nguyen Mau Chien.

¹⁰⁰ *The Lion's Share. South Africa's trade exacerbates demand for tiger parts and derivatives.* Environmental Investigation Agency, p.8 July 2017. <https://eia-international.org/wp-content/uploads/The-Lions-Share-FINAL.pdf>.

¹¹⁶ <https://www.envietnam.org/index.php/news-blog/829-alleged-rhino-horn-kingpin-arrested>.



<https://www.facebook.com/mauchien.nguyen.96.117>

ENV USA Twitter 27112017.

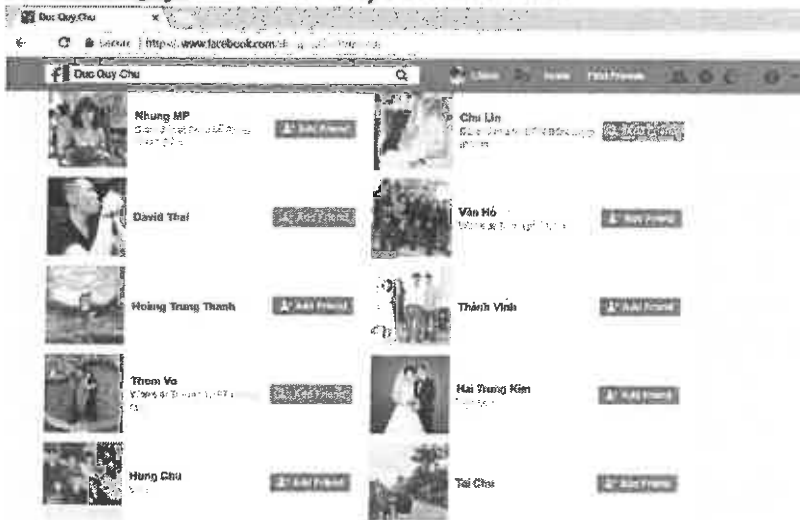
- Tran Huy Bao. Linked to Voi/DKC network. According to Rademeyer is also known as Ben Tran and he is the manager of DKC Trading's import and export operations in South Africa.¹⁰¹ He lives in Cape Town.
- Phuong Kieu (Anna). Linked to Voi/DKC network and according to Rademeyer is a DKC Trading representative in South Africa.¹⁰² Also known as Ana. She lives in Cape Town and is the wife of Ben Tran. Ana is a contact number (073 000 888) for DKC Trading, see below:

¹⁰¹ Rademeyer, Julian, Global Initiative against Transnational Organized Crime *Tipping Point: Transnational organised crime and the 'war' on poaching*, p.50, July 2016.

¹⁰² <https://www.corruptionwatch.org.za/wp-content/uploads/2017/02/Global-Initiative-Tipping-Point-Part1-July2016.pdf>, p.50.



- Chu Duc Quy Linked to Voi/DKC network.



- Ngo Vi Thu. He is linked to Voi/DKC network.



DJ.M
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- Tuan Le. Pictures below taken in March 2018 to Voi Game Lodge. From Tuan Le's Facebook page. Most of them removed.







- Chu Van Thanh/ Thanh Chu. Closely linked to Voi Game Lodge and DKC.

According to Rademeyer there is also a relationship between Voi Game Lodge and Frikkie Jacobs from Shingalana Game Breeders & Hunting Safaris, “As recently as December 2015, a Vietnamese national named Van Thanh Chu, who is involved in the day-to-day running of Voi Lodge, posed for a photograph in the Shingalana helicopter, a Robinson R44. His relationship with Shingalana dates back to at least March 2010 when he shot a white rhino there, according to North West hunting records. Frikkie Jacobs is listed as the outfitter who arranged the hunt and also as the professional hunter who accompanied Van Thanh Chu on the shoot. Other images show Van Thanh Chu posing in front of caged tigers and lions at Voi Lodge. In one photo he holds a dead jackal by the scruff of the neck. In another, posted on Facebook on 22 November 2013, he crouches behind a dead tiger, rifle in hand. “Went hunting yesterday,” he wrote.”¹⁰³

¹⁰³ <https://www.businesslive.co.za/fm/fm-fox/2016-07-15-the-crooks-behind-rhino-slaughter/>.

DSM



Thanh Chu with Hoang Trung Thanh) at Voi Lodge.



Thanh Chu with someone from Shingalana - Voi Game Lodge.



□ Hoang Trung Thanh (Micky Hoang). Linked to Voi Game Lodge and DKC.


EMS
④

Probably involved in the day-to-day running of Voi.



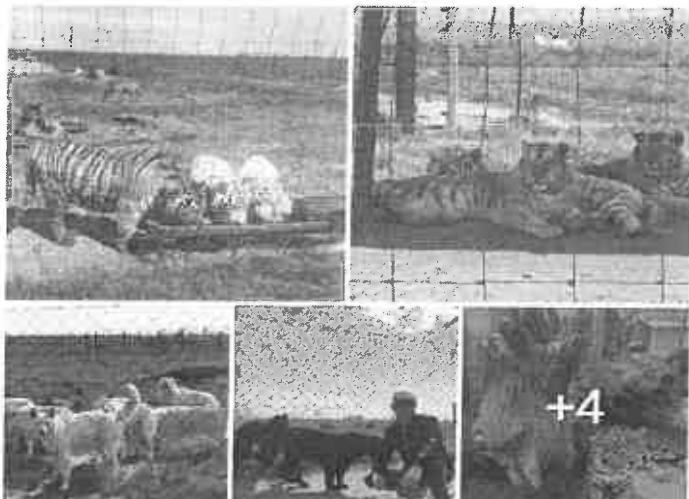
Micky Hoang and Tai Chu – Vietnamese New Year 2018.

Thanh Chu and Hoang Trung Thanh Facebook pages, dated 2 May 2018, showed pictures of tigers, a leopard and wolves on Voi Game Lodge. Most of the photos from that day (shown below) were later removed from their pages.

 **Thanh Chu is ~~is~~ feeling alone with Hoàng Trung Thanh.** ...
2 May at 09:32 · 🌐

Thiên nhiên hoang dã.

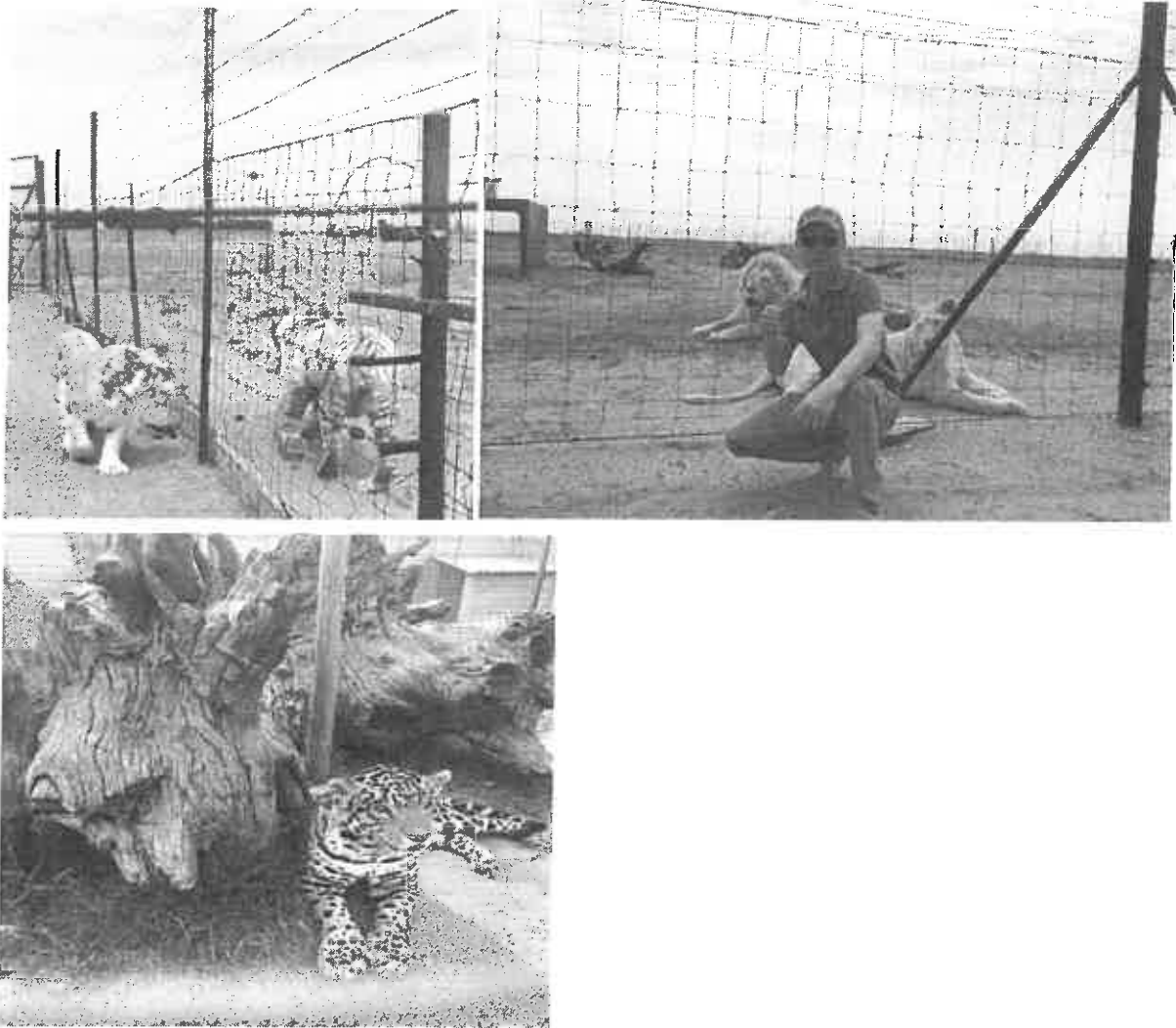
See Translation



👁️ 212

💬 125 comments

DSM



Of concern is the relationship between the DKC Network and the Vietnamese Embassy in South Africa as well as the involvement of embassy staff in the illegal trade of wild animals. The Vietnamese embassy in Brooklyn, Pretoria has been implicated in several incidences of rhino horn smuggling.¹⁰⁴ Since diplomatic immunity is invoked it protects embassy staff members from public scrutiny, it is very difficult to track all the occurrences, however according to a 2013 news article at least 3 officials based at the Vietnamese embassy in Pretoria have been documented participants in rhino-horn trafficking.¹⁰⁵

In 2006, Nguyen Khanh Toan, the commercial attaché was caught trafficking rhino horn¹⁰⁶ and in 2008 a Vietnamese embassy staff member, Vu Moc Anh, was sent home

¹⁰⁴ <https://conservationaction.co.za/recent-news/mahlobos-rhino-poacher-mate/>.

¹⁰⁵ <https://steelburgernews.co.za/15375/rhino-poached-every-11-hours-3/>.

¹⁰⁶ <http://www.thanhniennews.com/society/two-more-vietnamese-caught-with-rhino-horns-in-south-africa14104.html>.

after she was suspected of being involved in the smuggling of rhino horn to the East.¹⁰⁷ In 2016 a six-month Al Jazeera undercover investigation exposed the links between the Vietnamese Embassy in South Africa and Voi Game Lodge/DKC Trading which, according to Al Jazeera, traffics rhino horn and tiger bones. The Al Jazeera documentary also provided evidence that high-ranking Vietnamese officials, including the country's ambassador to South Africa at the time, Le Huy Hoang, have visited or have ties to Voi Game Lodge.¹⁰⁸

There are several pictures of DKC connected individuals with a vehicle (registration number: XJL909GP) that is registered in the name of Mr Huy, Brooklyn, Pretoria. In April 2006 Nguyen Tien Hoan was one of the traffickers who used CITES trophy hunting permit loopholes to export rhino horn for trade. He was 'hunting client' at the Leshoka Thabang Game Lodge in Limpopo where permission to "hunt" the rhino was given by the owner Johan van Zyl.¹⁰⁹ Christiaan (Chris) Van Wyk organised the "hunt" and he was convicted and fined R30,000 for this in 2010 as he did not have a permit to hunt the rhino and was not registered in Limpopo as a 'professional hunter'. During the trial Van Wyk was found with rhino horn and ivory and was also arrested in the Western Cape after being found with rhino horn. He was also found guilty in both those cases. Van Wyk was also the person who organised rhino "hunting" for Chu Dang Khoa. Nguyen Tien Hoan was also one of the traffickers on the North West list, who used CITES trophy hunting permit loopholes to export rhino horn for trade. The killing of the rhino took place at Shingalana (close to Voi) on 10 October 2010 and Frikkie Jacobs is listed as the "professional" hunter. Nguyen Tien Hoan is linked to the DKC network. Below is a picture from his Facebook page taken at Voi Game Lodge with the mystery vehicle. Nguyen Tien Hoan also has another Facebook page.

¹⁰⁷ <https://www.news24.com/SouthAfrica/News/Cops-describe-house-of-horrors-20090401>.

¹⁰⁸ <https://www.pressreader.com/south-africa/citypress/20161113/281547995469364>.

¹⁰⁹ Leshoka has been involved in several controversies. In April, 2013, 66 rhino horns worth almost \$3 million were stolen from the farm. In addition to hunting rhinos on the property, 4 white rhino were also poached in 2013. In 2014 Van Zyl sold off 45 rhinos. In 2002 a woman was mauled by a captive lion at Leshoka. In May 2017 the head and legs of 2 Bengal tigers were cut off at Leshoka after being poisoned.

Intro

Works at Thành phố Vinh
Lives in Vinh

Photos

Friends · 19



Nguyen Tien Hoang updated his profile picture.
July 23, 2014 ·



Hoàng Trung Thanh
25 Feb 2017 at 15:20 ·

Goodbye February .



Micky Hoang
March 2, 2017 ·
Piro Oil Phab/vutakij



Secure - <https://www.facebook.com/1015111111111111>

David Thai

David Thai Timeline · 2014 · All Posts

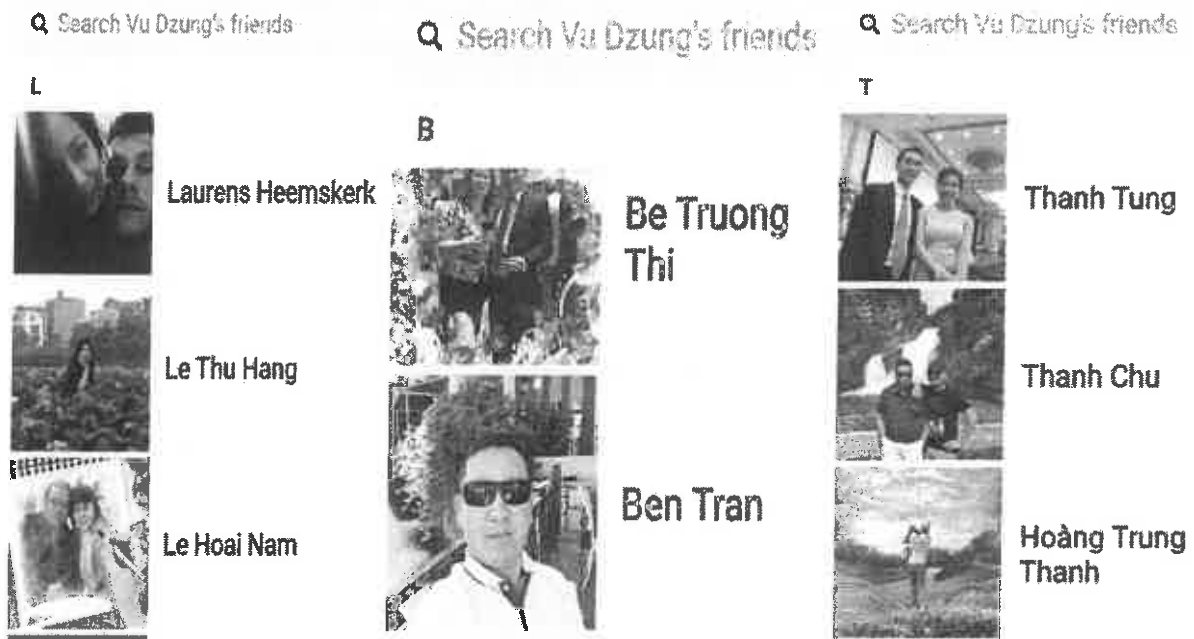
David Thai · 27 March 2014

Site what you have in common with David's friends.

