"Embracing Innovation to Conserve the World's Animal Kingdom."

Advisory Committee (High-Level Panel)
c/o Department of Environment, Forestry and Fisheries
Attention: Ms. Pamela Singh/Ms. Olenbee Mashiyane
Private Bag X447
Pretoria
0001
South Africa

11 June 2020

Dear Ms. Pamela Singh and Ms. Olenbee Mashiyane,

'National Environmental Management Act, 1998 (Act No. 107 of 1998) National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)'

Please find attached a submission as requested in Government Notice 221 of 2020 "*A general notice calling for submissions, scientific information, socio-economic information or any other relevant information to the Advisory Committee (High-Level Panel [(HLP)]) appointed to review existing policies, legislation and practices relating to the management and handling, breeding, hunting and trade of elephant, lion, leopard and rhinoceros"* as notified in Government Gazette, No. 43173, Department: Environmental Affairs (DEA), dated 27 March 2020.

The scope of the call for "*relevant scientific information, socio-economic information*" and other "*relevant information*" across the whole gambit of "*existing policies, legislation and practices relating to the management and handling, breeding, hunting and trade of elephant, lion, leopard and rhinoceros"* is a broad subject base, and any comprehensive analysis of such is an enormous undertaking for a stand-alone submission to the HLP. Guidance has been sought from the DEA in an effort to establish "*detailed terms of reference for the HLP which reflect Parliament's resolutions on this subject, to allow stakeholders to focus their submissions*," plus an extension to the submission deadline due the ongoing COVID-19 pandemic and its relevant potential impact. The HLP Terms of Reference (ToR) were distributed to some 22 April 2020, but the ToR were not made public alongside the DEA's Gazette Notices.

A two week extension to the submission deadline was eventually granted by the DEA on 13 May 2020.

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Is should be acknowledged by all, that it is impossible to accurately predict the COVID-19 pandemic's "*socio-economic*" longer term impacts, or the pandemic's long-term effects on the "*management and handling, breeding, hunting and trade"* of wildlife, both captive and wild sourced. Only the immediate science, data and anecdotal evidence is available from which to form evidenced based opinions on the likely outcomes.

Please find International Wildlife Bond's (IWB's) submission to the High Level Panel (HLP) here within (submitted by e-mail to submission2HLP@environment.gov.za and omashiyane@environment.gov.za).

Yours sincerely,

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"Embracing Innovation to Conserve the World's Animal Kingdom."

Submission to the High-Level Panel - 'National Environmental Management Act, 1998 (Act No. 107 of 1998) National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)

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1 Introduction

The subject matter contained within the High-Level Panel's (HLP's) remit covers a broad spectrum. Hence, this submission has been organised in the following manner to make the response to such a broad spectrum manageable. First, the general topics of applicable Acts, the wildlife economy, wildlife trade, Traditional Medicine, trophy hunting and alternative approaches are analysed. Then, species specific issues are discussed for elephant, lion, leopard and rhinoceros, followed by Summary and Conclusions, with Recommendations as the last section.

Three Appendices are attached to this submission, giving past submissions in full on the applicable subjects of Appendix 1 – "*Lion Bone Trade Consultation, 2019*"; Appendix 2 – "*Leopard Trophy Hunting Quota, February 2017*" and Appendix 3 – "*Rhino Horn Consultation, September 2019*."

However, any trade in wildlife must be viewed in the light of the coronavirus (COVID-19) pandemic. Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) causes the infectious disease COVID-19, a zoonotic disease this is highly likely to have resulted from the human species' interaction with wildlife, wildlife habitat destruction and the utilisation of wildlife and derivative products. The science ("*NIH moves to ax bat coronavirus grant draws fire,*" Science, 8 May 2020) at this stage, does not support the theory that SARS-CoV-2 was accidently, or intentionally released from the Wuhan Institute of Virology (WIV). Shi Zhengli, leading WIV virologist and her team published the genome of a bat virus collected that shares 96.2% of its genome with SARS-CoV-2, but it is most likely that the bat virus jumped to another mammal before mutating and infecting humans, with the consensus that the actual SARS-CoV-2 virus now circulating in humans is not 'manmade or genetically modified' from the known bat virus genome published by Shi et al.

Therefore, we are currently left with the likelihood that the SARS-CoV-2 virus originated via an intermediary host, where this ability could have been acquired from a virus found in pangolins (Li et al. 2020) to infect a human – where the likely virus source infecting humans would have been via wildlife consumption (Andersen et al. 2020). Without further scientific funding and joint-investigation, conclusive proof the world will accept is not a certainty, but from what is known, the most likely source was a live wildlife market in Wuhan, China.

> *"While the direct reservoir of SARS-CoV-2 is still being sought, one thing is clear: reducing or eliminating direct human contact with wild animals is critical to preventing new coronavirus zoonosis in the future"* - Li et al. 2020

The utilisation of wildlife not only includes consumption of wildlife within the human food-chain, as a food source, but also for inclusion within Traditional Medicine (TM) – there have been calls from within China (Wang et al. 2020) that to protect public health, China should be transitioning the wildlife farming industry from production of TM.

The legal, global wildlife trade also risks the importation of disease, because most countries do not have a government agency that comprehensively screens wildlife imports for pathogens.

When recently asked for comment on the wildlife trade and COVID-19, the body charged with regulating the 'legal' trade in endangered wildlife species (Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)) responded that it did not have the competence to comment regarding zoonotic disease:

> "*In a growing sign that global organisations are embarrassed by the emergence of zoonotic diseases in traded animals, Cites, the body which regulates the international trade of animals, refused to be drawn into the growing debate about the origins of Covid-19.*
>
> *In a terse statement it said: "Matters regarding zoonotic diseases are outside of Cites's mandate and the Secretariat does not have the competence to make comments on the recent news on the possible links between human consumption of wild animals and Covid-19"*" - "*Human impact on wildlife to blame for spread of viruses, says study*," The Guardian, 8 April 2020

There is also the economic impact of lock-down and travel restrictions on tourism, trophy hunting, poaching and the legal/illegal wildlife trade – what will happen longer term, remains open to question. The potential for coronavirus to mutate, or for a COVID-19 vaccine to emerge is also open to question and fraught with risk (there are currently no vaccines available for the coronavirus family). Even if a COVID-19 vaccine is developed, the global need versus vaccine manufacture, distribution, affordability/costs and the potential for nationalist policies to negatively impact 'a way out for all' makes the future highly unpredictable. But in the short term, the impact on conservation of species is clearly detrimental:

> *"Organisations that depend on visitors to fund projects for critically endangered species and rare habitats could be forced to close, according to wildlife NGOs, after border closures and worldwide travel restrictions abruptly halted millions of pounds of income from tourism"* – "*Conservation in crisis: ecotourism collapse threatens communities and wildlife*," The Guardian, 5 May 2020
>
> "*Poaching has surged during the coronavirus pandemic as illegal hunters take advantage of the lockdown to kill more endangered wildlife in remote areas, experts are warning.*
>
> *Rhinos in Africa, giant ibises in Asia and wild cats in South America have all been targeted while tourists have stayed away*" – "*Coronavirus: Surge in poaching of endangered rhinos, jaguar and pumas as hunters emerge during lockdown*," The Independent, 4 May 2020

The above makes clear that general tourism not only provides vital income, but also provides security through the presence of tourists and the supporting personnel in proximity with threatened wildlife – leaving wildlife with only the protection of rangers highlights the sheer challenge of patrolling vast swathes of wildlife habitat in the absence of other human eyes and ears.

The same applies to overseas trophy hunters that are no longer able to fly-in to Africa to indulge their hunting passions with the theory that such practices help fund wildlife security. However, general non-consumptive wildlife tourism numbers vastly outstrip dwindling trophy hunting numbers, so from a presence and security perspective, 'growing back better' general wildlife tourism in a responsible and sustainable manner is key to species conservation just because it provides more eyes and ears than trophy hunting:

- "*In South Africa the number of foreign hunters dropped from 16,594 in 2008 to 6,539 in 2016, in other words a decrease of 60.5% in 8 years*" - IUCN 2019b (Chardonnet)

- In 2016, South Africa entertained some 10 million visitors (1.5 million visitor for 'holidays' including wildlife safari/adventures) - South African tourism annual report 2016/2017

In these unpredictable times, there is no telling how wildlife is going to be conserved in the absence of foreign visitor income and the increased threat of poaching for bush meat:

> *"Across Africa, Kruger will not be the only island of wildlife habitat in a sea of growing human suffering. I spoke to Craig Parker, an ecologist at the University of Minnesota, about the issue. His focus is lion conservation – he is widely regarded as the world's foremost authority on the big cats.*
>
> *"Until three or four months ago, I felt that the best hope for lion conservation was large scale 'eco philanthropy' as well as significant institutional support from the World Bank and similar global financial institutions. The scale of the problem is huge and cannot be achieved from ecotourism alone. But my worldview has been shattered by the coronavirus pandemic.*
>
> *"Wildlife tourism is gone this year and maybe the next, and the World Bank will have to respond to the enormous economic challenges facing every country on earth. Meanwhile, food supplies face major disruptions and many local communities will be looking to survive on whatever they can capture in the bush. And afterwards, we don't know how willing the global community will be to devote resources to African wildlife," Packer told me.*
>
> *It is an old cliche in some conservation and development circles that "wildlife must pay for itself" in Africa. What happens when there is no one to write the cheque?" – "Wildlife at risk as hunger encircles Kruger Park," Ed Stoddard, Conservation Action Trust, 20 May 2020*

So, in the light of the COVID-19 pandemic, the key questions are:

- Which elements (if any) of any legal, or proposed wildlife trade is acceptable in terms of human health risks;

- Does any proposed legal wildlife trading help to mitigate and deter illegal activities such as wildlife poaching and illegal trafficking, or does legal trade legitimise and stimulate demand, giving oxygen to illicit trafficking routes and thus exacerbate illegal activities? Are there potential detrimental impacts for species conservation and biodiversity?

- Is animal welfare being considered as an overring priority in any captive-breeding environment, slaughter facility etc. that any trade encourages for a given species?

- Consequentialism versus Deontology – Does the "*Consequentialism*" end result of legal trade and utilisation of wildlife justify the means (industrial breeding of wildlife, animal welfare issues/abuse, killing attrition and wildlife "*utilisation,*" human health

risk etc.). Or should the "*Deontological*" ethical and moral arguments take precedence?

- Are there alternatives to consumptive wildlife practices that offer transparent conservation benefits?

1.1 A Risk Based Approach – Zoonotic Diseases

In an open letter ("*Open Letter to the World Health Organisation (WHO)*," 7 April 2020) signed by over 240 Non-Government Organisations calls for the WHO to:

- "*Recommend to governments worldwide that they institute a permanent ban on live wildlife markets [note: this is not "blanket ban" on all "wet markets"], drawing an unequivocal link between these markets and their proven threats to human health:*

  Note: This has initially been instigated in China, with the withdrawing of wildlife for food consumption but of course, there is always cultural resistance to change despite the clear human health risks from the wildlife/bush meat trade.

- *Recommend to governments that they address the potential risks to human health from the trade in wildlife – including collection from the wild, ranching, farming, transport, and trade through physical or online markets for any purpose – and act to close down or limit such trade in order to mitigate those risks.*

- *Unequivocally exclude the use of wildlife, including from captive bred specimens, in the WHO's definition and endorsement of Traditional Medicine and revise [WHO's 2014-2023 Traditional Medicine Strategy] accordingly to reflect this change.*

- *Assist governments and lead a coordinated response among the World Trade Organisation, World Organisation for Animal Health (OIE) and other multilateral organisations worldwide in awareness-raising activities to clearly inform of the risks of wildlife trade to public health, social cohesion, economic stability, law and order, and individual health.*

- *Support and encourage initiatives that deliver alternative sources of protein to subsistence consumers of wild animals, in order to further reduce the risk to human health*"

Academics within the IUCN SULi, have somehow misconstrued this open letter as a call for a "*blanket ban*" ("*Coronavirus: why a blanket ban on wildlife trade would not be the right response*," The Conversation, 8 April 2020):

> "*More extreme calls from more than 200 organisations include* ***ending*** *the keeping, breeding, domestication and use of all wildlife, which also covers traditional medicine*"

To be clear, this open letter to the WHO did not call for a blanket "*ending*" or 'oversold' a wildlife trade ban (Eskew et al. 2020) with regard to "*…the wild, ranching, farming, transport, and trade through physical or online markets for any purpose*," but a complete risk review and human health risk assessment of the wildlife trade that such practices present – in light of the ongoing zoonotic pandemic (COVID-19), an overdue comprehensive risk assessment of all such wildlife trade practices with regard to human health implications does not seem an irrational response.

Some decisive action to mitigate the immediate risk and a complete risk review and human health risk assessment of the wildlife trade (and any proposed new trade) that such practices present, in light of the ongoing zoonotic pandemic (COVID-19) with regard to human health implications aligns with the UN Biodiversity Chief and the WHO Special Envoy having expressed similar views.

The UNEP's 'approach' was re-emphasised within a Guardian article ("*Ban wildlife markets to avert pandemics, says UN biodiversity chief*," The Guardian, 6 April 2020), quoting Elizabeth Maruma Mrema, the acting executive secretary of the UN Convention on Biological Diversity, but perhaps with increasing recognition that a ban on "*wet markets*" [the live wildlife market element] is becoming a necessity to protect global human health:

> "*…..countries should move to prevent future pandemics by banning "wet markets" that sell live and dead animals for human consumption, but cautioned against unintended consequences…….*
>
> *It would be good to ban the live animal markets as China has done and some countries. But we should also remember you have communities, particularly from low-income rural areas, particularly in Africa, which are dependent on wild animals to sustain the livelihoods of millions of people……..So unless we get alternatives for these*

> *communities, there might be a danger of opening up illegal trade in wild animals which currently is already leading us to the brink of extinction for some species."*

On the 13 April 2020, Dr Nabarro (WHO Special Envoy and United Nations Secretary - General for Food Security and Nutrition) pleaded on the 'Today' programme, BBC Radio 4, within China (and elsewhere) to take the WHO's and UN's Food & Agricultural Organisation's 'pre-existing advice' and shut down "*wet markets*" [live wildlife, farmed and wild sourced element] - at 2:19:17 to 2:21:00 of the 'Today' programme recording:

> *"Dr Nabarro [WHO Special Envoy and United Nations Secretary-General for Food Security and Nutrition] said while the WHO is not able to tell governments what to do, their advice is to close wet markets.....He replied: "You know how the WHO and other parts of the international system work – we don't have the capacity to police the world. Instead, what we have to do is offer advice and guidance, and there's very clear advice from the [UN Food and Agriculture Organisation] and the WHO that said there are real dangers in these kinds of environments, pathogens hopping from animals to humans*""

On 17 April 2020, Professor Sir Robert Watson, Chair UN Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) – discussion on 'Today' programme (17 April 2020), BBC Radio 4, of "*Wet Markets*" [live wildlife market element] and also suggested that the WHO wants to close this element of the wildlife trade…..but Professor Watson also reiterated UNEP's sustainability policy, the importance of rural community income from wildlife trading, suggesting better regulation/risk management 'might' work - at 52:17 – 57:31 of 'Today' programme recording.

However, by the 8 May 2020, the WHO's messaging became increasingly confused, with ("*WHO food safety and animal diseases expert*") Peter Ben Embarek reportedly saying "*live animal markets are critical to providing food and livelihoods for millions of people globally and that authorities should focus on improving them rather than outlawing them — even though they can sometimes spark epidemics in humans*" whilst also rather flippantly acknowledging the obvious that *"Food safety in these environments is rather difficult and therefore it's not surprising that sometimes we also have these events happening within markets"*- "*UN: Live animal markets shouldn't be closed despite virus*" (Associated Press).

All this leaves the WHO in a contradictory position, tacitly defending a TM endorsement policy which has no scientific basis, when wildlife exploitation contributed to the worst pandemic in a century – the WHO's stance is "*apparently unpopular in the country [China] it is taking such*

embarrassing steps to defend" ("*WHO ate all the pangolins? The World Health Organization's tacit defense of Traditional Chinese Medicine*," Spectator USA, 8 May 2020)

Those that support 'sustainable utilisation' as a mandate have rightly suggested "*blanket bans*" (sic) are not necessary (but again, incorrectly citing the "*blanket ban*" as call coming from the open letter to WHO, 7 April 2020).

In another open letter of the 25 April 2020 ("*Open letter to World Health Organisation and United Nations Environment Programme*" - some 300 signatories including the IUCN SULi, Safari Club International Foundation etc.) agrees that:

- *"There is an urgent need to tackle wildlife trade that is illegal, unsustainable or carries major risks to human health, biodiversity or animal welfare"* – Yes, and there has been for some time, but of course not all "*sustainable utilisation*" practitioners acknowledge when 'legal' wildlife trade practices are clearly not sustainable and/or are a clear human health risk – for example the lion bone trade is not sustainable when it threatens wild lion conservation and when the lion bone trade presents clear human health risks (reference paragraph 9.6 "*Lion Bone Trade – Human Health Risks*" and paragraph 9.3.2 – "*Lion Bone Trade Conservation Claims*").

- "*Certain high-risk activities may rightfully necessitate targeted and/or time-bound bans, or severe restrictions (and rigorous enforcement)*" – This is not dis-similar from the open letter to WHO, 7 April 2020 recommendation;

- "*……suitably improved regulation..*" – something of a long-term (previously unobtainable) regulatory nirvana as the solution regardless of current human health risks?

The SULi "*Open letter to World Health Organisation and United Nations Environment Programme"* (25 April 2020) recommends:

1. "*Work with the appropriate experts to identify areas and activities where wildlife trade and/or use poses high risks to zoonotic disease transmission, biodiversity conservation or welfare, and strengthen or develop tailored, locally appropriate strategies, with suitably improved regulation and enforcement, along the entire supply chain to reduce those risks;*

2. *Initiate a coordinated response to the risks of pandemic emergence and biodiversity loss through the UN Environmental Management Group to raise intergovernmental*

awareness of the important role biodiversity plays in underpinning human health, the health risks associated with habitat destruction, and the value of sustainable use of biological resources (in line with Article 1 of the Convention on Biological Diversity (CBD) and guided by its 2004 Addis Ababa Principles);

3. *Build partnerships across WHO, UNEP and other key stakeholders including IUCN, FAO and WTO, to explore how health considerations could be better aligned with trade regulations within the CITES framework, in clear recognition that biodiversity loss, unregulated trade and human health are inextricably linked;*

4. *Effectively engage with the CBD's ongoing process to develop the post-2020 Global Biodiversity Framework and associated resource mobilization strategy to ensure biodiversity is valued, conserved, restored and wisely used;*

5. *Support science- and human-rights-based, equitable approaches to conservation, in order to achieve the Sustainable Development Goals, and deliver comprehensive improvements to both human and planetary health*"

However, whatever the revenue to rural livelihoods that is derived from wildlife utilisation, risky bush meat trade etc., that revenue pales into insignificance compared to the current and forecast economic impact of zoonotic pandemics of COVID-19's magnitude and the inequitable impact on human lives and livelihoods across the entire globe. Would ongoing complacency with regard to wildlife markets (legal and/or illegal) and permitting the next zoonotic pandemic to collapse an already weakened global economy look equitable?

Projected global economic costs for the COVID-19 pandemic may exceed $8.8 trillion USD, far outstripping the sustainment of the "*rural livelihoods*" that stem from wildlife trading:

> "*Proponents of 'sustainable use' worry about the uncertainty of outcomes for 'wildlife economies' [stemming from COVID-19]. This is now an irrelevance. Wildlife breeding may be worth $74 billion and involve 14 million people in China alone. One imagines those people would gladly trade that for an alternative source of income. Wildlife economies are the very bloody (quite literally) thing that have caused global economic collapse*" - Ross Harvey, PhD, Independent Economist, School of Economics, University of Cape Town

Right now, when it comes to zoonotic pandemics of mass destruction and preventing the next 'big one,' the human species would seem to be in denial. A co-ordinated global response is absent and an over-arching wildlife trade regulatory vacuum clearly exists (a void any

devolved "*Smart Regulation*" vision is unlikely to fill anytime soon, if ever). But the risks and potential impacts of that vacuum are immense.

Much of the trade in live wildlife (both farmed and wild caught) within Asian and African "*wet markets*" is already "*underground*" and virtually uncontrolled and unregulated (due to a lack of national legislation (domestic law) and/or enforcement, and/or disparate, lacklustre policies), hence the problem for wildlife conservation and inherent global human health risks.

The World Health Organisation (WHO) is clearly the current focus for resolving all the issues the current COVID-19 pandemic has raised - but some of the issues the pandemic has raised with regard to the broad spectrum of the global wildlife trade have laid-bear long-standing policy versus reality conflicts of interest.

COVID-19 was not unpredictable or some kind of 'once in a 100 year event' that cannot happen again within the next few years - the pandemic's contributory factors were well known. The next zoonotic disease/pandemic is already out there waiting to happen unless there is a global rethink of our interaction with (and destruction of) nature and treatment of wildlife/animals as mere 'sustainable use' commodity:

> "*The first thing to understand is that whatever future threats we're going to face already exist; they are currently circulating in wildlife. Think of it as viral dark matter. A large pool of viruses are circulating and we don't become familiar with them until we see a spillover event and people getting ill*" – Dennis Carroll (PREDICT/Global Virome Project), "*The Man Who Saw the Pandemic Coming*," Nautilus, 12 March 2020

Trying to pretend 'business as usual' can resume (despite the reality of the potential risk hitting us in the face), rather than an international, co-ordinated risk-based assessment approach, would at best seem the opposite of a long overdue precautionary risk approach to all wildlife trading, land-use, meat production and risks from consumer habits. At worst, 'business as usual' is a naïve gamble that puts the fate of the whole human species at risk. In probably the understatement of all time:

> "*If our preparations and responses are country-centric, we're in for some serious trouble*" - Dennis Carroll, 2020

The world needs to urgently reconsider its sustainable utilisation/exploitation of wildlife:

> "*Hunting, farming and the global move of people to cities has led to massive declines in biodiversity and increased the risk of dangerous viruses like Covid-19 spilling over*

from animals to humans, a major study has concluded" - "*Human impact on wildlife to blame for spread of viruses, says study*," The Guardian, 8 April 2020

The recommended 'risk assessment' and evidenced based approach includes the handling of species that are captive bred/farmed for meat and or other purposes. At the moment, the science surrounding COVID-19 (and many other zoonotic diseases) is unclear but potentially has implications for many species. Susceptible species might become reservoirs for COVID-19 or subsequent COVID-19 mutations. Where there is the risk of interaction between humans and animals, there is potentially a human health hazard, not to mention the risk associated with consumption of potentially infected animal/wildlife species.

For example, there are clear COVID-19 indicators for the handling, slaughter and processing captive bred lions, where captive bred lions are farmed for hunting and/or to supply the lion bone trade (for subsequent human consumption). Felines and felids, are seemingly susceptible to COVID-19 transmission from humans and each other, therefore potentially acting as a reservoir for transmission of COVID-19 back to humans:

- "*Bronx zoo tiger tests positive for coronavirus*," The Guardian, 6 April 2020;
- "*More tigers and lions test positive for coronavirus at US zoo*," Sky News, 23 April 2020;
- *"Exploitation of wildlife through hunting and trade facilitates close contact between wildlife and humans, and our findings provide further evidence that exploitation, as well as anthropogenic activities that have caused losses in wildlife habitat quality, have increased opportunities for animal–human interactions and facilitated zoonotic disease transmission*" – Johnson et al., 8 April 2020 - "*Global Shifts in mammalian population trends reveal key predictors of virus spillover risk*," The Royal Society Publishing;
- "*A study published on-line 8 April in Science, for example, reported the virus [COVID-19] can infect cats. Autopsies showed the infection led to "massive" lesions in their nasal passages, trachea, and lungs*" – Science, "*From mice to monkeys, animals studied for coronavirus answers*," 17 April 2020, Vol. 368 Issue 6488, p 221 -222;
- Shi et al. 8 April 2020 - "*Susceptibility of ferrets, cats, dogs, and other domesticated animals to SARS–coronavirus 2*," Science, DOI: 10.1126/science.abb7015.

- Lakdawala et al. 29 May 2020 - "*The Search for a COVID-19 Animal Model*," Science, Vol. 368 Issue 6494

- "*Calls to shut down fur trade after mink become infected with coronavirus*," The Independent, 5 May 2020

- "*Worker contracted coronavirus from mink at breeding farm, say Dutch authorities*," The Independent, 21 May 2020

- "*Dutch farms ordered to cull 10,000 mink over coronavirus risk*," The Guardian, 6 June 2020

- "*Scientists may have found a new coronavirus lurking in wildlife: Key Takeaways*," Daily Maverick, 12 May 2020

- Alekseev et al., 2008 - "*Bovine-Like Coronaviruses Isolated from Four Species of Captive Wild Ruminants Are Homologous to Bovine Coronaviruses, Based on Complete Genomic Sequences*," ResearchGate

- "*'Llamas are the real unicorns': why they could be our secret weapon against coronavirus*," The Guardian, 17 May 2020

- Wrapp et al., May 2020 - "*Structural Basis for Potent Neutralization for Beta Coronaviruses by Single-Domain Camelid Antibodies*," Cell Press, Elsevier, https://doi.org/10.1016/j.cell.2020.04.031

- Li, X.; Giorgi, E.E.; Marichannegowda, M.H.; Foley, B.; Xiao, C.; Kong, X.; Chen, Y.; Gnanakaran, S.; Korber, B.; Gao, F., 29 May 2020 - "*Emergence of SARS-CoV-2 through recombination and strong purifying selection*," Science Advances, DOI: 10.1126/sciadv.abb9153

The science needed for all species is still to be conclusively established, which would suggest a precautionary risk approach is advisable to "*address the potential [COVID-19] risks to human health from the trade in wildlife.*"

The wildlife trade in all its forms has always been a human health issue – but this can no longer be dismissed as a myth perpetuated by 'animal rights' groups motivated by a notion of vengeance. The wildlife trade, zoonotic diseases and human health is clearly a global health crisis/issue, with no single country, or party to blame. A concise and decisive global response is fundamental.

But without an urgent, comprehensive risk-based review of current and proposed wildlife trading practices, then the opportunity for a global response to the clear link of the potential impact of the wildlife trade, wildlife utilisation/exploitation, zoonotic diseases and human health could be lost.

2 Applicable Acts and Guidance

- National Environmental Management Biodiversity Act, 2004 (Act No. 10 of 2004) (NEMBA)
- National Environmental Management Laws Amendment Bill (NEMLAB)
- National Environmental Management: Biodiversity Act, 2004 (ACT No. 10 of 2004) Draft The National Biodiversity Framework
- Threatened or Protected Species Regulations (TOPS) as amended 2013
- Animal Improvement Act (AIA,) 1998 and "*Additional Lists to Table 7*," 17 May 2019
- Performing Animals Protection Act, 1935 (Act No. 24 of 1935 as amended)
- Game Theft Act (No. 105 of 1991, as amended in Acts 18 of 1996 and 62 of 2000)
- Meat safety Act, 2000 (Act 40 of 2000) - Any "*meat*" or "*animal product*" ("*Definitions*," 1. (1)) is therefore subject to the Animal Disease Act 35 of 1984 whereby "*Essential national standards*," para 11., (k) must apply - "*an animal presented for slaughter in accordance with an animal health scheme in terms of the Animal Diseases Act, 1984 (Act No. 35 of 1984), may only be accepted for slaughter if the animal is identified in accordance with the requirements of the scheme in question"*;
- Animal Disease Act 35 of 1984 and "*Controllable and Notifiable Animal Disease*" by the Department: Agriculture, Food and Fisheries (DAFF), where it is stated that:

  > "*Certain diseases require government control as they affect individual animal owners and also pose serious risks to other farmers or consumers of animal products*."

- Animal Health Act 2002 (No. 7 of 2002)
- Animal Protection Act (No. 71 of 1962)
- Abattoir Hygiene Manual, January 2007

- Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act 52 of 1972)

2.1 The Animal Improvement Act (AIA)

In 2019, South Africa's game breeding industry obtained (without any public consultation) the listing of 32 species including white and black rhinoceros, lion, cheetah, giraffe (IWB 2019e) (plus 24 specific indigenous and six non-indigenous game species, amongst others, lechwe and a number of non-indigenous deer species, plus 12 game species which included black wildebeest, blue wildebeest, blue duiker, bontebok, gemsbok, impala, oribi, red hartebeest, roan, sable, springbok and tsessebe), under a regime - namely, the Republic of South Africa's Animal Improvement Act (AIA,) 1998.

The AIA permits "*animal breeder societies*" (the membership of "*breeder societies*" remains wide open – reference "*Definitions*") to manipulate breeding outcomes and hence seek to breed genetically distinct sub-species. This is the same method used by humans to domesticate aurochs into docile cows, the grey wolf into the many breeds of dogs and produce "*golden*" impala:

> "*By the stroke of a legislative pen, a list of iconic and in some cases endangered wild animals can now be manipulated as farming stock. What happens next is anyone's guess*," Don Pinnock, Daily Maverick, 16 October 2019

Thereby the AIA allows game breeders to genetically manipulate listed species, under the pretence that such actions are undertaken to "*To provide for the breeding, identification and utilisation of genetically superior animals in order to improve the production and performance of animals in the interest of the Republic*" – whatever that means.

The species added to the AIA Table 7 was at the behest of Minster Senzeni Zokwana (Department of Agriculture, Forestry and Fisheries (DAFF)) as notified in Gazette 42464, 17 May 2019, Amendment to AIA, Table 7. However, no public consultation took place before the listed species were added to the AIA, in clear contravention of the AIA, Paragraph 2(2):

> "*In the **case of a new kind of animal** or a new breed of such kind of animal to be imported into or to be bred in the Republic, the Minister shall make such declaration after considering the request, taking the international law into consideration and after considering comments received in response to an invitation by the registrar to **interested persons** to comment on a proposed declaration that had been published in the Gazette at least 30 days prior to such declaration*"

Since when has the public, or NGOs not been deemed "*interested persons?*" As a past precedent, "*Game Policy*" was put to public consultation in Notice 874, Vol. 493 Gazette 28994, 7 July 2006. So why was adding new kinds of animals/breeds to the AIA Table 7 not put to public consultation? There is clearly scope for challenge to be made for the lack of public consultation for the DAFF's AIA amendments made in May 2019.

Such disparate policies have potentially negative consequences for conservation of wild species, threatening the genetic purity (by genetic pollution) of wild species if genetically bred animals escape, or are released, or are exported, where inter-breed with wild populations then dilutes species purity (*"South Africa struggles to manage wildlife ranching: why it's a problem"*).

There is also the consideration that captive bred rhinoceros for example (without bio-security separation of genetically modified and not modified), could no longer be considered for release into the wild, regardless of any claims that captive bred rhinoceros have not been "*imprinted*" (incapable of survival in the wild). Any genetic pollution of captive bred rhinoceros would completely undermine any claim that the Private Rhino Owners' Association (PROA) has to any conservation imperative in their members' rhino breeding endeavours. Or perhaps the intention is to create a genetic sub-breed of white rhinoceros for example in an attempt to subvert CITES restrictions by developing a captive-bred origin (CBO) variant – of course a CBO variant does not change the detrimental species risks inherent in any proposed CBO rhino horn trade, wild rhino could still be poached regardless. Any reasoning for inclusion of rhinoceros (and many other species) within the AIA remains opaque and withheld from democratic, public scrutiny it would seem.

The risks of genetic pollution is clearly identified as a major threat within South Africa's own National Biodiversity Strategy and Action Plan as a research priority:

> "*Research priorities that emerged through the process of developing the revised NBSAP include research on/into….The impact of current and future threatening processes on biodiversity, and mechanisms for adaptation, management and mitigation for example research to address genetic pollution (e.g. colour variance) linked to requirements of the hunting industry and research on risk assessments and how they are conducted*" – "*2nd National Biodiversity Strategy and Action Plan 2015 – 2025*," Republic of South Africa, Department: Environmental Affairs
>
> "*The Convention on Biological Diversity's [CBD's] 2020 targets clearly state that signatory countries should minimise genetic erosion (loss of genetic diversity) in domestic, socio-economically and culturally valuable species....However you regard these species – and they cannot reasonably be classified as domestic animals – South*

> *Africa's proposal will very likely lead to genetic erosion, in contravention of the CBD target...This proposal also comes at a time of rapid environmental deterioration, when we need to be increasing the resilience of our species by ensuring they retain as much genetic diversity as possible*," Michael Bruford, professor of biodiversity at the University of Cardiff and co-chair of the Conservation Genetics Specialist Group of the IUCN Species Survival Commission - "*South Africa: wild animals at risk of 'genetic pollution'*," The Guardian, 29 January 2020

A 2018 report and academic papers have highlighted the extensive tail risks to game breeding and genetic manipulation practices in some elements of ranching that are diametrically opposed to positive conservation outcomes:

> "*Even though there has been little work done on the genetic basis for colour transmission in African game species, it is well established that the selection of specific traits through a process of inbreeding or otherwise is very likely to lead to the expression of recessive deleterious attributes that may lead to physical, behavioural and lethal outcomes. It is further virtually certain that breeding practices, such as inbreeding, line breeding and artificial selection for specific phenotypic traits, for example colour variants, are taking place within sectors of the wildlife industry. The extent of the impact is likely to be limited to the individual and the specific population if no translocation or selling of individuals occurs. However, where individuals, that carry deleterious genes, are translocated to other populations the extent of the impact may increase to species level*" – Selier et al. 2018

> "*It is concluded that intensive management and selective breeding of game poses a number of significant risks to biodiversity at landscape, ecosystem and species levels, as well as to other sectors of the biodiversity economy of South Africa, and may compromise the current and future contribution of the wildlife industry to biodiversity conservation. This assessment has identified several important direct risks and impacts on biodiversity at different scales, as well as indirect collateral negative impacts on conservation and the broader wildlife economy*" - Pinnock 2020a

In addition, the private ownership model in South Africa has resulted in conservation challenges, with game-ranchers' intolerance to wildlife that is supposed to be protected, habitat fragmentation and the emergence of abhorrent captive breeding and 'canned' hunting exploitation:

> "*We demonstrate that game rancher tolerance towards free-ranging wildlife has significantly decreased as the game ranching industry has evolved. Our findings reveal a conflict of interest between wealth and wildlife conservation resulting from local*

> *decision making in the absence of adequate centralized governance and evidence-based best practice*" – Pitman et al. 2016

Can the HLP and/or the DAFF explain and make public the research that substantiates the genetic manipulation risks inherent in listing black and white rhinoceros, lion, cheetah, giraffe etc. within the AIA and how that fits with South Africa's CBD targets and conservation claims?

3 Wildlife Economy

The "*Wildlife Economy*" covers a wide spectrum of wildlife consumptive (trophy hunting, captive breeding, sustainable utilisation etc.) and non-consumptive, general photo-graphic tourism sectors. However, all sectors need to demonstrate a non-detrimental impact on species' conservation to justify their credibility within a sustainable, ecologically balanced wildlife economy:

> "*Tourism relies significantly on biodiversity assets, the protected area network being a significant draw for tourists, generating numerous employment opportunities and contributing millions of Rand a year to South Africa's Gross Domestic Product (GDP). An emerging wildlife industry, game ranching including hunting, is estimated to generate a further R7.7 billion a year and creates 100 000 jobs*" - "*South Africa's 2nd National Biodiversity Strategy and Action Plan 2015 – 2025*," Department: Environmental Affairs, Republic of South Africa, CBD, July 2015

3.1 Sustainable Utilisation

What do we mean when we use the term 'sustainable utilisation' as it appears to mean something different depending upon one's own interpretation? Is 'sustainable utilisation' principal aim to help rural communities, or has it become an industry run for and by vested interests in some cases?