Facebook · 2016

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Le Huy Hoang is now the ambassador to the Republic of Mozambique, and the Republic of Madagascar, the Republic of Seychelles and the Republic of Mauritius.¹¹⁰ The current ambassador of Vietnam to South Africa is Vu Van Dzung and it appears he is also Facebook friends with the DKC Network, see below:



Given this context it is alarming that in September 2017 South Africa announced that trade between South Africa and Vietnam will be accelerated, including wild animals.¹²⁸

¹¹⁰ <http://en.qdnd.vn/politics/news/president-presents-appointment-decisions-to-new-ambassadors-491274>. ¹²⁸ <http://www.dirco.gov.za/docs/2017/viet0908.htm>.

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Big Cat Skeleton Importers by Country 2014 - 2017

It is likely that these figures are higher given the evidence of illegally falsified "misdeclarations" of skeleton quantities

LAO PDR

Number of Skeletons imported from South Africa **1365**

Importers

Ainthaphone Trading	408	Lilavady	53
Vinasakhone	137	Jitplecheep Ning	50
SVF Trading	112	Empt- Import - Export Lao LTD	48
Vannaseng Trading	112	KNT Trading LTD	46
Somok Phaimany	110	Phonsavanh Trading	32
Sinthavy Import - Export Co	75	Johnny Pakxam (Pakxan)	29
Wattanasook Trading	67	CNP Import- Export LTD	16
Development Agriculture and Industry	58	JDT Imports (JH Du Toit)	12



VIETNAM

Number of Skeletons imported from South Africa **1138**

Importers

Son Long Investments	533	Thanh Manh Hung Co	251
Bao Huy Imp -Exp	140	Trans Giang	39
Vinh Phu - CMT Joint Stock	173	Hoan Van Dien	2

THAILAND

Number of Skeletons imported from South Africa **442**

Importers

Natakon Yuennao	383	Limited Partnership Boonchai	20
Lisa Lion Import Export	38	International Logistics	1

Images: © BIA / Education for Nature Vietnam

BIG CATS

BAN
ANIMAL TRADING
CORPORATION

EMS
FOUNDATION



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Lao PDR

South Africa's largest big cat bone importer is Lao PDR. This fact on its own warrants concern because this country is at the centre of global illicit wildlife trafficking and has the fastest growing trade in ivory in the world. Effective law enforcement and control of the trade in wild animals is practically non-existent; and

CITES has failed to hold Lao PDR to account.¹¹¹ In addition, according to wildlife trafficking investigation organisation, *Freeland Foundation*, in Lao PDR, "there is a public-private partnership with law enforcement agencies acting as partners to crime syndicates."¹¹²

Moreover, and of acute concern, particularly in this seemingly anarchical context, is that despite the large volume big cat body parts that have been sent to Lao PDR by South Africa over more than a decade, no imports of lion body parts have been reported by Lao PDR in the CITES Trade Database. The Lao PDR Scientific Authority stated there had been no imports or re-exports of lions.¹¹³ Lao PDR is in fact the single biggest importer of lion bones and skeletons and there is also an extensive illegal international trade in lion parts and products out of the country.

This shocking denial by Lao PDR authorities is symptomatic of persistent oversight failures in the country.

It is likely and very probable that 'lion' bones from South Africa imported into Lao PDR follow the usual illegal routes that other wildlife imported into Lao PDR follows, i.e. once it arrives at the international airport in Vientiane (Wattay International Airport) it goes to Paksan in Bolikhamxay (Lao PDR) and from there is then illegally exported to Nghe Anh in Vietnam.

Lao PDR, because of its geographic position, size and weak government, plays a pivotal role as a transit country for wild animal body parts, including rhino horn and big cat bones, moving illegally along smuggling routes from Africa and other parts of Asia, into China and Vietnam. Although trade in animals such as tigers, rhinos and elephants is theoretically prohibited by Laotian law the trade in these animals and their body

¹¹¹ Lucy Vigne and Esmond Martin. The ivory trade of Laos: Now the fastest growing in the world. Save The Elephants, 2017.

¹¹² <https://www.theguardian.com/environment/2016/sep/27/revealed-how-senior-laos-officials-cut-deals-with-animal-traffickers>.

¹¹³ Dr Souriodong Sundara of the Lao PDR Scientific Authority, quoted in Willow Outhwaite. TRAFFIC. The Legal and Illegal Trade in African Lions: *A study in support of Decision 17.241 e*). Preliminary findings for AC30. <https://cites.org/sites/default/files/eng/com/ac/30/E-AC30-25.pdf>, 16 May 2018.

parts continues unabated. The Golden Triangle Special Economic Zone (GTSEZ) is a global hub for trade in some of the world's most endangered wildlife species. Perfectly situated where Thailand, Myanmar, Laos and China come together, the area is home to large casinos, shopping malls and local markets that attract tourists from around the region, especially China. It has become a haven for gambling, prostitution and illicit trade in many goods, including wildlife.¹¹⁴ And CITES researchers found that, "Everyone can buy everything and cross the border. Informal border trade between China, Thailand, Lao PDR and Vietnam escape the regulatory framework...Wild animals consumers and investors are not from Lao: Citizens from neighbouring countries visit Lao PDR to buy wild animals products such as ivory, jewellery, figurines and carvings, tiger wine, pangolin scales, crocodile skins, rosewood carvings, seahorses and rhino horns. The investors behind major illegal wild animal transactions appear to be powerful businessmen from neighbouring countries."¹¹⁵

One of the key problems with the global trafficking of wild animals and their body parts is that often the key players have diversified, privately owned mainstream businesses and have powerful and complicit connections in government. In Lao PDR three legal companies have been publicly identified as being big players in the illegal wildlife trade and breaking international and Lao law: the Xeosavang Trading Company (run by Vixay Keosavang), Vinasakhone¹¹⁶ and Vannaseng Trading Company.¹¹⁷

Evidence collected by the *Guardian* shows that each of them has been supported by deals with the Lao government.¹³⁶ Despite Keosavang's clear involvement in wildlife slaughter and trafficking cases in Kenya, Mozambique and South Africa he has never been arrested. Indeed, the Laotian government, ignored international pressure and authorized similar agreements with other companies with a track record of wildlife crime, such as Vinasakhone and Vannaseng Trading Company. "The Guardian has had access to compelling evidence that in December 2013 the then Lao prime minister's office ordered four government ministries and two provincial governors to help these

¹¹⁴ Top Ten Most Wanted. Endangered Species in the Markets of the Golden Triangle. WWF, 2017.

¹¹⁵ Report entitled *Application of Article VIII in the Lao PDR*, July 2017.

<https://cites.org/sites/default/files/eng/com/sc/69/E-SC69-27.pdf>.

¹¹⁶ Vinasakhone is jointly owned by Sakhone Keosouvanh and a Thai-Vietnamese national known as Chook and his wife Vina Sayavong. According to Karl Ammann, Mr Sakhone has just opened a new 'resort' with a zoo at Thabok, which is also going to include a new tiger farm (apparently this is close to completion). Apparently three Laotian governors attended the opening festivities which were huge and which Karl documented.

¹¹⁷ The Crime Family at the Centre of Asia's Animal Trafficking Network *The Guardian*, 26 September, 2016. ¹³⁶ <https://www.theguardian.com/environment/2016/sep/27/revealed-how-senior-laos-officials-cut-deals-with-animal-traffickers>.

companies traffic wildlife with huge annual quotas. The agreements were worth a fortune – up to \$30m in a single month for one company – with the government once again taking its 2%...these agreements specifically sanctioned the sale of the three iconic species that are closest to extinction as a result of this trade: tigers, rhinos and elephants. And in vast quantities.”¹¹⁸ Like the Laotian government, South Africa also appears to be openly supporting and endorsing these wildlife traffickers by issuing CITES export permits to all three companies on an on-going basis. And although the CITES secretariat in Geneva was given detailed information about Keosavang by the Freeland Foundation in 2003, 2006, 2009, 2011 and 2012, Lao PDR remains a full member of CITES.¹¹⁹

A *Guardian* investigation revealed that “Vinasakhone has been illegally killing and selling tigers to order for buyers in Vietnam and China and also selling tigers to the notorious Golden Triangle area on Laos’s borders with Myanmar and Thailand where they are sold as meat, drink and decorative skins; and that Vannaseng, on one of its farms, has been breaching CITES by trafficking hundreds of tigers and bears.”¹²⁰ According to the *Guardian* and Freeland Foundation investigation, Vinasakhone and Vannaseng have clearly been violating international law because they have “been involved in the illegal trafficking of hundreds of tonnes of wildlife from Africa as well as Asia...through Laos and into Vietnam and China. During 2014...the evidence suggests that between them they traded \$45m of animal body parts including derivatives from three iconic endangered species: tigers, rhinos, lions and elephants.”¹²¹ This included permission from the government for Vinasakhone and Vannaseng to import and sell 110 tonnes of elephant ivory, which equates to 16,417 dead elephants. The quotas also included 10 tonnes of lion bone. In 2014 Lao officials found that between January and October Vinasakhone and Vannaseng had traded a combined total of 7.7 tonnes of lion and tiger bone. At least some of that trade must have been illegal...Even if the entire 7.7 tonnes was lion bone, at an average weight of 10kg per skeleton that would represent 770 dead lions. But CITES records show that during the whole calendar year of 2014,

¹¹⁸ *Ibid.*

¹¹⁹ Lao PDR was briefly suspended in 2015 and again in 2016 for failing to deliver a national plan to deal with the ivory trade and for failing to submit a second report on implementing the ivory plan.

¹²⁰ The Crime Family at the Centre of Asia’s Animal Trafficking Network *The Guardian*, 26 September, 2016.

¹²¹ *Ibid.*

Laos had permits to import the skeletons of only 360 lions.”¹²²

Documentary filmmaker, Karl Ammann, who went undercover in Lao PDR in 2017 and 2018 revealed that the lion-bone exports from South Africa to Lao PDR “do not stay in Laos. Filming local dealers, our hidden cameras documented that they were instead trafficked into China and Vietnam. Here they are sold as tiger bones, resulting in a litany of CITES infractions along the way.”¹²³ This means that South Africa through CITES is supplying an international organised illegal trade in big cat body parts and products for consumption by Chinese and Vietnamese buyers.

South Africa, over a number of years, and in breach of CITES regulations, exported ‘lion’ skeletons to Lao as hunting trophies.¹⁴³ This means that South Africa has been sending out ‘lion’ skeletons under the pretext of so-called non-commercial purposes when in fact ‘lion’ skeletons are traded purely for commercial purposes. Moreover, South Africa was extremely negligent because it also allowed dealers to send out sets of bones, making it almost impossible to monitor the quantity of lions or whether tiger or ligers were included in the shipments.

The information currently available through the CITES Trade Database in relation to South Africa’s ‘lion’ trade with Lao PDR is problematic, inaccurate and inadequate. This accentuates that the CITES permitting process appears to be merely a paper producing activity for its own sake rather than a system that ensures adequate or effective reporting, regulation and enforcement of trade activities. Furthermore, alarmingly it shows that there is a severe lack of even basic monitoring and verification by the CITES Secretariat or the Parties. Despite the fact that the Trade Database pointed to blatant irregularities over years, they were never rectified. For example:

- Lao PDR did not report any import of ‘lion’ body parts from South Africa over a six year period, namely 2009 – 2015
- Hundreds of “lion’ body parts went out as trophies/personal.
- “Lion’ body parts went out in kilograms and ‘bones’, making it difficult to accurately calculate the number of ‘lions’ exported.

¹²² <https://www.theguardian.com/environment/2016/sep/27/revealed-how-senior-laos-officials-cut-deals-with-animal-traffickers>.

¹²³ <https://www.dailymaverick.co.za/article/2018-05-11-on-the-trail-of-asias-shifting-rhino-hornmarket/#.WvWSeKSFPX4>. ¹⁴³ CITES Trade Database.

See below extract from CITES Trade Database of 'lion' body part exports from South Africa to Lao PDR from 2009 – 2015.

Year	App.	Taxon	Class	Order	Family	Genus	Importer	Exporter	Origin	Importer reported quantity	Exporter reported quantity	Term	Unit	Purpose	Source
2009	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	LA	ZA			30	bodies		H	C
2009	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	LA	ZA			50	bodies		P	C
2009	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	LA	ZA			250	bones	kg	H	C
2009	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	LA	ZA			5	skeletons		T	C
2009	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	LA	ZA			1	trophies		P	C
2010	I	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	LA	ZA			29	skeletons		T	C
2010	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	LA	ZA			357	bones		T	C
2010	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	LA	ZA			229	bones		T	W
2010	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	LA	ZA			54	claws		T	C
2010	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	LA	ZA			104	skeletons		T	C
2010	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	LA	ZA			6	skulls		T	C
2010	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	LA	ZA			90	teeth		T	C
2010	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	LA	ZA			1	trophies		H	W
2010	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	LA	ZA			43	trophies		T	C
2010	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	LA	ZA			10	trophies		T	W
2011	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	LA	ZA			1573	bones		T	C
2011	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	LA	ZA			127	skeletons		H	C
2011	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	LA	ZA			369	skeletons		T	C
2011	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	LA	ZA			36	trophies		T	C
2012	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	LA	ZA			20	bodies		P	W
2012	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	LA	ZA			49	bodies		T	C
2012	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	LA	ZA			107.5	bones	kg	T	C
2012	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	LA	ZA			2	bones		T	C
2012	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	LA	ZA			108	skeletons		T	C
2012	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	LA	ZA			7	skulls		T	C
2012	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	LA	ZA			8	skulls		T	W
2012	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	LA	ZA			1	trophies		H	F
2013	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	LA	ZA			42	bones		T	C
2013	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	LA	ZA			676	skeletons		T	C
2013	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	LA	ZA			161	skeletons		T	W
2013	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	LA	ZA			7	skulls		T	C
2013	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	LA	ZA			27	skulls		T	W
2013	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	LA	ZA			42	trophies		T	C
2013	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	LA	ZA			18	trophies		T	W
2014	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	LA	ZA			14	skeletons		H	C
2014	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	LA	ZA			360	skeletons		T	C
2014	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	LA	ZA			12	skulls		T	C
2014	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	LA	ZA			3	trophies		T	C
2015	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	LA	ZA			12	bones		T	C
2015	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	LA	ZA			480	skeletons	kg	T	C
2015	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	LA	ZA			148	skeletons		T	C

Based on CITES export permits that we have had access to, between 2014 and 2017, South Africa exported 1,268 big cat Skeletons to Lao PDR. However, given the evidence we have seen in relation to the weight of the shipments that were actually exported we believe this number to be possibly two or three times that amount (see Bones for Sale section of this Report).

Our investigations, including an *in situ* investigation in Lao PDR in January and February 2018, revealed that the largest importer of big cat bones from South Africa is Vannaseng Trading Company because they are also possibly trading as Ainthaphone (supposedly another importer). By muddying the waters in terms of who the actual importers are, big cat bone importers may be deliberately diversifying their contacts and reinvent themselves, so as to possibly:

- Create uncertainty about who the actual actors and networks are on the importing side, particularly so as not to appear to be controlled by one or two major players only;
- Confuse law enforcement;

- Create a 'moving target' environment; □ Spread their risk.

The loopholes and inadequacies in the CITES permitting system once again enable this duplicity.

Below is what our investigation in Lao PDR found in relation to the addresses on the CITES permits where the 'lion' body parts were supposedly sent.

Please note that we did not go to Vinasakhone as other NGOs have documented it.

Although we tried very hard, we **could not find** the addresses (as per the CITES permits) for most of the importers. These were:

- **CNP Import- Export LTD**, Ban Thongthoum, Vientiane.¹²⁴
- **Empt-Import Lao Ltd**, Chengsavanh Village, Khammouane (Vinasakhone?)
- **Johnny Pakxan**
- **Laos Food and Trading Import and Export (Pty) Ltd.**, Ning Jitpticheep (or Jitplecheep), Office 022 T2 Road, Ban Sosarek Village
- **Phonsavanh Trading**
- **Sinthavy Import- Export Co**, Ban Saysana, Vientiane
- **SVT Trading**, Ban Savang Chanthabuly City, Attapeu
- **Trading Co. Ltd., Mr Watanasook**, Ban Thongpong, Vientiane

Ainthaphone Trading (See Also Vannaseng)

Address on CITES Permits: 127 Dongdok Street, Dongdok Village, Vientiane. Telephone number: +856 20 5555 7799 (According to Truecaller the number belongs to V Kksmile).

Permits issued in 2016 and 2017.

¹²⁴ According to searches the only CNP trading company is a mining exploration company. Address: Ban HuaKhua Road, Xaysettha District, Vientiane. Tel: +856 21 461 340. When we spoke to them they said they have nothing to do with the import or export of live animals or animal body parts.



127 Dongdok Street, Dongdok Village, Vientiane, Lao PDR

Ainthaphone must be linked to the Vannaseng Trading Company because this number is listed as the contact number for Vannaseng on their Facebook page.



Our Laotian researcher rang the number and spoke to a Miss Toun. Toun says she works in Khammouane Province, and not in Vientiane. She informed our Laotian researcher that Ainthaphone would be moving to Khammouane Province soon.

According to Toun the owner of Ainthaphone is Mr. Thanakone.

Lilavadi International Import and Export

Address on CITES permits: Sisangvone Village, Xaythany District, Vientiane.

Additional information obtained through investigations:

Tel: +856 205 551 4792.

(According to Truecaller: Irene, Singapore Embassy Laos [written in Russian].)

Tel: +856 21 417051 (according to Truecaller: Kpvsmt).

Tel: +856 558 12 88.

Actual Address: 17 Sisangvone Road, Ban Hongke, 4237 Vientiane.

Trading as: Societe Mixte de Transport Co Ltd (Cargo and Freight Company).

According to Business France¹²⁵: "Societe Mixte De Transport Co., ltd (SMT) found in 1990 in the form of state Private Joint Venture Company under Ministry of Communication, Transport, Post and Construction and was later privatized in 1996 SMT is a Lao owned company specialized in the field of freight forwarding and logistics services with head office based in Vientiane Capital and 4 branches in the main provinces of Laos.

SMT is providing daily transport and transit services between Thailand and Laos with his own facilities and equipment and transport and transit services between Laos and Vietnam and domestics transport services nationwide.

Products / Service:

- Project cargo handling.
- Warehouse/Storage.
- Customs Clearance/Customs broker.
- Freight /logistics service.
- International removals.

Contact person: Kham Lar (other name: Prachith Sayavong)

¹²⁵ <https://events-export.businessfrance.fr/laos-cambodge/societe-mixte-de-transport-co-ltd-smt>.



Social Media associates:

- Aiy Keosouvanh (Vsk). Believed to be a nephew of Sakhone Keosouvanh, though raised as a son.
- Phou Keosouvanh. Could be Sakhone Keosouvanh's son. Married to Douangchay
- Douangchay Keosouvanh. Wife of Phou. She has a familial link to one of the key Vietnamese behind Vannaseng.
- Somdy Keosuovanh. Nephew of Sakhone Keosouvanh (of Vinasakhone) and is operations manager at the Thakek tiger farm. He is also connected to other individuals in the tiger farming/trade in Thailand & Lao PDR.



Vannaseng Trading Company (See Also: Ainthaphone)

Address on CITES permits: Pisit Pakawan, Vannaseng, 4Brd Anou Sonne Xay, Pakxan District, Bolikhamxai Province.

Permits issued in 2014.

<https://www.facebook.com/vnscompany/>

Handwritten signature or initials.



As per the addresses on the permits, Vannaseng Trading, Development Agriculture Industry and Somok Phaimany are all very close together in the same area.

We met with the Village Headman (who is in charge of the village on behalf of the Lao Government), and after we paid a fee he pointed out the address on the permit. It is a private residence, with no indication of any company registered at this address. The Village Headman went purely on the address and he had not heard of Vannaseng Trading Company. The person at the property, Mai Kham, gave the following as a contact number: +856 228 228 37 (True Caller ID Maykham 01 Ansx).

Of interest is that CITES permits for 'lion' bone to Vannaseng Trading associated the company with Thai national Pisit Pakawan. Pakawan is also a live animal smuggler/breeder/dealer who imports large quantities of meerkats and bushbabies from Mystic Monkeys and Feathers in Limpopo South Africa to trade in pet shops in

Thailand and Malaysia. Pakawan also has a wildlife farm in Northeast Thailand (which borders Lao PDR).¹²⁶ Pakawan also shares the same telephone number (+66 869 743 757) with Prajoub Thianthong and Kittitat Sirilakkhananan from the wildlife petting Café, *Mini Zoo Cafe* located in Chatuchak market, Bangkok.



Picture of Pisit Pakawan in South Africa

Pakawan is linked to Nikorn Wongprajan, the Laotian Ministry of Agriculture Inspector arrested in 2017 along with 'Boonchai' Bach, in connection with rhino horn trafficking. Both Pakawan and Wongprajan have visited South Africa together. We could not find a Facebook page for Pakawan but from a cursory Facebook search, it can be seen that Prajoub Thianthong is very close to a 'lion bone' importer in Thailand, Natakorn Yuennan and his wife as they are Facebook friends with a lot of comment exchanges. This may also link Pakawan and Vannaseng Trading to Natakorn Yuennan in Thailand. Kittitat Sirilakkhananan is also believed to link to this circle as he sometimes comments on same posts with Natakorn and Prajoub Thianthong. The three sometimes checked in (not together) at the Cargo Free zone Suvarnabhumi Airport, supposedly when they come to clear their animal cargoes.

Vannaseng Trading Company has a track record of wildlife crime and is implicated in the illegal bear, macaque¹²⁷, tiger, rhino and elephant ivory trade.¹²⁸

¹²⁶ <https://www.straitstimes.com/singapore/from-chatuchak-to-woodlands-smuggled-animals-face-long-and-perilous-journeys>.

¹²⁷ Vannaseng illegally imported 2,000 macaque monkeys captured and sold by villagers in Cambodia, according to an internal Lao government report. http://globaltigerforum.org/wp-content/uploads/2017/07/09_DEC_2016-1.pdf.

¹²⁸ Cultivating Demand: The growing Threat of Tiger Farms, 2017. <https://eia-international.org/wpcontent/uploads/Cultivating-Demand-The-Growing-Threat-of-Tiger-Farms.pdf>.

TRAFFIC has also voiced considerable scepticism about the legitimacy of the so-called “captive breeding” of Burmese Pythons, Reticulated Pythons or East Sumatran Shorttailed Pythons is taking place in the numbers reported in annual CITES trade reports by the sole commercial breeder and exporter: Vannaseng Trading/Farms.¹²⁹

According to the EIA the Vannaseng Trading Company established a tiger farm in 2002, but has expanded and now has at least two tiger ‘facilities’ (one in the village of Lakxao, Khammouan, on the border of Vietnam). The EIA states that “the number of captive tigers in the Vannaseng facility more than doubled – in 2016 there were 102 tigers in the facility, which increased to 235 in 2017. The company has reportedly exported large amounts of tiger products to Vietnam and provided Chinese companies based in Lao PDR with the raw materials for the production of tiger bone wine for the Chinese market.”¹⁵⁰

Apart from the information given in the section above, Vannaseng is also implicated in the Kromah Moazu money laundering and illicit trafficking case in Uganda. In July 2017 Mr Kromah Moazu, a Liberian national, Mr Kourouma Bangaly and Mr Mohammed Kourouma both Guinean nationals, were charged with: unlawful possession of protected species; unlawful possession of restricted goods; unlawful importation of specimen of protected species; conspiracy to commit offence and money laundering. They were found in possession of 437 pieces of ivory weighing 1.303.76kg, and valued at Shs 9.3billion. The Vannaseng Trading Company, between 2014 and 2017, illegally provided Moazu with \$190,000 (nearly Shs685m).

In 2015, the South African national Department of Environmental Affairs did not properly answer a parliamentary question as to whether they [South Africa] authorised the sale of lion bones to Vannaseng – instead they deflected the question and absolved themselves of any responsibility by replying: “To provide information relating to the above questions requires consultation with the provincial conservation authorities. We do not authorize any export of lion bones at the national department. My suggestion and advice is that the honourable member should use the Provincial Legislature representatives to ask this question so as to get direct response from the spheres of government which deals directly with permitting such exports. Should the honourable member require that this question be responded to at a national level, it should be

¹²⁹ The Trade in South-East Asian Python Skins Geneva: International Trade Centre, 2012. ¹⁵⁰*ibid.*

acknowledged and accepted that this will take longer, a period of up to more than six months.”¹³⁰

Somok Phaimany

Address on CITES permits: Somaok Phaimany Paksane District, Bolikhamxai.

Visited on 02 February 2018. Permits issued in 2017.



Somok Phaimany, January 2018.

As per the addresses on the permits, Vannaseng Trading, Development Agriculture Industry and Somok Phaimany are all very close together and in walking distance of each other. When our researcher rang the number, the person who answered called himself “Mr. Kop” and said that “Samoak Phaimany” is the name of a company, and not a person. Initially he said they were prevented from doing business with South Africa by the Lao PDR government. Later, he said they would like to do business with anyone from Africa who has animals for sale and that he had not told the

¹³⁰ https://www.environment.gov.za/sites/default/files/question633_lionbones_exportation.pdf

truth about the company being prevented from doing business with South Africans. He said the lion bones come to him and then they go (trafficked) to Vietnam. He told our researcher that the South African he deals with (in all likelihood SJ Alberts and/or Johan Du Toit) is upset because the Vietnamese had not paid him in full for the last 'shipment'.

Somok Phaimany (calls himself Den) is Facebook friends with Vixay Keosavang, Johan

Du Toit and Du Toit's wife Karin (*nee* Rothmann). He is also Facebook friends with Sakhone Keosouvanh (the part owner of Vinasakhone).

We believe there may be a link between Somok Phaimany and the My Quynh Zoo in Vietnam. After our visit to My Quynh Mr Kop called our researcher and said they wanted to know what we were doing in Vietnam.

JDT Imports (Johan Du Toit)

Address on CITES permit: Hengboun Road, Ban Anou, Chantabuly District, Vientiane.

Additional info obtained through investigations: Tel. no.: +856 21 251 094.

Permits issued in 2016.

The exporter, Johan H Du Toit (Hartbeesfontein, Hekpoort, Gauteng, South Africa) is exporting to himself as the exporter and importer have the same business name.



There is no street number on the permits, and this is a very busy, very long and winding road. The village headman, took us to a business called V. A. T. Import-Export Co. Ltd. as he said that JDT sometimes 'share' their office and address. However, their address is completely different: 233 02 Chao Anou Street, Anou Vientiane.



KNT Trading

Address on permits: Sana Sombon Village, Vientiane Province.

Permits issued in 2015 and 2016.

According to the village headman it is in Ban Anou Village, Vientiane. It may also be known as the Kengkai Import - Export Company. Tel: +856 21 216 831. Whether it is this business that the bones went to is inconclusive.

There is reference to KNT Trading being implicated in ivory trafficking in 2015. According to a Thai PBS article, "The Ministry of Industry and Commerce of Laos has issued a statement to dismiss as untrue reports by Thai media, which alleged companies in Laos to have been smuggling elephant ivory through Thailand, Vientiane Times reported. In the latest reports to emerge in mid-December, Thai and other foreign media outlets reported that on Dec 10 Thai authorities seized 789kg of elephant tusks and 587kg of other wildlife items. The reports said the shipment had originated in Nigeria and passed through Singapore before arriving in Thailand en route for Laos. They also said the shipment would be received by a Lao company, KNT Trading, upon arrival in Laos. Following the Thai media reports, including one by Channel 7, the ministry investigated the issue but found no company registered as KNT Trading as mentioned by the Thai media. The Lao ministry also dismissed earlier reports by Thai media, including Channel 3, alleging that two Lao companies were involved in the illegal trade of elephant tusks seized by Thai authorities with the tusks allegedly shipped through Thailand destined for Laos. The Thai media reports alleged that two Lao companies – Manisouk Trading

Lao and Soukpasong Import-Export – were supposedly to receive the tusks, which were seized by Thai authorities on April 2 and April 26 last year en route through Thailand. Investigations revealed that there were no companies registered under the names Manisouk Trading Lao and Soukpasong Import-Export.”¹⁵²



¹⁵² 29 February 2016. <http://englishnews.thaipbs.or.th/laos-dismisses-reports-illegal-ivory-trade/>.

Development Agriculture Industry

Address on permits: House no.210, 43 Paksane District, or Bolikhamxay.

Bones sent in 2014. Visited on 02 February 2018.

Development Agriculture Industry, Vannaseng Trading & Somok Phaimany are all very close together in this area.

This address was used by South African dealers: Rothmann, Riekert, De Jager and Van Tonder. The addressees were all different people with one even being Van Tonder’s Thai wife Narachon Damrongkul (who is domiciled in South Africa).

We found the address. It is a shop/factory that sells building materials. When we went inside we were also given a “business card” for the owners of the shop.



Translation of the card:

Chanthanome Industry Factory Co. Ltd.

Product: Zinc aluminium roof, rolling door, roof template, front gate, front roof, inside window. Glass and aluminium product: all types of door and window, sensor door, glass for house, glass wardrobe, glassfish, mosquito net, ceiling. Curtain products. Also, other product available for service.

Mr Chan 020 22337219, 55553 5296.

Mrs Ting 020 2233 3386, 5553 5196.

Landline phone: +856 54 280170.

Email: pschanthnome@gmail.com.

Research associated with the business card for Chanthanome Industry Company revealed the following website.

Address listed as road no. 4B Phonxay Village, Paksan, Bolikhamxay.

Email on the business card links to Facebook of a Laotian man: Alak Khounphaxay who posted an advertisement for Chanthanome Industry Comp. One of Alak Khounphaxay's

Facebook friends is Alex Khounphaxay, same family name, who in turn has a Facebook link to Sakhone Keosouvanh, Somchay Keosouvanh (of Vinasakhone and Ban Ta Bak tiger facilities).