Dylis Roe, Chair of the International Union for Conservation of Nature (IUCN) Sustainable Use and Livelihoods Specialist Group (SULi) argues that the legal wildlife trade if "*well regulated*" remains vital for "*rural economies/livelihoods*" in light of the COVID-19 pandemic, citing the example of the farming of saltwater crocodiles in the Northern Territory of Australia, a 'sustainable use' programme initiated in 1983:

> *"which between 1946 and 1971 were – entirely legally – nearly eradicated due to unsustainable exploitation. At the start of the 1970s only 3,000 of a natural population of 100,000 remained. In 1971 a protection programme was introduced and numbers recovered to around 30,000 by 1980.*

> *But, as the crocodiles grew in size and in number, local people began to perceive them as dangerous pests: they wanted them killed not protected.*
>
> *In response, a new scheme sought to make crocodiles valuable to local people. It encouraged them to sell eggs found on their land to newly-created crocodile farms for rearing and subsequent leather production…."*

However, it remains debateable how much the 'sustainable utilisation' of farmed saltwater crocodiles actually contributes to "*rural communities/livelihoods*" in Australia for example. Captive breeding, regulated sustainable harvesting of eggs and live crocodiles from the wild occurs in Australia, where the products derived are skins for international export, plus meat, feet, teeth and skulls sold on the domestic market. Australia supplies about 60% (2017 figures) of the international market for crocodile skins, but only a small percentage of that revenue trickles down to 'rural communities' in reality:

> *"Worth about $150 million annually, the annual earnings of local communities for harvesting crocodile eggs for farms amounts to 0.33% [$500,000] of the estimated value of the annual trade*" - "*What Does A One-Trick-Pony And Australian Crocodile Farming Have In Common? Sustainable-Use Ideology*," Nature Needs More, 13 April 2020

The example given by Roe does not give much credence to 'sustainable use' contributing significantly to 'rural community' livelihoods in Australia – it is more akin to industrial scale profiteering in the hope that tickled-down economics might benefit others.

Figure 1 - "*Saltwater crocodiles sunning themselves*" - Credit: Shazzashaw (i-Stock)

There is also clear evidence that the 'sustainable utilisation' of a 'legal' trade in skins for the fashion industry promotes parallel illicit activity, that in turn increases the spill-over risk of zoonotic diseases to humans (note: the illicit trade in skins stimulated by legal trade is not clearly acknowledged as a risk in the SULi's report, *"Lessons for CITES implementation: Challenges, Successes and Failures*"):

> "*The trade in skins for fashion accessories is legal, but experts say viruses do not distinguish between legal and illegal trade*" - "*Coronavirus: 'Exotic' skins in shoe and handbag fashion stores fuel risk of further epidemics, say experts*," The Independent, 13 April 2020
>
> *"A report finds that companies including Chanel, Gucci, and Coach had thousands of imported exotic leather goods seized by U.S. law enforcement from 2003 through 2013 " – "Luxury fashion brands had thousands of exotic leather goods seized by U.S. law enforcement*," National Geographic, 22 May 2020

Is should not escape anyone's attention that Professor Grahame Webb has led the IUCN Specialist Crocodile Group (SCG) for decades, which advocates farming crocodile for their skins. In 1994, Professor Webb developed Crocodylus Park, near Darwin, Australia, where eggs are collected from wild nests and crocodile skins sold to support Crocodylus Park's claimed conservation endeavours. However, there are now clear signs of industry oversupply as demand dwindles for crocodile 'products':

> *"Professor Webb, who has long been a champion for the concept of conserving wildlife through programs of sustainable use, said as the industry changed he was worried about the unintended consequences for the world's poorer communities….*
>
> *There is an over-production but on top of that, you've got to look at it from the point of view of fashion companies that are under increasing attacks from animal rights activists who don't believe people should use any leather, wool or anything that comes off an animal….*
>
> *The thing I'm most concerned about, is that as the brands and big companies try to tighten up their supply chains, that they don't undermine the conservation programs around the world that are based on local, rural people being able to harvest crocodiles…..*
>
> *Papua New Guinea is a classic example, where for many people, the only source of cash income they get comes from the few crocodiles they harvest….*

> *Here at Crocodylus we've had to really curtail what we're doing while this storm passes over and it will pass I believe" – "Crocodile farmers feeling the bite of a global oversupply of croc skins," MSN News, 12 February 2020*

The lessons from crocodile farming given as an exemplar by the SULi Chair would appear to be that demand drops when clients move away from such skins due to fashion market preferences – demand reduction is always a business risk, even if unbounded market expansion is promoted as a panacea by wildlife 'sustainable utilisation' ideology.

Blaming "*animal rights activists*" for such downward market movements provides a somewhat convenient scape-goat of course, one perpetuated by the SULi:

> "*A key current threat to this example of sustainable use and livelihoods, however, are the recent moves in the fashion industry to stop using wild reptile skins, apparently in response to animal rights lobbying campaigns*"

However, fashion/public tastes have always been fickle, highlighting how commercial, industrial scale exploitation of crocodiles (or other species exploited to supply 'fashion' for that matter) can rapidly become an unsustainable exploitation, once over-promoted by vested interests when market realties bite.

The 'rural communities' that actually rely upon the "*cash income they get comes from the few crocodiles they harvest"* are seemingly the very ones that are first to suffer and be crowded out by big 'sustainable utilisation' operators' margins. It is duly noted that there is no mention from the IUCN CSG Chair, Grahame Webb in the above article of the big Australian operators being asked to scale back their over-production in order to support concerns for Papua New Guinea's 'rural communities' income - even if 'rural communities' are supposedly the main cause promoted within the IUCN/SULi's/CSG 'sustainable use' vision.

The SULi Chair, Dylis Roe also makes the argument that non-consumptive wildlife tourism has been shown to be a failure as a result of the COVID-19 pandemic:

> "*COVID-19 also highlights the limitations of one particular form of sustainable use – wildlife tourism. Tourism has often been heralded as a panacea for conservation and for local peoples' livelihoods. Its almost overnight curtailment will certainly wreak havoc on the industry…*" - "*Despite COVID-19, using wild species may still be the best way to save them*," April 2020

Of course, COVID-19 has wreaked havoc on non-consumptive wildlife tourism (but virtual safaris offer some potential income regardless of 'travel'). But it would seem that the COVID-

19 pandemic has also affected and curtailed "*almost overnight*" elements of the 'legal' wildlife trade, with China closing off the consumption of wildlife for "*food*" via 'legal' mechanisms:

> 24 February 2020 - A set of 'Decisions' were adopted by the Standing Committee of the National People's Congress (NPC) prohibiting the trade in most terrestrial wild animal species for the purposes of consumption as food (EIA 2020d):
>
> > *"….it should be noted that the February Decisions represent a significant divergence from the Wildlife Protection Law by banning commercial breeding and trade in (almost) all terrestrial wild animal species, not just protected species. This suggests that some Government agencies are prepared to take a far more precautionary approach to wildlife trade, with a recognition that the risks posed to biodiversity and human health can far outweigh more consumptive, money-making imperatives"*
>
> 5 March 2020 - "*China - Urgent measures regarding wildlife trade regulation*," CITES

Plus of course, during this global lock-down, United States trophy hunters for example, are no longer able to travel to South Africa to 'sustainably utilise' wildlife for their hunting pleasure. The consumptive 'sustainable utilisation' of wildlife advocated by Roe (and others) as a panacea, is similarly not immune from the very zoonotic disease risks the wildlife utilisation trade poses to global human health.

Trophy hunting's compatibility with the IUCN's ethical and moral leadership remains questionable regardless of COVID-19's impact, reference paragraph 6.3 – "*Ethical/Moral Leadership.*"

In conclusion, there appears to be a dichotomy between the promise made for 'sustainable utilisation' as purveyed by the IUCN, whereby 'sustainable utilisation' delivers clearly defined 'rural community' benefits and tangible species conservation imperatives, whilst simultaneously 'sustainable utilisation' is used as an umbrella term for industrial scale, unbounded wildlife exploitation. When market forces intervene, the latter industry created around 'sustainable utilisation' proves detrimental to the very 'rural communities' that rely upon small scale sustainable schemes.

'Sustainable utilisation' has also morphed into stand-alone industrial scale wildlife exploitation that has no correlation to recognisable species' conservation, or any overriding benefits for 'rural communities' – exaggerated commercial 'sustainable utilisation' is epitomised by South Africa's captive lion breeding (CLB) industry, which has morphed into

some 8,000 – 12,000 (no one seems to know) captive big cats held purely for business profiteering based upon some notion of trickle-down economics, with no tangible species' conservation benefits whatsoever (reference paragraph 9.2 – "*Captive Lion Breeding (CLB) – Calls for Closure*," paragraph 9.3 – "*Conservation Claims of CLB Industry*" and paragraph 9.4 – "*The 'Buffer' Theory*").

There is a clear need for South Africa to step back and review its 'sustainable utilisation' policies in comparison within the Republic's own Constitution Section 24, "*Chapter 2, Bill of Rights, Environment*." This section refers to ensuring everyone's right "*to an environment that is not harmful to their health or wellbeing;*" "*to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that*" amongst other criteria "*promote conservation,*" whilst ensuring "*secure ecologically sustainable development and use of natural resources…*" There is no mention of 'sustainable utilisation' per se. in the Constitution and it is clear that CLB exploitation does not meet with the spirit of the Republic's Constitution's aims (reference paragraph 12.1 – "*Secure Ecologically Sustainable Development*").

3.2 Canned/Captive Industry Employment and Livelihoods

In the 2018 working paper ("*The Economics of Captive Predator Breeding in South Africa*" (Harvey 2018)) it was found that:

> "*……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*" but "*If the industry only employs 613 people directly and supports an additional 700……..the results suggest that there is an enormous amount of money accruing to facility owners…*"
>
> "*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.*"

Harvey (2018) concluded that "*Even if the land [occupied by captive predator breeders] did revert to agriculture [joining up tracts of ex-predator breeding lands], the resultant local employment benefit may well exceed the current employment benefits of the predator breeding industry*" – which, suggest local livelihoods might be boosted in the absence of intensive predator breeding facilities occupying tracts of what could be 'agricultural' land.

Compared to general tourism income (some $9.5bn USD per annum (2011) – reference paragraph 3.5 – "*Revenues from Trophy Hunting*"), the captive predator breeding in South Africa of "*$28.5 million in annual gross revenue"* represents some 0.3% of tourism income, which makes the negative reputational impact (PCEA) that captive predator breeding has on South Africa's general reputation and tourism industry looks like a very poor return.

3.3 Rural Communities Living with Wildlife

According to Adam M Roberts (Born Free Foundation 2015) - CEO of Born Free Foundation and Born Free USA:

> "*There is very little evidence that the proceeds of trophy hunting benefits conservation or local communities in the hunting areas, with as little as 3% or less of the revenue generated trickling down. Lions and other charismatic wildlife are worth far more alive than dead to Zimbabwe's tourism industry. In Zimbabwe it is estimated that trophy hunting generates only 3.2% of total tourism revenue.*"

The above figures appear to be extracted from the Economists at Large report (Economists at Large 2013) which concluded:

> *"Research published by the pro-hunting International Council for Game and Wildlife Conservation and the UN Food and Agriculture Organisation, supported by other authors, finds that hunting companies contribute only 3% of their revenue to communities living in hunting areas. The vast majority of their expenditure does not accrue to local people and businesses, but to firms, government agencies and individuals located internationally or in national capitals. As the quote above*

> *demonstrates, expenditure accruing to government agencies rarely reaches local communities due to corruption and other spending requirements".*

Based on an estimated £151m ($235m USD) (Economists at Large 2013) industry turnover, at 3% trickle down this equates to £4.53m ($7.07m USD) getting down to the grass roots level of conservation and local communities across 9 countries. Based on US Census numbers (2009) these same 9 countries have a combined population of some 243m. So, the trophy hunting income trickle down of 3%, £4.53m ($7.07m USD) divided by 243m people, equates to just £0.02 ($0.03 USD) per capita. Even if one was to hypothesise that only 5% of the population (12.15m) 'benefit,' that still only equates to £0.4 ($0.62 USD) per person.

In the area surrounding Hwange National Park, Zimbabwe, Loveridge (2018, page 242) states:

> "*I've seen almost no benefit to villages around Hwange National Park – from hunting or, indeed, from any kind of conservation revenue…….The promise of improved livelihoods through revenues derived from trophy hunting does not appear to be fulfilled, nor is hunting incentivizing people to tolerate wild animals*."

A ban on trophy hunting in Northern Botswana revealed negative consequences on the communal economy in areas that were previously hunting grounds. According to one study, the revenue generated by hunting expeditions represented around two-thirds of total tourism income (Mbaiwa 2015). The ban on trophy hunting also led to halting certain community-based natural resource management (CBNRM) programs due to loss of funding for these opportunities (Mbaiwa 2015).

Therefore, careful consideration must be given to any transition away from dependence upon trophy hunting income trickle-down to local communities and/or community programs.

Even at a mere 3% trickle down of hunting income, to some communities that is important welfare/subsistence (which is not the same as species' conservation per se). It should be borne in mind, that such human dependence on trophy hunting income does not necessarily correlate with species conservation – just because local communities enjoy some trophy hunting income does not necessarily mean that wildlife in the locality is free from human-wildlife conflict and attrition for evermore – the risk of human wildlife conflict can be increased by the presence of trophy hunting.

Brent Stapelkamp worked within WildCRU for 10 years on the 'Hwange project' in Zimbabwe. Stapelkamp (2016) provided (IWB 2019f, Appendix 1) a welcomed, fundamental insight and perspective on that work, identifying patterns in the data that point to lion trophy hunting

having a much wider negative impact; where trophy hunting of key pride members acts as a catalyst driving surviving pride members into human/wildlife conflict. The same is currently happening in Botswana under the reinstated elephant trophy hunting attrition (reference paragraph 6.5.8 – "*Botswana*").

3.4 Trophy Hunting's Employment and Livelihoods

In terms of employment (local communities or otherwise), then trophy hunting's claims have been overstated:

> "*….trophy hunting activities do not generate 53,000 jobs as claimed but rather between 7,500 and 15,500 jobs…..Trophy hunting tourism employment is only 0.76% or less of average direct tourism employment in study countries*" - *Economists at Large 2017*

In a 2018 article, "*Counting the contribution of hunting to South Africa's economy*," Peet Van Der Merwe (Professor in Tourism, North-West University, note: Peet Van Der Merwe receives funding from NRF and WRSA and conducts research for WRSA, SA Hunters and PHASA) explains:

> *"By our calculations trophy and biltong hunters contribute a combined R13.6 billion ($909 million) to the South African economy in 2016/2017 season….. An estimated 7,600 trophy hunters visited South Africa in 2016. Their trips lasted, on average, 12 days, and on average they spent R262 000 (US$20 000) per trip. Based on these numbers we calculated that trophy hunting contributed close to R2 billion ($130 880 815.00) to the South African economy. Our calculations also show that between 70% and 80% of trophy hunters' spending takes place in the area of the hunt. This includes the accommodation, game hunted and in some cases also the trophy handling and processing…….. hunting creates jobs, particularly in rural areas where employment is most needed. Research conducted in three of the top hunting provinces – the Northern Cape, Free State and Limpopo provinces – showed hunting created 31,500 jobs in the three provinces – 17,806 in Limpopo, 9,072 in the Northern Cape and 4,558 in the Free State.*
>
> *Typical employment created directly includes guides, professional hunters, skinners, trackers, catering, housekeeping, maintenance, conservation management, anti-poaching and taxidermy, to name a few."*

> *"Recent research conducted from one of my PhD students found that the average spend by product owners on infrastructure is just over R7 million (US$ 490 000), with some even spending up to R30 million (US$ 2.1 million). This all adds up to infrastructure development in rural areas*"

In comparison, the general tourism sector's 686,596 employees outnumber the respective workforces of utilities (118,000 employees) and mining (444,000 employees).

In terms of the habitat protection game farming provides, Peet Van Der Merwe also says:

> "*It's estimated that the private wildlife industry is managing an estimate 20 million hectares, compared to the +-6 million hectares owned by the state (national parks, provincial parks and others state-owned conservation areas).*
>
> *These private reserves rely heavily on hunting to keep their businesses going and hunters need game to hunt. Therefore private reserve owners often need to breed game for this purpose*"

So, based on the above research date, the wildlife ranching sector creates significant financial income into rural areas, but the above analysis does not explain how much of that income actually stays in South Africa, let alone the rural communities in question. Many hunting packages are booked through overseas operators, so the majority of income is often held offshore (some safari operators operating out of tax-havens). Of course, there is also the question of how diverse wildlife ranching ownership is and how many facilities are actually owned by rural community shareholders. So, it is questionable how much 'local communities' benefit directly from the "*trophy and biltong hunters"* industry income given in the data above, but does offer employment in otherwise remote rural locations.

Regardless of where the income goes, trophy hunting is losing its appeal IUCN 2019b (Chardonnet):

> "*In South Africa the number of foreign hunters dropped from 16,594 in 2008 to 6,539 in 2016, in other words a decrease of 60.5% in 8 years."*
>
> "*in 2011, Peter Flack, currently one of the leading authors on hunting and a defender of hunting and game farms, published a study entitled, "The South African conservation success story." However, in 2018 he wrote in his blog that after a 50% decrease in the number of foreign hunters in just a few years, many game farmers were killing their wild animals and replacing them with cattle, given the poor economic situation of the game farming sector"*

3.5 Revenues from Trophy Hunting

If money is the key to species conservation, then general tourism has far greater financial potential - to support habitat protection in the vast majority of past hunting concession areas and thus support conservation without the excuse of the '*sacrifice of one, saves the many*.' Table 1 below shows that tourism income far outweighs hunting income across Africa.

	Population[(a)] (million)	Trophy Hunting Revenue[(2) (b)] ($m USD)	Tourism Revenue[(2)(b)(c)] ($m USD)	Trophy Hunting Revenue as % of Tourism Revenue
South Africa	51.4	112	9,547	1.2%
Ethiopia	84.3	1.45	522	0.3%
Cameroon	18.9	2.4	159	1.5%
Tanzania	44.9	32.9	1,457	2.3%
Zambia	11.8	7	125	5.6%
Botswana	2.0	25.4	218	11.7%
Namibia	2.1	32.8	517	6.3%
Burkina Faso	15.7	0.8	72	1.1%
Zimbabwe	11.8	20	634	3.2%
	242.9	**234.75**	**13,251**	**1.77%**

(a) Based on US Census numbers (2009)
(b) All figures converted to 2011 $ USD
(c) UNWETO (2012)

Note 1 - It is not clear in the context used if 'Trophy Hunting' includes, or excludes 'Canned Hunting.'

Note 2 – It is not clear how Governments set their permitted hunt quotas – It is not often scientific and is suspected to be corruption (reference (1), para4.2, iii) many cases, Government revenue appears the main driver.

Table 1 – *Trophy Hunting, Tourism Income and Population (IWB 2015a, Economists at Large 2013)*

In a 2008 report (Lindsey 2008) it was estimated that income from Trophy Hunting[Note 1] generates at least $201m per year across 23 sub-Saharan African countries. These figures appear to be direct income from trophy hunters to hunting tour operators, so excludes permits bought at auction, travel, hotels and other income generated in country. We can safely assume that with an adjustment for inflation alone, the income today can be projected to around $300m USD.

Just to put that income into perspective, the 2008 figures (Lindsey 2008) are based on 18,500 international Trophy Hunter clients, so an average of around $11,000 USD per trophy hunter. The hunting taking place over some 1.4m km^2 of land area, which is an area 22% larger than the area designated as safe, protected havens for wildlife where hunting is not permitted.

However, those 2008 figures are perhaps an underestimate. The trophy hunting industry income for South Africa alone was estimated in 2013 at $112m USD (Economists at Large 2013) [Note 1], with the whole industry across 9 Trophy Hunting countries of Africa estimated at $235m USD.

Southwick Associates (2015) produced a report on behalf of Safari Club International Foundation, which claimed that trophy hunting contributes $426 million across Botswana, Ethiopia, Mozambique, Namibia, South Africa, Tanzania, Zambia and Zimbabwe. But, a more realistic estimate is less than $132 million per year, amounting "*to only 0.78% or less of the $17 billion in overall tourism spending in the studied countries*" – Economist at Large 2017

As a further example, the World Travel and Tourism Council estimated 2012 tourism income for South Africa at ZAR102bn ($8.58bn USD), employing 10.3% of the population and making up 2.3% of South Africa's GDP. It can be seen that in South Africa, trophy hunting is only a fraction of general tourism revenues, with trophy hunting revenue making up less than 0.02% of South Africa's GDP (or trophy hunting is only around 1.2% of tourism revenue).

3.6 How Much Money Goes Back to Communities from Trophy Hunting?

Trophy hunters, hunting supporters and advocates always refer back to the perceived virtue of the economic benefits their 'dedication' to killing animals for trophies contributes. The claim is that local communities in hunting areas financially benefit, plus the subsequent "*conservation*" of wildlife due to the funds raised etc. These 'claims' are based on financial,

empirical evidence, but the 'virtues' are nowhere near as widespread as claimed, with as little as 3% of hunting income reaching down to local communities.

For example, Zimbabwe's CAMPFIRE programme (established 1981) was introduced to distribute dividends derived from Trophy Hunting to local communities. In a 2007 study (Kamhorst et al. 2007) communities that should have benefited from the CAMPFIRE programme reported that dividend had not been received since 1997, with no discernible additional benefits for employment or improved infrastructure - corruption has eaten away at CAMFIRE's promise/revenue.

The IUCN/PACO (2009) reported that the economic benefits to local communities of hunting areas are minimal, employment opportunities are poor and the wildlife contained within hunting areas are far less well protected than wildlife contained within protected, non-hunting areas.

In September 2019, the Zambia Community Resources Boards (ZCRB) released a press statement expressing their deep concern over the fact that the communities have not been given their share of either concession fees or the hunting revenues. According to Felix Shanungo (ZCRB President), the communities have received no concession fees since 2016 and no hunting revenue since last year.

In comparison, the income to local communities derived from wildlife tourism is perhaps more general (ie. not necessarily over-lapping with the same 'local communities' supported by trophy hunting). It is estimated that trophy hunting tourism employment is only 0.76% or less of average direct tourism employment in study countries (Economists at Large 2017), so there is greater scope for local communities to benefit from the scale of general tourism employment and trickle down economics in comparison with trophy hunting.

4 Wildlife Trade

The trade in wildlife covers a vast spectrum and is a multi-billion dollar per annum global industry. A report (Baker et al. 2013) found that the illegal wildlife trade accounted for 59% of the trade reported/uncovered (with the illegal trade estimated by Interpol to be worth $20bn per annum), with legal trade accounting for 41% (though 'legal' trade can also be orchestrated for illicit means of course):

> "*The reported drivers of trade were luxury goods and food (36%.....), traditional medicine (25%), pets and entertainment (22%), subsistence food (7%), culture (5%), research and education (3%), and financial reasons (such as macroeconomic changes within a country—e.g., the emerging young middle classes in China and Vietnam—deemed sufficient to change the standard of living for a significant proportion of the population; 3%)*".

But legal wildlife trade mechanisms are no guarantee of successful species conservation, hence calls for the G20 to take action to ban the trade. The implied certainty given to justify 'sustainable utilisation' is that the wildlife trade can compete and quash illicit activity (even when legal trade helps create that illicit activity), is not supported by all past experience (reference paragraph 12.5 – "*Does Legal Trade Counter Illicit Activity?*").

Past interventions to positively influence or limit wildlife trading were generally reported not to have achieved their goal (58%) - it should be noted that only 2% of those interventions sought to benefit animal welfare (Baker et al. 2013), with animal welfare not given due consideration in legal wildlife trading:

> "*CITES plays a crucial role in regulating the international trade in wild animal specimens. It is a potentially powerful and currently underused tool for improving animal welfare in the international wildlife trade and for reducing trade in some species groups*."

So, animal welfare is not given high priority in legal trade (also reference Recommendation 13.3 – "*Animal Welfare*"), with little regard for animal welfare (or conservation) whatsoever within illegal trade of course (Baker et al. 2013).

There are risks inherent in legal wildlife trade orchestrated in the name of 'sustainable utilisation' - the question raised being:

- Would species conservation and animal welfare be better served in the absence of 'sustainable utilisation' of a given species?

- Does giving a species 'value' by facilitating legal 'sustainable utilisation' trade discourage illegal trade and exploitation of a given species, or does legal trade act as a catalyst for illicit activity?

Looking as the historical failures within the legal trade orchestrated for vicuña wool, elephant ivory, lion bone and the proposed international trade for rhinoceros horn demonstrate the potential risks such legal trade mechanism can create (reference paragraph 4.1 – "*Demand Management - The Vicuña,*" paragraph 8.3.1 – "*Elephant Ivory Demand Management and Regulatory Failure,*" paragraph 9.3.2 – "*Lion Bone Conservation Claims*" and paragraph 11.3.3 - "*Rhino Horn Demand Management*").

There is also the 'legal' mechanism of CITES exportation of live wildlife specimens, under the pretext of for non-commercial "*scientific research, captive breeding, public exhibition or performances, heritage conservation or other special purposes"* (China's Wildlife Protection Law loop-hole) and *"appropriate and acceptable destinations"* (CITES ' 'subjective' and opaque definition), when in reality such live specimen exports are fraudulently orchestrated to circumvent CITES restrictions with the export to supply commercial zoos, breeding facilities in China and for TM production and/or that supply international vivisection laboratories.

The live exports from South Africa includes chimpanzees, tigers, servals and caracals, giraffes, lions (reference paragraph 5.2 – "*Traditional Medicine – Lion Bone Trade Experience*"), hippos, rhinos (reference paragraph 11.5 – "*Live Rhinoceros Exports from South Africa*"), African wild dogs - and marmosets.

The May 2020 report - "*Breaking Point: Uncovering South Africa's Shameful Live Wildlife Trade with China*," EMS Foundation and Ban Animal Trading report, 18 May 2020 – exposes a number of myths:

- The legal trade can somehow always crowd out illegal trade – the report finds the two are functionally inseparable ('legal' trade mechanisms are being exploited to mask illegal trade). If anything, the presence of a legal trade – with zero conservation value – normalises consumption and triggers demand for wild-origin animals for commercial use and consumption;

- The research demonstrates that South Africa's live wide animal trade with China is riddled with irregularities that are exploited by traffickers:

    - animals taken from the wild to serve commercial purposes;
    - non-existent vetting of buyer credential – non-existent "*acceptable destination*" addresses in China and no exploration of buyer's intent;
    - no follow up of whereabouts of exported wildlife;

- CITES systems are failing dismally to adequately govern and regulate the live wildlife trade (with the fundamentals of transparency, accountability and traceability absent), thus giving a false sense of security to those who believe that the international wildlife trade in justified and sustainable:

    "*But a global system of paper export permits allows for pervasive fraud, with widespread false declarations by traders, agents and exporters, the research found, and "once animals leave South Africa it is impossible to identify where they will land up….. Regulation is "failing dismally, imparting a false sense of security for those who believe that the international trade in wildlife is justified and sustainable" while "such security is wildly misplaced and, far from contributing to conservation, the legal trade is one of the single biggest factors currently undermining conservation*" - "*South Africa traffics thousands of endangered wild animals to China in 'corrupt and growing' trade, investigation finds,"* The Independent, 17 May 2020

    "Examples [of irregularities in CITES paperwork accompanying the exports] include incorrectly dated, undated and unsigned permits, permits listing incorrect numbers, ages and places of origin for the animals involved, as well as permits giving untraceable or fictitious destination addresses in China and illegal shipments masked as legitimate exports.

    There appears to be little vetting of traders – both exporters and importers – some of which have in the past been implicated in illicit wildlife trafficking themselves or been associated with criminal smuggling syndicates" - "Horrific scale of SA's live wild animal trade to China exposed," Daily Maverick, 18 May 2020

    Captive bred wildlife exports are not serving any conservation purpose - "*Cheetah Cheater – The Wildlife Export Trade*," Carte Blanche, 17 May 2020

> "*The legal trade in wildlife between SA and China is extensive and often corrupt, with glaring violations overlooked by authorities and benefits flowing to a few wealthy traders. It's also acting as a cover for illicit trade*" - "*Enabling Dealers in Death - SA's international wildlife trade 'poorly enforced, indefensible and shameful' - report*," Sunday Times (South Africa), 24 May 2020

- The report reveals that such trust is widely misplaced; far from protecting and enhancing conservation, the legal wildlife trade is one of the biggest factors undermining conservation objectives;

With such widespread abuses and a clear absence of transparent regulatory over-sight, then a moratorium should be placed on all live animal/wildlife exports and CITES role in facilitating such trade abuses should be subject to public inquiry. The notion that CITES provides a 'well-regulated' environment conducive to helping secure conservation of habitat, and thus reduce the risk of habitat destruction and the release of zoonotic diseases (CITES Secretary-General, Ivonne Higuero, May 2020) is untenable when CITES is being so openly abused to serve vested interests that have no correlation with any conservation imperative whatsoever.

4.1 Demand Management – The Vicuña

The South American vicuñas' 'Demand Management' serves as a lesson as to why any legal wildlife trade strategy's intentions can falter when they meet the hard realities of non-conformist (illicit) market forces – poaching of the species develops as a direct result of stimulated demand from the introduction of 'legal' trade mechanisms.

A 2009 case study concluded that legal trade in vicuña wool/fibre offered the likelihood of detrimental species' risks resulting in reality:

> *"Our results showed that the role of the international market is ambiguous; live shearing for an international market can provide the very best of outcomes for both vicuña and local people, with large herds generating high revenues. But an international market also creates a market for poached vicuña fiber; as a result, vicuña numbers risk once again falling to critically low levels, resulting also in minimal revenues from sale of fiber. The message for the international community is that* ***if***

> ***community-based conservation is not implemented carefully then its impact can easily be perverse"*** – McAllister et al., 2009

The chronology of vicuña wool/fibre trade introductions and its historical negative effects first arose in Chile and Peru, which is only given tacit acknowledgment by the SULi in the 2019 report "*Harvest and trade of Vicuña fibre in Bolivia*" – Note: Bolivia only commenced a legal vicuña wool/fibre trade in 2007, Chile and Perú started such trade in the late 90s.

Many rhino horn trade advocates (including John Hume, rhino farmer) tout the Andean vicuña - an iconic South American mammal in the camel family that's related to llamas, alpacas, and guanacos - as an example of successful conservation through 'sustainable utilisation.' The vicuña has a fine, wool coat that is 'farmed' from roaming herds (ranched into semi-captive enclosures) to supply the high-end apparel/fashion industry. But 'sustainable utilisation' has also led to captive vicuña populations by larger stakeholders, which raises population stresses, animal welfare issues and risk potential genetic pollution, as domestic llamas and alpacas are placed in the same captive plots with vicuñas, creating hybrids:

> "*A potential threat both in the Andes and worldwide, is the breeding of paco-Vicuña (an alpaca/Vicuña hybrid) mainly promoted in developed countries out of the Vicuña distribution range for commercial purposes*" - (IUCN RedList).

Excessive hunting for European markets drove vicuña to the brink of extinction in the 1960s. The animals were usually shot and the fleeces sheared off their carcasses. It is duly noted that the vicuña's attrition was driven by an exaggerated international demand, not one directly driven by the domestic needs of the indigenous people living in the vicuña's home ranges.

In the early 1970s, CITES and the countries where the vicuñas range in the wild took measures that included a ban on trade in the vicuña's wool, putting the species on a path to recovery. By the 1990s, the vicuña numbers had rebounded to more than 200,000 (the majority in Peru at that time). There was the opportunity at this point to maintain the ban on trade in vicuña's wool/fibre and allow the vicuña's population to naturally recover, but reinstating legal trade mechanisms was mooted in the 1990's.

In Chile, before 'legal' trade was resumed in the 1990s, it should be noted that the vicuña's population recovery was in full flow, but a regulated legal trading in vicuña fibre/wool

resumed in the late 1990s. Indigenous families (ie. 'rural communities') were encouraged to derive a subsistence livelihood from the legal trade opportunity, corralling the migrating vicuña and legally harvesting their wool coats in a sustainable, non-consumptive manner.

At the time, ecologist Cristian Bonacic, of Pontifical Catholic University of Chile, in Santiago, was at the forefront of developing best practice guidelines for sustainable, ethical, non-consumptive utilisation of vicuñas.

However, the value of vicuña products became so highly prized as demand was stimulated, that vicuña poachers sought to cash in, with some 5,000 animals slaughtered (the poachers don't worry about non-consumptive sustainability) in five years to obtain the animal's wool coats, with the indigenous families threatened both physically and financially by the poaching gangs. Rangers seeking to confront the poachers lost their lives.

This experience has changed ecologist Cristian Bonacic's view of 'sustainable utilisation' and he fears that a legal trade in rhino horn could be catastrophic for the species:

> *"Bonacic explains his recent shift away from the notion of sustainable use of wildlife, why a legal trade in vicuña wool has led to more - not less - poaching, and why he thinks a legal trade in rhino horn could be catastrophic for the species……..In Chile, we followed this paradigm [if wildlife can be used, it can be saved] like a religion.*
>
> *But the world has changed, and many indigenous communities are now much more globalized. There are many more roads, many more exchange routes, including the Internet, which allows you with one click to buy something banned in one country and not in another. The romantic view that local communities can use an animal sustainably is simply no longer feasible in the 21st century*" – "*Legalizing Rhino Horn Trade Won't Save Species, Ecologist Argues, What can South Africa's rhino horn trade proponents learn from experiences with the South American vicuña?*" Katarzyna Nowa, National Geographic, 8 January 2015

Vicuña poaching escalated to the point that by 2015, 90% of vicuña wool exports were found to have been sourced from illegally killed and shaved poached vicuña, the illicit exports often disguised as originating from other species in an attempt to deceive detection.

Perhaps this is an example of how legal trade, market dynamics, stimulated demand and criminality collude to produce negative ('perverse') results.

The vicuña as a species in Chile, has a total population estimate of some 12,000 (2016) (IUCN RedList), but the vicuña population was not universally enhanced by 'utilisation' and 'legal trade' because of the poaching attrition that developed in parallel:

> *"Recent surveys have revealed a decline of nearly 5,000 animals from 2008 to 2017. The species in Chile is listed as Endangered"* - (IUCN RedList).