Vietnam

Vietnam leads the group of fastest growing economies in the world between 2016 and 2050 and by 2050, is projected to be among the Top 20 economies in the world.¹³¹ Concomitantly, in the current context of rapid economic and population growth, the domestic demand for wildlife body parts is growing and is a key driver of trade. Vietnam a major consumer country for South Africa's 'lion' bone trade and live wild animals.

By the mid-1990s, Vietnam had become one of the important links of the global wildlife trafficking rings. According to a recent article in the Vietnamese press, "At first, wildlife trafficking in Vietnam served demand from China. However, in the last two

¹³¹ <https://www.pwc.com/vn/en/publications/2017/spotlight-on-vietnam.pdf>

decades, as the Vietnamese living standard has improved, Vietnam not only serves as a link in the international trafficking rings, but also as a consumer.”¹³² Particularly in the last decade Vietnam has regularly been identified as both a transit country and a consumer market for wildlife body parts (including elephant ivory and rhino horn) and this ongoing demand continues to drive trade and trafficking.

Vietnam has been listed by CITES Elephant Trade Information System (ETIS) of ‘primary concern’ both as a source and transit country for illegal ivory – Vietnam has been implicated in over 46 tons of seized ivory since 2005. A Wildlife Justice public hearing in The Hague in November 2016 revealed that 579 products of rhino horn, 220 tiger parts, and almost 1 000 pieces of ivory were sold openly in just one small village in Vietnam. While according to an April 2018 TRAFFIC bulletin, despite seizures of live tigers and tiger parts, the open trade and sale of tiger parts continues in Vietnam. TRAFFIC also raised concerns about whether the legal tiger farms are in fact acting as sources for illegal trade.¹³³ While, despite a MoU signed by South Africa with Vietnam in 2013 which supposedly had important demand-side aims to increase cooperation in wildlife conservation and collaboration on demand reduction campaigns, in South Africa, Vietnamese nationals remain the most commonly arrested Asian nationals related to wildlife trafficking.¹³⁴ Within this context it is concerning that the South African government is feeding Vietnam’s insatiable demand for wild animals and their body parts.

As with Lao PDR and Thailand, the information currently available through the CITES Trade Database in relation to South Africa’s ‘lion’ trade with Vietnam is problematic, inaccurate and inadequate, with the data provided by both Vietnam and South Africa being substantially different or no reporting at all. This accentuates that the CITES permitting process appears to be merely a paper producing activity for its own sake rather than a system that ensures adequate or effective reporting, regulation and enforcement of trade activities. Furthermore, alarmingly it shows that there is a severe lack of even basic monitoring and verification by the CITES Secretariat or the Parties. See below extracts from CITES Trade Database of ‘lion’ body part exports from South Africa to Vietnam from 2008 – 2016.

¹³² <http://english.vietnamnet.vn/fms/environment/201778/vietnam-makes-progress-in-wildlife-protection.html>.

¹³³ TRAFFIC Bulletin, Vol. 30 No. 1, April 2018.

¹³⁴ <https://www.dailymaverick.co.za/article/2017-01-10-wildlife-trafficking-the-sordidconnection/#.WvrZF4CFPX4>.



New Search

Comparative Tabulation Report

Year	App.	Taxon	Class	Order	Family	Genus	Importer	Exporter	Origin	Importer reported quantity	Exporter reported quantity	Term	Unit	Purpose	Source	
2014	H	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	VN	ZA		21		bones		H	C	
2014	H	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	VN	ZA			18	bones		T	C	
2014	H	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	VN	ZA		4		bones		H	C	
2014	H	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	VN	ZA		21		skeltons		H	C	
2014	H	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	VN	ZA		479		781	skeltons	T	C	
2014	H	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	VN	ZA		87		skeltons		T	W	
2014	H	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	VN	ZA		26		skeltons		T	C	
2014	H	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	VN	ZA		21		skulls		H	C	
2014	H	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	VN	ZA				1	trophies	H	C	
2014	H	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	VN	ZA						T	C	
2018	H	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	VN	ZA		95		618	bones	T	C	
2018	H	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	VN	ZA				80	bones	T	D	
2018	H	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	VN	ZA		18		1	ue	T	C	
2018	H	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	VN	ZA		40		42	ue	Z	C	
2018	H	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	VN	ZA		515		208	skeltons	T	C	
2018	H	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	VN	ZA		814				T	C	
2016	H	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	VN	ZA		17		1	ue	Z	C	
2016	H	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	VN	ZA		1082			skeltons	kg	T	D
2016	H	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	VN	ZA		230			skeltons	T	C	

Year	App.	Taxon	Class	Order	Family	Genus	Importer	Exporter	Origin	Importer reported quantity	Exporter reported quantity	Term	Unit	Purpose	Source	
2	2008	H	Mammalia	Carnivora	Felidae	Panthera	VN	ZA			60	bones		P	C	
3	2009	H	Mammalia	Carnivora	Felidae	Panthera	VN	ZA			2	bones		H	C	
4	2010	H	Mammalia	Carnivora	Felidae	Panthera	VN	ZA			26	bones		H	W	
5	2011	H	Mammalia	Carnivora	Felidae	Panthera	VN	ZA			32	bones		H	C	
6	2012	H	Mammalia	Carnivora	Felidae	Panthera	VN	ZA		738.82		bones	kg	H	C	
7	2012	H	Mammalia	Carnivora	Felidae	Panthera	VN	ZA			738.82	bones	kg	H	W	
8	2013	H	Mammalia	Carnivora	Felidae	Panthera	VN	ZA		459.2		bones	kg	T	C	
9	2013	H	Mammalia	Carnivora	Felidae	Panthera	VN	ZA			4	bones		H	C	
10	2013	H	Mammalia	Carnivora	Felidae	Panthera	VN	ZA				531	bones		T	C
11	2013	H	Mammalia	Carnivora	Felidae	Panthera	VN	ZA				2	bones		T	W
12	2014	H	Mammalia	Carnivora	Felidae	Panthera	VN	ZA			4	bones		H	C	
13	2015	H	Mammalia	Carnivora	Felidae	Panthera	VN	ZA				60	bones		T	C

In Vietnam lion bone is being turned into lion balm (cooked lion bone), people wear lion claws and teeth, lion skulls and teeth are put on display as status symbols, and lion bone is being processed into “cake”, which is difficult to distinguish from tiger “cake”. A source interviewed by TRAFFIC in April 2018 anticipates that “the trade for lion bone cake will grow and that sellers are now openly telling consumers that the cake contains lion (bones and gall bladder) and consumers are specifically requesting lion products... It has been suggested that there are already lion farms in Viet Nam, but the captive-population is unknown.”¹³⁵

Below is what our investigation in Vietnam found in relation to the addresses on the CITES permits where the ‘lion’ body parts were supposedly sent.

Vinh Phu-Cmt Joint Stock Company

Address on permits: Lam Anh Thang, Vinh Phu CMT Joint Stock Co. 232/5/28 Binh Loi Str, Ward 13, Binh Thanh District, Ho Chi Minh City.

Permits issued 2017.¹³⁶

¹³⁵ <https://cites.org/sites/default/files/eng/com/ac/30/E-AC30-25.pdf>. 16 May 2018.

¹³⁶ We only have information for 2017 so permits could have been issued in previous years too.

Director: Mr Lam Anh Thang.

Business activities: “plants and wildlife breeding (birds, mammals, reptiles, amphibians, fish, insects, molluscs and corals). Trade of plants, live animals and animal products (bone, hair, skin, teeth, horns, claws”).

Tel: +84 3984 6905.

Their email address is also used for another ‘lion’ bone importer, Son Long Investment Development., Ltd. In Nghe An province.

Permits issued in 2017.

Visited 09 February 2018.

On inspection, this is a private house, with no indication that a company uses the premises as an office. It is an upmarket, quiet area in Ho Chi Minh.

The skeleton/bone consignments were addressed to Lam Anh Thang, the legal representative of the Vinh Phu CMT Joint Stock Corporation. Lam Anh Thang’s sister, Lam Bich Thuy, former treasurer of the Saigon Zoo (SGZ). Thuy and Thang’s brother, Lam Thanh Phong, were found guilty of the murder of a staff member of SGZ, in a corruption whistle-blower case. They received death sentences, which were commuted to life in 2005.

The actual owners are Bui Hong Thuy and veterinarian Phan Viet Lam¹⁵⁹. They are also the co-owners of two other wildlife supplier companies based in Vietnam, namely: Indochina Zoo Corp. and Nguyen Ngoc Company. This links the ‘lion’ bone traders to the trade in live animals, including live lions and tigers.



Thuy Bui Hong



Phan Viet Lam

Lam is the President of South East Asian Zoos Association. He was a previous director of Saigon Zoo. He sources wild animals for public and private zoos throughout Vietnam. Lam is linked to VinPearl and DKC Trading through his involvement in the DKC Trading/VinPearl animal shipment from South Africa in December 2015. He is also connected to imports of tigers from Europe and possibly South Africa, as well as rhino imports.

Vinh Phu-CMT has also directly imported live animals from South Africa:

- July 2012 - three rhinos sent by Bester Birds & Animals (veterinarian Charles Van Niekerk) with a transit in Thailand.¹⁶⁰
- February 2010 - two white tigers for Saigon Zoo, located in Ho Chi Minh City.

¹⁵⁹ Some of his Facebook friends include South African traders Adele Faul and Mike Bester. gfdsa¹⁶⁰
<https://annamiticus.com/2012/08/15/rhinos-from-south-africa-to-vietnam-via-thailand/>

□ 2009 - two rhinos for Cu Chi Water Park, located in Ho Chi Minh City.

Son Long Investment and Development Co. Ltd

Address on permits: Xuan Dinh Hamlet, Dien Hong Commune, Dien Hong Commune, Dien Chau District, Nghe An.

Business activities: wholesale of cars and other vehicles, vehicle components, machines, construction materials, agricultural and forestry products, live animals.

Owner: Nguyen Tien Luc.

Address on permits not physically located.

Permits issued in 2015, 2016, 2017.

Thanh Manh Hung Company Ltd

Address on permit: Phan Van Sau, Thanh Manh Hung Company Ltd, 4 Hamlet Str., Nam Lam Dien Lam Ward. Dien Chau District, Nghe An

Additional Information obtained through investigations:

Business activities: wholesale of household goods, construction materials, transportation, production of timber products.

Chief accountant: Truong Thi Thuy.

Legal Representative: Phan Van Sau

Tel number +84 1656021269 (and +84 1678567555 (According to Truecaller that number belongs to Cau Thiet).

One of the 2017 consignments of 'lion' bone/skeletons from Sandra Linde Taxidermy was linked to two relatives of Nguyen Van Hai, a major Vietnamese wildlife trafficker, possibly linked to the DKC Network (see section *Joining the Syndicate Dots*):

- Nguyen The Du (son of Nguyen Van Hai). His name was on the shipment delivery note as the representative of the Thanh Manh Company.
- Dang Van Thiet (Nguyen Van Hai's son-in-law), the actual owner of the shipment. His wife, Thuy Duong is connected to several members of the DKC Network, e.g. Nguyen Dang Khanh and Chu Duc Gulit (both arrested for possession of rhino horns and elephant tusk in South Africa in 2012).

Bao Huy Import–Export Trading Co. Ltd

Address on permits: Dien Xuan Social, Dien Chau District, Nghe An OR Dien Chau District

Nghe An.

Bones sent in 2015. Visited on 09 February 2018.

The above address could not be found.

There is a Bao Huy Import-Export Trading Company listed in the Yellow Pages but it is in Ho Chi Minh City, which is not in the Nghe An province:

Bao Huy Import-Export & Trading Company Limited

Address: 64/11 Le Van Luong, Tan Hung Ward, District 7, Ho Chi Minh City, Vietnam
 Telephone: +84 28 37751496,
 Fax: +84 28 37755376
 Email: info@baohuyco.com.vn
 Website: http://www.baohuyco.com.vn

Categories

- ▷ Plastic Packaging - Bottles, Boxes, Vases
- ▷ Consumer Goods - Import And Distribution
- ▷ Plastic Companies
- ▷ Agricultural Products
- ▷ Plastic Drums

Product & Services

- ▷ Plastic Chair

Company Profile

- ▷ Company name: Bao Huy Import-Export & Trading Company Limited
- ▷ Year Established: 2011
- ▷ Number of Employees: From 11 - 50 People

Hoan Van Dien

Address on permits: 30 BT/1A Cao Yuan Auy Street, My Dinh, 2 Ward, Tu Liem, Hanoi.

Permits issued in 2014.

This is a private residence in an upmarket, quiet area and there is no indication of a company being registered at this address

Trans Giang

No address provided. Could not trace.

Thailand

Thailand is a source, transit and destination country for wild animals and their body parts, including CITES-listed animals. It has been identified as a principle market for elephant ivory, rhino horn, pangolin and tiger products and the large numbers of people consuming wild animals and their body parts in Thailand is significantly large enough to drive the market.

The United Nations Office on Drugs and Crime has identified Thailand as a hub for the smuggling, laundering and trafficking of wild animals into the international exotic pet market in the United States, Europe and other Asian countries and the

Chatuchak Market in Bangkok has been widely identified as the epicentre of this illegal trade. Thailand also has a burgeoning trade in captive tigers with 32 licensed zoos having 1,287 tigers (as at April 2017).¹⁶¹ Given the context that it is very easy to obtain a zoo license (in Thailand and other source and demand countries), and that zoos exploit legal (domestic and CITES) loopholes to trade commercially under the pretext of their 'non-commercial purposes' status, makes this high number of tigers in captivity a major concern. Within this context it is also disquieting that Thailand does not currently have the legal framework to seriously challenge the criminal networks involved in the wildlife trade.¹⁶²

As with Lao PDR and Vietnam, the information currently available through the CITES Trade Database in relation to South Africa's 'lion' trade with Vietnam is problematic, inaccurate and inadequate, with the data provided by both Thailand and South Africa being substantially different or no reporting at all. This accentuates that the CITES permitting process appears to be merely a paper producing activity for its own sake rather than a system that ensures adequate or effective reporting, regulation and enforcement of trade activities. Furthermore, alarmingly it shows that there is a severe lack of even basic monitoring and verification by the CITES Secretariat or the Parties. See below extracts from CITES Trade Database of 'lion' body part exports from South Africa to Thailand from 2013 – 2016.

1	Year	App.	Taxon	Class	Order	Family	Genus	Importer	Exporter	Origin	Importer	Exporter	Term	Unit	Purpose	Source
2	2013	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	TH	ZA		2910	14 skeletons		T	W	
3	2015	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	TH	ZA		48	118 skeletons		T	C	

1	Year	App.	Taxon	Class	Order	Family	Genus	Importer	Exporter	Origin	Importer	Exporter	Term	Unit	Purpose	Source
2	2015	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	TH	ZA					30 bones	T	C
3	2016	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	TH	ZA		133			bones	T	C
4	2016	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	TH	ZA		20			bones	T	W

¹⁶¹ According to the Department of National Parks, Wildlife and Plant Conservation.

¹⁶² Criminal Justice Response to Wildlife Crime in Thailand: A Rapid Assessment. United Nations Office on Drugs and Crime, June 2017.

https://www.unodc.org/documents/southeastasiaandpacific/Publications/2017/Thai_Assessment_13_16_May_2017.pdf

Comparative Tabulation Report

Year	App.	Species	Class	Order	Family	Genus	Importer	Exporter	Origin	Importer reported quantity	Exporter reported quantity	Item	Unit	Purpose	Source
2014	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	TH	ZA				7 live		B	C
2014	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	TH	ZA				2 live		T	C
2014	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	TH	ZA		10		10 live		Z	C
2014	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	TH	ZA				2 trophies		T	W
2015	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	TH	ZA				30 bones		T	C
2015	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	TH	ZA		13		11 live		Z	C
2015	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	TH	ZA		1		leather products (large)		P	W
2015	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	TH	ZA		48		119 skeletons		T	C
2015	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	TH	ZA				2 trophies		H	C
2015	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	TH	ZA				3 trophies		T	C
2016	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	TH	ZA		3		bodies		P	C
2016	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	TH	ZA		1		bodies		P	W
2016	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	TH	ZA		133		bones		T	C
2016	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	TH	ZA		20		bones		T	W
2016	I	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	TH	ZA		5		live		T	C
2016	II	Panthera leo	Mammalia	Carnivora	Felidae	Panthera	TH	ZA		9		live		Z	C

Below is what our investigation in Thailand found in relation to the addresses on the CITES permits where the 'lion' body parts were supposedly sent.

Natakorn Yuennan

Address on permit: Natakorn Yuennan, 838/116 Tapyao Ladkrabang (or Latkrabang).

Bangkok 10900 (or 10520).

Permits issued: 2015, 2016 and 2017.

Additional Information: Tel: +66 8 6198 8128 and +66984194654. Facebook:

<https://www.facebook.com/tu.yuennan.5> and

<https://www.facebook.com/PetproLogistic-443094885848158/>

On the face of it, Yuennan may be a middleman for the 'lion' bone imports from South Africa. It is unknown where the 'lion' bones actually go to. Yuennan is linked to illegal wildlife trader Attiya Sriduang on social media. He is also linked on social media to people from The Mini Zoo Café (Chatuchak Market, Bangkok), and they in turn are linked to Pisit Pakawan, a live wild animal smuggler/breeder/dealer and 'lion' bone importer.



CARGO SERVICES

One stop service for your pet

MR. NATAKORN YUENNAN

838/110 The Trop Village, Tapyao, Latrabang,
Bangkok 10520, Thailand.
Mobile : 090-1188120, 090-4184654
E-mail : undetu_1997@hotmail.com

Address : Natakorn Yuennan
Id 100110 petprologistic
Id 100110 petpro

Natakorn Yuennan (10/09/2016)

International Logistics

No address made available.

Limited Partnership Boonchai

Address on CITES permits: House 138 Mu 11 Road, 168 Tambon Naratchak, wai District, Muang, Nakon Phanon. Permits issued in 2016.

It is highly likely that these shipments went directly to known wildlife trafficker 'Boonchai' Bach given that offices are in Nakhon Phanom, northeast Thailand. It is incredulous that the CITES authorities in both South Africa and Thailand issued the documentation for these transactions given the high criminal profile of Boonchai Bach.

Lisa Lion Import Export

Address on CITES permit: Office More Travel, 210 Moo 9 Soi Buchao, Nongprue, Banglamung Chonburi, Pattaya. Also: Ms Parichat Chumtong Office More Travel, 210 Moo 9, Nongpru, Banglamung Chonburi, Pattaya, 20150.

Permits issued in 2015.

Infographics

Part One South African big cat skeleton traders 2014 - 2017

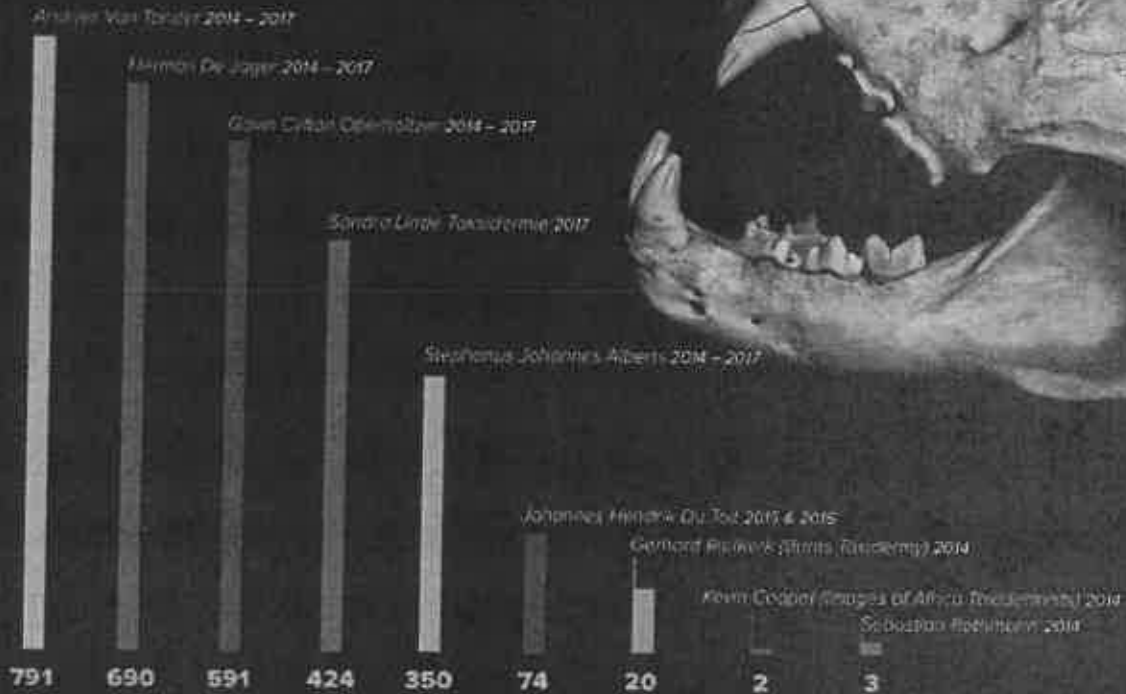
Not Just a by-product of the **trophy hunting** industry

91 % of the skeletons exported in 2017 had skulls present.
In South Africa **Big Cats** are being killed specifically for their bones.

Total number of **skeletons** exported 2014 - 2017

2,945

Traders and Number of Skeletons



BAN ANIMAL TRADING
A Foundation of EMS

EMS FOUNDATION
United in Purpose

1. Based on research and data information gathered for STEB report, period 2014-2017

Handwritten signature or initials.

Big Cat Skeleton Importers by Country 2014 - 2017

It is likely that these figures are higher given the evidence of illegally falsified "misdeclarations" of skeleton quantities.

LAO PDR

Number of Skeletons imported from South Africa **1365**

Importers

Ainthaphone Trading	408	Lilavady	53
Vinasakhone	137	Jitplecheep Ning	50
SVT Trading	112	Empt. Import - Export Lao LTD	48
Vannaseng Trading	112	KNT Trading LTD	46
Somok Pharmacy	110	Phonsavanh Trading	32
Sinthavy Import- Export Co	75	Johnny Pakxam (Pakxan)	29
Wattanasook Trading	67	CNP Import- Export LTD	16
Development Agriculture and Industry	58	JDT Imports (JH Du Toit)	12

VIETNAM

Number of Skeletons imported from South Africa **1138**

Importers

Son Long Investments	533	Thành Mạnh Hưng Co	251
Bao Huy Imp-Exp	140	Trans Giang	39
Vinh Phu - CMT Joint Stock	173	Hoan Van Dien	2

THAILAND

Number of Skeletons imported from South Africa **442**

Importers

Nitakorn Yuenhan	383	Limited Partnership Boonchai	20
Lisa Lion Import Export	38	International Logistics	1



Images: © EIA / Education for Nature Vietnam

BIG CATS

BAN
ANIMAL TRADING
Unit 10/11, 1st Floor, 100, Market Street, Singapore

EMS
FOUNDATION
100, Market Street, Singapore



Handwritten signature and initials.

**IN THE HIGH COURT OF SOUTH AFRICA
(GAUTENG DIVISION, PRETORIA)**

Case No: 86515/17

In the matter between:

**NATIONAL COUNCIL OF SOCIETIES
FOR THE PREVENTION OF CRUELTY
TO ANIMALS**

Applicant

and

THE MINISTER OF ENVIRONMENTAL AFFAIRS

First Respondent

**THE DIRECTOR-GENERAL,
DEPARTMENT OF ENVIRONMENTAL AFFAIRS**

Second Respondent

SOUTH AFRICAN PREDATOR ASSOCIATION

Third Respondent

**MEC: DEPARTMENT OF ECONOMIC
DEVELOPMENT, ENVIRONMENT AND
TOURISM (LIMPOPO PROVINCE)**

Fourth Respondent

**MEC: DEPARTMENT OF
ECONOMIC DEVELOPMENT, ENVIRONMENT,
CONSERVATION AND TOURISM
(NORTH WEST PROVINCE)**

Fifth Respondent

**MEC: DEPARTMENT OF AGRICULTURE
AND RURAL DEVELOPMENT (GAUTENG PROVINCE)**

Sixth Respondent

**MEC: DEPARTMENT OF
ECONOMIC DEVELOPMENT,
TOURISM AND
ENVIRONMENTAL AFFAIRS (FREE STATE PROVINCE)**

Seventh Respondent

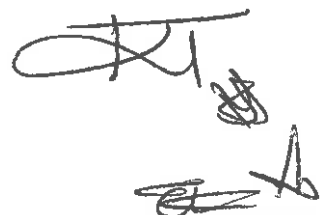
CONFIRMATORY AFFIDAVIT

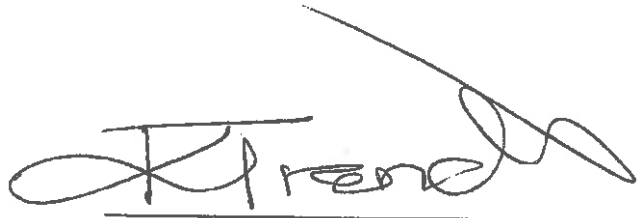
I, the undersigned,

KAREN OWEN TRENDLER

do hereby make oath and state as follows:

1. I am the Manager of the Wildlife Trade and Trafficking Unit at the National Council of Societies for the Prevention of Cruelty to Animals.
2. Except where the contrary is expressly stated or appears from the context, the facts in this affidavit are within my personal knowledge. To the best of my knowledge, they are true and correct.
3. I have read the affidavits of Este Kotze (in support of the urgent application, the supplementary affidavit and replying to the third respondent). I confirm the contents of these affidavits in so far as they refer to me.





DEPONENT

I hereby certify I certify that the deponent has acknowledged that she knows and understands the contents of this Affidavit which was signed and sworn to before me at on this the 12th day of September 2018 and that the provisions of the Regulations contained in Government Notice R1258 of 21 July 1972 (as amended) and Government Notice R1648 of 19 August 1977 (as amended) have been complied with.



COMMISSIONER OF OATHS
15 Sturdee Avenue
Rosebank

SOUTH AFRICAN POLICE SERVICE
CLIENT SERVICE CENTRE
2018 -09- 12
CSC
ROSEBANK
SUID-AFRIKAANSE POLISIEDIENS



Ekb

Jane Marston

From: Jane Marston
Sent: Wednesday, 08 August 2018 1:11 PM
To: 'Arista Wasserman'
Subject: RE: MEETING ON NEW LION BONES QUOTA : NATIONAL COUNCIL OF SPCA (NSPCA)

Dear Ms Wasserman

We have discussed the matter with client and they are willing to meet. We were about to serve another application upon your client in regard to this matter, but as a sign of good faith, our client has instructed us to hold the matter over.

The best day for us all would be 20 August 2018. Any time on that day would suit.

If that is not possible, we can rearrange diaries for Tuesday morning 14th August, or any time on Wednesday 15th.

We await to hear from you.

Regards,

JANE MARSTON

jane@marston.co.za

P O Box 784894, Sandton, 2146

3rd Floor, 61 Katherine Street,
Sandton

T: (011) 783 6775 / 783 7569 / 783 6304

F: (011) 783 6785 / 086 554 0981

W: www.marston.co.za



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From: Arista Wasserman <AWasserman@justice.gov.za>
Sent: Monday, 06 August 2018 9:55 AM
To: Jane Marston <jane@marston.co.za>
Subject: MEETING ON NEW LION BONES QUOTA : NATIONAL COUNCIL OF SPCA (NSPCA)

Dear Ms Marston

I refer to our telephone conversation earlier.

I confirm that our client would like to meet with your client to discuss the new quota that was set by the Minister.

Please be so kind to provide us with suitable dates for your client. We can meet at the Department of Environment alternatively please inform where you would like to meet.

Regards

Arista Wasserman
Assistant State Attorney
State Attorney Pretoria
Tel: 012 309 1507
Fax: 086 450 4256



the doj & cd

Department:
Justice and Constitutional Development
REPUBLIC OF SOUTH AFRICA

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A handwritten signature in black ink, appearing to be 'Arista Wasserman', located in the bottom right corner of the page.

EK7

Jane Marston

From: Arista Wasserman <AWasserman@justice.gov.za>
Sent: Friday, 17 August 2018 1:11 PM
To: Ruwaida Fourie; Jane Marston
Subject: MEETING ON NEW LION BONES QUOTA : NATIONAL COUNCIL OF SPCA (NSPCA)
Importance: High

Dear Ms Fourie

My apologies for only responding now.

Unfortunately we will not be able to meet on Monday 20 August 2018 as initially planned however we would like to meet in the week thereafter (last week of August 2018)

Please be so kind to provide me with suitable dates and I would like to apologies for any inconvenience caused.

Regards

Arista Wasserman
Assistant State Attorney
State Attorney Pretoria
Tel: 012 309 1507
Fax: 086 450 4256



the doj & cd

Department:
Justice and Constitutional Development
REPUBLIC OF SOUTH AFRICA

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Jane Marston

From: Jane Marston
Sent: Thursday, 30 August 2018 11:40 AM
To: 'Arista Wasserman'
Subject: RE: MEETING ON NEW LION BONES QUOTA: NATIONAL COUNCIL OF SPCA (NSPCA)

Dear Ms Wasserman

Thanks for the mail.

We look forward to meeting you there.

Regards,

JANE MARSTON

jane@marston.co.za

P O Box 784894, Sandton, 2146

3rd Floor, 61 Katherine Street,
Sandton

T: (011) 783 6775 / 783 7569 / 783 6304

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From: Arista Wasserman <AWasserman@justice.gov.za>
Sent: Thursday, 30 August 2018 11:36 AM
To: Jane Marston <jane@marston.co.za>
Cc: ntlewis@law.co.za
Subject: RE: MEETING ON NEW LION BONES QUOTA: NATIONAL COUNCIL OF SPCA (NSPCA)

Dear Ms Marston

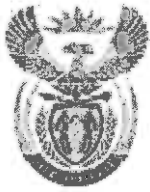
I hereby confirm that meeting will be held on 4 September 2018 at 14:00 at the chambers of our counsel, Adv J Rust:

Parc Nouveau Advocates' Chambers
225 Veale Street
Nieuw Muckleneuk
Pretoria
0181

Regards



Arista Wasserman
Assistant State Attorney
State Attorney Pretoria
Tel: 012 309 1507
Fax: 086 450 4256



the doj & cd

Department:
Justice and Constitutional Development
REPUBLIC OF SOUTH AFRICA

From: Jane Marston [<mailto:jane@marston.co.za>]
Sent: 28 August 2018 03:36 PM
To: Arista Wasserman
Subject: RE: MEETING ON NEW LION BONES QUOTA: NATIONAL COUNCIL OF SPCA (NSPCA)

Dear Arista

Thanks for the mail.