'Sustainable utilisation' of the vicuña in Chile encouraged poaching to profit from the stimulation in demand, threatened those communities that were supposed to profit in Chile from the trade and led to thousands of vicuña being slaughtered. Many scientists are concerned that the vicuñas' population levels remain threatened and of concern:

> "*....but most experts agree that there is cause for concern. Vicuña populations now hover at 400,000 to 500,000 animals, but their numbers have remained stagnant or, in the case of Chile, declined over the past two decades*" - "*Poaching upsurge threatens south America's iconic vicuña*," Scientific American, 24 November 2015

In Peru, poaching was a considerable problem as black-market traders sought to enhance their stockpiles of vicuña fibre/wool as the promise of a 'legal' trade was announced – in May 1994, this illicit stockpiling resulted in some 50,000 animals being slaughtered, equivalent to approximately 60% of the 1991 estimated vicuña populations of Puno and Pampa Galeras (Wheeler et al. 1997). However, the population has recovered from 66,559 (1994) to a population estimate of 218,000 (2016) (IUCN RedList), but the poaching threat remains across the vicuña's range:

> *"Poaching triggered by international illegal market demands of Vicuña fibre continues to be the major threat to the species. According to the Technical Meeting of the Vicuña Convention (2015) there has been, with the exception of Ecuador, an alarming increase in Vicuña poaching throughout its range, especially affecting isolated Chilean and relict populations whose marginal distribution increases their vulnerability"* - IUCN RedList

Benito Gonzalez, a zoologist at the University of Chile and chair of the International Union for Conservation of Nature's South American Camelid Special Group, pointed out in 2015, vicuñas inhabit areas that are exceedingly difficult to patrol (and rangers now risk being shot by vicuña poachers), meaning official poaching figures are "*just the tip of the iceberg*" – in other words, poaching figures are hard to quantify across the entire vicuña's range, but the expectation is that vicuña poaching is far more prolific than the official figures suggest:

> "*This dark truth is lesser known to the rest of the world, however, which largely views vicuñas as a beaming conservation success story*" - "*Poaching upsurge threatens south America's iconic vicuña*," Scientific American, 24 November 2015

The SULi postulates that "*International trade underpins this conservation model for vicuna and the fragile ecosystems of the Andes, and is vital to its continued success. Without trade in vicuna fibre, communities would lose motivation and the abilities to conserve and manage the vicuna"* and continues, without citing clear substantive evidence that 'without trade' *"This would lead to greater poaching and spark renewed decline of a species that was previously approaching extinction."*

Perhaps without 'legal' trade being reinstated and unleased in the first place, the vicuña would have been much safer (and so would the rangers that seek to protect them)?

The ongoing exploitation and plight of the vicuña in Bolivia (for example) is continuing to have 'perverse' impacts acknowledged by the SULi in 2019:

> "*However, poaching (for fibre) still occurs, and levels have recently increased in response to high prices, relatively weak controls and light penalties*" the SULi (2019) reports of the vicuña trade in Bolivia, but optimistically speculates as the poaching slaughter continues "*The relatively low numbers (in proportion to the total population) suggests the legal trade of vicuña remains relatively resilient to external shocks, and is successfully "crowding out" or outcompeting the illegal trade. Improved enforcement and penalties are required to safeguard conservation gains.*"

Perhaps the poaching rates in Bolivia will increase in response to "*high prices, relatively weak controls and light penalties.*"

There is no substantiated evidence that if "*high prices*" for vicuña wool/fibre can be manipulated to 'lower prices' - that this would result in reduced poaching rates:

- There could be increased poaching volumes to maintain profitability regardless of any price reductions – poaching rates could be inelastic to price;
- Lower prices for vicuña wool/fibre could stimulate demand, opening the market to players that previously found the commodity unaffordable - poaching rates could rise to meet that stimulated demand.

The stated market parameters, "*high prices, relatively weak controls and light penalties"* may endure regardless, being parameters which external proponents such as the SULi have limited power to control anyway in an effort to mitigate the poaching risk. The lack of ability to influence such parameters is particularly true when *"relatively weak controls and light penalties"* benefit corrupt officialdom within the wildlife trade for example, rather than the imposition of the implied 'tougher controls and heavier penalties' advocated by the SULi.

There is always the risk that 'legal' trade mechanisms create a parallel illicit trade perfect storm, reaching an uncontrolled critical mass despite anyone's best intentions with regard to deploying 'sustainable utilisation.'

What happens if/when legal trade is no longer deemed to be "*"crowding out" or outcompeting the illegal trade*" - where is the threshold if "*relatively low numbers"* of poached vicuña are surpassed and rise exponentially - trade bans?

Time will tell in Bolivia, but in ranges such as Apolobamba that "*are both protected areas and community-managed areas,*" the vicuña population has actually declined since 2013. The SULi explains the noted population declines away with "*although populations have slightly declined over this period in several (see Fig 2 (sic) [3]), due possibly to poaching, climatic factors, or stochastic fluctuations in generally stable populations.*" The vague "*due possibly to poaching"* offers little substantive reassurance the legal vs illicit market dynamics are fully understood, controllable, sustainable and the poaching threat is likely to evaporate, not escalate.

The legal trade in vicuña wool has reportedly led to "*stakeholder dominance*," with Italian and Argentinean traders controlling the market (National Geographic 2015a). This means that benefits to the dominant traders are much greater than those enjoyed by local people of the Andean communities who source and supply the raw product – thereby, the 'rural communities' that are supposed to be the ones benefitting from the 'sustainable utilisation' of vicuña are in reality becoming increasingly marginalised.

Inevitably, 'sustainable utilisation' becomes dominated by larger commercial interests and industrial scale operators (also reference crocodile 'sustainable utilisation' example given at paragraph 3.1 – "*Sustainable Utilisation*"). There does not seem to be any pre-existing levers by which the market dynamics can be altered to reduce the inevitability of "*stakeholder dominance*" emerging, just the expectation that trade can be unbounded to keep all those that profit in the game.

Ultimately, this exaggerated commercialisation of 'sustainable utilisation' means that potentially communities will "*lose motivation and the abilities to conserve and manage the vicuna,"* making illicit activity and rising poaching rates more likely (whilst dominant stakeholders seek to maintain profits in parallel).

4.2 Wildlife Trafficking and Enforcement

Rooting out wildlife poachers and traffickers is possible, but punishing their crimes has had limited success. In 2014, law firm DLA Piper investigated legislation, prosecution and penalties facing the illegal wildlife trade in 11 countries (South Africa not included) and found an overall "*host of weaknesses*":

> "*The only consistent theme in the country reports is that significant work needs to be done in every country in order to effectively tackle the illegal wildlife trade*"

All countries should formally adopt and implement a National Integrated Strategy to Combat Wildlife Trafficking (2014):

1. *Strengthen enforcement;*
2. *Reduce demand for illegally traded wildlife; and*
3. *Build international cooperation, commitment, and public-private partnerships*

The emphasis of this strategy is globally co-ordinated demand reduction and raising public awareness.

A unilateral pursuit of legal wildlife trade mechanisms as some kind of panacea regardless of risks is not part of the strategy – with specific refence to "*illegal elephant ivory and rhino horn trade"* highlighted within the USA's strategy proposals.

For example, in South Africa, enforcement needs to be strengthened to deter known rhino poaching activity within South Africa, focused upon the porous Mozambique frontier:

- Close off South Africa's domestic rhino horn trade – it feeds illicit activity (reference paragraph 11.3.1 – "*Domestic Rhino Horn Trade*");
- Implement legislation to enable prosecutors to charge alleged poachers with the primary act (rather than poachers that are caught being typically prosecuted using offences such as trespassing or illegal firearm possession) - Collins et al. (2020);

- Negotiate an extradition treaty with Mozambique – closing off the alleged poachers' potential escape from justice - Collins et al. (2020).

This appears especially poignant in the aftermath of the coronavirus pandemic, which has disrupted wildlife trafficking routes, but where criminal organisations are adapting and planning a rapid return to poaching activities:

> *"The Wildlife Justice Commission is in receipt of intelligence that known poaching organisers operating across Southern Africa are intending to take advantage of the current situation. This was highlighted during the recent 8 April 2020 full moon period in the Kruger National Park, South Africa, where the Wildlife Justice Commission received intelligence that six different poaching crews would attempt to enter the park from Mozambique to take advantage of the full moon conditions. Although South Africa's Department of Environmental Affairs has reported there has been no increase in poaching since the lockdown began, it will be crucial to monitor this situation closely across wildlife poaching hotspots"* - Wildlife Justice Commission, April 2020

Recommendations are given within Collins et al. (2020), arguing that a robust and militarised ongoing enforcement approach to conservation is essential:

> *"South African government has already introduced military style technologies in its bid to protect its iconic wildlife. This includes the introduction of Intensive Protection Zones (IPZ) within National Parks equipped. The IPZs are equipped with Tactical Operations Centres which utilise military style sensor technology linked to fast responding reaction teams which are further connected to other law enforcement agencies (DEA, Republic of South Africa 2019). This integrated agency approach is already reaping rewards for South Africa's law enforcement. On the 9 January 2019 at ORTIA Cargo terminal, several cargo companies were approached by a joint team comprising members of the Police, the Hawks, customs and excise and the Department of Environmental Affairs' Environmental Management Inspectorate (Green Scorpions). The team was supported by K9 sniffer dogs to detect illegal wildlife trade products. Following the positive reaction of one of the detector dogs to a shipment destined for Dubai, 116 kg of rhino horn pieces were discovered hidden under laminated wood (DEA, Republic of South Africa 2019). The militarisation of conservation is a much debated subject.*
>
> *Indeed, the Kruger National Park has and continues to adopt military techniques to protect its iconic species, including the rhino while the historic use of military*

techniques and weapons threaten the wildlife it is trying to conserve (Lunstrum 2015). For the Kruger, the need for militarised protecting of the rhino came hand in hand with increases in cross-border poaching. As poaching incursions from Mozambique increased so did the military style training of the Kruger's rangers. South Africa National Parks (SANParks) has introduced an additional 150 rangers inside Kruger who receive paramilitary style anti-poaching training.

These new units operate in small groups employing tactical military skills (Lunstrum 2015). Ranger teams are supported by the Environmental Crime Investigation (ECI) Unit, a dedicated paramilitary style anti-poaching organisation which is equipped for longer-term covert operations within the Kruger National Park and intelligence gathering beyond the park's borders (SANParks 2015). The Kruger National Park is of vital importance to South Africa. As well as the rich ecology, its economic importance to the country is significant (more than one million tourists visit the park each year). It continues to share a long border with Mozambique.

Recently, this border has been transformed through the development of the Great Limpopo Transfrontier Park in 2002. This has led to the removal of large stretches of the apartheid-era fence, enabling the free movement of wildlife, and the opening of the Giriyondo Border Post which has enabled the cross-border movement of tourists (Lunstrum 2013). However, alongside these undoubted benefits, the South African/Mozambique border is also the centre of the growth of rhino poaching. The increase in cross border poaching activity sees rhinos killed in South Africa, the majority in the Kruger National Park by Mozambican poachers.

Horns are then taken back across the border where poaching syndicates are increasingly using Mozambican ports to ship rhino horn to the lucrative Asia market (Lunstrum 2015). Poachers that are caught are typically prosecuted using offences such as trespassing or illegal firearm possession. Additionally, many arrested poachers evade the justice system by making bail and then fleeing to neighbouring countries such as to Mozambique (Lunstrum 2014). With no extradition treaty in place between South Africa and Mozambique, these individuals never face trial. Since judicial rulings create new systems of rights and privileges, the arguments presented herein suggest that such decisions need to be informed by a more transdisciplinary process to minimise the dangers of creating perverse incentives. The legalization of rhino horn trade in the 'domestic' market of South Africa serves to set in motion consequential

market forces that can escalate the poaching crisis in ways that spell doom to rhino species.

It is therefore important to re-institute the trade moratorium in South Africa while effectively implementing the assortment of administrative and regulatory measures that the South African Minister for Environmental Affairs has outlined for effective governance of rhinoceros horn. In addition, to enable prosecutors to charge alleged poachers with the primary act, a change in legislation is imperative. Additionally, the "escape route" to Mozambique needs to be tackled and this requires an extradition treaty to be put in place.

Finally, there remains the question of whether the militarisation of conservation within South Africa and the Kruger National Park in particular is a false dawn. The Kruger lies in an area that has witnessed terrible historic conflict. Following the end of the Mozambican war in 1994, powerful military grade weapons have been left behind. Despite the efforts of international NGOs to collect and destroy them, many remain and have fallen into the hands of the poaching gangs. The wartime AK-47s are not used to kill rhino, hunting rifles are more than adequate for that, but to use against rangers protecting the wildlife. Meanwhile, since the 1980s the militarisation of rangers has continued. What began with arming rangers against the weapons of elephant poaching gangs has led to poachers in turn becoming increasingly heavily armed themselves. As this arms race has continued, concern amongst commentators has grown (Annecke and Masubelele 2016)"

5 Traditional Medicine

Traditional Medicine (TM) encompasses wildlife derivatives sourced from leopard, lion, rhino, tiger, pangolin, donkey……. not to mention bear bile 'farmed' in Asia (recently touted as an ingredient within a TM 'remedy' to COVID-19).

An estimated 7,000 - 8,000 tigers are held captive across swathes of Asia – China, Vietnam, Laos and Thailand to supply ingredients for Tiger Bone Wine, Tiger "*Glue*," "*Cake*," TM 'potions' of no proven efficacy, but tigers are still illicitly bred across Asia and South Africa (reference paragraph 9.3.2 – "*Lion Bone Trade Conservation Claims*") in defiance of CITES 2007 "*ban*" (decision 14.69) to curtail any commercial tiger farming:

> "*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*"

Meanwhile, wild tiger populations (with perhaps less than 4,000 left in the wild) face growing threats across Asia, from poaching and habitat loss.

Do any activities in support of TM protect "*rural livelihoods,*" or just favour pure profiteering regardless of human health risks and further endanger wild species?

A recent open letter ("*Open Letter to the World Health Organisation (WHO)*," 7 April 2020) signed by some 241 groups called not only for the permanent closing of "*wet markets*" [live wildlife market element], but also the withdrawal of the WHO's "*definition and endorsement of Traditional Medicine [TM]*" encompassing wild and captive bred wildlife. The WHO gave endorsement to TM potions (despite an overwhelming lack of efficacy for many) in 2018 ("*Increased Threat to Wildlife from Traditional Chinese Medicine*," IWB, 3 October 2018).

In China, academics recognise that a ban on wildlife consumption is not enough to protect public health from wildlife-associated diseases. They called on the government to support transitioning the wildlife farming industry away from the production of Traditional Medicine ("*Wildlife consumption ban is insufficient*," Wang et al., Science, Vol 367, Issue 6485, 27 March 2020).

> "*The balance with nature is a key point [of TCM], and the use of [endangered] animals is against nature…….*This is not as much a Chinese medicine practitioner issue, it is more the industry, the people who make money," Dr Lixing Lao, president of the

Virginia University of Integrative Medicine - "*'This makes Chinese medicine look bad': TCM supporters condemn illegal wildlife trade*," The Guardian, 26 May 2020

Recent, relevant legislative action in China can be summarised as follows:

April 2020 – A document published by the National Forestry and Grasslands Administration (NFGA) "*gives some indication as to the approaches in implementing the February Decisions – and makes for disheartening reading for those in China and elsewhere who hope to see an end to the exploitation of wild animals for traditional Chinese medicine*" - EIA 2020d

April 2020 – The Chinese Ministry consulted on which species can be classed as livestock, exempting them from bans (EIA 2020d). There was a significant response from wildlife NGOs including IWB in a joint submission.

April 2020 – Another Chinese department, the National Intellectual Property Administration – touched on wildlife trade policy:

> *"The draft document provides guidance for consideration of patent applications relating to traditional Chinese medicine products and was published alongside a call for public comment. We were pleased to note that the guidance specifically states* ***patents should not be issued for products containing tiger bone and rhino horn****. We were, however, disappointed by guidance suggesting patents which use "rare medicinal ingredients" which aren't prohibited by the law may be granted, using the example of a formulation that uses musk"* - (EIA 2020d)

April 2020 - Consultation on state medical insurance – draft suggests medicines containing rare wildlife won't be covered. The draft regulation "*Interim Measures for the Administration of Medicine under Basic Medical Insurance*," was published by the National Healthcare Security Administration on 28 April:

> *"The document, which details regulations relating to China's national basic medical insurance, specifies that medicines containing "nationally rare or endangered wild animal or plant ingredients" will not be covered under the basic insurance. While only a draft at present, this provision is good news and indicates that support for use of threatened wildlife in traditional medicine is not consistent across all levels of Government"* - (EIA 2020d)

June 2020 – "China raises protection for pangolins by removing scales from medicine list," The Guardian, 9 June 2020

However, there is a potential clamp-down coming on dissention with regard to TCM being reported as emanating from authorities in Beijing – "*drafting legislation to outlaw criticism of traditional medicine in the Chinese capital… It would potentially lead to the criminal prosecution of people who criticise traditional Chinese medicine (TCM) or "cause trouble or disturb public order" by breaching the law*."

Looking at the relevant Article 36, "*Regulations on Chinese Medicine in Beijing*" (29 May 2020) proposals for consultation, this roughly translates as "***No organization or individual may make false or exaggerated propaganda about Chinese medicine…***" This makes the exaggerated 'health' claims for rhino horn, tiger, lions, pangolin etc. based TM potions of no proven efficacy subject to potential penalty:

> "*Anyone who, in violation of the provisions of Article 36, paragraph 2, of these Regulations, denigrates or denigrates Chinese medicine, provokes trouble and disturbs public order, constitutes a violation of public security administration, shall be given a punishment for public security administration by the public security organ in accordance with the law; if the act constitutes a crime, criminal responsibility shall be investigated in accordance with the law*" - Article 54

Members (three Chinese NGOs and two global organisations) of the International Union for the Conservation of Nature (IUCN) have supported a call (IUCN World Conservation Congress 2020 in Marseille to 7-15 January 2021) to end the use of threatened species in traditional medicine:

> "*CALLS ON Members to support the prevention of the use in TM of threatened species of wildlife assessed in categories Endangered or higher, or which are considered data deficient in the IUCN Red List*" – Motion 108 – *"Adapting traditional medicine to achieve social and environmental sustainability"* co-sponsored by:

- Beijing Xicheng District Evergreen Center For Sustainable Development [China]
- China Biodiversity Conservation and Green Development Foundation [China]
- Friends of Nature [China]
- The Jane Goodall Institute China [China]
- Wildlands Conservation Trust [South Africa]

However, the exact wording of Motion 108 needs to ensure that the exclusions include captive bred specimens of all wildlife species, because sustaining demand from captive bred sources perpetuates the risk of poaching/pseudo hunting of wild specimens:

> *"There is a risk that advocates for captive breeding of tigers [for example] will use this language to argue that the 'harvest' of tigers bred in captivity is sustainable, without taking into account that the trade in captive-bred specimens sustains demand for wild specimens, particularly given consumer preference for wild"* - Debbie Banks, tigers and wildlife crime campaign leader at the UK-based Environmental Investigation Agency

Of course, some wildlife species have theoretically been excluded for decades from the Chinese Pharmacopoeia (TM listing) – for example, rhino horn and tiger bone were removed from this official listing in the 1980s, but lax enforcement has allowed demand to flourish regardless (and wildlife exploitation and speculative captive wildlife breeding to develop in parallel). In 2018, China announced the reintroduction of 'legal' trade in rhino and tiger products, but quickly rolled back on this announcement, but has unofficially allowed such trade to manifest – the time and global sentiment dictate that "*prevention of the use in TM of threatened species of wildlife*" is transparently enacted and enforced.

5.1 World Health Organisation Endorsement of Traditional Medicine

In 2018, the World Health Organization (WHO) endorsed Traditional Medicine (TM) as part of the WHO's strategy (2014-2023) as an "*integral part of global health care*":

> "*In response to queries by Nature, the WHO said that its Traditional Medicine Strategy "provides guidance to Member States and other stakeholders for regulation and integration, of safe and quality assured traditional and complementary medicine products, practices, and practitioners*"" - ("*Why Chinese medicine is heading for clinics around the world*," Nature, 26 September 2018

It should be borne in mind, that many such TM 'remedies' lack any, independent science that prove its efficacy as a 'remedy' (and can be quite the opposite):

> "*Critics view TCM practices as unscientific, unsupported by clinical trials, and sometimes dangerous: China's drug regulator gets more than 230,000 reports of adverse effects from TCM each year*" - "*Why Chinese medicine is heading for clinics around the world*," Nature, 26 September 2018

> *"The risk of human health and safety posed by zoonosis (an infection or disease that is transmissible from animals to humans under natural conditions) including tuberculosis, parasite transmission and possible exposure to lethal immobilising compounds (if the animal is humanely immobilised before being shot) that may have deposited in the [lion] bones*" - EMS Foundation quoting from "*Dying for a Myth*," Linda Park, Voice4Lions, updated 2018

> *"Here's what TCM really looks like: the horrific slaughter of the last remaining rhinoceroses in Africa in order to hack off their [horns], which are sold to become part of elixirs that some people mistakenly think confer strength or virility*" - "*WHO Endorses Traditional Chinese Medicine. Expect Deaths To Rise*," Forbes, 1 October 2018

5.2 Traditional Medicine – Lion Bone Trade Experience

If we look at the plight of the African lion, what is CITES' current 'thinking' on the use of lion skeletons, with the bones used in TCM products such as 'Tiger Bone Wine' and 'Cakes'?

CITES Standing Committee documents are limited for the 71st (16 August 2019) and 72nd (28 August 2019), but the Working Group on the African Lion (*Panthera leo*) reported to CITES 70th Standing Committee (Seventieth meeting of the Standing Committee Rosa Khutor, Sochi (Russian Federation), 1-5 October 2018) provides a clear insight:

> "*Given concerns relating to the recent and ongoing decline in lion populations across much of Africa, and* ***the recognition that trade in lion bones and body parts is a major threat****, a dedicated Resolution on African lions would be helpful, in order to provide Parties with more specific guidance on the control of trade and the implementation of the provisions of the Convention in respect of the species*" - SC70, Doc 54.2, page 9 "*Conclusion*"

How exactly does the WHO's endorsement legitimising, for example 'Tiger Bone Wine' that is known to encompass lion bones counter the "*recognition that trade in lion bones and body parts is a major threat"* to the species (*Panthera leo*) in the wild?

In the Report of the Secretariat and the Animal Committee (SC70, Doc. 54.1) to the same CITES Standing Committee, the TRAFFIC study (dated 2 August 2018) is given at the Annex of the report.

It paints a damming indictment of how poorly the on-going 'trade' is understood (by CITES, South Africa's Department of Environmental Affairs etc.) and the clear risks this lack of understanding represents for negative and illicit activity (as highlighted in "*The Extinction Business*," July 2018) to flourish that will further imperil *Panthera leo:*

1. The trade reporting to CITES lacks any credibility:

"*The role that Lao PDR plays is unclear. According to South African export data, Lao PDR has been one of the major legal importers of lion bones, and it has been suggested that Lao-based companies have been issued import/export quotas for importing lion and tiger products although this could not be verified. However, Lao PDR itself has not reported the import/export of any lion products to CITES and the Lao PDR Scientific Authority stated there have not been any imports/exports of lions and that no lion farming takes place. It is important that clarity is provided by the Lao PDR and South African Governments regarding the true nature of trade between the two countries*" - SC70, Doc. 54.1, page 10

"*Our research has found little evidence for consumption within the country, but instead Lao PDR appears to be acting mainly as a transit location for lion bone products destined for Viet Nam or China*" - SC70, Doc. 54.1, page 10

"*There are also indications that Chinese nationals are travelling to neighbouring countries and purchasing lion products and taking them back to China. This cross-border trade does not appear in the CITES Trade Database, if trade is occurring then it is important to clarify why it is not included in each of the countries' annual report*" - SC70, Doc. 54.1, page 11

"*...there are concerns that tiger bones from South Africa are being laundered as lion bones*" - SC70, Doc. 54.1, page 12, para 1

2. There is the prospect of China expanding its own commercial lion breeding facilities to meet stimulated/increased demand from the lion bone trade:

"*Captive lions are present in China, including at facilities holding other species such as tigers* [in contravention of CITES]*, which could be the source of the lion skeletons used in the wine*" - SC70, Doc. 54.1, page 11, para 3

"*There are concerns relating to the role of organised criminal networks operating between African range States and South-East Asia, and their possible involvement in the trafficking of lion specimens and specimens of other CITES-listed species*" - SC70, Doc 54.2, page 9, para. 3

"*Lion farming may increase in consumer countries, and some South African farmers appear willing to export live lions to these countries which would help establish/increase farming. As live lions are not explicitly detailed in the CITES listing-annotation it is not clear how this will be addressed, although the South African CITES Scientific Authority is treating permit applications for live lions with caution in case they are acting as a proxy for skeleton exports*" - SC70, Doc. 54.1, page 12, para 4

Note: There is no quota on the live export of lions from South Africa, so the South African Scientific Authority's reported "*caution*" could evaporate if commercial incentives take priority. Between 2016 – 2019 South Africa exported at least 187 lions to China (EMS Foundation and BAT 2020 p. 37 - 38), which begs the question where is the "*caution*" threshold being set, where such live exports are clearly helping to increase lion farming exploitation in China and acting as a potential supplementary addition to any lion bone tared quota supposedly set against 'science' in South Africa (ie. the live lion exports specimens are slaughtered upon arrival in China for lion bones)?

5.3 Traditional Medicine Conclusions

How does any of the documented negative resulting impacts from the lion bone trade (reference Paragraph 5 - "*Traditional Medicine*") sound like demand reduction is being prioritised by the WHO and CITES in the name of wild species' conservation, when both bodies seemingly endorse chaotic 'legal' trade (stimulating illicit trade) in wildlife products for unproven TM purposes?

"*It seems that there may be an element of opportunistic poaching by hunters who have heard that lions are now valuable so will take one where possible— the apparent ease of poisoning lions makes it a relatively low risk activity as there are no gunshots fired to alert rangers*" SC70, Doc. 54.1, page 11, para 5

"*By endorsing TCM, the WHO is taking a big step backwards. Let's hope that the current leaders of the WHO will realize that this step undermines their core mission. The WHO should not advocate treatments that not only have no evidence to support them and that can cause real harm to patients, but also are the primary reason that humans are hunting rhinoceroses, tigers, pangolins, and other animals to extinction*" - "*WHO Endorses Traditional Chinese Medicine. Expect Deaths To Rise*," Forbes, 1 October 2018

How can any campaign to lift CITES 1977 ban on international trade in rhinoceros horn ignore the failure to protect the wild species evidenced by the CITES endorsed lion bone trade, or indeed expect a leopard bone trade to somehow help that species' conservation?

6 Trophy Hunting

In 2019, the International Union for Conservation of Nature (IUCN) funded a report – "*Africa is changing: Should its protected areas evolve? Reconfiguring the protected areas of Africa*" and its content is explored further in the following sections.

However, in summary, this report indicated a rapid decline in big game hunting in Africa over several years (Pinnock 2019b):

> Trophy hunting "*does not protect the natural habitat from agropastoral encroachment. It can only finance a small percentage of the sum required for its conservation and its socio-economic benefits are too low*."
>
> "*Hunting used to be a conservation tool, but in the great majority of cases it no longer plays this role and will not do so in the future either*."
>
> "*consumptive use of wildlife is far less promising than we thought and that should be taken into account in the role we assign to protected areas. This leads us directly to reviewing the choice of wildlife management categories*."

In 2018, the WWF's "*Living Planet Report*" warned that animal populations had declined by 60% since 1970:

> "*By killing breeding-aged animals and disrupting their social structures," the report said, "trophy hunting is 'super-additive' because it causes wildlife populations to decrease at a faster rate than would naturally occur*."

What makes trophy hunting so poor at returning upon its claimed conservation benefits……?

Lest we forget, trophy hunting in terms of CITES regulation is supposedly a 'non-commercial' activity, but in reality, it is a multi-million-dollar industry where wildlife commodities can be obtained under the deceit of the veil of trophy hunting as 'sport'/'leisure' (sic).

6.1 Poorly Regulated Trophy Hunting

The aim in this section is to just highlight some of the bad, poorly regulated trophy hunting practices that have been allowed to persist.

> "*Trophy hunting is defended with vehemence despite its proponents recognising unequivocally that its failure to deliver conservation benefits are repeatedly undermined by poor governance. It seems that, in their view, governance can simply be reformed but offer no analysis of why the governance of trophy hunting tends to be as weak as it is or exactly how it could be reformed in light of the vested interests already deeply entrenched……. Governance reforms, even if successful, are not likely to change the nature of trophy hunting, which is incentive-incompatible with ecological sustainability"* - (Harvey 2019 – EMS Foundation)

6.1.1 Pseudo Hunting

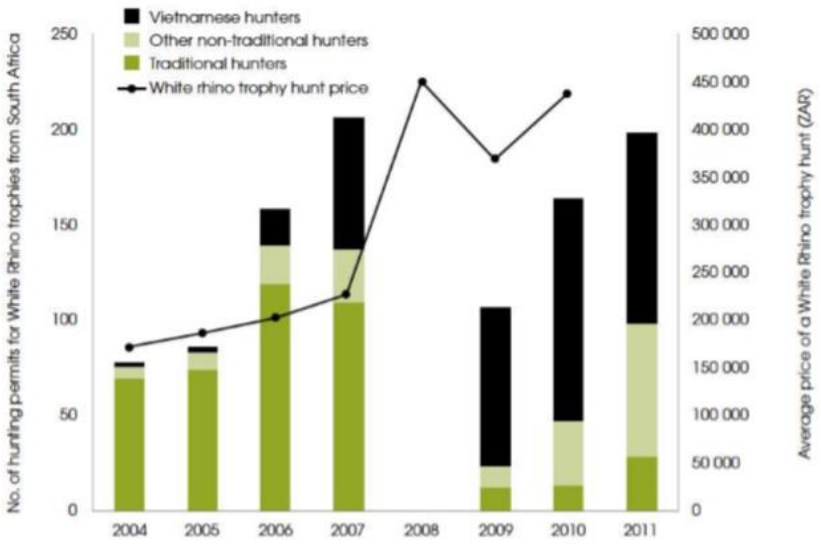
'Pseudo hunting' is used under the guise of trophy hunting to obtain wildlife commodities (such as rhino horn, but extends to ivory from elephants, hippopotamus (ivory) and other species, such as lions for their skeletons to supply the lion bone trade etc.) by deception, by exploiting the leeway given to 'legal' trophy hunting.

> "'*Pseudo-hunting' is the practice whereby supposed trophy hunters either need to be told how to shoot or leave the actual shooting to an accompanying Professional Hunter or land owner, a practice that is illegal in South Africa*" – Endangered Wildlife Trust

It should be borne in mind that anyone can declare themselves a trophy hunter and 'legally' seek to kill a target animal with the intention of obtaining certain body parts for commercial gain (by illegally selling on the commodities obtained once the trophy has been successfully imported in to say Vietnam).

The past trophy hunting of rhinoceros has not always been above ethical reproach, because it has been used as a mask to obtain rhino horn by deception, via pseudo-hunting:

> For example (Harvey 2018) - "*A Vietnamese businessman who has 'used CITES trophy hunting permit loopholes to export rhino horn for trade. He was arrested in Limpopo in 2011 and found guilty…..*" - EMS Foundation & Ban Animal Trading, 2018, page 70



Source: Graph extracted from Milliken and Shaw (Milliken/Shaw 2012: 53); data compiled by Michael Knight (No hunting permit data was available for 2008)

Figure 2 - *Nationality of hunters applying for white rhino hunts juxtaposed against average price of hunting trophy between 2004 and 2011 (Hübschle 2017)* - Data source: Milliken and Shaw 2012

In 2006, the number of trophy hunted rhino in South Africa was 58 trophies and in 2005, 73 were exported. A total of 268 rhino horns were exported between 2006 and 2009. These figures are however suspect because between 2005 and 2007 Vietnamese 'trophy hunters' participated in 203 white rhino hunts, and this would have yielded at least 406 rhino horns (Ginkel 2016). As the Vietnamese started to dominate the white rhino (pseudo) trophy hunting market (2007 – 2011), the cost of white rhino trophy rose from 210,000ZAR (2007) approaching 450,000 ZAR by 2010. By comparison, it became increasingly cost effective to obtain rhino horn via poaching methods – thus 'legal' trophy hunting exacerbates the incentive to risk illegal poaching to obtain rhino horn.

How easy is it to determine a given trophy hunting client's motivations, and regardless does anyone in the hunting industry actually care? In 2012, Walter Slippers ('Ingogo Safaris') challenged the Department of Environment and Tourism over a decision of theirs to not issue white rhino hunting permits to five Vietnamese "*trophy hunters*" (Note: Walter Slippers has past links (Appendix 3) to Dawie Groenewald and the 'Groenewald Gang' – reference Recommendation 13.9.1 – "*Prosecutions and Justice for Wrong-doing*"). The permits were initially authorised, but when the permits application was seen by the national Department of Environmental Affairs, they decided to change their decision because of the abuse by Vietnamese citizens of the white rhino hunting permits to do "*pseudo-hunts*."

Figure 3 - *Pseudo-hunter/Rhino Poacher*

In response to the application by Walter Slippers, the Court ordered that the five Vietnamese applicants would need to attend interviews that were to be conducted by the conservation authorities of the area, this was to determine (somehow) if the Vietnamese hunters were legitimate hunters. Slippers told the court that the hunters were not yet in the country, and so could therefore not be available for interviews.

The Court eventually turned down Slippers application, and he was ordered to pay the costs. But this example highlights how hard it is to actually determine any trophy hunter's actual intentions – 'pseudo' intentions purely to obtain wildlife commodity, and/or for the pleasure of killing an animal?

In a May 2016, United Nations Office on Drugs and Crime (UNODC), "*World Wildlife Crime Report – Trafficking in protected species*" ("*Case Study: Rhino Horn*" page 70 – 71), identified that the CITES exceptions made for the live transport of rhino and trophy hunting from South Africa, has given rise to Vietnamese "*pseudo hunting*" (at around 50% of the trophy hunting market) as a 'legal' means of "*sustainable utilisation*" to meet illicit demand for rhino horn. Even with a South African Government ban of hunting permits being issued to Vietnamese nationals in 2012, the practice continued via proxy (UNODC 2016, Africa Geographic 2013, Annamiticus 2014), with Vietnamese 'employing' Czech and Thai nationals as "*pseudo hunters*" to kill in the name of "*utilisation*" on the Vietnamese traders' behalf. There have also been 'illegal' rhino hunts orchestrated in South Africa directly from the United States (UNODC 2016, Africa Geographic 2016b).

So, trophy hunting of rhino has been used to supply the "*illegal trade in rhinoceros products"* which Namibia's own submission to Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), 18th Conference of the Parties (CoP18) states *"constitute the greatest threat to this species."*

> *"A 2012 report highlighted multiple [CITES Permit] abuses related to trophy-hunted rhinos exported from South Africa to Vietnam, including allegations that corrupt professional hunters allowed individuals not named on the hunting permit to shoot rhinos or falsely obtained export permits for clients not named on the permit. Instances of this "pseudo hunting," where the horn was in fact exported with the intention of selling it commercially, were documented. On the import side, rhino horn were only declared in the event of a Customs inspection; if no inspection was conducted then the unsurrendered CITES documents were subsequently re-used until they expired. The authors calculated that 74% of South Africa's total rhino horn exports to Vietnam went undeclared at the time of importation (Milliken and Shaw 2012)"* - UNODC 2012

It takes the hunting industry (under outside pressure of course) a long time to recognise and attempt to address such poorly regulated trophy hunting abuses and deception:

> *"….. experience from rising exports of rhino horn as hunting trophies from so called "pseudo hunts" in South Africa has shown that it can take seven years (2003-2009) to recognise and address such problems*" - Mass et al. 2016

There is no reason why given the right commodity price incentives, 'legal' trophy hunting of elephants, rhino, lions, hippopotamus, tigers, bears…… etc. cannot continue to be abused to obtain wildlife commodities for commercial gain, in fact it already probably is:

> *"Tigers, leopards, lions, elephants and rhinos were among the many species of wild animals on offer by South African hunting outfitters at the first-ever Chinese hunting show in Shanghai last weekend"* - "*South Africa selling tiger and lion hunts to Chinese nouveau riche*," Louise de Waal, Conservation Action Trust, 25 June 2019

Contentiously, trophy hunting is supported as a sustainable utilisation policy by the International Union for Conservation of Nature (IUCN) – the IUCN populates the Sustainable Use and Livelihoods Specialist Group (SULi) and the IUCN advises CITES. However, 'pseudo hunting' (using 'legal' trophy hunting mechanisms as a mask to obtain wildlife commodities) demonstrates how the trophy hunting industry can undermine the United Nation's (UN's) own programmes - the UN is a donor/partner of IUCN, SULi has individual project sponsors.

There is evidence that pseudo hunting is already established as an illicit means to obtain crocodile and caiman skins – which potentially undermines the SULi's 'sustainable utilisation' crocodile trade initiative to supply the fashion industry (reference paragraph 3.1 – "*Sustainable Utilisation*"), particularly as that 'sustainable utilisation' crocodile skin market/model suffers from oversupply, with the dominant stakeholders marginalising the very 'rural communities' this trade is supposed to benefit as this 'sustainable utilisation' model's principal raison d'être:

> "*Almost as many crocodile hunting trophies have been exported from South Africa as have lion trophies. South Africa is not the only exporter of crocodile trophies. In fact, it appears that trophy hunting is being used to mask a massive global industry in crocodile and caiman skins. Labelled as 'hunting trophies' in the CITES Trade Database, they account for more than half of all the hunting trophies of captive-bred animals traded over the past decade….. The trophy hunting industry appears to be providing legal 'cover' for major international trade in crocodile and caiman skins. These are exported from Bolivia, Colombia, as well as from southern African countries such as Mozambique and South Africa. Over 50,000 skins have been traded in this way over the past decade alone"* – "*Shooting Captive Animals for Sport - South Africa, the United Kingdom & the growth of a global industry*," Campaign to Ban Trophy Hunting (CBTH), May 2020

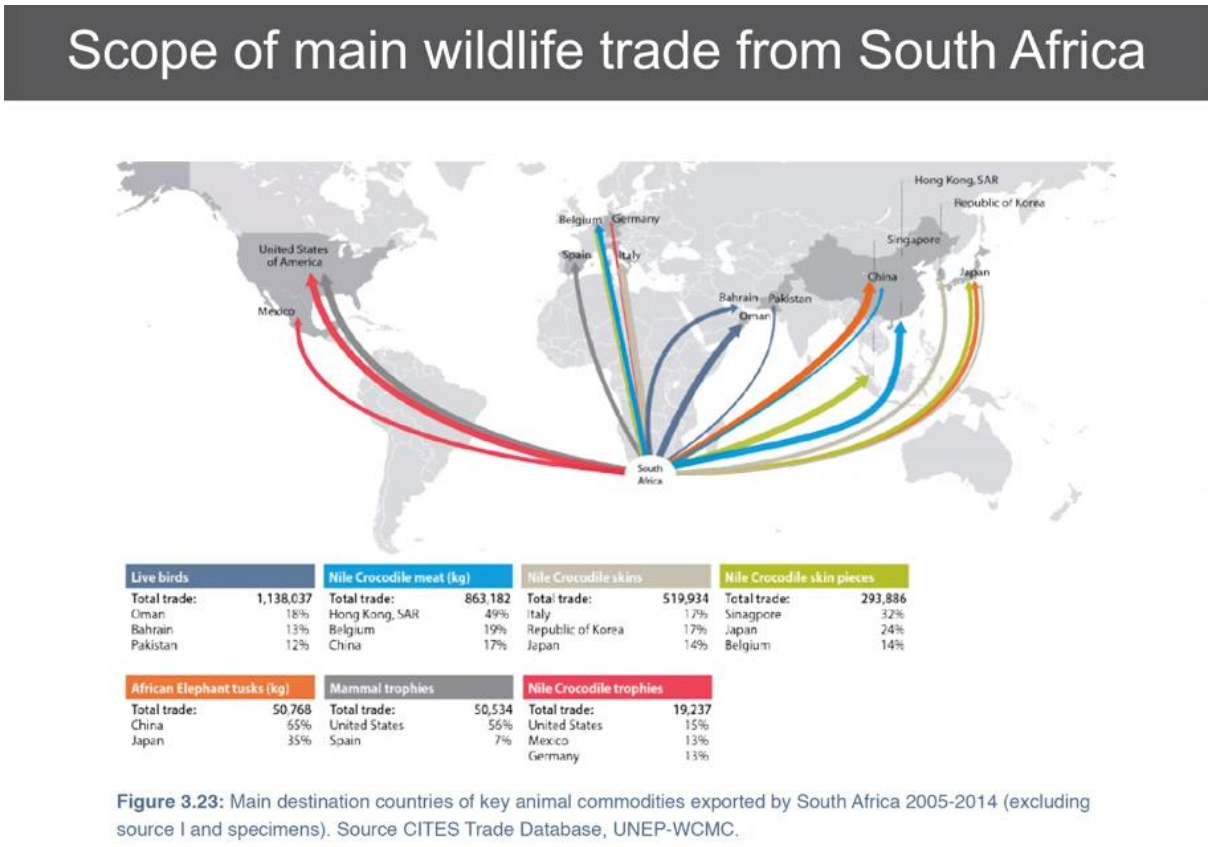


Figure 3.23: Main destination countries of key animal commodities exported by South Africa 2005-2014 (excluding source I and specimens). Source CITES Trade Database, UNEP-WCMC.

Figure 4 - *DEFF Biodiversity Sector Online Seminar on Wildlife Trade, COVID-19 and Zoonotic Diseases – 4 June 2020*

South Africa has exported in the period 2005 – 2014 some 19,237 Nile crocodile trophies, 519,934 skins and 293,886 skin pieces.

It is clear, that trophy hunting loop-holes are potentially being exploited to obtain wildlife commodities, undermining 'rural communities' that rely on 'legitimate' trade as a means of subsistence living. South Africa appears complicit as a leading proponent of such "*pseudo hunting*" loop-hole abuses.

6.1.2 Pseudo Trophies and Fraudulent Exploitation

There is little thought given to how many, or the potential for how many seemingly 'innocent' hunting trophy imports (and/or subsequent exports) opens the trophy import/export system of any country up to fraudulent exploitation and abuse to circumvent hunting trophy import restrictions beyond that country's borders; feeding illicit activity. Examples from the UK highlight these loop-hole abuses:

> "*The UK representative [Adrian Sailor, an amateur taxidermist in the West Midlands UK] of a South African safari company [Settlers Safaris] advised an undercover investigator how he could bypass a US ban on importing captive-bred lion trophies by legally importing it to the UK, before hiding the lion's skin inside that of a dead red deer and moving it on to America*" – "*Horror of lion farms exposed: Year-long investigation reveals sickening trade and ends with a dramatic rescue*," The Daily Mail, 27 April 2019
>
> "*During the search, officers noted a Western Screech Owl which had also been offered for sale. At the time the officers did not have any major concerns about that specimen, because it was not listed on [EU] Annex A and did not require an Article 10 Certificate. However, there are strict export restrictions on the species, which meant export permits were required if it was ever exported outside the EU. A few days after the search, officers noticed on Ebay that the sale of the Screech Owl had been completed and it had been exported to a man in Connecticut, USA. Despite the fact that Mr. Yafano [the vendor] was well versed in the legal requirements to export such species, there was no record him applying for an export permit. Officers contacted their colleagues in the US Fish and Wildlife Service, who visited the buyer in Connecticut. Agents from the USFWS made a significant seizure of around 150 illegally held taxidermy, including the Screech Owl*" - "*Taxidermist guilty of fraud and illegal trade in endangered species*," National Wildlife Crime Unit (NWCU), 25 September 2019

6.1.3 Poor 'Science' Influenced Pro-trophy Hunting Interests

On 30 August 2019, 'Science' magazine (the journal of the American Association for the Advancement of Science (AAAS)) published an 'Open Letter' titled "*Trophy hunting bans imperil biodiversity," (Dickman et al. 2019)* - also reference the BBC News' initial article, "*Scientists: Banning trophy hunting 'doesn't protect animals'*," 30 August 2019.

However, this 'Open Letter' has been openly criticised for being incomplete and failing to consider ethical values (plus the initial lack of the authors' declaration of the Open Letter's ties to pro-hunting funding for elements of their research – eg. "*Amy Dickman is the Director of the Ruaha Carnivore Project, which has received funding from phototourism (Asilia, Nomad) and hunting nongovernmental organizations (the Dallas Safari Club, and Safari Club International)"*.

"*Trophy hunting: Values inform policy," (Batavia et al. 2019)* makes the point that Dickman et al. contend such bans would "*imperil biodiversity.*" However, Dickman et al.'s evidence is "*selective and does not directly support the contention that [hunting trophy] import bans yield negative conservation outcomes*."

Critics of trophy hunting suggest that trophy hunting concessions (land) do not ensure that threatened or endangered animal populations will rebound from low levels (Loveridge et al. 2006), or that such hunting concessions encourage natural biodiversity – "*some rangeland managers artificially alter the ecosystem by introducing exotic species or manually reducing predators of trophy animals*" - Congressional Research Service (2019) (page 16)

Harvey (2019) states that "*The letter [Dickman et al. 2019] goes on to argue that "ending trophy hunting risks land conversion and biodiversity loss." Not ending trophy hunting carries similar risks. Shooting the elephants with the biggest tusks, for instance, means shooting the most reproductively successful animals who also play a crucial role in maintaining ecosystem functionality and herd sociology…..Shooting the lions with the biggest manes similarly undermines pride functionality. In both instances, the genetic selection effects are pronounced and problematic for biodiversity loss*."

Furthermore, Batavia et al. 2019 make clear that any pro-hunting advocates that espouse policy being "*based on science, not feelings of "repugnance""* establishes another dichotomy. Batavia et al. 2019 contend that policy *"requires both understanding the likely results of a policy (science) and evaluating whether those results are desirable (values)*" - ie. where such "*values*" must be weighed against current moral and ethical norms, not the assumption that morals and ethics are to be somehow disregarded when it comes to trophy hunting – trophy hunting's self-exemption from morals and ethics is not a given:

> *"…….if a few animals are shot because a few wealthy people can afford to shoot them, and this ensures (speculatively) that the land is not converted to agriculture or other non-wildlife uses, then it is morally acceptable to allow trophy hunting.*

> *But this backdoor appeal to consequentialism assumes that outcomes would be worse in the absence of hunting and ignores the importance of respect for individual animals (and the fact that removing the most impressive individuals has deleterious ecosystem and population-level impacts)"* - Harvey 2019

Therefore, it is important to review the available science in the round, trying to avoid the confirmatory bias (just looking for evidence to support one's own pre-judgement of an issue/argument), or be lulled into accepting published, credible science when some of the scientists in question have funding links that challenge their impartiality.

6.1.4 Hunting Quotas are Not Based on Independent Verifiable Science

Any trophy hunting activity needs to be taken in the full light of the reality of what trophy hunting actually represents on the ground.

For example, looking at the specific subject of lion trophy hunting, ("*Are lion trophy hunting quotas based on science?*" IWB, 2015), the setting of hunting quotas is clearly based upon often outdated and inaccurate data – but data that supports the continuation of hunting quotas regardless. The motivation would appear to be to maintain the income model, with actual science to support a conservation imperative somewhere in the background (if at all).

Other examples are given at paragraph 10.2 – "*Leopard Trophy Hunting and Leopard Skins*" where a leopard census based on poor science was orchestrated (by SCI) to support the (pre-meditated) theory 'there are still plenty left to kill.'

6.1.5 Genetic Effects of Trophy Hunting

Trophy hunting can also have a significant effect on the genetic makeup of a targeted population, if the population is small or if hunting is prolific and focused on individuals with specific traits (e.g. large tusks, horns or antlers):

> "*Trophy hunting of individuals in small populations could reduce the population's gene pool and increase the chance of inbreeding and breeding by less vigorous males; if too many males are removed from the population by hunting, there is less fighting to*

> *establish dominance and breeding rights among males, which can allow less vigorous males to breed. Inbreeding and a reduced gene pool can affect the population's viability and can cause extinction*" - Congressional Research Service (2019) (page 14)

If trophy hunting, for example, focuses on larger, breeding males, there would be fewer males to mate and the population could suffer from low reproductive rates (Milner et al. 2007). This is clearly evident in lion trophy hunting, where larger males with impressive manes are prized trophy hunting targets, which can also lead to population decline if too many male lions are trophy hunted, as females then have a limited pool of males to mate with and maintain reproductive rates (Whitman et al. 2004).

This opinion is also concurred by Knell et al. 2017:

> "*we asked the question of how this might change when those highest-quality males are removed by "selective harvest." It's prohibitively difficult to test these ideas with real hunted populations, so we developed a computer simulation which allowed us to examine what happens when you take these animals out of a population.*
>
> *Our results are clear - and worrying. If the environment is relatively stable, then even quite severe harvesting of high-quality males is sustainable. But if the population is already stressed by a changing environment, then removing even a small percentage of the best males can lead to extinction…..The trouble is, almost all animal populations today are facing increasing stress from changing environments.*
>
> *This goes against the conventional wisdom. Since there is usually little paternal care of offspring in these animals - and because it seems reasonable to assume that females will not have problems getting fertilised if we remove, say, 15% of the males - it is usually assumed that trophy hunting and similar selective harvests are unlikely to drive animals to extinction when only a small proportion of males are hunted. Our results suggest otherwise."*

6.1.6 Infanticide and Conflict

Trophy hunting can disrupt the social makeup of a population (or pride) if the species is social, such as African lions (Panthera leo). If a dominant male lion is killed, males in the region fight to gain control of the vacated territory, but in order to improve its reproductive success, an

incoming male might kill the offspring of the former rival male (Lindsey et al. 2006, Caro et al. 2009). Pride females need to hunt, so they have to leave their cubs unattended – this is when an incoming male can strike. But such action does not endanger the incoming male's chances of reproducing with the pride females, even if he did kill their previous cubs – the incoming male can be a "*murderer turned family man*" in lion pride dynamics (Loveridge 2018).

The fighting amongst male lions trying to take over and dominate any pride, can lead to injuries, death and disruption, with far reaching effects for lion sub-population stability. If this practice occurs frequently (due to regular trophy hunting attrition), a given lion sub-population's viability could suffer from lower growth rates and diminished reproduction. It has been estimated that the trophy hunting of one pride male can lead to up to 20 additional lion deaths as the consequence ripple out. The taking of a key female lion, the pride's hunting expeditions leader, can lead to a vacuum thus diminishing the chances of the pride successfully hunting and feeding itself.

So, the taking of 'one lion' as a hunting trophy can have wide spread, negative impacts on lion dynamics and positive species' population growth. The taking of multiple lions from a sub-population on a regular basis can be devastating – it's potentially more than 'just one lion' any given trophy hunter is removing from the species' survival.

6.1.7 Cover-ups and Denial

The hunting industry lacks transparency. When the hunting industry is questioned over its policy claims and actions in reality, there is often a lack of a credible response - denial and deflection are the industry's usual fall-back.

For example, controversial lion hunts abound, from Zimbabwe to South Africa.

In 2005, lion trophy hunting was suspended in Zimbabwe, because research made clear that past hunting quotas had been unsustainably high – with "*double, triple, or quadruple counting of lions moving through areas*" (Loveridge 2018). When trophy hunting's attrition was removed by the temporary ban, lion populations started to recover:

> "*Because male lions were now living longer, with the survival rate of males increased to more than 80 percent, there were many more males in the population. More males meant more lion coalitions divided the available space into smaller territories. In our*

> *[Wild CRU] core study site of nearly 3,000 square kilometres, we now had seven male territories, where there had once been only two….The structure of the population was staring to look much more like those seen in well-protected national parks like the Serengeti or Kruger*" – Loveridge 2018

However, when this research was presented at the 2005 Safari Club International conference in Reno, rather than welcoming the conservation success, it was roundly condemned and ultimately, undermined by the pro-hunting lobby:

> "*Well, maybe hunting does have an [negative] effect on lion populations, but we can't let the anti-hunters see any of these results*" – attributed to an SCI attendee's comments (Loveridge 2018 – Note 27 p. 268)

Due to unrelenting pressure from vested hunting interests, lion trophy hunting was reinstated in 2009 Zimbabwe National Parks, with a spokesperson for the National Parks and Wildlife Management Authority, retired Major Mbewe stating he didn't "*think the numbers are good enough to start hunting. We still have a few lions and their numbers need to grow first*" (Loveridge 2018), which only adds reaffirms that lion trophy hunting lobbies undermine, not welcome and support proven species' conservation.

On 1 July 2015, Cecil was lured (baited, so not a "*fair chase*" hunt) to his death in a bereft hunting concession from the protection of Hwange National Park, Zimbabwe by an American trophy hunting dentist, Walter Palmer and 'Professional Hunter' Theo Bronkhorst (Loveridge 2018):

- There was no lion hunting quota for the Gwaai Conservancy where Cecil was lured to be cruelly killed – by 2013 and 2014 most of the lion population hunted in the Gwaai were subadults, and as a consequence of this poor record, the area lost its lion-hunting quota for the 2015 season;

- Cecil was lured by the carcass of a trophy hunted elephant in the concession of Honest Ndlovu – Antoinette Farm;

- Palmer was hoping to submit Cecil's trophy as a bow-hunted trophy to a hunting record book – thus precluding the use of a firearm to dispatch the animal, regardless of any animal's suffering. Palmer's first arrow failed to kill Cecil outright, with Cecil left to try and move away from the hunting party and die from 'wounds' rather than the

> moral, or ethical imperative to end Cecil's suffering – perhaps nine or more hours elapsed between Palmer's first arrow and Cecil's eventual release from suffering;

Regardless of the clear lack of any legal permit for Cecil to be lured from Hwange National Park to be executed in the Gwaai concession by Bronkhorst, Palmer, Ndlovu, none of these parties has ever been formally indicted for the wrong-doing – due to the cover-up, corruption and trophy hunting's deceit (Loveridge 2018).

In 2017, another WildCRU study lion, Xanda (a pride male and son of Cecil), was targeted by trophy hunters – the lion was lured from the protection of Hwange National Park in highly controversial circumstances ("*Xanda - who is not telling the truth?*").

On the 14 August 2019, another male lion (11 years old) Seduli was lured from the protection of Hwange National Park, Zimbabwe to be executed for a hunter's trophy needs. Seduli was in a coalition with another male lion, Mopane, with both lions frequently seen by photographic safari lodges in and around Hwange National Park, Zimbabwe.

How does luring healthy male lions to their death from a photographic tourism area support the hunters' claims that their 'sport' conserves lion habitat not suitable for photographic tourism? There has been no explanation why luring a healthy male lion to be killed in an empty hunting concession can be justified by pro-hunting advocates as 'conservation.'

> "*Until the lion has its own storyteller, tales of the lion hunt will always glorify the hunter*" is often cited as a Zimbabwean proverb.

In the circumstances, perhaps this should be updated to "*Even when the lion has its own storyteller, tales of the lion hunt and corruption will always glorify and exonerate the hunters.*"

In 2018, a lion named Skye was hunted in Umbabat on the border of Kruger National Park, South Africa (Cruise 2018, Pinnock 2018b) – Skye was baited and lured to his death on 7 June 2018 from the 'protection' of the Kruger National Park:

> "*Despite limitations, the practice of trophy hunting lions seems, too often, to targets males in their reproductive prime so that the hunter can get a better trophy. This can lead to elevated infanticide and reduced reproduction by the removal of too many adult males and this sadly leads to a rapid population decline*."

To this day, there has never been any official acknowledgement of the targeted lion's identity and why a permit was issued to kill a lion protected within the Kruger:

> "*Every attempt at obtaining full and transparent disclosure from the Umbabat Reserve and from the Mpumalanga authority (the Mpumalanga Tourism and Parks Agency) that issued the hunting permit have failed. This included: requests for information on the actual hunt itself; the people involved; visual sight and identification of the lion skin to ascertain which lion was hunted; and details of the permit (including a copy thereof)*" – Skye Report, 2018

The killing of Skye, a protected 'wild' lion also brings into question the claim made of how captive bred lions act as buffer for wild lion attrition and therefore, captive bred lions have conservation value (reference paragraph 9.4 – "*The 'Buffer' Theory*")?

The conclusion is, that the hunting industry lacks transparency and when questioned, tends to close ranks and seeks to cover-up, rather than any attempt to be open and extol the self-proclaimed virtues of its motivations/actions (perhaps because the self-proclaimed virtues on killing protected wild lions remain an apparition even to those that extol such actions). The pro-trophy hunting campaign machine is untenable:

> "….*claiming that trophy hunting benefits imperilled species is significantly easier than finding evidence to substantiate it*" – House Committee on Natural Resources, 2016 – "*Missing the Mark – African trophy hunting fails to show consistent conservation benefits*

6.2 Deontology vs. Consequentialism

In moral philosophy, deontological ethics or deontology is the normative ethical theory that the morality of an action should be based on whether that action itself is right or wrong under a series of rules, rather than based on the consequences of the action.

The converse of deontology is consequentialism, where the latter is defined as the doctrine that the morality of an action is to be judged solely by its consequences.

Trophy hunting's claims are based upon consequentialism, but the benefits claimed by trophy hunting's consequentialism are often unfounded (House Committee on Natural Resources 2016), or if being generous, remain open to question. However, the (immoral) cruelty inflicted by trophy hunting is beyond dispute:

> *"The second issue is the distress and suffering caused to individual animals by hunting. Hunted animals may show measurable indications of stress (Macdonald et al. 2000), starting at first awareness of the natural (Chabot et al. 1996) or human (Jeppesen 1987) predator. At some point during a successful hunt, the hunted animal fails to cope with events, and stress becomes distress"* - (Loveridge et al. 2006)

To preserve the target animal for its future use as a trophy (ie. gracing a wall in the hunter's domain), a clean/quick head shot is avoided for fear it will leave the trophy's skull/head scarred (and show the trophy's means of execution). Therefore, the target animal is often wounded in other regions of its body, leading to a slower, more painful death (as demonstrated in July 2015, with the killing of Cecil the lion in Zimbabwe, by Walter Palmer using a bow and arrow).

Or, in some cases, self-proclaimed 'conservationists'/'hunting guides' (eg. Ivan Carter) are reportedly happy to wound precious wildlife, then leave them for hours to suffer (for thrills and kills later in the day):

> "*In one clip, the Zimbabwean-born hunter leads viewers through the savannah towards a lion his group had 'wounded several hours previously'. Over the footage, he explains: 'My first shot went right in just underneath his chin. It was enough to turn him.' The injured lion is then heard growling and, as it prepares to pounce, is shot again 'just on the cheekbone'. Mr Carter, 50, then turns to the camera and says that 'without a double gun, I would have been busy reloading as he took off and got on top of me'. In another scene, he guides a trophy hunter through an elephant kill and declares 'brilliant second shot in the earhole' as the creature collapses*" – "*'Saviour' of Africa's wildlife is revealed as cold-hearted killer: TV host Ivan Carter is caught on camera revelling in slaughter of elephants and lions*," Mail on Sunday, 31 May 2020

6.2.1 Trophy Hunting's Consequentialist Claims

Many pro-trophy hunting claims are based upon pure consequentialism, when the target animal often is executed ("*harvested*") in cruel (reference paragraph 6.2 – "*Deontology vs. Consequentialism*") and barbaric circumstances, using bows/arrows, guns/bullets.

The pro-hunting advocates also rely on trophy hunting being 'legal' within a given host nation, with the false correlation that just because something is 'legal,' then it is 'right' and beyond moral, or ethical reproach. However, this historical defence/justification has not been beyond challenge – for example the past challenges made to 'legal' apartheid, or 'legal' slavery that ended such abhorrent embarrassments to humanity.

Just because something is 'legal' does not by default make it acceptable, or right. The general public's ethics and morals are constantly evolving and within this context, trophy hunting (regardless of its 'legality') is increasingly seen as a socially unacceptable 'sport'/past-time – deontology overriding pro-trophy hunting's consequentialist claims.

In the paper, "*Trophy hunting: Role of consequentialism,"* (Chapron et al. 2019) the authors make clear that traditional pro-trophy hunting advocates try to base their arguments upon evidence-based policy-making and give no credence to any moral-based policy-making – where the hunter's objectification of the trophy target renders it an inanimate object and beyond ethical consideration:

> "*Objectification is also a mechanism of moral disengagement, a psychological process allowing people to temporarily or conditionally suspend moral norms to engage in what would otherwise be condemned as unethical behavior*" - (Batavia et al. 2018)

However, pro-trophy hunting's arguments are often hard to substantiate (House Committee on Natural Resources 2016) in the first place, or there is clearly a lack of research and study to substantiate pro-trophy hunting's claims:

> *"Rigorous impact evaluations establishing clear causal links between specific conservation practices and observed conservation outcomes, though possible, are challenging and remain relatively rare"* (Baylis et al., 2016) and "*we highlight trophy hunting as a key research focus*" (Batavia et al. 2018).

There has clearly been a shift in the public's perception (plenty of negative press), rejecting the acceptability of trophy hunting with today's raised awareness of nature and the negative impacts it faces – be that climate change, habitat loss etc.

Increasingly, trophy hunting is being viewed as a repugnant 'sport' from a bygone era whose attrition is morally unacceptable:

> "*Society is rapidly evolving towards adopting an equal relationship with the environment where humans and natural systems, including animals, are viewed as an*

> *inseparable entity and where exploitive and selfish behaviours that put fellow humans and animals at a disadvantage are shunned*" – The Southern Africa Tourism Services Association (SATSA), 2019 - "*Evaluating Captive Wildlife Attractions & Activities*"

In the 2016 report, "*Report on Lion Conservation with Particular Respect to the Issue of Trophy Hunting,"* (Wildlife Conservation Research Unit (WildCRU), Macdonald, Professor David et al.) the conclusion was drawn that despite any consequentialism arguments given in support of lion trophy hunting, the report speculates (at Paragraph 5.1) that even if lion hunting is considered the 'best bad option' for habitat security for example, public opinion (based upon a notion of 'emotionally driven ethics' or otherwise) is increasingly averse to the on-going social acceptability of lion/wildlife trophy hunting, regardless of any faith in its potential adherence to regulatory mandates etc.

In conclusion, trophy hunting's past reliance on consequentialist claims appears unsustainable.

6.3 Ethical/Moral Leadership

Why is ethical/moral leadership important and how does that get distorted when it comes to trophy hunting and the application of different standards (*speciesism*) when it comes to sentient wildlife?

The compatibility of the International Union for Conservation of Nature's (IUCN's) membership with ethical/moral leadership and therefore the IUCN's impartiality when preparing trophy hunting guidance has been called into question by a 2017 legal conclusion (only made public in 2019) by the World Commission on Environmental Law (WCEL), Ethics Specialist Group (ESG).

The ESG's legal analysis ("*Compatibility of Trophy Hunting as a Form of Sustainable Use with IUCN's Objectives*") concluded that:

> *"Trophy hunting is not consistent with "sustainable use". And even if it were, "sustainable use" is not the sole criterion for the decision on eligibility of organizations seeking IUCN membership. The critical question is whether trophy hunting as it is practiced by individuals and promoted by certain hunting organizations may be consistent with IUCN's general objectives as expressed in Articles 2 and 7. This is clearly*

> *not the case. Any other view would threaten IUCN's credibility for providing moral and ethical leadership in conservation policies. It would certainly undermine the many efforts of IUCN members to promote a just and sustainable world."*

In the "*Sustainable use and trophy hunting: differences and IUCN positions*" 2017 paper developed to inform the IUCN Council on the subject, the ESG's legal opinion is expanded upon, but the basis of the ESG's position is also countered by clashing perspectives on trophy hunting's ethical acceptability and trophy hunting's claimed contribution to conservation (where individual animal suffering is deemed to be irrelevant for the 'greater good' for example). However, the IUCN's core mission to 'conserve the integrity and diversity of nature' is undisputed, but the machinations of acceptable means by which to achieve that mission clearly are disputed.

Regardless of any nuanced debate of "*value pluralism*" or "*moral pluralism*" impinging on setting ethical boundaries for the delivery of the IUCN's mission and/or the IUCN's membership, there clearly has to be limits.

One of the IUCN's members is Conservation Force Incorporated (in USA - "*a Louisiana-based charity that advocates trophy hunting as a conservation tool*") - an IUCN member and an observer member at CITES. Conservation Force Inc. recently signed/contributed to the *'Open Letter (Dickman et al.)*' in 'Science.' It should be noted that Conservation Force Inc., was founded by John J Jackson III, former Safari Club International (SCI) CEO. Shane Mahoney is a Conservation Force director, a member of the SULi's Steering Committee and a former member of the International Council for Game and Wildlife Conservation (CIC) and the Dallas Safari Club.

It seems unlikely Mahoney and those of similar backgrounds would remain open-minded to any evidenced based challenges to their long-held doctrine of trophy hunting consequentialism. The question is, can Conservation Force Inc. (CEO John John Jackson III – nb. Jackson is not a big cat biologist, or in possession of any other relevant 'wildlife expert' scientific qualifications) and its membership be seen as a credible, impartial members of a world body (previously renowned for its impartiality) such as IUCN (Jackson sits on the lion specialist group committee) when Conservation Force Inc.'s impartiality is openly questioned in the public media:

> "……..*critics have described it [Conservation Force Inc.] as a "an around-the-clock international communication headquarters and advocacy 'war room'" for the pro-hunting lobby that has repeatedly blocked attempts to protect species including lions*

and giraffes - "Anti-hunting groups seek to oust big-game hunters from global conservation body," The Telegraph, 3 October 2019

Of course, countering this there are also questions raised of whether organisations such as the Born Free Foundation (BFF) status as an IUCN member can be similarly challenged (SSC SULi Response, Stuart) on the grounds that the BFF's 'views' and 'track record' might also be considered by some as inconsistent with IUCN's mission and ethical standing.

However, it is not always transparent when Conservation Force Inc., similar IUCN members and consultants influence IUCN publications such as Challender et al. 2016 [updated 2019], or IUCN's pro-trophy hunting guidance to CITES on issues such as the 2019 proposal to 'uplist' giraffe to Appendix II protection, a move strongly opposed by pro-trophy hunting advocates, with clear links to IUCN expert group for giraffes and okapis, bringing into question the impartiality of IUCN's species guidance. IUCN's 2019 guidance to CITES on giraffe concluded:

> "*it is not clear that regulation of trade is necessary a) to avoid the species becoming eligible for inclusion in Appendix I in the near future or b) to ensure that the harvest of specimens from the wild is not reducing the wild population to a level at which its survival might be threatened by continued harvesting or other influences*"

The IUCN guidance was subsequently not accepted at the 2019, CITES Conference of the Parties (CoP18); Proposal 5 was accepted at Committee, 22 August 2019, up-listing "*Giraffa camelopardalis [Giraffe] to Appendix II of the Convention*," thus enhancing (in theory) the species' protection from the threats of both legal and illegal offtake for meat, trophy hunting, or for parts and products (Note: November 2019, South Africa, Eswatini, Namibia, Zimbabwe, Botswana, Tanzania, DRC and Zambia filed "*Reservations with reference to the amendments to Appendices I and II of the Convention and related communications*" to self-exempt themselves from the up-listing of the giraffe to Appendix II).

Hence, there is reason to question the underlying credibility of the IUCN's membership and therefore, its output and policies, particularly when there is legal, ESG opinion clarifying the incompatibility of IUCN's stated policies on trophy hunting and IUCN's credibility for moral and ethical leadership in conservation policies - trophy hunting clearly encompasses a plethora of activities "*motivated purely by pleasure, with little regard for social or environmental concerns*" which "*might*" (sic) "*be considered unethical*" - 't Sas-Rolfes, Cooney, 2017

> "*When our cruelty expands and mutates to the point where……..we insist on an inalienable right to stalk and slaughter intelligent, magnificent creatures like elephants*

or polar bears for the sheer, bracing thrill of it - and today's moneyed big-game hunters do just that - then we debase ourselves" – "*The Most Compassionate Conservative*," The New York Times, 27 October 2002 review of "*Dominion: The Power of Man, the Suffering of Animals, and the Call to Mercy*," Matthew Scully, 2011

6.3.1 A Case Study – Is Trophy Hunting Moral/Ethical?

The so-called "*antis*" or "*animal rightist*" that choose to speak out for the voiceless wildlife are often accused by the pro-trophy hunters of being too "*emotional*" in support of animal/wildlife welfare – this suggests the "*antis*" have a different moral/ethical perspective.

Such contradictions in the trophy hunting debate are founded in deontology doctrine versus consequentialist doctrine – the former is enshrined in establishing if the morality of an action is plainly wrong, or can be deemed acceptable under certain pre-conditions. The latter is enshrined in the morality of an action judged solely by its consequences, does the end justify the means? Batavia et al. (2018) suggest that trophy hunting is morally inappropriate in today's societal norms:

> *"We highlight that trophy hunting entails a hunter paying a fee to kill an animal and claim its body or body parts as a trophy of conquest. Situating this practice in a Western cultural narrative of chauvinism, colonialism, and anthropocentrism, we argue trophy hunting is morally inappropriate.*
>
> *……nonhuman animals are not only physically, socially, and emotionally disrupted, but also debased by the act of trophy hunting. Commoditized, killed, and dismembered, these individuals are relegated to the sphere of mere things when they are turned into souvenirs, oddities, and collectibles."*

When considering the morals and ethics encompassed in trophy hunting and the industry surrounding it, how are the moral and ethical values set, are they based upon normative (modern day) expectations? How much does speciesism influence such moral and ethical values?

6.3.1.1 A Thought Experiment

What happens if trophy hunting's morals and ethics are applied in a human species scenario, rather than the attrition of wildlife in the claimed goal of supporting 'rural communities' and species' conservation? What if those moral and ethical arguments were fully explored and extended, rather than any financial and/or scientific arguments against trophy hunting in the ongoing debate?