We are available from 12h00 on 4 September.

We have two counsel, but only one will be attending on 4 September:

Advocate Nicole Lewis
The Bridge Group
Email: ntlewis@law.co.za
Tel: 011-263-8900
Cellphone: 066-033-8197

If you have any problems getting hold of her or for any reason, please do not hesitate to give me a call.

I look forward to receiving confirmation of the time and venue of the meeting.

Regards,

JANE MARSTON
jane@marston.co.za

P O Box 784894, Sandton, 2146

3rd Floor, 61 Katherine Street,
Sandton

T: (011) 783 6775 / 783 7569 / 783 6304
F: (011) 783 6785 / 086 554 0981
W: www.marston.co.za



Marston & Taljaard
Attorneys, Notaries, Conveyancers

The information transmitted is intended only for the person or entity to which it is addressed and may contain confidential and/or privileged material. Any review, retransmission, dissemination or other use of, or taking any action in reliance upon, this information by persons or entities other than the intended recipient is prohibited. If you received this in error, please contact the sender and delete the material from any computer.

From: Ruwaida Fourie
Sent: Tuesday, 28 August 2018 2:51 PM
To: Jane Marston <jane@marston.co.za>
Subject: FW: MEETING ON NEW LION BONES QUOTA: NATIONAL COUNCIL OF SPCA (NSPCA)

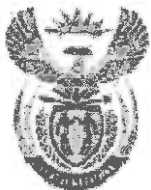
From: Arista Wasserman <AWasserman@justice.gov.za>
Sent: Tuesday, August 28, 2018 1:33 PM
To: Ruwaida Fourie <ruwaida@marston.co.za>
Cc: ntlewis@law.co.za
Subject: FW: MEETING ON NEW LION BONES QUOTA: NATIONAL COUNCIL OF SPCA (NSPCA)

Dear Ms

Please see my email below.

Regards

Arista Wasserman
Assistant State Attorney
State Attorney Pretoria
Tel: 012 309 1507
Fax: 086 450 4256



the doj & cd

Department:
Justice and Constitutional Development
REPUBLIC OF SOUTH AFRICA

From: Arista Wasserman
Sent: 28 August 2018 10:57 AM
To: Ruwaida Fourie
Cc: ntlewis@law.co.za
Subject: Re: MEETING ON NEW LION BONES QUOTA: NATIONAL COUNCIL OF SPCA (NSPCA)

Dear Ms.

Firstly I would like to apologies for only responding now.

Due to unavailability of our counsel, we had no other option as to appoint a new counsel as this matter is very important to our client.

Our new counsel together with counsel are available to meet on 4 September 2018.

Please provide me with your counsel's details in order to determine at which chambers the meeting will take place.

A handwritten signature in black ink, appearing to be 'Arista Wasserman', located at the bottom right of the page.

Please be so kind to confirm if it is in order and time suitable.

Regards
Arista

Sent from my iPhone

On 28 Aug 2018, at 09:45, Ruwaida Fourie <ruwaida@marston.co.za> wrote:

Dear Madam

We refer to the above matter and our various emails to which we have not received a response. We wish to advise that we have attempted to contact you telephonically on several occasions but have not been successful, as there has been no response from your office.

We await to hear from you in this regard as a matter of extreme urgency.

Yours faithfully

RUWAIDA FOURIE

ruwaida@marston.co.za

P O Box 784894, Sandton, 2146

3rd Floor, 61 Katherine Street,
Sandton

T: (011) 783 6775 / 783 7569 / 783 6304

F: (011) 783 6785 / 086 554 0981

W: www.marston.co.za

<image002.gif>

Marston & Taljaard

Attorneys, Notaries, Conveyancers

The information transmitted is intended only for the person or entity to which it is addressed and may contain confidential and/or privileged material. Any review, retransmission, dissemination or other use of, or taking any action in reliance upon, this information by persons or entities other than the intended recipient is prohibited. If you received this in error, please contact the sender and delete the material from any computer.

From: Ruwaida Fourie

Sent: Friday, August 24, 2018 12:09 PM

To: 'Arista Wasserman' <AWasserman@justice.gov.za>

Subject: FW: MEETING ON NEW LION BONES QUOTA: NATIONAL COUNCIL OF SPCA (NSPCA)

Importance: High

Dear Madam

We refer to our email below and await your confirmation as a matter of urgency.

Yours faithfully

RUWAIDA FOURIE

<image001.gif>



ruwaida@marston.co.za

P O Box 784894, Sandton, 2146

3rd Floor, 61 Katherine Street,
Sandton

T: (011) 783 6775 / 783 7569 / 783 6304

F: (011) 783 6785 / 086 554 0981

W: www.marston.co.za

Marston & Taljaard
Attorneys, Notaries, Conveyancers

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From: Ruwaida Fourie

Sent: Wednesday, August 22, 2018 12:12 PM

To: 'Arista Wasserman' <AWasserman@justice.gov.za>

Subject: MEETING ON NEW LION BONES QUOTA: NATIONAL COUNCIL OF SPCA (NSPCA)

Dear Madam

We refer to the above matter and our telephone conversation of even date. We confirm having advised you that all parties are available to attend the meeting on Tuesday, 28 August 2018. We confirm further having advised you that the meeting can be held at any time on the date in question and that same can be held either at your offices or at the Advocates chambers.

We also confirm that you will communicate with us as soon as same has been confirmed with your client.

We await to hear from you in this regard.

Yours faithfully

RUWAIDA FOURIE

ruwaida@marston.co.za

P O Box 784894, Sandton, 2146

3rd Floor, 61 Katherine Street,
Sandton

T: (011) 783 6775 / 783 7569 / 783 6304

F: (011) 783 6785 / 086 554 0981

W: www.marston.co.za

<image001.gif>

Marston & Taljaard
Attorneys, Notaries, Conveyancers

The information transmitted is intended only for the person or entity to which it is addressed and may contain confidential and/or privileged material. Any review, retransmission, dissemination or other use of, or taking any action in reliance upon, this information by persons or entities other than the intended recipient is prohibited. If you received this in error, please contact the sender and delete the material from any computer.





MARSTON & TALJAARD

Your ref/U Verw:
Our ref/Ons Verw: J Marston/rf
Date/Datum: 05 September 2018

Office of The State Attorney
AWasserman@justice.gov.za

Dear Sirs

NATIONAL COUNCIL OF SPCA'S // DEPT ENVIRONMENTAL AFFAIRS - LION BONES

We refer to the meeting held at the offices of your counsel, Advocate J Rust yesterday, when the above issue was discussed and debated.

Kindly provide us with the following information as agreed at the aforesaid meeting:

1. A list of all the applicants so that we may ensure that they are joined as interested parties in any future litigation, as requested by you;
2. The number of permits issued and the number of skeletons included on such permits, in terms of the 2018 quota.

Kindly advise when the study referred to by you at the meeting will be published. As you are aware, the author of the interim study has publicly stated that it cannot be relied upon for the establishment of a quota, and your client's reliance thereon is accordingly irrational.

We demand an undertaking from your client that they will not issue any further permits in terms of the 2018 quota. In the event that this undertaking is not provided by noon on Friday 7 September 2018, we intend to proceed with litigation. Accordingly, we wish to place on record that the issue of any further issue of permits will be construed as constructive contempt.

2.

We await to hear from you at your earliest convenience.

Yours faithfully

A large, stylized handwritten signature in black ink, consisting of several loops and a long vertical stroke.

MARSTON & TALJAARD

Marston & Taljaard Attorneys, Notaries & Conveyancers
3rd Floor, 61 Katherine Street, Sandton, P O Box 784894, Sandton 2146
T: (011) 783 6775/ 6304 F: (011) 783 6785 / 086 554 0981
e-mail: jane@marston.co.za / ruwaida@marston.co.za

A small, stylized handwritten mark or signature in the bottom right corner of the page.



Office of the State Attorney Pretoria

PRIVATE BAG X 91
PRETORIA
0001

SALU BUILDING
316 THABO SEHUME STREET
CNR FRANCIS BAARD AND
THABO SEHUME STREET

TEL: (SWITCHBOARD): (012) 309 1500
(DIRECT LINE): (012) 309 1507
(SECRETARY): (012) 309 1502

FAX: 086 450 4256

DOCEX: 298

7 SEPTEMBER 2018

Enq: MRS A WASSERMAN
Email: AWasserman@justice.gov.za

My Ref: 0173/2018/Z71
Your Ref: JANE MARSTON

MARSTON & TALJAARD ATTORNEYS

BY EMAIL: jane@marston.co.za

Dear Ms. Marston

**RE: NATIONAL COUNCIL OF SOCIETIES FOR THE PREVENTION OF CRUELTY TO
ANIMALS / THE MINISTER OF ENVIRONMENTAL AFFAIRS AND ANOTHER**

We acknowledge receipt of your letter dated 5 September 2018.

While our omission to deny any specific allegation therein should not be construed as an admission thereof, it is our instructions to reply thereto as follows:

1. We place on record that the meeting held on 4 September 2018 was without prejudice and with a view to find some common ground in order to put an end to the litigation.

2. The Provinces are the respective issuing authorities for permits. Kindly obtain the list of applicants for permits in terms of the 2018 quota directly from the Provinces.
3. No permits have yet been issued in terms of the 2018 quota as the quota has not yet been allocated to the Provinces.
4. The publication of the scientific study is not under the control of the Department and the details thereof could therefore be sourced directly from the South African National Biodiversity Institute. We further place on record that we have no intention of litigating by correspondence. Your allegation of irrationality will be dealt with in the pleadings.
5. We cannot provide you with the requested undertaking, which you may rather seek from the Provinces as the respective issuing authorities of these permits. Your misconceived allegation of "constructive contempt" will be dealt with in the pleadings.

Regards



**MRS A WASSERMAN
FOR: STATE ATTORNEY PRETORIA**



SWORN AFFIDAVIT

I, Emmerentia Colenso Meyer, hereby make oath and declare in English as follows;

1.

All the facts herein contained are, except where otherwise stated, within my own personal knowledge, and are both true and correct.

2.

I am employed at the Bloemfontein SPCA as a Senior Inspector, situated at 25 McGregorstreet, Bloemfontein and telephone number 0829232639, Fax number 0865504757 and email address bloemfonteinspca@absamail.co.za

3.

On the 24 April 2018, I took photographs with my cellular phone, a Samsung Galaxy S7 Edge to document the evidence on the day. The photographs were downloaded on to my laptop and compiled into photographic evidence packs. The photographs were not edited or changed in any way.

5.

I know and understand the content of this declaration.
I have no objection to taking the prescribed oath.
I consider the prescribed oath to be binding on my conscience.

EC Meyer
Senior Inspector EC Meyer

The Deponent has acknowledged that she knows and understands the contents of this affidavit/declaration, which was signed and sworn to/declared before me at 07:20 07 on SEP 2018, the regulations contained in Government Notice No R1258 of 21 July 1972 (as amended) having been complied with.

W. van der Merwe
Commissioner of Oaths

Signature: Commissioner of Oaths

Full Names: W. van der Merwe

Designation: CSF

Business address: NO 02 PARKROAD
WILLOWS GRASS



[Handwritten Signature]

11.1

Photographic Evidence

Address: Wag-'n-Bietjie Farm GPS Coordinates: 28°55'58.8" S 26°17'21.6" E

Owner: Andre Steyn

Date photos taken: 24 April 2018

Photos taken by: Senior Inspector Emmerentia Colenso Meyer

Photos taken with: Samsung Galaxy S7 Edge (R58HACOCTSBW)



Photo 1 – This photo illustrates one lion kept in a transport crate, including indicating that the crate is too small for this animal. This photo also shows how depressed the lion is in this crate.

Photographic Evidence

Address: Wag-'n-Bietjie Farm GPS Coordinates: 28°55'58.8" S 26°17'21.6" E

Owner: Andre Steyn

Date photos taken: 24 April 2018

Photos taken by: Senior Inspector Emmerentia Colenso Meyer

Photos taken with: Samsung Galaxy S7 Edge (R58HACOCTSBW)



Photo 2 – This photo illustrates how uncomfortable the lion is in the transport crate, including how depressed the lion was.

Photographic Evidence

Address: Wag-'n-Bietjie Farm GPS Coordinates: 28°55'58.8" S 26°17'21.6" E

Owner: Andre Steyn

Date photos taken: 24 April 2018

Photos taken by: Senior Inspector Emmerentia Colenso Meyer

Photos taken with: Samsung Galaxy S7 Edge (R58HACOCTSBW)

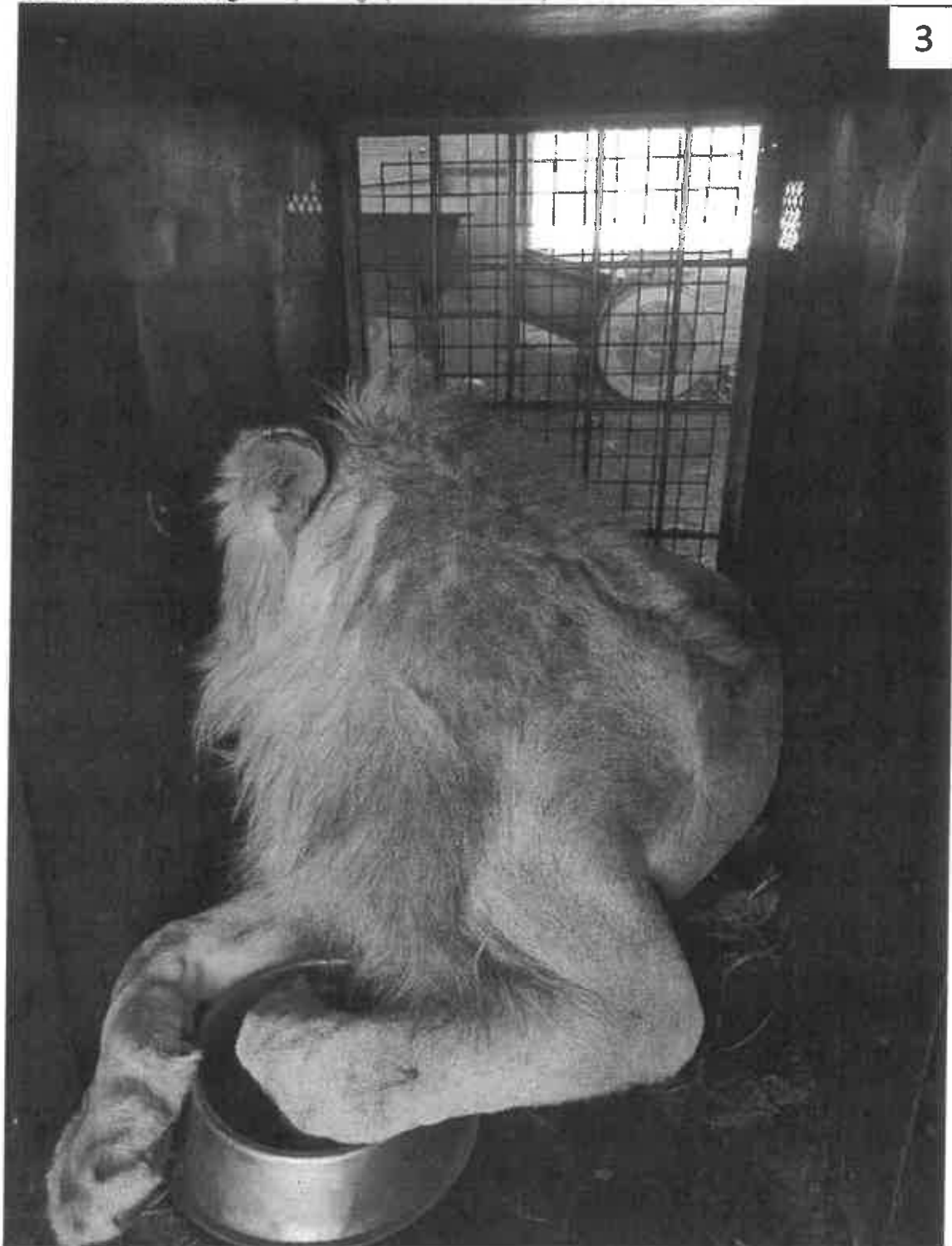


Photo 3 – This photo illustrates the uncomfortable laying position of the lion whilst in the transport crate.