One 2016 paper did just that with startling/disturbing results – the thought experiment explored under the title, "*This Is Speciesism*" provides the main gist of a purely 'ethical' argument against Trophy Hunting:

> "*The Trophy Hunting Debate – A Case of Ethics*," Aejaz Ahmad (Department of Political Science, University of Delhi), Economic & Political Weekly, Vol 51, Issue No 26 – 27, 26 June 2016

The paper hypothesises, for the sake of argument, a precise thought experiment based upon trophy hunting's advocates proffered consequentialism justification ('sacrificing some to save the many') if applied to a human condition:

> "*In libertarian parlance, there is no incentive, other than voluntary, for poverty eradication. The debates on poverty constitute one of the most important areas of contemporary political economy and moral philosophy. These debates have been trying to figure out whether we have any obligations towards the poor, with poverty sometimes seen as natural (Pogge 2008). Following this, why not invite rich people to kill "some poor people" for "fun" or to satisfy their "kingly passions" by paying for it just like hunting wild animals? Why not allow such killings for generating huge funds which can thereafter be used for otherwise incentive-less poverty eradication programmes? Outrageous, isn't it? How then is trophy hunting, which invokes similar kind of reasoning, ethical? Why doesn't trophy hunting evoke similar outrage? It doesn't because we have created values about animals that are one-sided or unilateral. Animals don't participate in such value creation about them. This is what speciesism is all about*.
>
> *At the locus of all criticism that is levelled at trophy hunting is the very act of killing and the manner in which it is done. The magnitude of suffering, both physical and emotional, that it causes is seldom taken into account. In the entire debate of trophy hunting that is largely about its economic benefits this element of the practice is*

> *ignored (Gunn 2001). Last but not least, such reasoning can also be challenged from the standpoint of animal rights. Trophy hunting, it is argued, takes the rights discourse about animals as hostage. It not only denies even the minutest "agency as living beings" to the animals, but also transforms their very existence into an instrument for GDP, let alone for conservation of wildlife per se.*
>
> *……From any ethical point of view, justifying animal killings for the sake of "entertainment" is untenable."*

Therefore, the conclusion from this paper is that from a moral and ethical viewpoint, trophy hunting is untenable, the consequentialist justification given by trophy hunting's advocates is based upon speciesism.

6.4 Trophy Hunting Financing Habitat and Conservation

No matter how much scientific study one reads on the subject of trophy hunting, there is always the espoused theory that "*if*" well regulated, then trophy hunting does contribute to conservation, which normally comes down to trusting that the value put on the target animal makes is valuable and makes it worth saving ("*if it pays, it stays*").

However, there is always the "*poorly-regulated*" trophy hunting highlighted within the very same papers – the lack of scientific hunting quota setting; unknown target population data, over-harvesting, biased targeting of the best examples to obtain the best trophy, targeting of too young a trophy animal etc.:

> "*This is not to say that there is not a level of illegal practice taking place, as in most industries. There are regulatory weaknesses and illegal activities taking place in some countries, sometimes very serious. These include hunting in excess of quotas, in the wrong areas, taking of non-permitted species, and for African rhinos, problems with "pseudo-hunting" and sale of hunting trophies into black markets in consumer states*" – "*Informing decisions on trophy hunting*," IUCN, 2016 [Updated 2019]
>
> "*Despite their claims, trophy hunters do not generally target problem, redundant or old and infirm animals, preferring to set their sights on animals with impressive traits – the darkest manes, the biggest tusks, the longest horns. This often results in the killing of key individuals, removing vital genetic resources and causing disruption to*

> *family groups, populations and, by extension, the wider ecosystems of which they form a part…….Far from incentivising wildlife conservation and helping local communities, trophy hunting operations generate only a tiny proportion of wildlife tourism income, with most of the fees they pay benefitting a few officials, outfitters, and professional hunting guides. Research suggest that little, if any, of the money hunters pay to make their kills ever filters down to local communities*" - "*Trophy Hunting; Busting the myths and exposing the cruelty*," Born Free Foundation, July 2019

With the underlying background that the trophy is being taken from dwindling wild species populations already facing habitat loss, climate change and many other perils, then trophy hunting can make a bad situation worse:

> "*Never was this doctrine ("If it pays it stays") more evident than in community-based conservation in Namibia. It is all about money. Financial benefits to the community were the focus. National pride, ethics, aesthetics and sound ecological practices shared a sad second place. If any place at all. Everything must have a price tag*" – "*End of the Game for Namibia*," Christiaan Bakkes, Africa Geographic, 23 March 2015

Therefore, I see no reason to accept on "*faith*" that well-regulated trophy hunting of threatened wild species exists for any altruistic conservation imperative. It seems to be mainly driven by commercial needs, subsistence welfare for local communities and a trophy hunter's self-gratification.

Even if trophy hunting income did pay the majority of that income to conservation (rather than the majority of that income going into profiteer's pockets), then it is nowhere near enough to cover the conservation costs. In the 2018 book, "*Lion Hearted*" (page 241) Andrew Loveridge explains:

> "*…..does the revenue from trophy hunting cover the costs of conservation? In Africa, on average, the annual cost of conservation (such as employment of park rangers, maintenance of infrastructure, and protection from poachers) comes in at around $500 per square kilometre (Lindsey et al. 2017). This is actually quite modest compared to what is spent on reserves in North America, where conservation expenditure sits at around $2,500 per square kilometre* [Yellowstone National Park's budget is even higher at $4,100 per square kilometre per year] *(Adams 2004). According to conservation biologist, Peter Lindsey, revenues from hunting concessions amount to around $400 per square kilometre per year (Lindsey et al. 2012). Deduct hunting concession and trophy fees, then subtract operating costs and profits, and you discover*

> *that hunting revenue does not come close to covering the actual costs of conservation.*"

Packer et al. (2013) calculated that the minimum of $2,500 per square kilometre per year should be applied to protect a lion population (at half its potential size) in an unfenced area. A Hwange National Park lion, such as Cecil, by the time he was 12 years old (as he was when killed for a hunting trophy in July 2015) occupied around 500 square kilometres, the average range of a lion in Hwange (Loveridge 2018).

Therefore, the investment made in Cecil's protection with Hwange National Park could well have exceeded $1 million a year (500 square kilometres x £2,500 per square kilometre per year x 12 years = $15m).

Chardonnet (IUCN 2019b) estimates a good hunting-zone density is two lions within 100 square kilometres. To shoot one lion sustainably would require 5,000 square kilometres and the annual upkeep of that area would be about $4-million.

In a July 2019, The Financial times ("*Trophy assets: lion prices, dead or alive*") estimated that "*any lion would have a net present value [npv] of $179,000*" [LionAid estimated for this FT article that a Serengeti lion's tourism value to Tanzania as $890,000]. The FT article goes on to say, *"that [$179,000 npv] is still more than four times higher than the price [a trophy hunter pays] for shooting a pride master"* – (with a mature male trophy hunting value given as between "*$40,000 - $59,000*" – The Financial Time, 2019). This example shows that the non-consumptive tourism value of charismatic wildlife if far higher than the trophy hunter is asked to pay to kill the same tourist attraction – from a purely asset value perspective, trophy hunting does not make sense in habitat where wildlife tourism is the main economic driver.

Hence, the execution of a lion such as Cecil for a hunting trophy for a mere $50,000 looks like a very poor return on investment, with no potential ongoing conservation benefit for any remaining Hwange lions:

> $50,000 equates to less than 20 square kilometres protected for a year at $2,500 per square kilometre per year to protect and conserve a lion (Packer et al. 2013). Even when the $15m 'protection costs' are pro-rated to multiple lions and species occupying the same protected area, $50,000 is still a poor return for a pride male lion such as Cecil.
>
> No one will pay $4-million to shoot a lion. "*This shows how hunting is powerless to fund its own conservation*" Chardonnet (IUCN 2019b). "*The hunting market, it says, simply does not have the means to pay the real price of safaris. So hunting is running down its prime resource*" – Pinnock 2019b

It should be noted that Hwange National Park's conservation budget is perhaps $276 (Loveridge 2018) per square kilometre per year – but $50,000 still only buys around 181 square kilometres protected for a year, assuming all of the trophy fee went into conservation anyway, which it did not, as Hwange National Park did not directly benefit form Cecil's execution, as Cecil was illicitly lured into a hunting concession adjoining Hwange National Park to meet his untimely fate.

The bottom line is, trophy hunting grossly undervalues wildlife, but regardless, very little of any trophy hunting fee filters down to cover the realistic costs of conserving the very wildlife that trophy hunting takes from protected areas and wildlife reserves. As demonstrated in the case of Cecil the lion above, if hunting concession truly conserved wildlife, then why the need to lure lions like Cecil from the protection of Hwange National park into an empty hunting concession to be killed? Why aren't the hunting concessions themselves teeming with wildlife for the trophy hunters to kill?

The notion of trickle- down economics to local communities (to enshrine wildlife and mitigate human wildlife conflict) is also sporadic and offers poor returns (if any) – reference paragraphs 3.5 "*Revenues from Trophy Hunting*").

6.5 Hunting Trophy Import Restrictions and Policies

There is increasing use of extraterritorial jurisdiction (which refers to a state's authority to prescribe law over persons, property, or events on foreign territory). Blattner suggests the use of extraterritorial jurisdiction will become increasingly adopted, using trophy hunting as an example to counter the laissez-faire attitude taken in many range states that succumb to economic pressures over animal welfare and species' conservation considerations - Blattner 2020 p. 135 - 152 – "*Trophy Hunting, the Race to the Bottom, and the Law of Jurisdiction*":

> "*Thanks to the development of the modern law of jurisdiction, states can choose among viable jurisdictional options to protect animals abroad. These options are especially valuable to animals—more than to any other group that benefits from extraterritorial jurisdiction—because they still live under a totalitarian regime of law. Needless to say, extraterritorial jurisdiction runs the risk of being used to oppress or discriminate others, but if properly applied and strengthened with the necessary safety valves, it can be a powerful tool to advance our ongoing struggle for interspecies justice*"

This has been evidenced in Australia, France, the Netherlands and the United Kingdom etc.

6.5.1 Australia

In March 2015, Australia banned the import and export of all lion hunting trophies, giving CITES Notification to all Parties, 19 March 2018. There have been no reported negative consequences for species' conservation.

Australia also gave notice (CITES Notification to all parties, 19 March 2018) stricter domestic trade measures for African elephants – treating all as though they are Appendix I listed without exemption, plus whales and dolphins (Cetacea) as if Appendix I listed.

6.5.2 France

In 2015, France banned the import of lion hunting trophies. There have been no reported negative consequences for species' conservation.

6.5.3 The Netherlands

In 2015, the Netherlands' Minister for Agriculture, Sharon Dijksma made a very clear statement of intent:

> *"I feel that the poaching of ivory and rhino horn and other forms of trophy hunting are crimes that threaten biodiversity and the overall health of the natural environment. We need to work together in the international context to put an end to this despicable situation."*

In 2016, the list of species banned from import into the Netherlands was expanded to 200 – to include white rhino, elephant, hippo, cheetah, polar bear and lion.

There have been no reported negative consequences for species' conservation.

6.5.4 United Kingdom

The United Kingdom is potentially going to legislate in 2020 for comprehensive restrictions on hunting trophy imports and exports, with the public consultation having closed on 25 February 2020.

6.5.5 United States of America (USA)

The USA imposed restrictions on the importation of lion hunting trophies in early 2016 under the Endangered Species Act (ESA):

> *"In response to the dramatic decline of lion populations in the wild, the U.S. Fish and Wildlife Service (Service) today announced it will list two lion subspecies under the Endangered Species Act (ESA). Panthera leo leo, located in India and western and central Africa, will be listed as endangered, and Panthera leo melanochaita, located in eastern and southern Africa, will be listed as threatened"* - USFWS 21 December 2015

'Canned' hunting is in contravention of the guiding principle for importation to the USA "*…it is also imperative that the program* ['canned' hunting] *is part of a legally recognized governance system that supports conservation." There is no evidence to substantiate any credible theory that 'canned'/captive lion breeding (South Africa) supports conservation. Hence, it has become difficult to import 'canned'/captive lion trophies into the USA.*

The USA is the largest hunting trophy importer in the world, including 'canned' lion trophies prior to 2016, hence the ban has had a significant financial impact on the South African 'canned'/captive hunting business:

> *"The majority of hunters visiting South Africa to hunt lions, nearly all of which are captive-raised, come from the U.S. According to SAPA the ban has resulted in a significant decline in the number of American hunters visiting the country"* - Born Free Foundation, March 2018 – "*Cash before conservation*"

In 2017, the USFWS announced the reinstatement (after introducing stricter African elephant hunting trophy import restrictions - CITES Notification to all parties, paragraph 2. f)*, 10 October 2014) of all elephant trophy hunting imports regardless of origin into the USA on the grounds that the department "can allow the import of a sport-hunted elephant trophy only when the killing of the trophy animal will enhance the survival of the species*" – this statement has been widely disputed and the decision countermanded and put *"on-hold"* by the President. But in 2018, the restrictions were lifted on a case-by-case basis – but a USFWS memorandum (1 March 2018) does not make clear the criteria that will be taken into consideration when granting importation permits. The USFWS guidance remains opaque.

6.5.6 China

China has brought in stricter (time limited) controls on the import of tusks obtained via trophy hunting (CITES Notification to all parties, 1 April 2016):

> *"…..import of tusks and ivory carvings of elephant (Elephantidae spp.) in the following forms will be suspended from 20 March 2016 to 31 December 2019:*

a) Pre-Convention tusks from elephant and its products;

b) Ivory carvings of African elephant obtained after the Convention entered into force; and

c) Tusks as hunting trophies obtained in Africa.

There is increasing pressure on China to revise its Wildlife Protection Law, where such recommended revisions are due to be discussed at the Standing Committee of China's National People's Congress (now due May 2020). In the post-COVID-19 pandemic, there is scope for China to reviews its role as a primary source of demand for parts and products of many wildlife species threatened by trade, including tigers, leopards, pangolins, rhinos and elephants, China's domestic policies regarding trade in these and other species are of global importance.

6.5.7 Kenya

Kenya, banned elephant hunting in 1973, with a complete ban on all hunting (without permits) from 1977 – reference paragraph 7.1 – "*Kenya*"

6.5.8 Botswana

Botswana has recently reinstated elephant trophy hunting (after a 2014 moratorium) - with the suggestion that culled elephants could be used to manufacture pet food. However, the return to elephant trophy hunting is considered a mistake by leading experts that will not help reduce human-wildlife conflict (but in fact risks increasing such conflict).

Botswana announced a return to elephant trophy hunting in 2019, with an annual quota of around 400 elephants (800 tusks) – the conservation benefits of such a move are not transparent (Harvey 2020b) as human wildlife conflict is unlikely to be mitigated, but can in fact be exacerbated by the trophy hunting of elephants (De Waal 2019, IWB 2019g, Pinnock 2019e). Therefore, Botswana's elephant trophy hunting reinstatement is a retrograde step, perhaps driven by a need to fund past subsistence income to local communities (reference paragraph 3.3 – "*Rural Communities Living with Wildlife*") and compensate for human-wildlife conflict in the absence of mitigating expenditure.

The killing of an elephant as a hunting trophy does not mean that any given community will not be subject to ongoing conflict with other elephants that encroach on the community's land and resources.

Let's look at the reasons elephants have expanded their ranges in Botswana (and increasing human wildlife conflict resulting) with Dr Mike Chase, Elephants Without Borders (EWB):

> "*i. Density dependent dispersal – search for food*,
>
> *ii. Failure of the Kavango-Zambezi TFCA. Poaching and habitat constriction in southern Angola, Zambia and along Botswana's borders have restricted elephants to remain in the safety of Botswana,*
>
> *iii. Water availability in the form of artificial water and recent flooding events in previously dry rivers have enticed elephant to move further south, and*
>
> *iv. Vet fences are effective barriers to elephant movements, but many of them have not been maintained and long stretches are broken giving elephants access to new areas.*
>
> *"In all likelihood, the reintroduction of trophy hunting will have no impact on any of these factors as they are unrelated to the ban on trophy hunting in 2014*" – Chase, M., 2018 - "*Arguments for lifting the ban are unsound*"

The funding (from whatever source) of appropriate mitigating action is the key, but the preference is for funds that are not derived from consumptive wildlife attrition.

The theory that trophy hunting can reduce human wildlife conflict is espoused in "*Landscapes of Fear*" (Cromsigt et al. 2013), whereby the theory is that having trophy hunting in a region scares elephants (or other targeted species) away from the human settlements within that hunting concession. Even if that theory holds true, then by default this 'fear' would potentially drive trophy targeted species into conflict in other areas (in search of resources such as food and water) where the targeted population feels safer, thereby perpetuating the risk of human wildlife conflict in that 'safe area' – perhaps many elephants migrated into Botswana (when it had a trophy hunting moratorium) from neighbouring KAZA countries (Kavango Transfrontier Conservation Area (KAZA), which spans Angola, Namibia, Zambia, Botswana, and Zimbabwe) for fear of being hunted or poached in their home ranges – driving the elephants back again for 'fear' of being trophy hunted in Botswana does not reduce human wildlife conflict risks in the KAZA region.

Therefore, trophy hunting is not a panacea even if the "*Landscapes of Fear*" (Cromsigt et al. 2013) holds true, unless the plan is to hunt and scare elephants wherever they may be, which

has potentially, cumulative negative impacts on elephant welfare/conservation and potentially such 'fear' exacerbates human wildlife conflict.

Elephant trophy hunting can increase human wildlife conflict, as evidence in Botswana in 2019, with unethical hunting practices clearly evident in Ngamiland where local elephants have been hunted - detrimental to elephant conservation with dominant bull elephants removed, thus opening up local herds to delinquent behaviour and a reduced gene pool. Local Ngamiland communities were not informed of the hunting, do not benefit and are against the hunting in their area, which they say is likely to increase the potential of human wildlife conflict as the local elephant herds are negatively disrupted and angered by humans hunting with guns, thus endangering the local community that have previously co-existed with the elephants:

> *"But modern research confirms what past management decisions demonstrated, there is no ecological reason to artificially reduce Botswana's elephant. The cries of habitat destruction caused by elephants are unfounded. The habitat is changing because of ungulate populations rebounding from the rinderpest epidemic at the turn of the 20th century….. It is clear Botswana does not have too many elephants and hunting will not have any impact on preventing a theoretical ecological collapse. Yet, the country continues to promote their opinions as scientific facts. If the country wishes to base their opinions on experiments from the 1960s, perhaps they should consider the ones that were successful and not the ones that failed" - – "Theoretical Ecological Collapse: Any Excuse To Kill Elephants,"* Kukura, J., 1 April 2020

Plus of course, elephants are a migratory species, so any hunting quota set in Botswana lack co-ordination with quotas set within adjacent regions – therefore the 'ownership' of migratory elephants and the scientific setting of 'sustainable' hunting quotas is highly questionable:

> *"……in an open landscape such as the Kavango Transfrontier Conservation Area (KAZA), which spans Angola, Namibia, Zambia, Botswana, and Zimbabwe (between them home to the vast majority of the world's remaining African savannah elephants), it is not clear to which range state any given elephant belongs to on any particular day. For instance, if an elephant is shot in a hunting concession in Botswana that arrived there that day from Angola, is it part of the quota of 400 licences that the government has recently reintroduced to that country?"* - Harvey 2019 – EMS Foundation

The main reason for reinstating trophy hunting in Botswana appears to be disgruntlement with the lack of income from hunting activities within some local communities (however, it must be stressed that income to local communities from trophy hunting does not equate to conservation of the target species per se):

> A ban on trophy hunting in Northern Botswana revealed negative consequences on the communal economy in areas that were previously hunting grounds. According to one study, the revenue generated by hunting expeditions represented around two-thirds of total tourism income (Mbaiwa 2015). According to Mbaiwa 2015, the ban on trophy hunting also led to halting certain community-based natural resource management (CBNRM) programs due to loss of funding for these opportunities.

Therefore, careful consideration must be given to any transition away from dependence upon trophy hunting income trickle-down to local communities and/or community programs.

The longer-term solution to elephant and human wildlife conflict, has more scope from reduction from smart land-use planning protecting elephant migratory routes, resource provision for wildlife (water/bore holes that do not directly conflict with human needs) and conservation compatible agriculture, rather than any hope trophy hunting is a stand-alone solution to all the issues raised across the entire KAZA region.

6.5.9 Columbia

In 2019, the South American nation of Colombia banned all trophy hunting within its borders:

> "*Explaining the judicial ruling which declared trophy hunting to be unlawful, magistrate Antonio Jose Lizarazo said that it was "not constitutionally allowable to kill or mistreat animals for the sole purpose of recreation. Animals are not things, they are beings with feelings*" (Phys.Org 2019)

6.6 Trophy Hunting is Running Out of Steam

According to the IUCN 2019b (Chardonnet) report, poaching, hunting and the bushmeat trade have resulted in a rapid decline in trophy animals in Africa. The depletion of trophy hunting

animals is clearly exacerbated by trophy hunting's biased attrition that defies science (reference paragraph 6.1.5 – "*Genetic Effects of Trophy Hunting*"), has led to a sharp drop in the number of hunters worldwide:

> "*In South Africa the number of foreign hunters dropped from 16,594 in 2008 to 6,539 in 2016, in other words a decrease of 60.5% in 8 years. Since there are 9,000 hunting game farms in South Africa, that total does not even represent one hunter per game farm per year. Some game farms have started to get rid of their game and return to cattle breeding*"
>
> "*The phenomenon that wildlife conservation cannot be self-financed through a consumptive activity is also confirmed by some of the best specialists in this consumptive wildlife management. Thus, in 2011, Peter Flack, currently one of the leading authors on hunting and a defender of hunting and game farms, published a study entitled, "The South African conservation success story." However, in 2018 he wrote in his blog that after a 50% decrease in the number of foreign hunters in just a few years, many game farmers were killing their wild animals and replacing them with cattle, given the poor economic situation of the game farming sector"*

Chardonnet (IUCN 2019b) examined biodiversity conservation at genetic, species and ecosystem levels across the African continent, concluding that trophy hunting has not lived up to its claims to support and pay for conservation.

Huge, formerly-hunted areas in Africa are now emptied of wildlife and are returning to pastoralism, challenging the trophy hunters' claims that their sport can protect biodiversity and prevent encroachment by farmers (Pinnock 2019b):

- Chardonnet (IUCN 2019b) found that 40% of the big game hunting zones in Zambia and 72% in Tanzania are now classified as "*depleted*" and useless to hunters, containing no game species;
- In hunting areas in Tanzania that still contain lions, despite a six-year minimum age limit, in 2015, 66.7% of the lions shot were five years old or under. There were simply no lions of the correct age (greater than 6 years old, but even this is a subjective limit left to be shot – reference paragraph 9.1.2 – "*Tanzania Shows Wild Lion Trophy Hunting is Not Conservation*")

6.7 Trophy Hunting Conclusions

> *"When defending trophy hunting in the media, hunters often claim it has conservation or job creation benefits. However, when describing the hunts in industry journals and online forums, there is rarely if any mention of this. Instead, hunters' accounts often include graphic details of the shocking injuries and suffering experienced by animals, and focus on the sheer thrill of the hunt"* - Gonçalves 2020

In reality, trophy hunting provides a very poor conservation return Chardonnet (IUCN 2019b), failing to adequately finance the conservation of its own attrition (reference paragraph 6.4 – "*Trophy Hunting Financing Habitat and Conservation*"). Unless there is a change, many targeted species will become increasingly pushed towards extinction (not only by hunting attrition, but also other major factors such as habitat loss and climate change):

> *"Wild game is the continent's version of crude oil—and it too will run out someday. Trophy hunting – the killing of big game for a set of horns or tusks, a skin, or a taxidermied body – has burgeoned into a billion-dollar, profit-driven industry, overseen in some cases by corrupt governments. Many countries in sub-Saharan Africa allow trophy hunting, with varying degrees of transparency and control, establishing yearly quotas meant to reflect the status of species and creating exclusions for highly vulnerable populations"* – National Geographic, 2017

Then there is the deontological argument, that the morality of trophy hunting is in itself unacceptable (reference paragraph 6.3 – "*Ethical/Moral Leadership*") – the lack of trophy hunting's moral/ethical acceptance in today's society is supported by public opinion (reference paragraphs 6.2.1 – "*Trophy Hunting's Consequentialist Claims*").

This is leading to many countries restricting trophy hunting imports (reference paragraph 6.5 - "*Hunting Trophy Import Restrictions and Policies*") – concluding that the majority of scientific analysis does not support trophy hunting's claims.

If future generations are going to see iconic wildlife in the wild (and not just wildlife farmed in captive, synthetic, commercial breeding facilities/zoos), there has to be a significant paradigm shift. Carrying on with 'business as usual' is not going to change anything that gives long-term hope for the survival of vulnerable wildlife species (in the wild).

7 Alternatives

7.1 Kenya

What happens to species' conservation and the natural environment if trophy hunting is removed from a given host country/range state?

The obvious example here is Kenya, where elephant hunting was made illegal in 1973, with a complete ban on all hunting (without permits) from 1977. However, illegal poaching is still a major issue.

A BBC news article (entitled "*Mara Wildlife in Serious Decline*") from 2009 states clearly "*numbers of giraffe, warthog, impala, and hartebeest fell by 50% or more between 1979 and 2002*," citing evidence from a British Journal of Zoology report (Otuoma et al. 2009). The loss of grazing animals is already having an impact on lions, cheetahs and other predators according to the researchers.

Kenya is often cited by pro-hunting advocates as an example of the decline of trophy hunted species if trophy hunting is removed from the equation. However, the Congressional Research Service, 2019 (page 28) concluded that regarding Kenya:

> "*In some cases, the banning of hunting correlates with animal population declines. For example, in Kenya, which instituted a hunting ban in 1977, almost all the common wildlife species have declined from their previous levels since the ban to 2016. Concurrently, livestock numbers, notably sheep and goats, increased by 76.3% during the same period (Ogutu et al. 2016). Kenya's population increased from 14.5 million in 1977 to 48.5 million in 2016. Based, in part, on these data, scientists note that* ***demographic pressure and livestock encroachment on wildlife rangelands appear to be the decisive factors leading to wildlife declines in Kenya*** *(Ogutu et al. 2016)*."

The scientists who conducted the report (Otuoma et al. 2009) concur, that the surge in domestic livestock has been held largely accountable for the drop in wildlife populations – the three main causes that have been cited for the drop in wildlife numbers are illegal poaching, larger numbers and ranges of domestic livestock, plus changing land use patterns on the ranches. There is no direct mention of 'trophy hunting' cited as a cause/effect for the decline in Kenya's wildlife since 1977 - the trophy hunter's 'claim' appears unsubstantiated.

In terms of poaching in Kenya, the 2005 BBC article ("*Lifeline for Kenya's 'lost' Wilderness*") the poachers shot the last of the black rhino in Sera over a decade ago. Elephant herds are now at levels of 20% compared with the 1970s. Lawlessness and armed poachers are still evident today, but heavily fortified wildlife areas are still managing to protect black rhino, lions and leopard also managing to 'survive' somehow.

So, is Kenya an example of what will happen if trophy hunting is banned within a country/range state? No, it is not. Kenya would seem to be an example of poor land management, poaching and wanton over-grazing, based on a culture where a man's wealth and social status is directly linked to owning large herds of cattle, which dominate the grazing available to the detriment of wildlife.

7.2 African Trophy Hunting Alternatives

Trophy hunting arguments are often based upon the money generated (and the assumption of trickle-down economics to local communities guaranteeing a reduction in human wildlife conflict).

However, by that rationale, the animal deaths inflicted by trophy hunters is an unnecessary by-product - only the funding generated is key to conservation by trickle-down economics to sustain "*livelihoods*" and to give wildlife "*value*:"

> "*Trophy hunting: Bans create opening for change"* (Novak et al. 2019) review of the common arguments made in favour of trophy hunting "*actually describe is how loss of funding may impart these effects [could threaten African biodiversity and livelihoods], without specifying any unique benefits of trophy hunting*."

So, if the necessary funding can be secured by other means to support "*livelihoods*" and ensure human wildlife conflict mitigation (ie. wildlife "*value*"), then the animal/wildlife killing by trophy hunters is a repugnant irrelevance, perpetuated to satisfy the trophy hunting lobbies' need to kill animals in the name of so-called "*sport:*"

> "*Trophy hunting understandably garners strong local support among those who benefit from it, but would a socially, economically, and ethically sustainable alternative that also empowers communities with higher degrees of autonomy and resilience not*

> *also receive broad support? We can only speculate, but this seems at least plausible*" - Batavia et al. 2018

Novak et al. 2019 contend that "*trophy import bans present an opportunity to rethink how we can conserve wildlife in non-extractive ways that are consistent with shifting public opinion.*"

The examples Novak et al. offer for alternatives include:

> "*..land use reforms, co-management, and greater participatory stewardship can provide a more sustainable, resilient, and equitable system. Locally adjusted and bottom-up management practices, granting communities land titles, conservation-compatible agriculture, and coexistence approaches can also benefit communities and conservation more than trophy hunting. In addition, tourism reforms could invigorate domestic tourism, minimize leakage of tourism income to foreign investors, and reduce the footprint of wildlife-viewing tourism through green development investment. Diversified nature-based tourism beyond photographing and viewing wildlife could incorporate survival skills/bushcraft training and agritourism, emphasizing local knowledge, cultural exchange, and inclusion of women. Finally, environmental investments could connect would-be micro-investors more directly to wildlife-wealthy communities. Financial strategies such as decentralized markets made possible by blockchain technology could use carbon [carbon offsetting] and biodiversity credits for conserving habitats. Sustainable enterprise development could generate direct financial benefits to local communities*."

Examples of a habitat and nature conservation initiative in Scotland (Highland Titles) offers the public the opportunity to purchase modest plots (in return for a token title, of "*Laird, Lord or Lady*"), thereby funding the nature reserves under its management.

The Carbon Habitat project, in Kulera, Malawi project seeks to protect biodiversity and support local livelihoods, "*by managing natural resources as an asset base, creating long-term sustainable alternative livelihoods, improving biodiversity and increasing food security. The Program promotes financial empowerment through supporting communities in building new sources of income through the development of non-timber forest products (NTFPs) including honey, mushrooms, and other high value crops and small livestock animals*" – calls to introduce trophy hunting were rejected in Malawi's national parks in 2018:

> *"In 2017 the Malawian government passed a law to prohibit recreational and professional hunting of protected species. Exporting trophies is also illegal, and tough new punishments have been introduced for poaching wildlife or engaging in the illegal*

> *wildlife trade. These measures have contributed greatly to Malawi's growing reputation as the 'warm heart of Africa' and the country is gaining popularity as a wildlife tourism destination"* - Born Free Foundation
>
> Hon Commodius Nyirenda, MP and Malawi Parliamentary Conservation Caucus (MPCC) Spokesperson said in 2018, "*Public opinion reflects that of the Malawi Parliamentary Conservation Caucus: that trophy hunting is not welcome in Malawi. We value our reputation as a tourism destination too highly. And – where legal hunting can be used as a cover for illegal wildlife trade and undermine community sensitisation efforts – we believe that the questionable revenue is not worth the associated risks that could ultimately undermine conservation efforts*" - Lilongwe Wildlife Trust

Malawi's action was backed by extensive laws to protect wildlife within Malawi, with the listed species given specific consideration and high penalties for non-compliance:

> "*Elephants, rhinos, leopards, lions, cheetahs and giraffes are all listed species, as are African wild dogs, Nyasa wildebeest and pangolins – the world's most trafficked animal. A conviction for dealing or possession of a listed species holds the highest penalty – up to 30 years in jail, with no option of a fine"* - African Conservation

The harsh deterrent's available in Malawi are swiftly used to good effect – "*18 Year Sentence Handed Down to Rhino Poacher by Malawian Court*," African Parks, October 2017

Malawi's counter-poaching task-force development is supported by the UK Government, and in December 2019, assisted African Parks relocate seventeen Critically Endangered black rhinos "*from South Africa to Malawi in one of the largest international rhino translocations to date*."

So freeing a country of trophy hunting and wildlife trading can lead to international support to adopt models/initiatives that work to protect habitat in Africa for example, by carbon-offset and/or by "*granting communities land titles"* which can then be re-sold (with limited rights/leasehold) to private individuals across the globe to protect and support the local community, habitat and the incumbent wildlife (under certain, prerequisite conservation criteria).

For example, the European Union (EU) recently announced not only to "*crack down on illegal wildlife trade*," but also that:

> "*The EU will step up support to partner countries across the world to achieve the new global targets, fight environmental crime, and tackle the drivers of biodiversity loss. In Africa, the EU will launch the NaturAfrica initiative to protect wildlife and key ecosystems while offering opportunities in green sectors for local populations*" – "*EU Biodiversity Strategy for 2030 - Bringing nature back into our lives*," European Commission, 20 May 2020
>
> *"The EU will launch a "NaturAfrica" initiative to tackle biodiversity loss by creating a network of protected areas to protect wildlife and offer opportunities in green sectors for local populations" – "The European Green Deal,"* European Commission, 11 December 2019

There is no doubt that hunting occupies large tracts of land/habitat. In sub-Sahara Africa, very large areas are used for big game hunting (approximately 1.4 million square kilometres). This big game hunting area is 22% larger than all the areas designated to National Parks in the same region (IUCN/PACO 2009). However, in an letter to Science, August 2019 ("*Trophy hunting bans imperil biodiversity*") Dickman et al. suggest "*more land has been conserved under trophy hunting than under national parks*," but this unsubstantiated 'conserved' claim is countered by Treves et al. 2019:

> *"….this interpretation is misleading because those lands include private lands, protected areas that allowed subsistence hunting, and various other classes of protected areas, not exclusively trophy hunting concessions. In addition, the authors' prediction that a ban on trophy imports or hunts would indirectly harm biodiversity could be just the converse: Perhaps hunting concessions would be upgraded in protection by catalyzing a governmental rethinking of carnivore management systems. An evidentiary basis for informing controversial policy interventions, such as trophy hunting, demands strong inference with full disclosure of uncertainties and disentangled value judgments from observations or inferences."*

However, there is no denying, when it comes to habitat the hunting industry has control vast hunting areas and therefore, significant influence. The hunting industry claims that its hunting areas protects habitat, generates revenue for local communities, and provides funds for anti-poaching units (Deere et al. 2011; Lindsey et al. 2012), but trophy hunting income is not the only way to generate such revenues, and trophy hunting incomes are clearly going to dwindle regardless (reference paragraph 6.6 - "*Trophy Hunting is Running Out of Steam*") .

Harvey (2019) argues that "*Paying community members directly through a carbon credit system, for instance, is far more likely to yield ecological and economic sustainability than trophy hunting. If community members are being paid to keep migratory corridors open and farm in conservation-compatible ways, for instance, threats to wildlife will be significantly reduced……Moreover, these alternatives avoid the governance problems associated with community trusts that are typically riddled with power politics, gatekeeping and in-fighting over how revenues are to be allocated*."

IUCN/PACO (2009) reported that actual economic benefits to local communities of hunting areas are minimal, employment opportunities are poor and the wildlife contained within hunting areas are far less well protected than wildlife contained within protected, non-hunting areas:

> "*Certain conservation strategies have been based on a theory developed around thirty years ago, according to which wildlife had an economic value which would convince local communities to preserve it. All the figures, maps and data consulted show that this theory is in fact untenable and that the economic value is not sufficient to generate the expected behaviour change*" - IUCN/PACO (2009), "*Conclusions*," page 106

So, apart from saving the habitat, it's questionable what other benefits the majority of hunting areas actually deliver for conservation, particularly when quotas for trophy hunting "*off-take*" has also been shown to be excessive (Packer et al. 2009) in many cases, actually perpetuating the species' decline?