Photographic Evidence

Address: Wag-'n-Bietjie Farm GPS Coordinates: 28°55'58.8" S 26°17'21.6" E

Owner: Andre Steyn

Date photos taken: 24 April 2018

Photos taken by: Senior Inspector Emmerentia Colenso Meyer

Photos taken with: Samsung Galaxy S7 Edge (R58HACOCTSBW)



Photo 4 – This photo illustrates how small the transport cage is and there is insufficient place for this lion to express normal behaviour.



Photographic Evidence

Address: Wag-'n-Bietjie Farm GPS Coordinates: 28°55'58.8" S 26°17'21.6" E

Owner: Andre Steyn

Date photos taken: 24 April 2018

Photos taken by: Senior Inspector Emmerentia Colenso Meyer

Photos taken with: Samsung Galaxy S7 Edge (R58HACOCTSBW)

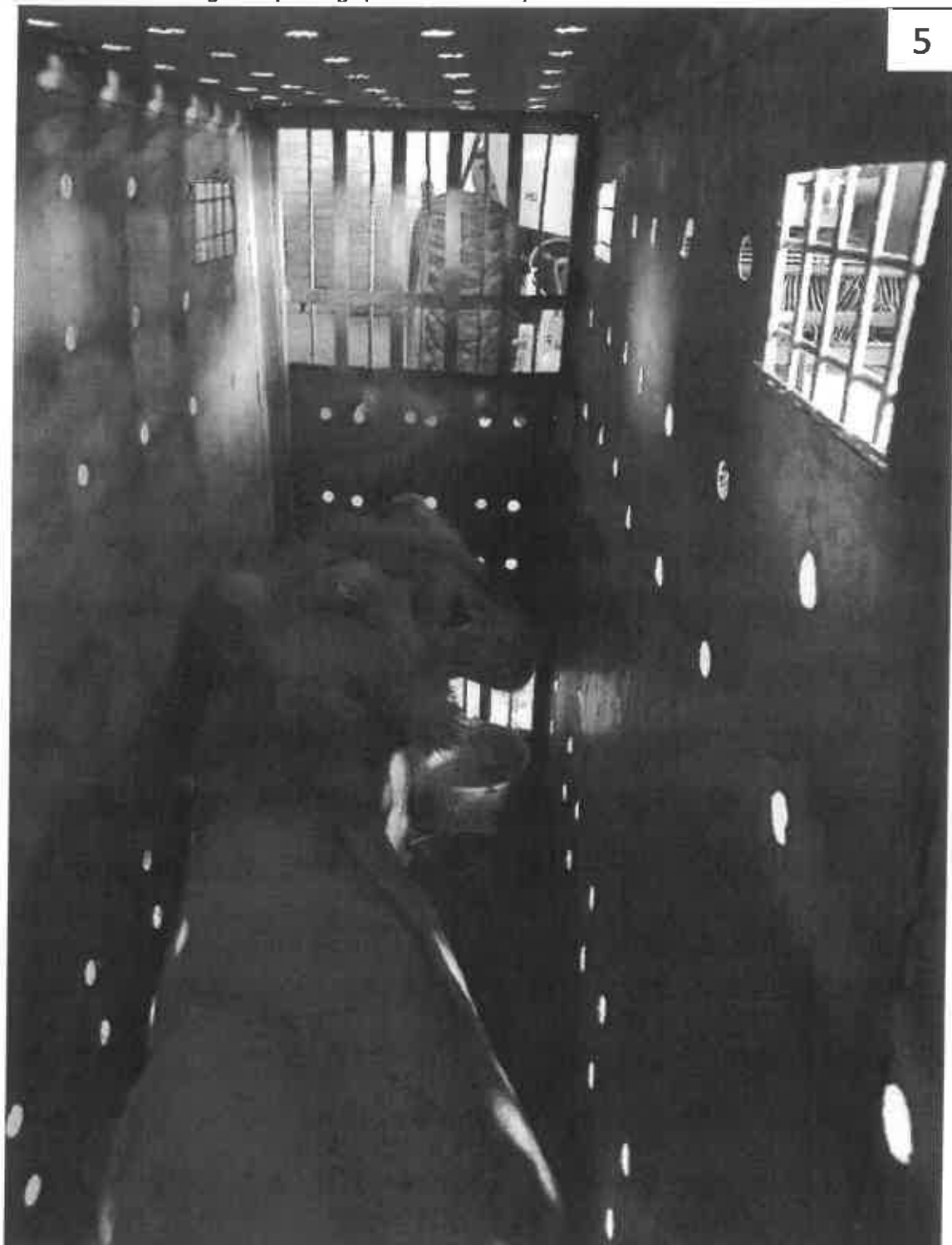


Photo 5 – This photo illustrates another lion kept in a transport crate. The photo illustrates how small the transport crate is and there is no place for the lion to be comfortable.

Photographic Evidence

Address: Wag-'n-Bietjie Farm GPS Coordinates: 28°55'58.8" S 26°17'21.6" E

Owner: Andre Steyn

Date photos taken: 24 April 2018

Photos taken by: Senior Inspector Emmerentia Colenso Meyer

Photos taken with: Samsung Galaxy S7 Edge (R58HACOCTSBW)



Photo 6 – This photo illustrates that there are no shot marks on the lion’s head in front, between the eyes where the lion could have been shot.

Photographic Evidence

Address: Wag-'n-Bietjie Farm GPS Coordinates: 28°55'58.8" S 26°17'21.6" E

Owner: Andre Steyn

Date photos taken: 24 April 2018

Photos taken by: Senior Inspector Emmerentia Colenso Meyer

Photos taken with: Samsung Galaxy S7 Edge (R58HACOCTSBW)



Photo 7 – This photo clearly shows the skinned lion. This also shows that a professional person did this job.

Handwritten signature or initials in black ink, located at the bottom right of the page.

Photographic Evidence

Address: Wag-'n-Bietjie Farm GPS Coordinates: 28°55'58.8" S 26°17'21.6" E

Owner: Andre Steyn

Date photos taken: 24 April 2018

Photos taken by: Senior Inspector Emmerentia Colenso Meyer

Photos taken with: Samsung Galaxy S7 Edge (R58HACOCTSBW)

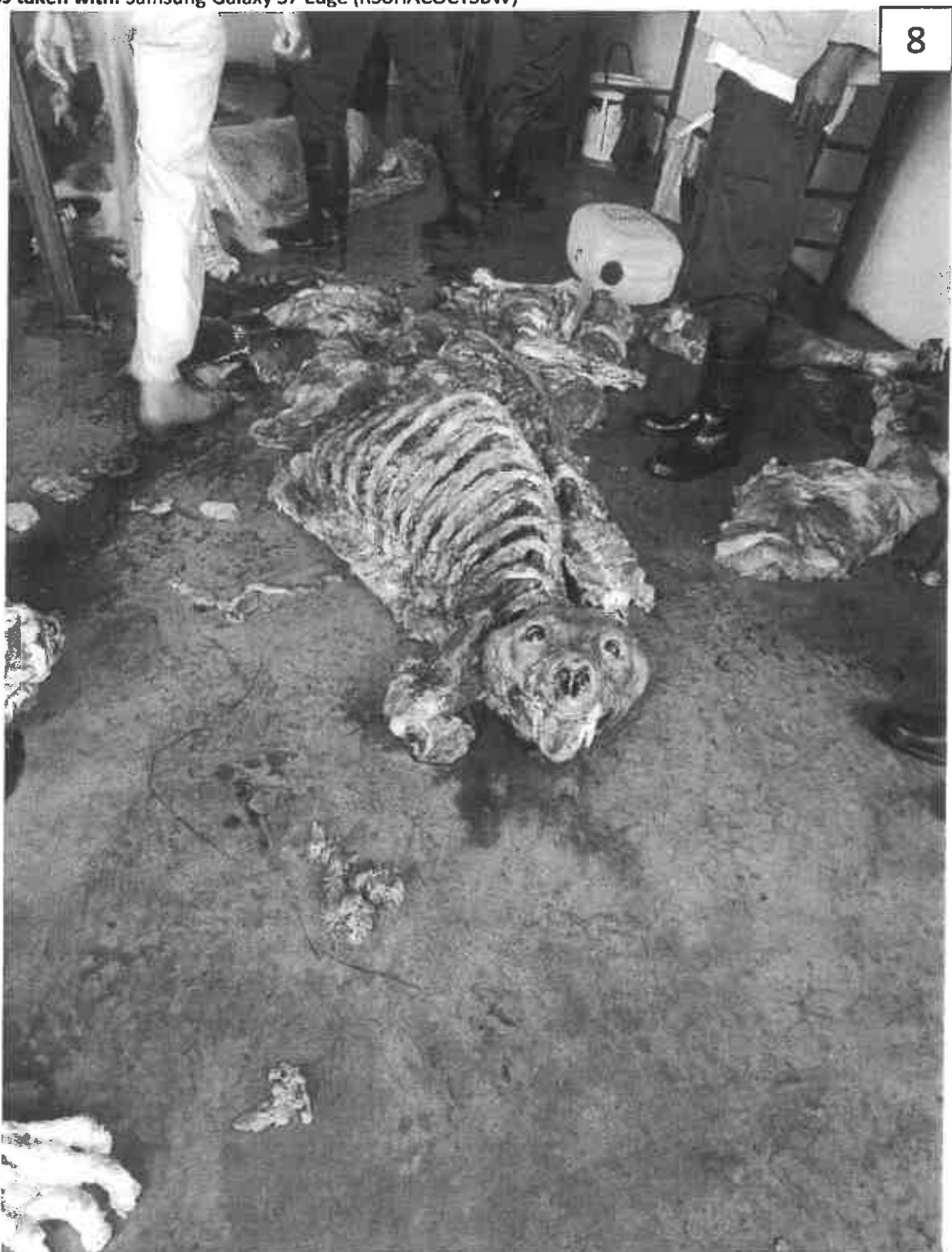


Photo 8 – This photo shows the lion’s whole skinned body. It also shows that some parts of the lion such as the legs and the feet are not with this particular carcass.

Photographic Evidence

Address: Wag-'n-Bietjie Farm GPS Coordinates: 28°55'58.8" S 26°17'21.6" E

Owner: Andre Steyn

Date photos taken: 24 April 2018

Photos taken by: Senior Inspector Emmerentia Colenso Meyer

Photos taken with: Samsung Galaxy S7 Edge (R58HACOCTSBW)



Photo 9 – This photo clearly shows the skinned lion.

Photographic Evidence

Address: Wag-'n-Bietjie Farm GPS Coordinates: 28°55'58.8" S 26°17'21.6" E

Owner: Andre Steyn

Date photos taken: 24 April 2018

Photos taken by: Senior Inspector Emmerentia Colenso Meyer

Photos taken with: Samsung Galaxy S7 Edge (R58HACOCTSBW)

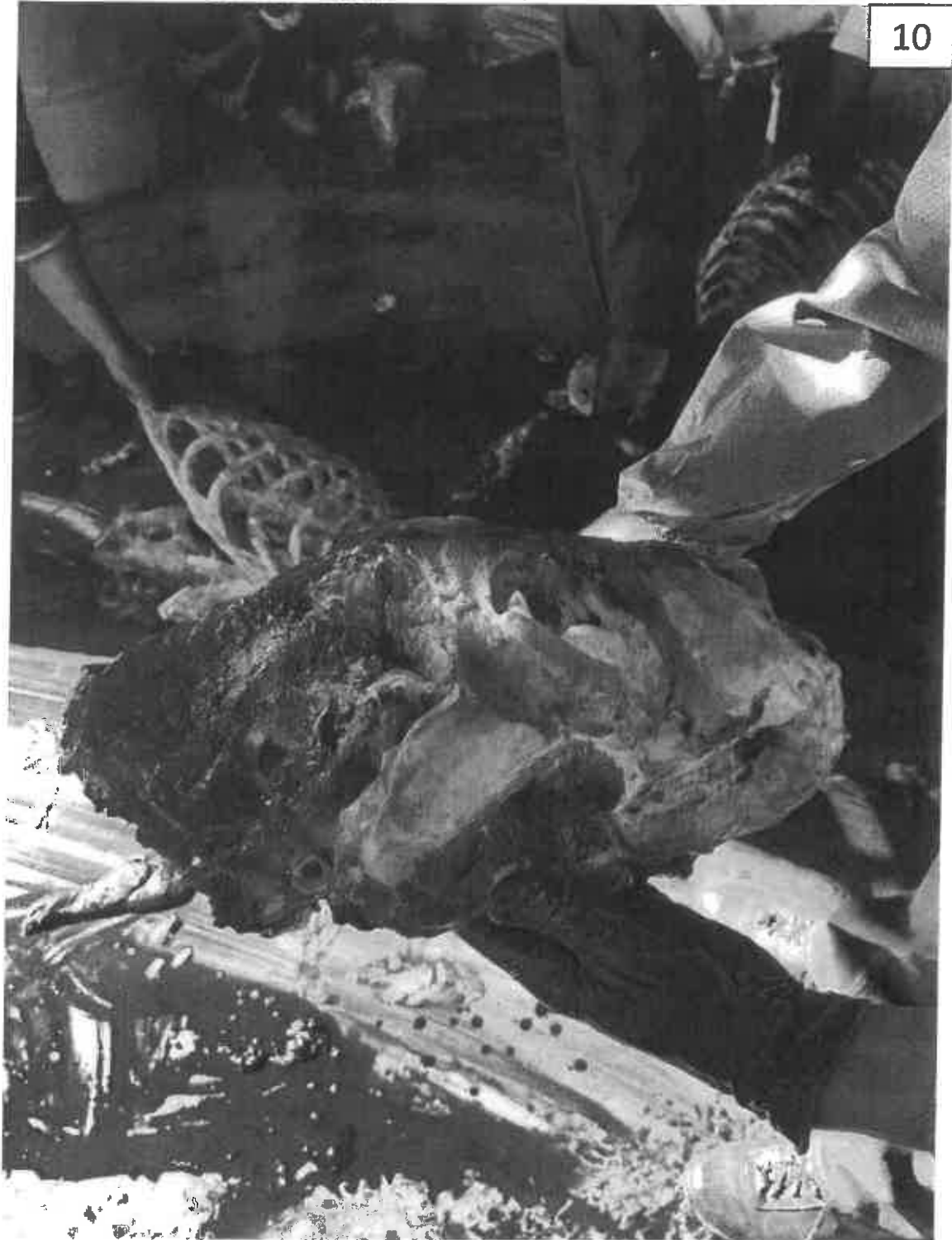


Photo 10 –This photo illustrates the hole in the lion’s skull where the bullet entered, when the vet shot the lion in the ear.