In the 2016 report for the United States House Committee on Natural Resources, the conclusion with regard to trophy hunting financing conservation efforts was clear:

> "*In assessing the flow of trophy hunting revenue to conservation efforts, we found many troubling examples of funds either being diverted from their purpose or not being dedicated to conservation in the first place……On the whole, though, the evidence shows that trophy hunting is having negative impacts across sub-Saharan Africa. According to scientists, unsustainably high rates of trophy hunting have caused population declines in African lions and possibly African leopards. Many hunting areas are also fenced, which fragments the habitat into small blocks and alters species migrations*" - House Committee on Natural Resources, 2016 – "*Missing the Mark – African trophy hunting fails to show consistent conservation benefits*"

It can also be argued that "*Trophy hunting does not provide agency or self-determination. If anything, it deepens dependency on wealthy 'donors' (hunters) and crowds out the*

importance of thinking deeply about more appropriate home-grown alternatives [for real conservation]" - Harvey (2019)

But, playing devil's advocate, there is clearly a need to have contingency plans in place to replace trophy hunting income where is does exist in otherwise remote, non-tourism habitat – but where the trophy hunter is happy to go and pay to get their thrills and kills ("*Opinion - trophy hunting is not all black and white, says conservation biologist*"). In these areas, where trophy hunting is perhaps acting as a buffer to human wildlife conflict, then the imperative is to find alternative schemes to 'value' wildlife (in the minds of the local community) in non-consumptive ways.

However, it should always be borne in mind, that the trophy hunter's attrition in such areas can always lead to species decline due to poor regulation of the trophies taken (ie. too many young, male lions) – even in remote habitat, trophy hunting does not necessarily equate to conservation. Trophy hunting income's purported benefits is only theoretically offset as the '*best bad option*' if one truly believes that in the absence of trophy hunting, then the local community would poison and spear all such wildlife out of existence and/or, such remote hunting concessions would be rapidly turned into agricultural (ie. livestock grazing) lands and hence increase the likelihood of human wildlife conflict escalating.

But the financial pressure to convert even remote hunting concessions into agricultural use (assuming it is a feasible option for the hunting concession land in question) is likely to happen at some point anyway, due to human population growth and increasing demand for land for food:

> The hunting industry across sub-Sahara Africa generates an income of approximately $230m USD per annum (Economists at Large 2013). So, that equates to approximately $230m USD/1.4 million km^2, or approximately $164.3/$km^2$ ($1.64/hectare). In contrast, it is suggested (IUCN/PACO (2009)) agriculture generates 300, to 600 times more per land unit area, so there is undeniable pressure on habitat/land returns as human population growth will increasingly demand (and will look increasingly economically viable) more land use for livestock and agriculture.
>
> To put that increasing human demand into perspective, between 2015 and 2050, half of the world's population growth is expected to occur in 9 countries, 6 of which are within the lion's range (India, Nigeria, Democratic Republic of the Congo (DRC), Ethiopia, Tanzania, and Uganda (UN 2015, p. 4). Africa has the fastest population growth rate in the world (UN 2015, pp. 3, 9; UNEP 2012a, p. 2), and future population

> growth in sub-Saharan Africa is projected to be large and rapid (UN 2013, p. 9). By 2100, Angola, Burundi, DRC, Malawi, Mali, Niger, Somalia, Uganda, Tanzania and Zambia are projected to increase by at least five-fold (UN 2015, p. 9).

So, unless provisions are made now to conserve wildlife even in remote, present day hunting concessions, the wildlife inhabitants are not safe from over-hunting, or a secure future where such habitat becomes increasingly viable for agricultural use – unless alternative schemes are devised and implemented as a matter of urgency to secure and protect such habitat.

General tourism provides much greater income than trophy hunting (reference paragraph 3.5 "*Revenues from Trophy Hunting*" - Table 1), and general tourism revenues should perhaps be taxed and used to support wider habitat and conservation efforts to buy up ex-hunting concessions and reduce trophy hunting's attrition.

7.3 Certification of Trophy Hunting

Lindsey et al. 2007 propose that the lack of 'well-regulated' trophy hunting can be solved by 'Certification' whereby some independent (it's assumed) regulatory body could provide guidance as to appropriate and inappropriate trophy hunting operators etc.:

> "*Certification would enable clients to select operators on the basis of their commitment to conservation and community development and could create economic incentives for hunting operators to conduct their activities more in line with conservation objectives. Incentive-based compliance is likely to be more effective than trying to regulate operators in vast, remote hunting concessions in nations struggling with corruption and poor governance……certification system has been suggested in the past, but has not yet been accepted by the hunting industry (Lewis & Jackson 2005). Cooperation with the development of such a system would be a major step toward convincing conservationists, African governments, and a skeptical public of the legitimacy of trophy hunting as a conservation tool.*

However, it is not made clear by Lindsey et al. 2007 how such a certification body would be established (whom could be trusted?) and funded (whom will pay?) and crucially, how such a certification body could be impartial and independent and not fall foul to corrupting influences – ie. hunting operators buying favourable certification credentials.

It should be borne in mind that the trophy hunting industry has had decades to reach the promised nirvana of universal "*well-regulated*" trophy hunting, but has failed through greed, corruption and a masquerade of 'conservation' imperatives – which have failed to materialise. The proposed certification process is long overdue, but is hardly likely to become established anytime soon and even if it does, is unlikely not to become corrupted by the pro-hunting influences.

In fact, this latter undermining by vested trophy hunting interest, is exactly what happened to Craig Packer's "*Savannas Forever*" attempt in Tanzania to introduce sustainable hunting practices:

> "*Craig lost his research permits and had to leave his study site in the Serengeti and the lions he'd dedicated much of his professional life to understanding*" – Loveridge 2018

WildCRU's 2016 report (paragraphs 3.1 and 3.2) reiterates hunting industry reforms that have been 'recommended' for the past decade (or longer) – such as "*Lease length, allocation and fixed quotas,*" "*Restrictions on lions able to be hunted*" etc., all of which do not guarantee any increase in conservation return if not adequately regulated and enforced in the field.

The conclusion from such repeated calls over the past decades for the hunting industry to adopt these same reforms advocated in the WildCRU report, must be that the hunting industry remains wedded to short term profiteering in its business model, stifling any 'conservation' based reforms that might negatively impinge on that model's income stream. The ultimate implication being, conservation is low on the list of the hunting industry's priorities (despite self-proclamations to the contrary). Any expectation or 'faith' that the hunting industry will suddenly reform is not widely held.

7.4 Conflict Mitigation

Minimising livestock incursion into wildlife habitat, fenced (bomas) protection for livestock at night, and 'lions lights' that deter lions from approaching bomas. However, on the scale required, this level of 'basic' protection is not cheap – it is estimated (Abell et al. 2013) that to build a bomas (at £1,200 ($1,940 USD) per household) to protect the livestock held by the population of Zambia (approximately 236,097 households exist in Zambia's lion ranges, 68% of these households keep livestock), the cost to fence/bomas every household's livestock would be in the region of £192m ($311m USD). Then roll this out across the entire range of

the lion across Africa……without considering on-going population expansion, compensation schemes and management costs etc. The financial resources and will just do not exist to make such Conflict Mitigation programmes universally available, unless a new alternative approach is adopted - such as "*green development investment……carbon and biodiversity credits for conserving habitats"* (Novak et al. 2019), or international development funding from nations, such as the UK.

Private initiatives already exist seeking funding (independent of trophy hunting income) to provide bomas - reference the Soft Foot Alliance's inspiring "*Mobile Bomas*" project. Such projects just need adequate investment and scaling to make a guaranteed difference to human-wildlife conflict mitigation.

7.5 The World Bank - Wildlife Conservation Bond (WCB)

The World Bank has launched a Wildlife Conservation Bond (WCB) concept proposal - South Africa: Wildlife Conservation Bond (P174097), 2 June 2020, a proposal to raise an investment of some $150m USD in black rhinoceros conservation through The Eastern Cape Parks and Tourism Agency (EPTCA), South African National Parks (SANParks), in conjunction with Wilderness Foundation Africa:

> "*Through the proposed model, financing from the coupon payments of the WCB will be directed to two priority sites for rhino conservation: Addo Elephant National Park [AENP] and Great Fish River Nature Reserve [GFRNR]. Project investments will be used to enhance management of these protected areas to secure and increase black rhino populations, and increase benefits realized by local communities. Funding will be directed to these two project sites to implement conservation and adaptive management activities that seek to maximize net rhino growth rates over five years. The WCB will draw-in US$13.76m funding from the GEF's [Global Environment Facility] non-grant instrument (NGI) window to pay the WCB bond holder a final success payment based on independently verified rhino growth ("Contingent Success Payment")"*
>
> "*The Global Environment Facility (GEF) Trust Fund was established on the eve of the 1992 Rio Earth Summit, to help tackle our planet's most pressing environmental problems. GEF funding to support the projects is contributed by donor countries. These*

financial contributions are replenished every four years (see GEF Replenishment documents) by the 39 GEF donor countries" - Global Environment Facility, Funding

The key performance indicators and the planned conservation success payments as a result are defined as:

- Number of black rhino population in target sites (annual increase of 5% by the end of the project) – Note: The AENP and GFRNR host two priority black rhino populations and are collectively responsible for protecting around 80% of the Eastern Cape's black rhino, 18.5% of South Africa's estimated 2,000 – 2,046 black rhino population – so an estimated 375 black rhino under management in the proposed WCB scheme;

- Area under improved management (153,141 hectares);

- Number of direct beneficiaries disaggregated by gender as co-benefit (increase from 624 to 4,172);

"*The black rhino growth rate at each site is assessed over the period and independently verified. At the end of the 5-year term, the [International Bank for Reconstruction and Development (IBRD)] IBRD Bond is redeemed at par and bond investors receive their principal back*"……"*the conservation success payment will be directly proportional to the growth in the rhino population, to be capped on the upside at 1.83% per annum (reflecting a 3.67% annual growth target in the rhino population)*" - "Project Information Document (PID)," World Bank, 28 April 2020

The incentives to invest in the bond are summarised as, with the planned bond launch Q4 2020, or beginning of Q1 2021:

"*The project will directly contribute to the Sustainable Development Goal (SDG) 15 "Life on land" by mobilizing and increasing financial resources for biodiversity and ecosystem conservation (SDG 15.A) and enhancing global support for efforts to combat poaching and trafficking of protected species, including by increasing the capacity of local communities to pursue sustainable livelihood opportunities (SDG 15.B). The project will also contribute to the following goals: protection of important habitats for carbon sequestration (SDG13 Climate Action) and supporting a major tourism industry and a thriving commercial agricultural industry (SDG8 Decent Work and Economic Growth) which creates jobs in the local region (SDG1 No Poverty) and feeds people (SDG 2 Zero Hunger). The community engagement elements will also highlight gender*

equality (SDG5). The project will additionally support SDG17, Partnership for the goals" – "*Project Information Document (PID)*," World Bank, 28 April 2020

The investment concept at a 5% annual target increase on 375 (2020 estimate) in South Africa's black rhino population under management at the AENP and GFRNR potentially equates to a population increase to 479 in five years when the WCB matures. At the upper 6.5% rhino population growth rate, this equates to an increase to 514 in five years.

South Africa moved from 5 black rhinos a year to "*harvest*" up to 0.5% of South Africa's black rhino population (CoP18), with a population of around 2,000 that equates to around ten black rhino per year at today's species' population level in South Africa.

Therefore, it is questionable if the proposed WCB concept to raise the black rhino population on two named reserves in South Africa, then increases black rhino to South Africa's overall population thus raising the black rhino trophy hunting quota - in other words, the additional 104 to 139 black rhinos financed by the WCB means another black rhino could (rounding up 0.5% x 139 = 0.695 rounded up to 1 rhino) potentially be added to South Africa's overall trophy hunting quota.

Unless there is an exemption of the AENP and GFRNR black rhinos financed by the proposed WCB adding to South Africa's trophy hunting quota, then this raises a potential moral and ethical dichotomy, particularly if the WCB ambitions are scaled up to increase black rhino populations by more than 200 – the WCB conservation of black rhinos is potentially financing as a by-product the death of another black rhino as a hunting trophy.

Black rhino trophy hunts, due to their rarity sell for some $350,000 or more, for the pleasure of executing a given black rhino. So, this offset is potentially going to benefit a hunting outfitter as a by-product of the WCB financing, unless there is an exemption for the AENP and GFRNR black rhino project enhancing South Africa's trophy hunting quota.

8 Elephant (*Loxodonta africana*)

In 2007, the Minister for Environment Affairs and Tourism convened a scientific round table to reach consensus on elephant management amongst various stakeholders (private elephant owners, animal rights and biodiversity conservation organisations in South Africa and abroad, and representatives of local communities). This led to a comprehensive report summarised within the "*Assessment of South African Elephant Management - Summary for Policy Makers*."

Leading on from this study, a public consultation was launched in 2018 regarding the Norms and Standards for the Management of Elephants in South Africa (the Elephant Norms and Standards) in Government Gazette No. 42015 (Notice No. 1208) on 2 November 2018.

However, these Elephant Norms and Standards are yet to be signed into legislations……which begs the question, why is the DEA and its HLP seeking to revisit so many questions and reinvent the wheel, when so much past work has led to the formation of the Elephant Norms and Standards that have passed consultation and await the DEA's sanction? Is the HLP's review a final approval process, or an attempt to rewrite past scientific findings in pursuit of some 'sustainable utilisation' ideology bias?

8.1 Elephant Trophy Hunting

Back in the early part of the 20th century, there may have been as many as 3 - 5 million elephants.

Today, the wild African elephant population is perhaps less than 400,000 (Chase et al. 2016) across the entire continent. This population is insufficient to reproduce and sustain that population level (Chase et al. 2016) whilst subject to the scourge of poaching for ivory (an estimated 30,000 elephants a year are slaughtered (Chase et al. 2016)), human-wildlife conflict and trophy hunting attrition. Therefore, without intervention, the African elephant population is doomed to carry on declining towards extinction in the wild.

The IUCN Red List categorises the African elephant as "*Vulnerable*" but somehow suggest the species' population is increasing (at 4%, 15,000 elephants in some regions – but this is based on 2005 – 2007 studies, which are superseded by Chase et al. 2016).

CITES (Species+) lists the African elephant at Appendix I, but with exemptions for the populations of Botswana, Namibia, South Africa and Zimbabwe, which are included in Appendix II subject to annotation 2 – with recent annual, ongoing trophy hunting quotas set as follows (a total of some 903 elephants per annum):

2019 - Namibia, 90 elephants (180 tusks); Tanzania, 50 elephants (100 tusks);

2018 - Mozambique, 33 elephants (66 tusks); South Africa, 150 elephants (300 tusks); Zimbabwe, 500 elephants (1,000 tusks).

2017 – Cameroon, 80 elephants (160 tusks).

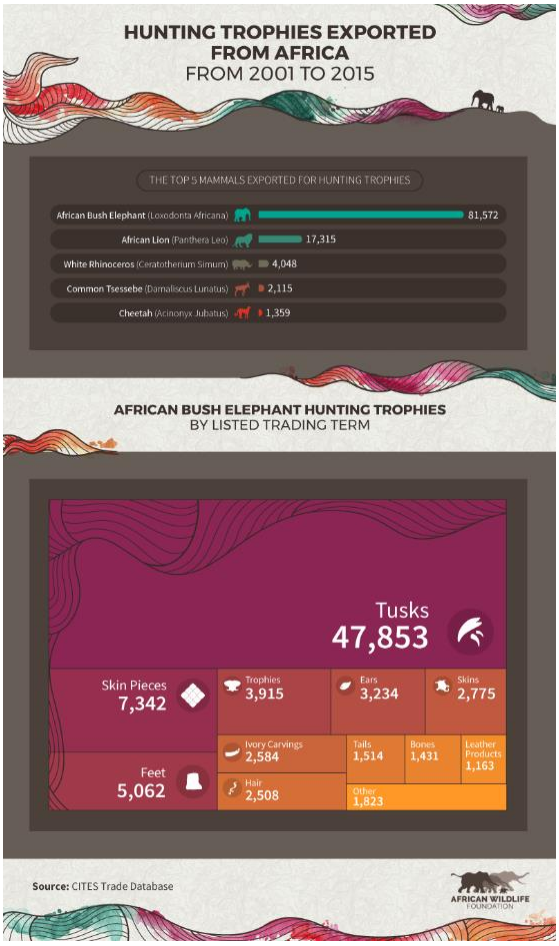


Figure 5 - *"African Mammal Trade – A Look at the African Animal and Animal Product Trade," African Wildlife Foundation, October 2017*

Botswana announced a return to elephant trophy hunting in 2019 after a trophy hunting moratorium in 2014 – which has only had negative impacts on Botswana's reputation and the reputation of trophy hunting as an ethical, or moral pursuit – reference paragraph 6.5.8 – "*Botswana*."

The African Wildlife Foundation estimates that between 2001 – 2015 some 81,572 African elephants were killed for hunting trophies – far more elephants were killed for trophies than the next most persecuted trophy hunted species in the list, the African lion ("*Vulnerable*") at 17,315 trophies for the same period.

There is clear scientific evidence (Chiyo et al. 2015, Coulson et al. 2018) that elephant trophy hunting targeting elephants with larger tusks, (prized by trophy hunters and hunting association award schemes) has led to a decline of tusk size in African elephants as the elephant gene pool becomes depleted.

At an estimated average $15,000 USD per elephant hunting trophy multiplied by 81,572 elephants, that's an income of some $1.224bn USD (or some $87m USD per year). The Congressional Research Service (2019) states at Table 1 that the average fee established from nine hunting outfitters is now at $45,013 USD for an elephant (which would equate to some $3.67bn USD derived from the trophy hunting of 81,572 elephants, or some $262m USD per year).

Yet even this year, elephants are still dying in the wild from an historic lack of conservation investment, such as avoidable lack of water and food, because the drilling of long promised bore holes has yet to happen in drought regions in Zimbabwe and Botswana. So where is the conservation funding/spend to deliver conservation of elephants from the conservatively estimated $1.2bn USD gained from trophy hunting elephants between 2005 - 2015?

Trophy hunting has a poor public image in general, but elephant trophy hunting is particularly poor as despite the mass attrition, the income derived seems to give little conservation return (as illustrated above).

Trophy hunting does not offer transparent conservation of the elephant species (IWB 2015a, Economists at Large 2013, IWB 2016c, National Geographic 2015).

8.1.1 Elephant Trophy Hunting in South Africa

South Africa has an elephant hunting quota of 150 elephants per annum, with most of the trophy hunting attrition conducted within Associated Private Nature Reserves (APNR) alongside Kruger Park. The Greater KNP hunting protocol for reserves where hunting takes place apply, where it is claimed:

> "*Well governed trophy hunting, generates critically needed incentives and revenue to maintain and restore wildlife as land use and to carry out conservation actions, including anti-poaching interventions. It can return much needed income, jobs, and other important economic and social benefits to local communities*"

So, elephants (national assets) are moved from the protection of Kruger Park to be trophy hunted, apparently to raise much needed funds for 'conservation' and 'local communities.' It should be noted that the Protected Areas Act, 57 of 2003 (as amended by Act 31 of 2004), prohibits certain 'extractive activities' in national parks, including hunting. Therefore, it has been suggested that the fulfilment of this mandate is being contravened by Kruger Park's custodians, SANParks by allowing animals to be shot in areas which, as tourist operators, some hunters and SANParks themselves advertise, are part of an unfenced natural area which forms the Greater Kruger National Park:

> "*Animal Rights Africa has attempted to get clarity from SANParks on this issue but has been met with incomplete and inadequate answers and referrals to provincial authorities. If the Government approves of the hunting of animals that cross from Kruger into provincial and private reserves they should proudly say so publicly – in other worlds Government must tell South Africa and the world that they do not mind if national assets are killed for the enrichment of a few hunting outfitters and entertainment of a handful of rich foreigners*" – Animal Rights Africa, 2010

Therefore, it remains a matter of clear dispute that the movement of elephant from the protection of Kruger Park to be trophy hunted in areas is lawful, and serves any purpose other than to "*fund the leisure lifestyles of a group of mainly white landowners with scant benefit to bordering communities*" - Pinnock 2020c

8.2 Elephant Meat

There is now the question of elephants being listed under "*…proposed update to Schedule 1, as provided for in section 1(2) of the Meat Safety Act, 2000 (Act No 40 of 2000), listing the animals to which the Act applies*" - Gazette no. 43050, Notice 201/2020, dated 28 February 2020.

It is unclear why the Asian elephant genus, *Elephas* has been included unless the intention is to include this genus within intensive breeding facilities within South Africa for meat production.

Therefore, any proposed legal 'sustainable utilisation' trade mechanism for elephant meat derived within South Africa where elephant populations are in Appendix II (subject to annotation) is limited to some 150 elephants killed for hunting trophies.

> "*Appendix II includes species not necessarily threatened with extinction, but in which trade must be controlled in order to avoid utilization incompatible with their survival*" - CITES

Therefore, unless CITES approves a controlled international trade, the elephant meat derived from trophy hunting would be subject to domestic demand only.

Of course, the meat would need to remain fit for human consumption, despite the meat donor animal in question being trophy hunted/slaughtered in an unlicensed, open air 'abattoir.'

Any desire to increase the volume of elephants killed for meat (beyond trophy hunting/pseudo hunting quota attrition) would require CITES approval.

However, the fear is that a legal trade in elephant meat could encourage the 'sustainable utilisation' captive breeding of elephants (with no conservation imperative) and potentially invites increased poaching of elephants to illicitly infiltrate and supply any legal trade routes.

Is there any publicly available science (from the South African National Biodiversity Institute (SANBI) or otherwise) that assesses:

- The risk to the wild species' conservation status, not just within South Africa, but globally, from any proposed trade expansion of elephant 'meats'?

- What demand side risk assessment has been completed for potential domestic, and/or any 'legal' international export of each elephant 'meats,' or derivative products that encompass the given 'meats'?

- What risk assessment of the potential for zoonotic or otherwise disease transmission (including tuberculosis (TB) - Mycobacterium tuberculosis complex/M. bovis/M africanum/M microti), to humans during any subsequent species handling, breeding, slaughter, processing, packaging, and indeed consumption of the elephant 'meats' proposed under Notice 201?

In the absence of any evidence based science in support of extending elephant utilisation and the potential expansion of captive breeding activities that will no doubt ensue as a result (regardless of any Elephant Norms and Standards that prohibit such activities), then such commercial business endeavour to promote these species' meat for human consumption, then a precautionary risk approach is recommend – that until such independently sourced, peer reviewed science is available, then the meat of any species lacking that specific evidenced/scientific backing should not be added to Schedule 1, as provided in section 1(2) of the Meat safety act, 2000 (Act No. 40 of 2000).

8.3 CITES and Ivory Stockpiling

During the COVID-19 pandemic, illegal wildlife trafficking routes have been curtailed – due to the shut-down of air, land and sea infrastructure – but Chinese demand may well be beginning to be stifled due to restrictions imposed within China itself. The Wildlife Justice Commission (April 2020) reported that during the pandemic's lock-down restrictions:

> "*Southeast Asian ivory retail markets serve mainly Chinese clientele. While ivory markets have been on the rise in Cambodia and conversely declining in Lao PDR, sellers in both countries are experiencing a dramatic downfall in the number of Chinese customers due to travel restrictions.*
>
> *Difficulty transporting products into China is resulting in the stockpiling of large quantities of raw ivory in Vietnam, Lao PDR and Cambodia. While ivory stockpiling was already starting to occur during 2019 due to increased law enforcement efforts in China, it has been exacerbated by recent border closures and subsequent increased border security*"

The recent clampdown on ivory carving factories in China (reference paragraph 8.3.5 – "*China*") has significantly lowered the price demanded for ivory. The price of raw ivory plummeted between 2014 ($2,100/kg) and 2017 (to $700/kg).

During the pandemic, ivory demand has (temporarily) collapsed:

> *"The Wildlife Justice Commission's undercover missions to Lao PDR in 2019 and 2020 identified that the previously open ivory trade in Vientiane has become more clandestine and parts have shifted to areas outside the capital. As with markets in Cambodia, Wildlife Justice Commission operatives observed a noticeable downturn in business and many shops were closed. There was a low number of wildlife products on offer and shop owners mentioned the absence of (Chinese) clientele*" - Wildlife Justice Commission, April 2020

8.3.1 Elephant Ivory Demand Management and Regulatory Failure

It can be argued that CITES' attempted ivory trade intervention strategy increased demand and elephant poaching. Elephant poaching has reached unsustainable levels. African elephant poaching might be stabilising (2015 CITES data), but not at a level that will allow elephant population numbers to recover - continent wide elephant numbers are only set to decline ("*The Great Elephant Census*," 2016).

It is estimated that 230,000 elephants have been poached between 2009 and 2015, and maybe as few as 500,000 wild elephants now remain (from an early 20th century population of as many as 3-5 million elephants).

In 1989/90 CITES introduced a ban on all ivory trade and 'uplisted' the elephant to CITES Appendix I status.

Prior to the 1989/90 ban, in 1986/87 CITES registered 89.5 tonnes and 297 tonnes respectively, of ivory in Burundi and Singapore. However, by 1997, CITES sought to 'find ways' (delisting relevant elephant populations by country to CITES Appendix II, where only an export license is required) to meet 'demand' for ivory from stockpiles – not dis-similar to any proposed rhino horn trade.

CITES permitted the export of 47 tonnes of 'stockpiled' ivory to Japan from Botswana, Namibia and Zimbabwe. The suggestion is that this initiative gave the tacit message to previous ivory trading and poaching syndicates that "*the game was back on*."

In 2000, CITES repeated its 1997 'thinking,' when South Africa's elephants were delisted to CITES Appendix II with CITES' blessing and 6 tonnes of 'stockpiled' ivory permitted for export to Singapore in 2002. In addition, in 2002 some 60 tonnes of ivory from South Africa, Botswana and Namibia was 'released' with CITES' blessing to Japan (were ivory controls appeared lacking, with a reported 25% of traders not even registered).

In 2008 (to "*quell*" demand and "*reduce prices*") CITES once more blessed 'stockpiles' of ivory for export, including South Africa which reportedly sold 47,000kg of ivory, at a value of $157 a kilogram, to the Chinese and Japanese governments. However, the funds so raised in South Africa were reportedly misappropriated, when CITES only allowed the trade under the condition that the money was guaranteed be ring-fenced and ploughed back into conservation – the conservation benefits derived remain opaque.

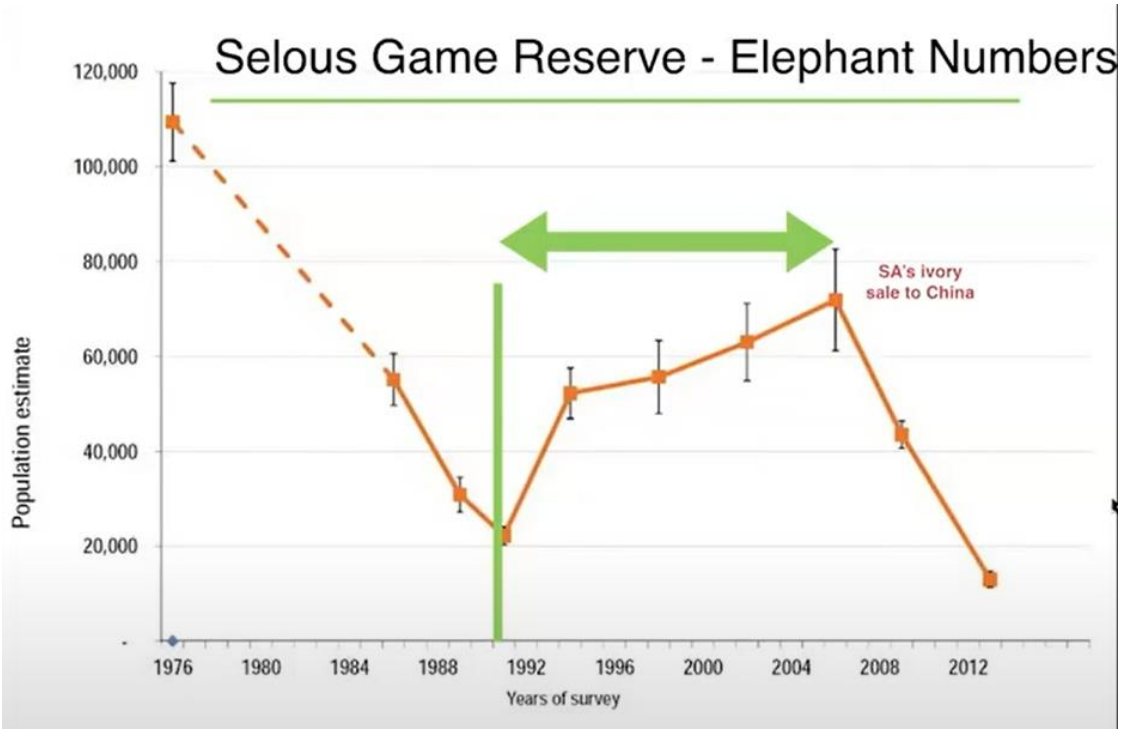


Figure 6 - *The elephant population in the Selous Game Reserve grew after the CITES international trade ban on ivory in 1989, but poaching took a heavy toll in direct response to South Africa's ill-advised sanctioned sales of ivory stockpiles in 2008* (Bell 2020)

The message was clearly given in the lead up to 2008 that the ivory trading game was really back-on - elephant poaching rose in response (wiping out some 60,000 elephants in 6 years).

Since 2008, ivory demand and prices paid rose exponentially (the price of ivory rose from USD $5/kg in 1989 to a wholesale price of USD $2,100/kg in China by 2014), with poaching stimulated to the point that in 2012, some 600 elephants were illegally massacred in just two to three months in Cameroon's Bouba Ndjida National Park.

The recent clampdown on ivory carving factories in China has significantly lowered the price demanded for ivory. The price of raw ivory dropped between 2014 ($2,100/kg) and 2017 (to $700/kg). This decline in raw ivory prices was likely in response to the Chinese ban, but the pressure applied to the criminal syndicates' margins has not fully crushed on-going poaching of wild elephants to still profit from demand and speculative stockpiling:

> "*Even with the price coming down, there's still a heck of a lot of poaching going on*," Douglas-Hamilton (Save the Elephants) said. "*It's important prices have come down but it hasn't killed the trade, we're not out of the woods yet*" - *Story behind China ivory ban*, The Guardian, 29 August 2017

The Wildlife Justice Commission's September 2019 analysis similarly concluded that despite the price/demand falling for ivory, there is still a large volume of illicit ivory trafficking:

> "*The analysis shows that the volume of ivory being seized has increased by 124% during the last two years. This, despite our intelligence indicating a sharp downward trend in the street value of raw ivory*."

Even in 'well-regulated' ivory trading environments, illicit activity is still rife. In 2018, researchers found that 74.3% of the ivory being sold across the entire European Union (EU) was illegal. In 2017, Two Million Tusks' - "*Ivory – The Grey Areas*" - report highlighted that "*for 90% of the ivory lots investigated, auction houses did not satisfy the legal requirement to demonstrate proof of age for pre-1947 ivory*" – IWB 2019d

If such widespread illicit activity in what is assumed are "*well-regulated*" trading arenas such as the UK and EU can persist, then less well-regulated countries have little hope of regulating wildlife trade.

The conclusion is, market demand and market pricing for ivory moved contrary to CITES' stated expectation when CITES released ivory from stockpiles from 1997 - demand was

stimulated and the price of the commodity rose. It is estimated that as much as 450 tonnes of poached ivory might have been trafficked in 2013 alone to meet that stimulated demand. Even with more recent market price reductions for ivory, elephant poaching and illegal ivory trafficking still continues at unsustainable levels.

It is improbable that Demand Management proposals for the international trading of commodities such as rhino horn (reference paragraph 11.3 – "*Rhinoceros Horn Trade – White Rhinoceros*") are likely to yield different results than the negative results of ivory releases from stockpiles.

In terms of 'legal' international trading of ivory, there is no likelihood that:

- China is going to withdraw from its ban on domestic ivory trading – reference paragraph 8.3.5 – "*China*";

- CITES is going to agree to future releases of ivory from State/government or private ivory stockpiles; and/or

- CITES is going to lift the 1989/1990 ban on international trade in elephant ivory. In fact, CITES has sought the closing of domestic markets for ivory:

  > *"Parties that have not closed their domestic markets for commercial trade in raw and worked ivory are requested to report to the Secretariat for consideration by the Standing Committee at its 73rd [October 2020] and 74th meetings on what measures they are taking to ensure that their domestic ivory markets are not contributing to poaching or illegal trade"* - Decision 18.117 - Closure of domestic ivory markets

Therefore, it remains questionable if there is any realistic likelihood of 'return on investment' in securing and managing ivory in registered stockpiles. One thing that is clear that previous releases of ivory from stockpiles has not contributed to elephant conservation, but have resulted in the opposite – encouraging the poaching of elephants seeking to cash-in on the stimulated demand (reference paragraph 8.3.1 – "*Elephant Ivory Demand Management Failure*").

There is also the risk that the keeping of such ivory stockpiles gives credence to the hope of further speculative profiteering from ivory somewhere in the future, when that is extremely

unlikely. In the absence of any legal releases from registered stockpiles being likely, there is also the potential for unregistered ivory stockpiles to be illicitly horded and illicitly trafficked.

Perhaps the right thing to do is declare an amnesty for illicitly stockpiled ivory to be handed into appropriate authorities and all stockpiles, including State stockpiles destroyed. Kenya has clearly shown global leadership by burning stockpiles of ivory and rhino horn in 2016 – Kenya's president, Uhuru Kenyatta stating at the time:

> "*The future of the African elephant and rhino is far from secure so long as demand for their products continues to exist*"

8.3.2 CITES – Trade in Government Ivory Stockpiles

At the CITES Conference of Parties (CoP) in 2018, there was a clear rejection of CoP18 Proposal 11, which was submitted by Botswana, Namibia, South Africa and Zimbabwe and sought (via removal of Annotation 2, Clause h)) to trade in government registered stockpiled ivory 9 years after CoP14 and the last CITES sanctioned sale of ivory in 2008.

CoP18 Proposal 11 was "*Rejected at Committee, 22 August 2018*" - "*Amendment to Annotation 2 pertaining to the elephant populations of Botswana, Namibia, South Africa and Zimbabwe*"

A counter submission, CoP 18 Prop. 12 to remove the Appendix I exemption of the elephant populations of Botswana, Namibia, South Africa and Zimbabwe was also "*Rejected at Committee, 22 August 2018*."

8.3.3 European Union

In 2018, researchers found that 74.3% of the ivory being sold across the entire European Union (EU) was illegal – there have been calls from The Council of Elders for the African Elephant Coalition to close the ivory trade across the whole European Union:

> *"We applaud the European Commission for leading the global effort to protect international biodiversity, so eloquently elaborated in the Strategy published today. We therefore call on the Commission and member states to set that global example*

and propose rules to close the EU ivory market for once and for all" - "*Open Letter: African Elephant Coalition calls on Europe to show leadership on global biodiversity by closing the EU ivory market*," Journal of African Elephants, 28 May 2020

8.3.4 UK Ivory Trading Bill

The United Kingdom introduced the UK Ivory Bill (2018) to end nearly all ivory trading from within the UK – with minimal exemptions.

8.3.5 China

In 2016, China brought in stricter controls on the import of tusks obtained via trophy hunting (CITES Notification to all parties, 1 April 2016), mainly due to international political pressure ("*Story behind China ivory ban*," The Guardian, 29 August 2017). There is no likelihood that any relaxation of China's restrictions would be tolerated by the international community.

8.4 Elephants in Captivity

A public consultation was launched in 2018 regarding the Norms and Standards for the Management of Elephants in South Africa (the Elephant Norms and Standards) in Government Gazette No. 42015 (Notice No. 1208) on 2 November 2018.

The 2007 revised Norms and Standards specifically exclude the capture of elephants from the wild to prevent new elephants being added to existing captive population.

It is assumed that there is no intent to propose amendments to the 2018 Gazetted Elephant Norms and Standards, to create captive-bred origin (CBO) elephants held permanently in captivity, to supply through natural attrition or otherwise, meat and/or ivory to stockpiles in the speculative hope international trading in such commodities might be liberated (which would seem unlikely – reference paragraphs 8.2 – "*Elephant Meat*" and 8.3 – "*CITES and Ivory Stockpiling*").

The only places that currently hold captive elephant stock are in in zoos, circuses, sanctuaries, logging and tourist camps – with the exception of welfare sanctuaries, most of these facilities are widely objected to as unnatural, cruel, unethical and immoral practices.

The Southern Africa Tourism Services Association (SATSA), 2019 - "*Evaluating Captive Wildlife Attractions & Activities*" guidance should be applied to all existing captive elephant facilities.

8.5 Elephant Population Management and Culling

The Republic of South Africa, Department: Environmental Affairs (DEA) – "*South Africa Elephant Research Strategy, 2014 - 2024*" includes discussion of "*Management Intervention Programmes*" and at 3.3.2. (2). "*removals through live capture, hunting and culling to change numbers and population structure,"* but cautions *"Various management interventions will have different environmental and social impacts, often unintended."*

The debate regarding elephant culling as effective, or indeed a needed management tool has been rumbling on for years:

> "*The central question remains `will elephants irreversibly destroy biodiversity if their population is left unchecked?' The procull storyline sets out the argument that too high a density of elephants poses a risk to biodiversity. The anticull standpoint critiques this position as politically and economically motivated and lacking in adequate scientific support*" - Dickson et al. 2009

It has been argued that the concept of 'carrying capacity' can be accurately determined and applied is unfounded, especially when applied to highly complex structures with many variables, such as the multifaceted complexity of elephants and ecological balance within their domain.

Plus, there is the known population decline in African elephants (Chase et al. 2016), which makes any unscientific elephant culling appear an absurdity in terms of any claimed conservation of the species on a continent wide basis. The precautionary principle has a long history of being incorrectly used to justify killing elephants in an attempt to manage ecological balance based upon unsubstantiated 'science' and has failed in the past when it comes to killing elephants to protect habitats and biodiversity:

> "*The present management strategy of the South African National Parks is focused on how elephants use their resources in relation to their distribution rather than absolute elephant numbers. The interplay between elephants and large trees is complex to the extent that no single species or factor can be thought of as solely responsible for what is essentially a multifaceted ecological process*" - "*The management dilemma: Removing elephants to save large trees,"* Henley, M.D. and Cook, R.M., 15 August 2019

It is estimated that between 1967 and 1997, 14,629 elephants were culled in South Africa, mainly in Kruger, to maintain the population at an arbitrary level of 7,000 (Pinnock 2020c). The concept of such an arbitrary 'carrying capacity' is not supported by science, but a 'natural' policy of controlling elephant numbers through water/bore hole availability is a method supported by science (Purdon 2017) and was adopted within South Africa.

In November 2014 the park's large-animal ecologist, Dr Sam Ferreira confirmed that there would be no further culling in the park, he said managing the effects of elephants was not about controlling populations but letting natural processes influence where elephants spend time and what they do when they are in particular places. The Elephant Management Plan Kruger National Park 2013-2022 confirmed the adoption of this 'natural' elephant population control policy.

Therefore, it is questionable why the HLP is debating elephant culling at all – the science, conclusions and policies formed from past debates are clear and remain valid. Why is the debate being reinvigorated unless the motives are linked to 'sustainable utilisation' ideology rather than proven, 'natural' elephant population management and conservation?

It is suggested that the current, 'natural' elephant population management policy is maintained, rather than any rush to unscientifically justify elephant culling, or an increased elephant trophy hunting quota:

> *"Allan Savory admits his experiment of killing 40,000 elephants to prevent desertification in Zimbabwe was a complete failure. He calls this experiment "the saddest and greatest blunder" of his life. Kruger National Park's officials led a decades long culling program to limit elephant numbers under the guise of protecting large tree species. Again, this experiment failed to prove a clear relationship between elephant densities and dead trees" – "Theoretical Ecological Collapse: Any Excuse To Kill Elephants,"* Kukura, J., 1 April 2020

Maintaining a policy that does resort to elephant culling or increased trophy hunting attrition is especially true when Botswana's unscientific return to elephant trophy hunting has been

met with widespread condemnation (reference paragraph 6.5.8 – "*Botswana*") and lacks credible scientific foundation.

8.6 Elephant Handling and Well-being

Providing guidance on the "*Practices, standards and guidelines for permitting facilities that contribute to conservation objectives*" (HLP Terms of Reference) depends on how those "*conservation objectives*" are framed – true conservation intent, or 'sustainable utilisation' commercialisation of wildlife commodities masked behind a veil of 'conservation'?

If "*conservation objectives*" are somehow wrapped within 'sustainable utilisation' ideology, then past experience with the lion bone trade would suggest that "*conservation objectives*" are nowhere to be seen (reference paragraph 9.3.2 – "*Lion Bone Trade Conservation Claims*").

Therefore, if the intent of "*permitting facilities*" is related to elephant meat and/or ivory production, then this has no proven scientific relevance to claim any species' conservation imperative (reference paragraph 8.2 – "*Elephant Meat,*" and paragraph 8.3 – "*CITES and Ivory Stockpiling*"), or relevance to 'well-being' as defined in NEMLAB *as:*

> *"'well-being' means a state where the living conditions of a faunal biological resource are conducive to its health"*

Based upon the lion bone trade (reference paragraph 12.3 – "*Animal Welfare – A legal Obligation*"), sustainable utilisation of a species does not equate to "*a state where the living conditions of a faunal biological resource are conducive to its health."*

9 African Lion (*Panthera leo*)

9.1 Lion Trophy Hunting – Free Ranging Lions

Within South Africa, the various levels of wild, free-ranging and management intensity impose a biodiversity management framework where lions are classified (Biodiversity Management Plan (BMP) for the African Lion (2015)) as:

1. ***"Wild lions** only occur in formally gazetted national parks and fulfil their role in biodiversity processes and are largely unmanaged, stable and viable. Conservationists do not actively manipulate vital rates and lion demographics.*

2. ***Managed wild lions** occur in a range of smaller fenced reserves (<1000 km2) and are managed, largely to limit population growth and maintain genetic diversity. Managers actively manipulate some vital rates and demographics.*

3. ***Captive lions** are used exclusively to generate money and currently have limited conservation value. Managers actively manipulate all vital rates and demographics*"

South Africa has a free ranging (ten fenced subpopulations) which have reportedly grown by 29% (across Southern Africa) since 1993 (IUCN Red List) – the 'viable' free ranging lion population recognised by IUCN (2014) is approximately 2,074 lions. The BMP (2015) estimates this population at around 3,000+ lions, but the actual population number is perhaps subjective, as no updated lion population census data is readily, publicly available:

> The last lion survey was done in Kruger National Park in 2005/2006 – nearly 14 years ago – "*The Kruger National Park had about 1700 lions (range of 1617 – 1751) in 2005/2006 (Ferreira & Funston 2010) with about 300 lions in the private nature reserves bordering the park*" (BMP 2015). According to Dr. Pieter Kat of LionAid, "*you cannot use [that data] in any management plan as it is well beyond the 'sell by' date*."

The South African BMP for the African Lion (2015) suggests that truly "*wild*" lions (those outside of protected reserves) are not actively managed, so 'numbers' are transitory and elusive.

However, the stability of wild/free-ranging lion populations across the African continent show a steep decline, no matter any pre-conceptions that South Africa's free-ranging is stable and

any attrition or threat from captive breeding trade is inapplicable – the threats are continent wide, and should not be viewed through the lens of South Africa in isolation:

> "*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*" - (Harvey 2018)

Lion trophy hunting within South Africa has been predominantly from captive bred lions (population estimates range from 6,000 – 12,000 lions):

> "*Lion trophy hunting in South Africa is from captive animals: Lindsey et al. (2012a) reported that South African hunting operators estimated that only 0.9% – 1.1% of lions hunted in 2009 and 2010 were wild. The CITES Scientific Authority for South Africa have given a slightly higher estimate, with wild lions accounting for 5% of total successful lion hunts, but the vast majority of hunting in South Africa is clearly from captive animals (Williams et al. 2015)*" – WildCRU's research (2016)

But the conservation of South Africa's wild/free-ranging lion populations has no dependency upon the Captive Bred Lion (CBL) industry:

> *"South Africa's free ranging lions were down-listed from Vulnerable to Least Concern conservation status – this was due to ongoing, concerted conservation action and concerted reintroductions, all of which have no connections with the captive lion industry" – "Open letter to Secretary Zinke: The African Lion Conservation Community's response to the South African Predator Association's letter,"* African Lion Conservation Community (November 2017) open letter to Secretary Zinke, then head of the United States Fish and Wildlife Service (USFWS)

This free ranging wild lion population is subject to trophy hunting attrition (as a CITES Appendix II species), but the trophy hunting attrition is not transparent (an estimated 8.7% of the free ranging population - IFAW, IUCN and Duke University, 2015).

Interrogation of the CITES trade database indicates the South Africa exported 2,159 wild ("*W*") lion "*Trophies*" (all "*Purposes*") between year 2000 – 2018 (average of 120 "*Trophies*" per annum, or 4% - 6% trophy hunting attrition), with 4,247 "*Trophies*" (average of 237 "*Trophies*" per annum, or a 8% - 11.4% trophy hunting attrition) imported for the same period/criteria from South Africa across all CITES signatories – CITES trade database throws up such enormous, unexplained anomalies (why the massive difference between exports and imports over a 18 year time frame?), without seeking to analyse for hunting trophies exported/imported under the guise of "*Bodies*," "*Skulls*" etc.

It is generally recommended that lion quotas should either be set at about 3% of the total population (Creel & Creel 1997) or that offtakes should not exceed 0.5 lions/1000 km2 (Packer et al. 2011), therefore the CITES data suggest over-harvesting, with an annual average offtake in excess of 3% .

However, it remains opaque why any wild/free-ranging lion needs to be targeted for trophy hunting in South Africa. For example, in 2018, a lion named Skye was hunted in Umbabat on the border of Kruger National Park, South Africa (Cruise 2018, Pinnock 2018b) – Skye was baited and lured to his death on 7 June 2018 from the 'protection' of the Kruger National Park:

> "*Despite limitations, the practice of trophy hunting lions seems, too often, to targets males in their reproductive prime so that the hunter can get a better trophy. This can lead to elevated infanticide and reduced reproduction by the removal of too many adult males and this sadly leads to a rapid population decline …….SANParks' letter on the 2018 quotas for the Umbabat Reserve includes the census data provided by the reserve but does not contain any census information for lions.*"

To this day, there has never been any official acknowledgement of the targeted lion's identity and why a permit was issued to kill a lion protected within the Kruger:

> "*Every attempt at obtaining full and transparent disclosure from the Umbabat Reserve and from the Mpumalanga authority (the Mpumalanga Tourism and Parks Agency) that issued the hunting permit have failed. This included: requests for information on the actual hunt itself; the people involved; visual sight and identification of the lion skin to ascertain which lion was hunted; and details of the permit (including a copy thereof)*" – Skye Report, 2018

The hunting industry lacks transparency and when questioned, tends to close ranks and seeks to cover-up, rather than any attempt to be open and extol the self-proclaimed virtues of its

motivations/actions. The setting of hunting quotas of free ranging lions in South Africa and the contribution of lion trophy hunting to any meaningful conservation of the wild species therefore remains opaque.

9.1.1 Lion Trophy Hunting Elsewhere

> *"[African] lions are in crisis. Because lions are uniquely visible to tourists there is a false impression that they are not endangered. The opposite is true: they are disappearing in plain sight. From an estimated population of 200,000 across Africa a century ago, and 30,000 a decade ago, as few as 20,000 lions may now roam free in the entire continent. Their numbers have been devastated by loss of habitat and wild prey, poaching, conflict with farming communities, unsustainable legal hunting, and emerging threats including the use of lion bones in traditional Asian medicine. Lions are being killed daily in Africa"* - *"Lions in trouble...."*, WildCRU, 27 October 2015

Despite the African lion's steep population decline, the species is still only listed as CITES Appendix II, despite other species, which have larger species populations, such the African elephant, or similar species populations, such as the white rhinoceros, both being listed at Appendix I (with exemptions).

The African lion (*Panthera leo*) is only listed as "*Vulnerable*" in the IUCN Red List, with the "*Threats*" listed including:

> *".....trophy hunting has a net positive impact in a 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)."*

Perhaps the reluctance to uplist the African lion to Appendix I (or IUCN Red List as "*Endangered*" or above) because the African lion is such a popular income generator as a hunting trophy?

Lion trophy hunting is conducted in a number of range states, so the evidence given within the confines of this consultation can only be a snap-shot.

The African Wildlife Foundation estimates that between 2001 – 2015 some 17,315 African lions were killed for trophies (1,236 per year) – with only perhaps 20,000 African lions left in

the wild, then extinction clearly looms for the species as a direct result of trophy hunting if that rate of attrition is projected forward.

There is compelling evidence of declining numbers of the African lion, which poorly managed trophy hunting has not helped to improve across vast swathes of hunting concessions:

> Mweetwa et al. 2018 showed that "*a three-year moratorium on trophy hunting in South Luangwa National Park in Zambia resulted in a 17.1 and 14 percentage point increase in survival in subadult and adult male populations respectively*" - Harvey 2020

The claimed "*conservation*" by killing clearly has no guarantees, but has put a market value on every target animal's head. If universally "*well managed*" and trophy hunting was indeed a virtuous circle as advocated by Craig Packer ("*Lions in the Balance*" 2015) then perhaps the hunting industry's claims would hold more weight. But most hunters are seemingly driven by self-interest and just want to shoot, ably supported by hunting outfitters driven by short term self-interest, which in turn are 'licensed' under a 'legal' umbrella rife with corruption, short termism and greed – hardly a recipe for successful 'conservation' of anything, except human self-interest (IWB2016a).

The main outcome is large tracts of land conserved for hunting iconic species where hunting quotas are not based on science, but based upon virtually 'unknowable' (IWB2016a) target species population references and/or vague criteria for target selection to help 'conserve' the target species.

As the House Committee on Natural Resources 2016 report puts it:

> "*As a result, it is difficult to confidently conclude that any particular trophy import would enhance the survival of a species*" - "*Missing the Mark – African trophy hunting fails to show consistent conservation benefits, page 21*"

With the African lion used as an example, the empirical data points to undeniable species' population decline, as for many iconic, target species.

There has been an attempt to ensure 'minimal' impact on a given lion pride's dynamics from lion trophy hunting. However, a 6 years of age limit assumes the age at which a male lion holds a senior rank (tenure) within a pride is 4 years of age, with 2 further years of reproduction. This assumption has been challenged in studies (Nicholls et al.), which concluded that pride tenure can extend to lions of a mean age of 7.8 years.

Cecil was a pride male, in his prime with his off-spring in the pride. In 2015, Cecil was 12 years old – so the assumption of a pride male's tenure appears at best to be subjective (Loveridge 2018).

Plus, the ability to accurately age lions in the field and the penalties for not doing so accurately have no correlation to any post-kill penalties for the hunting party. The only real penalty is depleting the gene pool and hindering real conservation of the species – an under-age lion is dead regardless of any genuine ageing mistake and/or financial penalty imposed on the hunting party post-kill etc.

The feasibility of determining any lion's age from distance, in the field is incredibly unreliable (Loveridge et al 2009), particularly the 'recommended' method to hunters and their guides of using a lion's nose colouration as a key indicator of age (Whitman and Packer 2006). Aging error in the field using a target lion's nose pigmentation as the key indicator is a problem (Caro et al. 2009; Whitman et al. 2004).

Therefore, any such criteria espoused to try to improve the regulation of lion trophy hunting tends to fall down in reality, the penalties for non-compliance are just not sufficient motivation.

If we explore deeper into specific lion range states that host trophy hunting, we can also see the flaws in any notion of 'well-regulated' trophy hunting:

> "*…it is not always clear that the locations where trophy hunting takes place are even financially viable themselves. For example, Lindsay et al. (2012) studied the effect of restrictions on lion hunting on the amount of land where trophy hunting would remain commercially viable across Mozambique, Namibia, Tanzania, Zambia and Zimbabwe. While the study showed that a total ban on lion hunting across all the studied countries would reduce the viability of trophy hunting industries in 14% of the current hunting areas, and a reduction in offtake to previously estimated sustainable levels would reduce viable areas of hunting by 2%, the more interesting finding was that even under existing regulations, trophy hunting was financially viable in only 56% of the total area in which lion hunting was undertaken (Campbell, 2012). This suggests that across 44% of the land used for lion hunting, alternative wildlife uses (like non-consumptive tourism) would be more economically sustainable than trophy hunting. Why trophy hunting persists at all in these areas is more likely to be a product of political and social pressures, rather than economic ones*" - Economists at Large 2017

There is also the lack of income for conservation's true value and covering the actual costs of habitat protection – reference paragraph 6.4 – "*Trophy Hunting Financing Habitat and Conservation*"

9.1.2 Tanzania Shows Wild Lion Trophy Hunting is Not Conservation

Selous Game Reserve (SGR), the most important trophy hunting destination in Tanzania – Brink et al. 2016 highlighted the negative impacts that trophy hunting has had on the lion populations:

> "*The primary threats to large felids across Africa are thought to be retaliatory killing and habitat loss (Riggio et al. 2012, IUCN 2006, IUCN 2008, Fitzherbert et al. 2014). However, over-hunting is also a possible cause of concern, especially in felid species like the lion where infanticide is common (Caro et al. 2009, Whitman et al. 2004)*"
>
> Furthermore, the suggestion is that "*only recently*" (really?) "*has enough evidence been gathered to suggest….."*:
>
> *"……that trophy hunting of lions is having a negative impact on populations (Packer et al. 2011, Packer et al. 2009, Loveridge et al . 2007, Kiffner et al. 2009). Lion trophy hunting specifically targets adult males and sport hunters are extremely efficient in locating their quarry. This has large impacts because the males that replace the hunted individuals in the pride kill any cubs they have not fathered (Packer et al. 2011). Recent research from Zambia suggests that lion trophy hunting could be sustainable* ***with a strategy that combines periods of recovery or no hunting****, a minimum age of at least seven years for trophy lions, and a quota of 0.5 lions per 1000km^2 (Creel et al. 2016). Similarly, research from West Africa suggests a quota of 1 lion per 1000km^2 would be sustainable (Bouché et al. 2016)"* – if 'hunting is conservation' (sic) as claimed by the pro-hunting advocates, then why is "*no hunting*" recommended as a means of recovery from the hunting attrition (Creel et al. 2016)?

Figure 7 - *A Sample of Under-aged Male African Lions Shot by "Sport Hunters" in Various Countries from 2004–2008 - Packer et al. 2009*

In Katavi, Tanzania the estimated lion numbers were recorded as zero in 2014, from a population of 1,118 in 1993 (UNEP, 2015). It should be noted, that from 2010, 41 adult males (less than five years old) had been "*harvested*" for trophies in Katavi. Could this excessive trophy hunting of young male lions have been the end of the Katavi sub-population?

> "*Trophy Hunting was reported to have contributed to population declines outside of (and within some) protected areas of Tanzania (Lindsey et al. 2013) and was considered by Packer et al. 2011 to pose the greatest threat to the populations in Trophy Hunting areas*."

Chardonnet (IUCN 2019b) found that of the big game hunting zones in Tanzania, 72% are now classified as "*depleted*" and useless to hunters, containing no game species. In hunting areas in Tanzania that still contain lions, despite a six-year minimum age limit, in 2015, 66.7% of the lions shot were five years old or under. There were simply no lions of the correct age left to be shot.

9.2 Captive Lion Breeding (CLB) – Calls for Closure

After a two-day Colloquium on Captive Lion Breeding (CLB) for Hunting in August 2018, a Parliamentary Portfolio Committee on Environmental Affairs (PPCEA) reported (November 2018):

a) Parliament was instructed to put an end to the commercial exploitation of lions through the implementation of the National Assembly Resolutions.

b) The CLB issue has generated "*huge international outcry*" and "*it is tainting South Africa's brand image from abroad*" – as the industry has been exposed in the following sample:

> "*"Unfair Game" – An exposé of South Africa's captive-bred lion industry*," Lord Ashcroft, Biteback Publishing, due June 2020
>
> "*Lions, Bones & Bullets*," Jagged Peak Films, 2020
>
> Lord Ashcroft – Wildlife, Lion Framing – News compendium
>
> "*Cuddle me, kill me*," Richard Peirce, 2018
>
> "*Captive Lion Breeding, Canned Lion Hunting & the Lion Bone Trade: Damaging Brand South Africa?*" - A compendium of the worldwide reaction to South Africa's captive lion breeding and canned hunting industry and involvement in the lion bone trade, CACH UK & SPOTS Netherlands, August 2018
>
> "*Blood Lions - Bred for the bullet*," 2015
>
> "*Dying to be free*," Gareth Patterson, 1998
>
> "*Cook Report – Making A Killing*," May 1997 – "*How the lid was lifted on canned lions*," Mail & Guardian, 23 October 1998

There is clear precedent set by the PPCEA to close down the commercial exploitation of captive bred lions.

In addition, there is a past precedent set by IUCN Motion 009 – "*Terminating the hunting of captive-bred lions (Panthera leo) and other predators and captive breeding for commercial,*

non-conservation purposes" – "*NOTING that the great majority of hunters regard 'canned shooting' as an ethically repugnant embarrassment*" – IUCN's Motion 009 (WCC 2016 Res. 13)

Therefore, the DEA has a clear mandate to make proposals to close down the CLB industry and provide breeders with a clear exit strategy – the HLP debating the same issues that have already be analysed and concluded upon in the PPCEA is not a necessity when Parliament has a clear instruction to put an end to the commercial exploitation of lions.

9.3 Conservation Claims of CLB Industry

9.3.1 CLB Contributing to Lion Species' Conservation

9.3.1.1 CLB Trophy Hunting - Canned or Captive?

Definitions to differentiate between 'canned' and 'captive-bred' trophy hunting are not definitive – there is a subjective and variable line between what constitutes a '*small enclosure*' ('*canned*') and hunting of '*animals that are bred in captivity*' although the hunting '*does not necessarily take place within a confined enclosure*' ('*captive*'). Is such a non-confined enclosure *small* or not? Can any such enclosure (big or small) provide the hunted quarry any means of escape in reality, ie. is there an element of *fair chase*?:

> 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*"(Harvey 2018))?

The definition of enclosure size, fair chase etc. is subjective – hence, so is trying to draw a definitive line between "*canned*" or "*captive*" derived hunting trophies. Animals (mainly lions) from both categories are bred for commercial purposes, to be hunted and killed regardless of enclosure size – both "*canned*" or "*captive*" hunting offers a chance of a kill approaching 100%.

Perhaps better sub-definitions (Harvey 2018) to use are:

Canned – "*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 – "*Lions [though not necessarily limited to this] 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 ('ranched') 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*."

The Republic of South Africa, Department of Environmental Affairs (DEA) ("*Lion Management in South Africa*") makes it clear that "*it is prohibited to hunt lion:*"

- *in a controlled environment (the minimum size of the hunting camp is not prescribed in the Threatened or Protected Species (TOPS) Regulations, as it will differ from area to area. However,* ***the minimum [enclosure/"hunting camp"] size is prescribed in many of the Provincial Acts/Ordinances****)* – note 'many' is not all, and how often are such stipulations actually inspected for compliance and enforced in reality by Province Environmental Management Inspectors?;

- *while it is under the influence of a tranquiliser (the minimum time frame before a lion may be hunted after it has been darted, is not prescribed in the TOPS Regulations but is regulated in terms of some of the Provincial Acts/Ordinances)*;

- *with certain methods, such as poison, snares, air guns, shot guns, or by luring it with scent or smell.*

The DEA do not attend hunts themselves and its questionable how much checking any Province Environmental Management Inspectors (EMI) actually conduct to ensure any stated objective, such as "*Do compliance monitoring at hunting operations with foreign hunters*."

Therefore, trying to define acceptable enclosure sizes and trying to make canned/captive hunting sound like it has an element of '*fair chase'* within any enclosed area is merely a marketing ploy. Regardless of the presence of '*fair chase'* or otherwise, a target animal still bleeds and dies to provide a hunting trophy, whether the hunt took two minutes in an enclosure, or two weeks in truly open terrain; '*fair chase*' does not equate with conservation regardless of its presence, or absence of course.

Canned/captive-bred lion hunts are cheaper and easier to organise and provision than wild lion hunts. The former is within a known (enclosed) area and the target is clearly released or targeted for the purpose. The latter, wild hunt is just that, typically over a much larger range and the target has to be sought typically over many more days in comparison (with no guarantee of a kill).

The lack of any credible conservation, ethics and morals in 'canned' hunting is clearly given in a 2012 Bob Vitro video:

> "*Between the killing party, eight female and two male lions (hand-bred 'canned' lions) were shot from tree tops, whilst hiding in burrows and cowering against enclosure fencing……the lions were simply seeking to evade the massed hunters' guns suddenly raining upon them. The target animal's bewilderment is palpable and rudimentary evasion opportunities heart wrenching*" - IWB, 5 July 2016

The same applies to 're-wilding' of captive bred lions pre-hunt – regardless of whether a captive bred lion is released into an enclosure for a short period, or a longer period, it is never truly wild and any element of '*fair chase'* remains absent:

> *"…whether a lion arrives drugged two hours before a hunt or stays in its enclosure for two years, it is essentially canned"* (Harvey 2020e).

9.3.1.2 CLB Industry - Conservation or Farming?

The CLB industry, through its own machinations successfully fought attempts to enforce longer rewilding periods pre-hunt and hence give some credence to any notion of a rewilding/pseudo conservation imperative within the CLB industry.

In fighting the provision of a 24-month rewilding obligation the CBL industry (via the SA Predator Breeders' Association) was legally declared as 'farming' and of no conservation value - "*The Supreme Court of Appeal of South Africa Judgement*," Case No. 72/10, 29 November 2010. This legal opinion has not changed in the intervening years to the present day.

If the CLB industry now sees value of its own volition in extending captive animal releases pre-hunt, doing so will not give the CLB industry any legally recognisable conservation status – unless the CLB industry wishes to overturn the 2010, Supreme Court of Appeal of South Africa judgement and provide actual, independent, peer-reviewed science that proves its conservation claims?

In a 7 March 2016 article (Note: published by Wildboere, but no longer available on-line) entitled "*9 Myths About Captive-bred Lions*," written by Professor Pieter JJS Potgieter (then President of the South African Predator Association (SAPA)), the claim was made that the captive-bred "*ranch lions*" (sic) industry is all about the industry's 'love of lions and conservation.' Note: The SAPA likes to confuse and blend 'canned'/'captive' lion breeding with wildlife ranching, when no true comparison actually exists, as explained below.

In an open letter (dated 29 November 2017) to Secretary Zinke (then head of the United States Fish and Wildlife Service (USFWS)), the African Lion Conservation Community's posted response to the SAPA's letter (pleading for the lifting of captive lion trophy hunting import restriction) made the distinction clear between wildlife ranching and the SAPA's canned/captive breeding. The African Lion Conservation Community summarised the conservation claims of the captive breeding industry as follows:

> "*The [SAPA] letter appears to associate the captive lion breeding industry with the wildlife ranching industry as a single entity. While there have been conservation benefits stemming from the expansion of South Africa's wildlife ranching industry, we point out that captive lion breeding cannot claim any of the conservation successes that the wildlife ranching industry has achieved. Captive bred lions are kept in small, intensively-managed enclosures that have been cleared of most of their indigenous vegetation, thus removing the natural habitat of the area. In no way does this type of*

> *land management contribute to biodiversity conservation, or support claims of benefits for mesocarnivores and veld rehabilitation, linked with lion breeding*."

Furthermore, the open letter from the African Lion Conservation Community made clear that:

> *"[SAPA] claims that captive bred lions are required for reintroduction and species restoration are not based on any scientific evidence and are contradictory to the published, peer reviewed evidence of several of the world's leading lion conservationists……..South Africa, where free ranging lions have recently been down-listed from Vulnerable to Least Concern conservation status. This is due to ongoing, concerted conservation action and concerted reintroductions, all of which have no connections with the captive lion industry."*

In an attempt to 'prove' that any captive raised lion (no matter its background) can indeed be rehabilitated into the wild, Professor Pieter JJS Potgieter ("*9 Myths About Captive-bred Lions*," 7 March 2016) cited Elsa the lioness as a key example of successful rehabilitation (one example from the 1960s duly noted).

Elsa's rehabilitation was of course the theme of the 1966 'Born Free' film and Professor Pieter JJS Potgieter stated in his article "*Elsa the lioness made the transition from pet lion to wild lion mama pretty easily.*" Professor Pieter JJS Potgieter's reference to Elsa is puerile and lacks any scientific weight that might give a modicum of credibility to the captive lion breeder's otherwise unsubstantiated conservation claims.

Furthermore, according to Professor Pieter JJS Potgieter "*There are numerous cases where captive-bred lions have successfully made the transition to become wild lions. And they did it with little fuss and with little if any coaxing. Currently there are two studies of note, one on captive-bred lions in the wild in Zambia and another in the Zambezi River region.*" The exact scientific citations to this purported work are sadly lacking.

> "*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*" - (Harvey 2018)

The SAPA has no connection to any internationally recognised lion conservation programme (such as the African Lion Coalition), or any other organisation that actually contributes to wild lion conservation.

Therefore, canned/captive lion breeding has never had any independently proven conservation value and the captive industry's future input into wild lion conservation is not required by the African Lion Conservation Community.

Plus, there is the risk of polluting the genetic purity of wild populations by planned, or inadvertent release of captive bred stock into the wild (a risk that will not subside by surreptitiously adding 'farmed'/captive bred lions to the AIA – reference paragraph 2.1 - "*Animal Improvement Act (AIA)*"):

> "*……..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" -* Harvey 2018
>
> *"These authors [Manuel et al. 2020] caution that "although conservation efforts are contributing to increasing population size after centuries of decline, their remarkable lack of genomic diversity suggests that they could be extremely susceptible to inbreeding depression and genetic erosion, as well as future pathogen outbreaks" – "Genetic Diversity and Relationships of Living and Extinct Lions,"* JD Supra, 5 June 2020

Wild lions live in complex and dynamic social structures – introducing any lion (let alone a captive bred lion) into a wild lion environment is fraught with risk:

> '*reintroducing large carnivores from captivity into the wild is profoundly limited by biological, technical, financial and sociological factors*' - Hunter et al. 2013

In conclusion, with no conservation value, canned/captive lion trophies clearly do not qualify for any trophy importation based on proven conservation criteria. There is also the risk of miscategorising on CITES (still paper based) permits system of canned/captive ('C') sourced as wild ('W') to circumvent the obvious lack of conservation credentials from a canned/captive trophy hunting (Ammann 2015, EMS Foundation 2018).

In early September 2016, IUCN passed Motion 009 – "*the prohibition by the South African Government on the capture of wild lions for breeding or keeping in captivity.*"

> "*Terminating the hunting of captive-bred lions (Panthera leo) and other predators and captive breeding for commercial, non-conservation purposes*" – "*NOTING that the great majority of hunters regard 'canned shooting' as an ethically repugnant embarrassment*" – IUCN's Motion 009 (WCC 2016 Res 13)

Only recently has any hunting association had the (convenient) epiphany that canned/captive hunting is bad for the image of trophy hunting and decided to drop 'canned' from their approved activities list (after over 20 years of past support).

On the question of canned hunting's potential negative impact on wild lion populations, nurturing hunters that graduate to seek wild lion trophies:

> "*The lion farms' creation of a market for canned lion hunts puts a clear price-tag on the head of every wild lion. They create a financial incentive for local people, who collude with poachers or turn a blind eye to illegal lion kills. Trophy-hunters who begin with a captive-bred lion may then graduate to the real, wild thing*" - Fiona Miles, director of Lion's Rock Big Cat Sanctuary

The canned/captive lion hunting is not providing any recognisable proven conservation benefit (also reference paragraph 9.4 – "*The 'Buffer' Theory*").

The canned/captive industry is also riven with illicit activity:

> *"The association between some of those involved in the industry, and illegal trade in other wildlife products, and the increasing association between lion breeding and the fast-expanding trade in donkey meat and skins, are highlighted*" – "*Cash before conservation*," Born Free Foundation, 2018

It is high time that South Africa's commercial, non-conservation purpose canned/captive big cat breeding industry was shut down in its entirety, in accordance with the Republic of South Africa, Parliamentary Report, 13 November 2018

9.3.2 Lion Bone Trade Conservation Claims

A by-product of South Africa's canned/captive lion hunting industry is the sale of lion derivatives (meaning lion bones, bone pieces, bone products, skeletons and derivative products such as lion claws, skulls and teeth of lion) to the Asian, Traditional Medicine (TM) market – where lion bones are used as a substitute in products such as 'tiger bone wine' and 'tiger (lion) cakes' etc., but other felids such as leopards are also illicitly targeted for TM purposes.

These TM products are sold as premium remedies (despite no proven efficacy). The lion bone trade started as a stand-alone trade in 2008, without any precautionary assessment by the Republic of South Africa, Department of Environmental Affairs (DEA) of the potential risk to global wild lion populations from stimulated demand – the lion bone trade is analysed in full at Appendix 1 – "*Lion Bone Trade Consultation, 2019*" but can be summarised as follows.

The action was taken allegedly to supply a substitute to the `tiger bone' market after the 2007 (CoP14) CITES "*ban*" (decision 14.69 - which South Africa voted in favour of) to curtail any commercial tiger farming:

> "*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*"

In 2017, the DEA appeared to still be under the delusion that the trade in tiger bones has subsided because of this 2007 CITES "*ban*:"

> "A *2015 study commissioned by TRAFFIC* ["*Bones of Contention*"] *raised concerns around the shift in lion and tiger bone trade; namely that when the trade in tiger bone was banned; the trade shifted and bones were sourced from South Africa, available as a by-product of the hunting of captive bred lions*" - DEA's 28 June 2017 media statement

This need for substitute lion bones is a delusion, because intensive tiger framing has not abated since 2007, in fact it has got worse and is still evident within South Africa itself:

- the 2015 "*Bones of Contention*" report [page 7 - 10] cited by the DEA suggests South Africa was/is still supplying tiger bones/parts (in contravention of CITES decision 14.69);

- *"South Africa allows lion and tiger farming for commercial trade in parts and derivatives….in 2015, 280 tigers were estimated to be in at least 44 facilities in South Africa*" - "*The Lion's Share.*" It is believed that none of the tiger breeding facilities in South Africa are CITES registered, with the South African Deputy Director CITES Policy Development & Implementation believing South Africa's tiger breeding is non-commercial and therefore, CITES registration is not necessary;

    - However, CITES CoP18 (2019) Draft decision Doc. 71.2 reiterates - "*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 Standing Committee 71, Doc. 19 states that "*the Secretariat further reported that it had identified the number and location of facilities which may be of concern keeping Asian big cat species in captivity*" – listing 66 tiger breeding facilities including 1 in South Africa.