Handwritten signature or initials

Photographic Evidence

Address: Wag-'n-Bietjie Farm GPS Coordinates: 28°55'58.8" S 26°17'21.6" E

Owner: Andre Steyn

Date photos taken: 24 April 2018

Photos taken by: Senior Inspector Emmerentia Colenso Meyer

Photos taken with: Samsung Galaxy S7 Edge (R58HACOCTSBW)



Photo 11 – This photo shows all the intestines and all the meat that came off the lions that are slaughtered.

SWORN AFFIDAVIT

I, Irinka Schröder, herby make oath and declare in English as follows;

1.

All the facts herein contained are, except where otherwise stated, within my own personal knowledge, and are both true and correct.

2.

I am employed at the National Council of SPCAs (NSPCA) as a National Inspector, situated at 6 Clark Road, Florentia, Alberton, telephone number 011 907 3590, Fax number 011 907 4013 and email address wild8@nspca.co.za.

3.

On the 23 June 2018, I took photographs with my cellular phone Huawei P8 LITE, Model ALE-L21 (S/N QLF7N17502002737) to document the evidence on the day. The photographs were downloaded on to my laptop and compiled into photographic evidence packs. The photographs were not edited or changed in any way.

5.

I know and understand the content of this declaration.

I have no objection to taking the prescribed oath.

I consider the prescribed oath to be binding on my conscience.

Irinka Schröder
Inspector Irinka Schröder

The Deponent has acknowledged that she knows and understands the contents of this affidavit/declaration, which was signed and sworn to/declared before me at ALBERTON on 07/09/2018 the regulations contained in Government Notice No R1258 of 21 July 1972 (as amended) having been complied with.

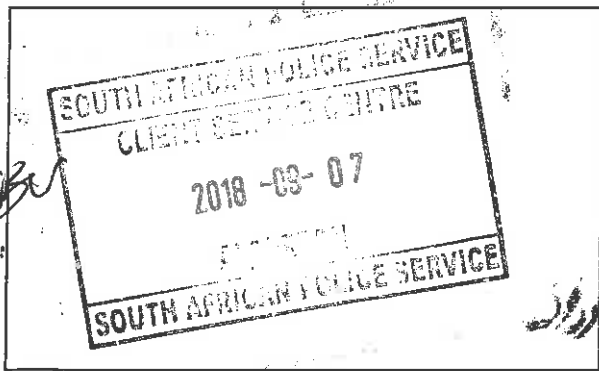
[Signature]

Signature: Commissioner of Oaths

Full Names: *MILCA MAFORZU MAFORZU*

Designation: *WARRANT OFFICER*

Business address: *56 VAN RIEBEEK AVE. ALBERTON*



[Signature]

12.1

Photographic Evidence

Address: Gold Fields Game Ranch (Exotic Game Breeders), Farm Welgelee, District Theunissen, Virginia, Freestate at GPS coordinates S28.20985° E026.82042°

Owner: Mr Sydney Wiggett

Date photos taken: 10 February 2018

Photos taken by: Inspector Irinka Schröder

Photos taken with: Huawei P8 LITE, Model ALE-L21 (S/N QLF7N17502002737)



Photo 1 – Dirty unhygienic conditions in which lion cubs are kept with faeces greatly accumulated and inadequate shelter. Cubs too old for cleaning staff to safely enter the enclosure.

Handwritten signature or initials, possibly 'K' and 'S'.

12.2

Photographic Evidence

Address: Gold Fields Game Ranch (Exotic Game Breeders), Farm Welgelee, District Theunissen, Virginia, Freestate at
GPS coordinates S28.20985° E026.82042°

Owner: Mr Sydney Wiggett

Date photos taken: 10 February 2018

Photos taken by: Inspector Irinka Schröder

Photos taken with: Huawei P8 LITE, Model ALE-L21 (S/N QLF7N17502002737)



Photo 2 – Decaying food, bones, accumulated faeces and hazardous foreign objects having passed through the digestive systems of the cubs.

IR
AS

Photographic Evidence

Address: Gold Fields Game Ranch (Exotic Game Breeders), Farm Welgelee, District Theunissen, Virginia, Freestate at
GPS coordinates S28.20985° E026.82042°

Owner: Mr Sydney Wiggett

Date photos taken: 10 February 2018

Photos taken by: Inspector Irinka Schröder

Photos taken with: Huawei P8 LITE, Model ALE-L21 (S/N QLF7N17502002737)



Photo 3 – Unacceptably unhygienic and hazardous conditions in which the cubs at Goldfields were found.

Photographic Evidence

Address: Gold Fields Game Ranch (Exotic Game Breeders), Farm Welgelee, District Theunissen, Virginia, Freestate at GPS coordinates S28.20985° E026.82042°

Owner: Mr Sydney Wiggett

Date photos taken: 10 February 2018

Photos taken by: Inspector Irinka Schröder

Photos taken with: Huawei P8 LITE, Model ALE-L21 (S/N QLF7N17502002737)



Photo 4 – Vast amounts of accumulated faeces right down the enclosure fence line.

LOUIS TRICHARDT

Society for the Prevention
of Cruelty to Animals



Dierebeskermings-
vereniging

Incorporated Association not for gain - Ingelyfde Vereniging sonder winsoogmerk
KENNELS / HOKKE: Vondeling Road, Louis Trichardt, 0920

Reg. No. 001-740 NPO

P.O. Box 758
Louis Trichardt
0920
☎ 082 965 5151
☎ 084 900 5332
* Emergency No.: 082 965 5151
✉ E-mail: spcaitt@gmail.com
Website: www.nspca.co.za

SWORN AFFIDAVIT

I, AZWIHANGWISI LAWRENCE KHODOBO, ID NO. 8404215688082 herby make oath and declare in English as follows;

1.

All the facts herein contained are, except where otherwise stated, within my own personal knowledge, and are both true and correct.

2.

I am employed at the Louis Trichardt SPCA as a Senior Inspector, situated at 64 Bergvliet 288 L.S Portion 64, Vondeling Road, Louis Trichardt, telephone number 082 965 5151, and email address spcaitt@gmail.com

3.

On the 12 APRIL 2018, I took photographs with my camera an Iphone 5 and my cellular phone 082 965 5151 to document the evidence on the day. I was requested to undertake this inspection on behalf of National council of SPCA's Wildlife Protection Unit. The photographs were downloaded on to my laptop and compiled into photographic evidence packs. The photographs were not edited or changed in any way.

4.

I know and understand the content of this declaration.
I have no objection to taking the prescribed oath.
I consider the prescribed oath to be binding on my conscience.

Senior Inspector. Lawrence Khodobo

LOUIS TRICHARDT

Society for the Prevention
of Cruelty to Animals



Dierebeskermings-
vereniging

Incorporated Association not for gain - Ingelyfde Vereniging sonder winsoogmerk
KENNELS / HOKKE: Vondeling Road, Louis Trichardt, 0920

Reg. No. 001-740 NPO

☑ P.O. Box 758
Louis Trichardt
0920
☎ 082 965 5151
☎ 084 900 5332
* Emergency No.: 082 965 5151
✉ E-mail: spcaltt@gmail.com
Website: www.nspca.co.za

The Deponent has acknowledged that he knows and understands the contents of this affidavit/declaration, which was signed and sworn to/declared before me at MAKHADO SAPS on 06 September 2018, the regulations contained in Government Notice No R1258 of 21 July 1972 (as amended) having been complied with.

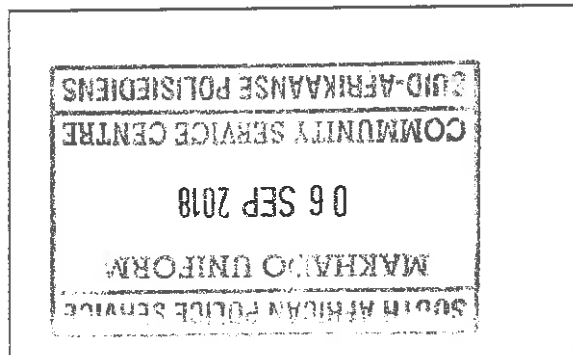
Signature: Commissioner of Oaths

Full Names: Maldia Joseph

Designation: W/O

Business address: 106 Brook Street

Mokoro



13.1

Photographic Evidence

Address: Slippers Breeding Farm GPS Coordinates: S 22.6825° E029.1027°

Owner: Mr Walter Slippers

Date photos taken: 12th April 2018

Photos taken by: Senior Inspector Lawrence Khodobo

Photos taken with: Iphone 5, Model MD297SO/A (S/N F2NKPSL2DTWD)



Photo 1 – Two emaciated tawny sub-adult male lions kept in unhygienic conditions as per the accumulated faeces.

Handwritten signature

132

Address: Slippers Breeding Farm GPS Coordinates: S 22.6825° E029.1027°

Owner: Mr Walter Slippers

Date photos taken: 12th April 2018

Photos taken by: Senior Inspector Lawrence Khodobo

Photos taken with: iPhone 5, Model MD29750/A (S/N F2NKPSL2DTWD)



Photo 2 – White, male adult lion, tawny adult lioness, white adult lioness and tawny adult male lion found emaciated on the Walter Slippers breeding farm.

Handwritten signature or initials

Photographic Evidence

Address: Slippers Breeding Farm GPS Coordinates: S 22.6825° E029.1027°

Owner: Mr Walter Slippers

Date photos taken: 12th April 2018

Photos taken by: Senior Inspector Lawrence Khodobo

Photos taken with: Iphone 5, Model MD297SO/A (S/N F2NKPSL2DTWD)



Photo 3 – Three tawny sub-adult males and one tawny sub-adult female found emaciated.

Handwritten signature or initials.

Address: Slippers Breeding Farm GPS Coordinates: S 22.6825° E029.1027°

Owner: Mr Walter Slippers

Date photos taken: 12th April 2018

Photos taken by: Senior Inspector Lawrence Khodobo

Photos taken with: Iphone 5, Model MD297SO/A (S/N F2NKPSL2DTWD)



Photo 4 – Three emaciated sub-adult lions, one white male, one white female and one tawny female.

Handwritten signature or initials.

Photographic Evidence

Address: Ingogo Safaris GPS Coordinates S 22.59080° E028.61780°

Owner: Mr Walter Slippers

Date photos taken: 04 July 2016

Photos taken by: Anonymous member of the public

Photos received by NSPCA Wildlife Protection Unit: 05 July 2016 08:29

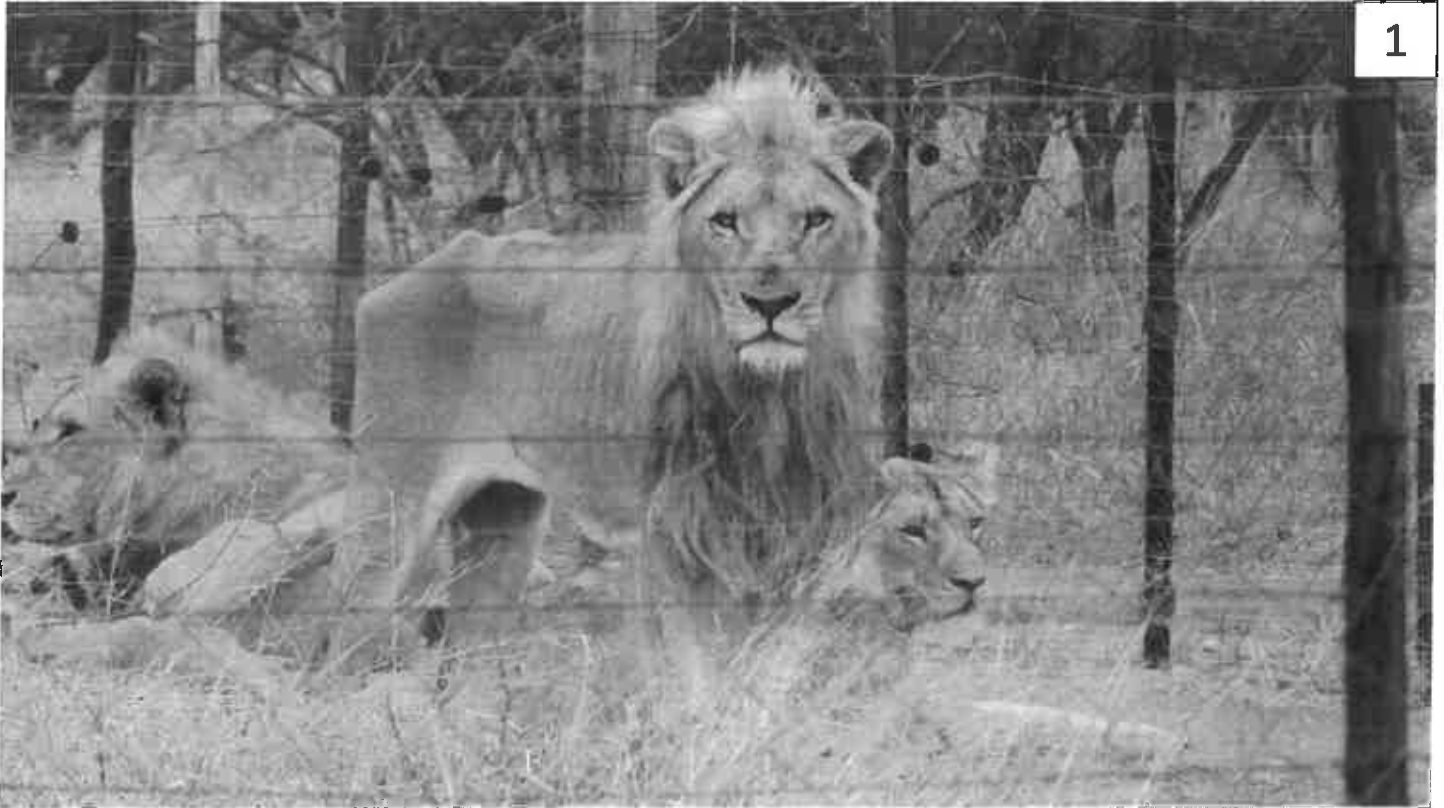


Photo 1 – Emaciated tawny sub-adult male lion at Walter Slippers property.

Handwritten signature or initials, possibly 'W.S.', located at the bottom right of the page.

Photographic Evidence

Address: Ingogo Safaris GPS Coordinates S 22.59080° E028.61780°

Owner: Mr Walter Slippers

Date photos taken: 04 July 2016

Photos taken by: Anonymous member of the public

Photos received by NSPCA Wildlife Protection Unit: 05 July 2016 08:29



Photo 2 – Tawny, male sub-adult lion found emaciated on Walter Slippers property.



Photographic Evidence

Address: Ingogo Safaris GPS Coordinates S 22.59080° E028.61780°

Owner: Mr Walter Slippers

Date photos received: 10 February 2015 11:40 AM

Photos taken by: Anonymous member of the public

Photos received by NSPCA Wildlife Protection Unit



Photo 1 – Emaciated sub-adult male lion at Walter Slippers property.



Photographic Evidence

Address: Ingogo Safaris GPS Coordinates S 22.59080° E028.61780°

Owner: Mr Walter Slippers

Date photos received: 10 February 2015 11:40 AM

Photos taken by: Anonymous member of the public

Photos received by NSPCA Wildlife Protection Unit



Photo 2 – Tawny, male sub-adult lion found emaciated on Walter Slippers property.

14.5

Photographic Evidence

Address: Ingogo Safaris GPS Coordinates S 22.59080° E028.61780°

Owner: Mr Walter Slippers

Date photos received: 10 February 2015 11:40 AM

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Photo 3 – Emaciated male sub-adult lion, tawny in colour kept on Walter Slippers Property.