- The 2017, Environmental Investigation Agency (EIA), "*The Lion's Share*," suggests there are more than 6,000 tigers held in captive breeding facilities in China, Laos and Vietnam to supply tiger bones to the TCM industry (more than in 2008 when CITES' "*ban*" guidance was supposed to be implemented), plus South Africa's exportation of tiger parts.

- The 2020, Environmental Investigation Agency (EIA) "*On the Butcher's Block – The Mekong Tiger Trade Trail*," reiterates that the trade in tiger body parts and derivatives has not subsided, resulting in increased poaching of wild tiger species, this detriment to conservation being directly linked to South Africa's lion bone trade:

> "*There is no escaping the fact that countries from which wild tigers have been wiped out or virtually wiped out in recent years – Cambodia, Laos, Vietnam and China – are countries where the tiger has been valued solely for the sum of its body parts…End the domestic trade and use of tiger and other big cat parts and derivatives, including from captive specimens and non-native species*"

> "*Witnessing how operations in these key tiger farming countries have been able to expand, businesses in South Africa and elsewhere have followed suit, breeding tigers and selling their body parts into trade. In the case of South Africa, this trade is often conducted along with African lion bone which is marketed as tiger to increase profits at the end of the trade chain*."

It remains unclear why South Africa voted at CITES in 2007 to close down the commercial exploitation of tigers (decision 14.69), whilst simultaneously seeking to expand the commercial exploitation of lions – the stance is non-sensical and duplicitous (the most likely motivation was South Africa saw more profit to be made from their 'experience' from exploiting the breeding of lions for 'canned' hunting).

It is estimated that no less than 70 tonnes of lion bones/skeletons etc. have been shipped to East-Southeast Asia [from Africa] since 2008, 64% in the three years from 2014 – 2017, with South Africa exporting 99% of all lion skeletons listed on the CITES trade database up to the end of 2015 (Williams, V.T. et al. 2017).

Since 2017, South Africa (the DEA) has issued stand-alone lion bone trade export quotas (2017 - "*800 skeletons*," 2018 - "*1,500 skeletons*") whereby canned/captive lions can be euthanized specifically to supply the lion bone trade (ie. without any prerequisite necessity for a trophy hunting element).

The 2017 study, *"A roaring trade? The legal trade in Panthera leo bones from Africa to East-Southeast Asia,"* (Williams V.T. et al. 2017) highlighted the lack of forethought within the lion bone trade suggesting that:

> "……*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*."

The report's authors identified "*the concerns that the legalised sale of lion bones, supplied by captive-bred lions, from South Africa is:*

(i) impeding efforts to curb the tiger trade because access to lion parts might be perpetuating and/or expanding the market for large felid bones, and thereby rekindling efforts to poach tigers as the demand is supplied, and

(ii) abetting the illegal acquisition and trade in lion bones and derivatives across Africa (seemingly evinced through the rise in incidences of lion poaching and trafficking)."

Recent evidence (August 2017) suggest this latter threat, might be manifesting as the 'trade' develops. In fact some countries have taken pre-emptive action to try to deter the likely onset of wild lion poaching in the wake of South Africa's 2017 "*800 skeletons*" quota – in July 2017, Namibia, introduced a N$1m fine/10 year jail term for possessing lion bones (with proposals to increase this to a potential N$15m/15 year jail term for illegal possession of wildlife products).

Field observations indicate that wild lions in southern Africa, specifically Mozambique, have been under increasing threat for their parts. The Greater Limpopo Carnivore Programme has recorded an escalation in the number of wild lions poached on the Mozambican side of the Great Limpopo Transfrontier Conservation Area, with a marked increase since 2015. They report that 26% of the lion population in this park has been lost due to poaching for their body parts.

These signs are a pre-cursor/warning that allowing a stand-alone lion bone trade (and/or a by-product lion bone trade from captive lion trophy hunting) to become legitimised and flourish poses a threat to the future survival of the African lion species on a continent-wide basis.

9.4 The 'Buffer' Theory

Williams, V.L. et al. 2019 did not conclusively prove any conservation benefits stemming from South Africa's captive lion breeding industry, but stated:

"*Aside from considering **a possible buffer effect** of legal body part exports, questions remain in the conservation role of captive lion breeding for hunting……*"

The South African Predator Association (SAPA) also claims that the hunting of captive bred lions presents direct conservation benefits to wild lions by the supply of 'legal' body parts and

taking hunting pressure away from wild lion populations – this is the "*possible buffer*" theory perpetuated by Williams, V.L. et al. 2019.

The SAPA claims that if captive lion hunting is stopped, increased pressure will be placed on wild populations (for hunting and poaching to supply demand for lion bones to the Asian Traditional Chinese Medicine (TCM) market). Yet the SAPA (and/or Williams, V.L. et al. 2019) have not provided any scientific evidence whatsoever to substantiate this theory/claim.

There is no conclusive, peer-reviewed science that supports the 'buffer' theory and hence, the relevance of canned/captive lion hunting and the by-product/stand-alone lion bone trade:

> *"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*" - Harvey 2018

The evidence suggests the SAPA's/CLB industry claims are false with regard to the lion skeleton by-product that results from the captive lion trophy hunting and/or the killing of captive lions specifically for their skeletons/bones. The legal lion bone trade is acting as a catalyst for illicit trade and is starting to put pressure on wild lion populations. More legal trade is not the cure to counter illicit trade. Legal trade is fuelling the potential escalation of illicit trade.

In a comprehensive report, "*The Extinction Business, South Africa's 'Lion' Bone Trade*," EMS Foundation and Ban Animal Trading, July 2018 the conclusion is South Africa's lion bone trade has "*….created a situation where the legal trade in 'lion' bones is fuelling the illegal trade in lion and tiger bones and providing laundering opportunities for tiger bones in Asian markets.*"

This report also highlighted the links between the 'legal' export of lion bones to known wildlife trafficking syndicates in Vietnam – namely, the Xaysavang Network, an international wild animals trafficking syndicate that facilitates the killing of endangered elephants, rhinos, pangolins, and other species for products such as ivory and rhino horn. Therefore, the 'legal' lion bone trade is happy to do business with known rhino, elephant and other wildlife poachers – hardly a sign of any conservation imperative in the 'legal' lion bone trade:

> *"…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"*

An Africa Geographic article, "*Lion poaching: Escalating demand for claws and teeth*," 2 January 2020 has summarised the conclusions of a paper (Everatt at al. 2019) published towards the end of 2019. The study makes a potential link:

> "*.....between the escalation in poaching of wild lions and South Africa's increasing export of captive-bred lion skeletons and body parts, which has shown exponential growth since 2007. This trade feeds a growing market among upwardly mobile Asians for luxury products, such as lion bone wine, with lion bones used in lieu of tiger bones as tiger parts become increasingly scarce.*
>
> *The rising demand for lion body parts could exacerbate motives to kill lions in the vicinity of communities and livestock, irrespective of livestock losses or a perceived threat of losses. Incentivising the killing of lions by a demand for body parts could seriously undermine conflict mitigation efforts.*
>
> *Lion poaching for body parts has also increased in the Niassa reserve in northern Mozambique (C. Beggs Niassa Lion Project pers coms) and of captive lions in the Limpopo province of South Africa (K. Marnewick Endangered Wildlife Trust pers coms). Lions killed for conflict in the Caprivi region of Namibia also had teeth and claws removed (L. Hansen Kwando Carnivore Project pers coms).*
>
> *.....predominantly Chinese tourists were fuelling a demand for lion teeth and claws, supplied with lions often killed in conflict situations by Masai herdsmen, while other body parts such as pieces of skin, were sought for local demand. The situation we present from Mozambique may have similarities to the situation documented in Kenya, however the main source of the demand is still speculative" - Everatt et al. 2019*

Everatt et al. (2019) concludes that the captive lion industry/lion bone trade is potentially increasing demand for lion body parts and derivatives, with 'conflict killings' of wild lions being used as an excuse to harvest lion body parts to try and profit from the demand/trade:

> "*The legal export of lion parts from captive lion breeders in South Africa may also fuel an illegal trade in lion body parts to be used within Traditional Chinese Medicine markets*

or curios (Williams et al. 2017a). While direct evidence linking the legal trade in captive sourced lion parts from South Africa to the targeted poaching of wild lion populations has to date been scant (Williams et al. 2015), there is reasonable concern of a link (CITES 2016; Parliamentary hearings). Lion teeth and claws have the highest monetary value in South Africa's legal market (Williams et al. 2019). In all of the lion poaching incidences we documented where only teeth and claws were taken, the poachers involved were working on foot and under at least a nominal threat of being arrested. In such a situation it is likely that poacher's selection for teeth and claws over removing full skeletons is a way of optimizing their return while reducing the costs.....our findings have [also] indicated a possible international demand from Vietnam impacting this wild population and calls for further detailed investigation."

9.5 Legal and Scientific Challenges to the Lion Bone Trade Quota

IWB responded to the 2019 lion bone trade consultation – this is given in full at Appendix 1 - "*Lion Bone Trade Consultation, 2019*" to this submission.

The stand-alone lion bone trade export quotas set by the South African DEA (2017 – "*800 skeletons*," 2018 "*1,500 skeletons*") are not based on any recognisable science and have been declared unlawful (August 2019), on the grounds that the DEA did not take animal welfare into account in the setting of lion bone trade quotas.

There have been no public reports released by South Africa Scientific Authority (the South African National Biodiversity Institute (SANBI)) to support any specific lion bone trade quota, only analysis of the trade itself. It seems clear that the "*scientific*" reasons given by Ex Minister Molewa (DEA) for the 2017/2018 lion skeleton quota had no grounding in any scientific reality. In response to journalist Adam Cruise's questions, Mpho Tjlane (the DEA's "*media queries contact*") apparently responded that the lion skeleton quota had been upped for 2018:

> "*.....because they [the lion breeders] have surplus stockpiles of lion bones and they want to get rid of them*" - "*Dodgy skeleton traders and lion slaughterhouses exposed in damning report*," Don Pinnock, Daily Maverick, 19 July 2018

The key points from the "*Sustainable rhino horn production at the pointy end of the rhino horn trade debate*" paper are relevant, as it makes clear that a full understanding of the demand side is required (assuming it is even possible) before a scientific quota can be set:

> "*Further research is necessary to assess the likely outcomes of legalising trade*"

There was no scientific research for demand prior to the ill-advised lion bone trade being launched, therefore there can be no scientific justification for a quota in the absence of such knowledge.

The pro-trade advocates and those that stand to profit might argue that the quota should be unbounded – supply should be open to try and meet demand despite a finite capacity to meet unbounded demand from 1.4bn potential Asian consumers from captive bred sources and stockpiles. If that capacity is exceeded, or stimulates demand out of control, then the resulting poaching pressure threatens to wipe out wild lion populations in order to satisfy and profit from a potential tsunami of demand.

I don't pretend to know what the demand for lion bone might be – but more to the point, neither do the pro-trade advocates and those that stand to profit from such trade.

In June 2017, the DEA undertook to deliver a 3 year SANBI study to look into the effects of the lion bone/skeleton trade on wild lion populations on a continent wide basis:

> "*The South African National Biodiversity Institute (SANBI) has initiated a study aimed at increasing the understanding of the lion bone trade in South Africa and the captive lion breeding industry*."

This SANBI study is still awaited. But if an SANBI study is needed on the continent-wide impacts of the current lion bone trade, if the potential effects on wild species are not fully understood, if the DEA suggests that without a lion bone trade quota there is potentially a risk to wild lion/tiger populations, where is the DEA's/SANBI's current scientific proof (not a hypothesis based on a wedded devotion to 'sustainable utilisation') of the conservation purpose of the lion bone trade/captive bred lion breeding? There is no current scientific evidence that captive/canned lion breeding provides a buffer for wild lion populations (reference paragraph 9.4, "*The 'Buffer' Theory*").

Any support of a current lion bone trade quota in the absence of knowing the potential continent-wide risks to the conservation of the African lion species also contradicts

International Union for Conservation of Nature (IUCN) when IUCN concluded in September 2016:

> "*the prohibition by the South African Government on the capture of wild lions for breeding or keeping in captivity*" and "*terminating the hunting of captive-bred lions (Panthera leo) and other predators and captive breeding for commercial, non-conservation purposes.*"

In the absence of supporting science, the lion bone trade quota should be set at zero and endure until either the industry is disbanded, or categoric, independent peer-reviewed science exists to support a specific lion bone trade quota.

In parallel, the export of live lion specimens should also be set at zero, to curb the potential abuse of this mechanism as a deceptive way to export live lions, only for the lions to be slaughtered upon arrival at the "*acceptable destination*" (sic) and supply the lion bone trade.

9.5.1 Lion Bone Trade – By-Product

The false assertion has also been made that the lion bone trade is purely a by-product of 'canned'/captive lion hunting, but it is clear that the lion bone trade has become a stand-alone commercial endeavour:

> "*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 (The 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*" - Harvey 2018

The main market for 'canned'/captive lion hunting industry was predominantly from United States trophy hunters. But since 2015, the United States Fish & Wildlife Service (USFWS) has closed down the import of lion trophies that had no conservation value for the species. Therefore, the main market for 'canned'/captive lion hunting has evaporated.

After the shut down on 'canned'/captive lion hunting imports into the USA, there was no recorded surge in demand for wild lion hunting (Harvey 2018). Of course, even if closing down

'canned'/captive lion hunting there was a surge in demand for wild lion trophy hunting then surely the hunting industry's self-declared "*well regulated*" practices and 'scientifically' set hunting quotas would curtail any such surge from over-harvesting wild lions of course, unless "*well regulated*" wild lion trophy hunting is a myth?

Wild lion population sustainability is more sensitive to excessive hunting quotas than to habitat loss (Packer et al. 2009, IWB 2016a), so scientifically set hunting quotas are key to species conservation, but in reality scientific hunting quota setting is clearly lacking (IWB 2015c, IWB 2016a) with short term gains and profiteering taking priority.

In conclusion, the bottom line is that South Africa's canned/captive lion breeding industry, does not sustain a lion bone trade as a by-product of trophy hunting. The lion bone trade is a stand-alone commercial endeavour, that has no proven conservation imperative whatsoever and is proving detrimental to the survival of the wild lion species.

9.6 Lion Bone Trade – Human Health Risks

Three letters have been sent regarding the on-going welfare of animals/wildlife held in captive breeding facilities and the human health risks:

> Minister Barbara Creecy, Minister of the Environment, Forestry and Fisheries - "*Captive Lion and Other Big Cat Breeding Industry and the Coronavirus*," EMS Foundation, via Cullinan & Associates attorneys, 15 April 2020
>
> The Honourable Ms Thoko Didiza, Minister for Agriculture, Land Reform and Rural Development - "*Wildlife Trade and Coronavirus*," EMS Foundation, via Cullinan & Associates attorneys, 15 April 2020
>
> The Honourable Dr Zwelini Mkhize, Minster for Health - "*Wildlife Trade and Coronavirus*," EMS Foundation, via Cullinan & Associates attorneys, 15 April 2020

There are report of captive-bred lions being slaughtered in makeshift, insanitary and squalid conditions (the Abattoir Hygiene Manual guidance is clearly not being applied despite the slaughtered lion's "*animal product*" being marketed for subsequent human consumption), thus exacerbating the human health risk from the slaughtering process and/or consumption:

"An investigation by Senior Inspector Reinette Meyer of the Bloemfontein SPCA found the slaughter conditions on a Free State farm she visited, Wag-'n-Bietjie, owned by lion breeder André Steyn, to be almost beyond belief and far from sanitary.

"It was shocking," she said. "We couldn't believe what was happening. You could smell the blood. The lions got shot in the camp and then were all brought into this one room. The flies were terrible."

She discovered lions were being left in small, cramped cages. A total of 54 lions had been killed at the farm in just two days. They were first hit with tranquilliser darts before being shot dead with a .22-calibre rifle.

It is understood they were shot through the ear directly into their brains "because overseas buyers will not pay for damaged skulls". Some of the lions are believed to have been trucked about 400km to the farm from a "safari park" near Johannesburg.

"Dead lions, some skinned and others waiting to be skinned, littered the bloodstained floor," said Meyer. "A pile of innards and skeletons lay elsewhere inside, while discarded internal body parts were piled high in overflowing black plastic bags on a trailer outside."

The farm's permits have been revoked.

Sava says TB can be transmitted to humans through accidental contact and through the consumption of animal meat or bone infusions such as lion bone wine. Lion meat, after the animal has been deboned, is also often given to communities, exposing them to harmful contamination" – "*China's ban on wildlife consumption is an overdue death knell for lion bone industry*," Don Pinnock, Daily Maverick, IWB, 24 February 2020

9.6.1 Bovine Tuberculosis (bTB)

The captive lion breeding industry represents a risk to public health, bovine tuberculosis.

Both captive and wild lion populations suffer from bovine tuberculosis, with high levels of infection in Kruger posing a conservation risk. Lions were previously thought to be a dead-end host for the disease, but recent research suggests infected individuals can transmit the disease to other lions.

Tuberculosis infects and kills millions of humans per year (World Health Organisation, tuberculosis fact sheet) - the WHO lists bovine tuberculosis as one of the seven neglected zoonoses perceived to pose severe threats to public health:

- A total of 1.5 million people died from TB in 2018. Worldwide, TB is one of the top 10 causes of death and the leading cause from a single infectious agent;
- There is no adult vaccine for TB, with the global death toll resulting from TB likely to rise as a result of the COVID-19 pandemic;
- In 2018, an estimated 10 million people fell ill with tuberculosis (TB) worldwide. 5.7 million men, 3.2 million women and 1.1 million children. There were cases in all countries and age groups;
- Five years ago, world leaders pledged via the United Nations Sustainable Development Goals to end the TB epidemic by 2030. At a high-level meeting in 2018, UN members promised to scale up their response, including doubling funding by 2022.

Therefore, the lion bone trade represents a clear human health risk (Modlin 2017) and potentially public health liability, with the potential passing of TB to humans via wildlife/livestock handling ("*Roadmap for Zoonotic Tuberculosis*," World Health Organisation) and directly from infected livestock during the slaughter process - research shows bovine tuberculosis is "*a concern for vulnerable communities*" in South Africa.

Lion bone products and derivatives are consumed via the lion bone trade within the human food chain (in Traditional Medicine), where lion bones are known to potentially contain transmittable TB ("*Dying for a Myth*," Linda Park, CEO Voice4Lions):

> "*I am therefore of the opinion that uncontrolled exposure of humans to bones from animals, in particular lion bones, poses a risk for development of the form of TB known as bovine TB in particular, although not necessarily being limited to this form of TB only*" - Professor Paul van Helden, Director of the South African Medical Research Council's Centre for Molecular and Cellular Biology and Co-Director, DST/NRF Centre of Excellence for Biomedical TB Research - "*Dying for a Myth*"

The 'captive' lion breeding industry's 'stock' is not subject to regular TB testing (with no scientific evidence supplied to the contrary, only verbal assurance from within the captive breeding industry itself) and the whole arena of TB within the 'captive' lion/big cat breeding industry was not addressed in the Minster's reply to questioning in 2017 (Question No.

NW1581, raised by Mr N Singh, May 2017 to the Minister (DEA)). For clarity, the Minister Molewa's, Department: Environmental Affairs reply is given in full:

> "*The bacterium causing Bovine Tuberculosis (BTb) is an intracellular bacteria, mainly residing in the lungs and associated tissues. In South Africa, it is maintained primarily in cattle, with specific populations of buffalo and kudu also acting as maintenance hosts, with spill over into various other wildlife species, including lions in those specific areas been documented (including the greater Kruger Complex and Hluhluwe Imfolozi Game Reserve). The disease is under state veterinary (Department of Agriculture) control and there is currently an active test and slaughter policy for BTb in cattle. In addition, certain wildlife areas and properties in the country are also identified as being BTb infected, and are therefore placed under quarantine. All animal movement out of such areas are subject to 2 negative Tb tests. If lions are hunted in an area that is infected with BTb, then those hunts and processing of the trophies/skins thereof will be under strict state veterinary supervision. These carcasses will remain on the infected farm and be inspected by the state vet and disposed of appropriately. All BTb infected properties and areas will need to have in place a risk assessment and management plan for mitigating disease transmission (including to humans) that have been approved by the Department of Agriculture. For any further details on the research relating to this matter, the National Department of Agriculture would be in a better position to respond*."

How does the supply of lion bone products for human consumption potentially infected with TB comply with Office International Epizoologies (OIE) (World Organisation for Animal Health) advice and standards? South Africa's OIE delegate is listed as Dr Botlhe Michael Modisane, Department of Agriculture, Land Reform and Rural Development, so perhaps the responsibility lies with this department as to why captive lions are not routinely tested for TB. If they are, then the records should be made public for ongoing scrutiny and transparency.

The NSPCA case commenced in September 2018 (Case No. 86515/17) against the Minister of Department: Environmental Affairs (DEA) (and co Respondents). The case resulted in a Judgement (6 August 2019) from the Pretoria High Court, which concluded that the lion bone quotas set for 2017/18 were unlawful because animal welfare was not considered (by the DEA Minister) to be a function in the Minister's decision making (this has been proven a fallacy in contravention of the Constitution). The case highlighted that:

- The DEA considers the responsibility for the administration of the Animals Protection Act No 71 of 1962 falls within the legislative mandate of the Department of

Agriculture, Forestry and Fisheries (DAFF). However, the legal understanding is that even if the mandate does not reside with the decision maker (the DEA), this does not preclude the decision maker (DEA) from considering them if indeed they are relevant – where animal welfare is indeed a consideration enshrined in the Animal Protection Act No. 71 of 1962.

- the slaughter/euthanasia of captive bred lions to supply the lion bone trade is of a poor standard:

    - "*The Extinction Business – South Africa's 'Lion' Bone Trade*," EMS Foundation, Ban Animal Trading (BAT), page 59 - 64, "*UNLEASHING HELL: THE RISE OF LION BONE SLAUGHTERHOUSES, FACTORY FARMING AND THE MASS KILLING OF LIONS"* and referenced at 'EK4,' 'SL1' and 'SL2', Case No. 86515/17:

        "*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…. 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*."

There is also the question of once a lion is slaughtered/euthanised, the meat stripped and the skeleton removed, where does the meat go? There is evidence that lion meat enters the human food chain. Lion meat has not been scheduled under Notice 201, Gazette 43050, 28 February 2020 for inclusion within the Meat Safety Act (No. 40 of 2000), but lion meat that remain on lion bones is encompassed as an ingredient in "*Lion Cake (pages 12, 112)*" (a Traditional Medicine (TM) of no proven efficacy), Lion Cake being manufactured within South Africa for illicit shipment. There is also anecdotal evidence that lion meat is also trafficked to be served within the 'bush meat' trade.

"*Sava [South African Veterinary Association] says TB can be transmitted to humans through accidental contact and through the consumption of animal meat or bone infusions such as lion bone wine. Lion meat, after the animal has been deboned, is also often given to communities, exposing them to harmful contamination*" – "*China's ban*

> *on wildlife consumption is an overdue death knell for lion bone industry*," Don Pinnock, Daily Maverick, IWB, 24 February 2020

Thereby, potentially TB infested lion meat/derivatives are entering directly into the human food chain, plus the TB transmission risk during the handling of lion skeletons/bones and derivatives within the slaughtering and processing activities.

In addition, captive populations of TB infected lions pose a theoretical source of transmission to previously uninfected wild populations if captive lions escape, or are intentionally released into wild populations, or exported as live specimens. The spread of chronic wasting disease exemplifies this risk - movement of farmed deer and elk is spreading the disease across the globe and infecting wild populations, lions could do the same. The same applies to a deadly virus originating in Africa (evidence points to zebra) now killing horses in Thailand, due to the cavalier wildlife trade/export without due regard to such bio-security risks (Bloomberg 2020):

> *"While the zebras were imported legally because of a loophole in the rules, many countries face an increased risk of outbreaks because of the growing black market for illegal wildlife products, which Interpol estimates is worth as much as $20 billion annually"*

So where is the clarity that any 'captive' lion bones/skeletons being exported by South Africa do not carry TB organisms harmful to human health, and which department is responsible for checking the exports of lion bones/skeletons - the DEA/DEFF, the DAFF, or the Provincial offices? If the DAFF has a complete historical record of all the testing for TB of all of South Africa's captive bred lion stock, that data is yet to be made public.

9.6.2 Toxic Tranquilisers

Lion bones could also be infused with dangerous tranquilisers used to pacify some of the animals before they're executed/slaughtered - prior to slaughtering lions, the common procedure is to anaesthetise the animal that is selected, in what is commonly known as 'darting.' Whilst under sedation, the animal is then shot and killed with a .22 calibre rifle:

> "*Added to that is the danger of the tranquiliser mostly used in the slaughter process. The South African Veterinary Association (SAVA) has confirmed that the procedure is not regulated. The association has warned that the tranquiliser may be harmful and even lethal to humans and to other animals which feed on the carcasses of darted*

animals" – "*China's ban on wildlife consumption is an overdue death knell for lion bone industry*," Daily Maverick, 24 February 2020

The risks of unregulated tranquiliser use in the lion slaughtering process (Zietsman 2019) is summarised:

1. *It is common knowledge that the anaesthetic used in these veterinary procedures can be lethal if it enters the bloodstream of humans. For the same reason, it can also be lethal to animals who feed on the carcasses of darted animals. For that purpose the products so used, are contra indicated for human as well as animal use, and carry a warning: "**do not use in food producing animals**"*

2. *It is also common knowledge that these products are regulated as schedule 4 and 5 type medical supplies and may only be handled by suitably qualified veterinarians.*

3. *As a further warning one of the products typically used, is teratogenic. In layman's terms, it causes abnormalities of physiological development during pregnancy, resulting in human congenital abnormalities and also in other non-birth developmental stages, including puberty. It is a well known fact that the meat of slaughtered lions is given to communities for consumption and the CBL trade is exposing these most uninformed and vulnerable communities to the serious risks outlined herein.*

4. *The problem goes further than this. The farm worker who performs the slaughter is also exposed to the same risk, if he should accidentally cut himself and contaminated lion meat or blood should enter his body.*

5. *Lastly, there is no guarantee that the product is not transmitted into the bone structure of the animal and that South Africa is not exporting poisonous products"*

SAVA has acknowledged that the tranquiliser (and TB) could be transferred in the production of tiger bone wine, for which lion bones are increasingly used. There is also the clear human health risk to local communities who are given lion meat by breeders after the animal has been deboned.

Needless to say, slaughtering lions without first tranquilising them would be inhumane and contrary to any notion of recognisable 'animal welfare.'

9.6.3 Feline Immunodeficiency Virus (FIV)

There are also other potential human health risks associated with the consumption of lion bones from FIV*:*

"*Not only are captive lions well-known for harboring bovine tuberculosis, which can be passed to humans, wild lions across Africa are infected with the cat equivalent of HIV (known as feline immunodeficiency virus, or FIV). "I'm not saying it is likely to mutate in lions and jump to humans, but it did in gorillas, and they were free-ranging animals that were likely to be as healthy as possible," Funston [Panthera] said. "We should be taking more care*" - "*Coronavirus is a crisis for South Africa's captive lions, campaigners warn*," Mongabay, 13 April 2020

9.6.4 Applicable Acts – Human Health

- Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act 52 of 1972) – lion bones are incorporated into Traditional Medicine products that have no proven efficacy; therefore, lion bones are exported under fraudulent and false health claims;

- Meat safety Act, 2000 (Act 40 of 2000) - Even if *Panthera leo* is not listed at Schedule 1 of the Act, lion bone is a "*animal product*" ("*Definitions*," 1. (1), (iii)) and therefore the Animal Disease Act 35 of 1984 should be applicable, whereby "*Essential national standards*," para 11., (k) must apply - "*an animal presented for slaughter in accordance with an animal health scheme in terms of the Animal Diseases Act, 1984 (Act No. 35 of 1984), may only be accepted for slaughter if the animal is identified in accordance with the requirements of the scheme in question"*;

- Animal Disease Act 35 of 1984 - Tuberculosis (TB) is listed as a "c*ontrolled disease*" as listed within "*Controllable and Notifiable Animal Disease*" by the Department: Agriculture, Food and Fisheries (DAFF), where it is stated that:

  > "*Certain diseases require government control as they affect individual animal owners and also pose serious risks to other farmers or consumers of animal products*."

Of course, COVID-19 has potential implications for lion health and also human consumption from lion sourced "*animal product*" and anecdotal evidence "*It is a well known fact that the meat of slaughtered lions is given to communities for consumption and the CBL trade is exposing these most uninformed and vulnerable communities to the serious risks outlined herein"* the risk also incorporates TB and toxic *"teratogenic"* tranquiliser transmission to humans (reference paragraph 9.6.2 – "*Toxic Tranquilisers*").

9.7 CITES – Lion Bone Trade

In 2016, at CoP17 CITES announced an "*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*"

Head of Policy at Born Free Foundation who attended CITES CoP18 and on the issue of the lion bone trade, said:

> *"…. the meeting failed to grapple with the thorny issue of legal lion bone exports originating from intensive captive breeding operations in South Africa, in spite of the considerable evidence that this trade presents a risk to wild lions. Nor did the meeting do anything to quash the immoral and corrupt practice of lion trophy hunting. Efforts to persuade governments in South Africa and beyond to bring an end to lion trophy hunting and the lion bone trade will clearly need to continue*."

CITES Decision African lion (*Panthera leo*) 17.241 proposed:

> "*e) undertake studies on legal and illegal trade in lions, including lion bones and other parts and derivatives, to ascertain the origin and smuggling routes, in collaboration with TRAFFIC and/or other relevant organisations;*
>
> *f) undertake a comparative study of lion population trends and conservation and management practices, such as lion hunting, within and between countries, including the role, if any, of international trade*;"

The 2017 review (paragraph 4) of progress was disheartening - "*The Secretariat regretted that, because of the lack of adequate funding and resources, it had not been able to make substantial progress in implementing the activities indicated in paragraphs a) to i) of Decision 17.241*."

The 2018 (paragraph 14) update was "*The study, conducted by TRAFFIC, is ongoing*" – with a draft update attached as an appendix – "*The Legal and Illegal Trade in African Lions, A study in support of Decision 17.241 e), Preliminary findings for AC30*," 18 May 2018:

> "*.....currently the international trade in lion parts does not seem to be the largest threat facing wild lions: retaliatory killing and prey base depletion are of most concern, although poorly managed trophy hunting and use/trade are also identified as risks. The risk from use/trade is most likely magnified when the sub-population is small and located in a region where demand is high for lion products (e.g. West Africa) or in areas where established criminal networks are already poaching other species for international trade (e.g. rhino/elephant in Mozambique).* ***However, there are indications that a perception of increasing value and demand in Asia is going to lead to increased illegal poaching***"

Of course, this assessment has been superseded by EMS Foundation and Ban Animal Trading, 2018 - "*The Extinction Business, South Africa's 'Lion' Bone Trade*" and recent field observations indicate that wild lions in southern Africa, specifically Mozambique, have been under increasing threat for their parts. Everatt et al. (2019) concludes that the captive lion industry/lion bone trade is potentially increasing demand for lion body parts and derivatives, with 'conflict killings' of wild lions being used as an excuse to harvest lion body parts.

We await signs of actual progress at the 31st Animal Committee (due July 2020).

10 Leopard (*Panthera pardus*)

10.1 Traditional Medicine – Leopard Bones

Traditional Medicine (TM) also encompasses wildlife derivatives sourced from leopard. The April 2020 Environmental Investigation Agency (EIA) research report ("*Bitter Pill to Swallow – China's flagrant trade in leopard bone products*") revealed that at least 24 Chinese pharmaceutical companies have been listing leopard bones as an ingredient in their traditional medicines, China's own leopard population has been pushed to near extinction with fewer than 450 wild leopards left in that country. The analysis reveals:

- In recognition of the threat posed to these species by commercial trade, the leopard, snow leopard and clouded leopard were included on the very first version of Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) when the Convention was adopted in 1975, banning international trade in the species or their parts and derivatives for commercial purposes – the trade threatens the very survival of Asian leopard populations, including snow leopards and clouded leopards;

- Links between Beijing Tongrentang Co. Ltd utilising leopard bone, with a subsidiary in South Africa.

The illegal killing of leopards for their body parts in Asia is driving the species towards extinction. They have already disappeared from Laos, Vietnam and Singapore and are on the brink of extinction in several other countries. Demand for their bones, primarily from Chinese consumers, is one of the drivers of the trade. Leopard bone is used in similar ways to tiger bone, steeped in rice wine to produce 'health tonics' (sic) and used in other traditional medicines.

The full scale of China's domestic leopard bone trade and the total number of companies involved remains largely unknown because of a lack of Government transparency.

South Africa willingly supplies lion bones to profit from TM potions of no proven efficacy (whereby South Africa is helping to perpetuate a fraud, which in any other sphere would be declared racketeering, with that racketeering starting from the moment a cub is bred in

captivity – from volunteers paying to nurture 'orphan' (sic) cubs, cub petting, lion walking to eventually the bred lion receiving the bullet – none of which is conservation driven, but exploitation for profit).

There is a fear that South Africa (under the guise of the AIA – reference paragraph 2.1 – "*The Animal Improvement Act (AIA)*") could seek to add leopards to intensive, captive-breeding (if it's not already happening illicitly, with 26 captive bred leopard hunting trophies exported from South Africa between 1991- 2017 (CBTH May 2020)), under the umbrella of 'sustainable utilisation' to seek to profit from the non-sensical and fraudulent demand in Asia for lion, tiger, jaguar and leopard bones. Seeking to legitimise and profit from the fraudulent TM trade has led to big cat abuses across swathes of South Africa (reference paragraph - 12.3 "*Animal Welfare – A Legal Obligation*") and Asia:

> "*harrowing evidence" that inbreeding and breeding at speed leaves some animals with painful health problems including deformities, and they may also suffer sight, hearing, breathing and chewing problems*" – "*Lions and tigers suffer painful deformities in industrial breeding schemes for traditional Chinese 'medicine'*," The Independent, 9 July 2019

The main conclusions that can be drawn from the "*The Extinction Business, South Africa's 'Lion' Bone Trade*" report are that South Africa's lion skeleton/bone trade:

- is supplying known illegal wildlife trafficking syndicates in Asia, again offering no glimmer of redemption – but instead is stimulating and perpetuating demand, thus imperilling targeted, wild species' survival – such as tiger, lion…..with the leopard next. Will South Africa also try to cash in on the leopards' exploitation as well and help push the species to extinction?

But despite protestations to the contrary, South Africa already illicitly profits from tiger exploitation:

- *"South Africa allows lion and tiger farming for commercial trade in parts and derivatives….in 2015, 280 tigers were estimated to be in at least 44 facilities in South Africa*" - "*The Lion's Share*"

- So, South Africa is playing an active role is circumventing CITES decision 14.69 to end the commercial farming of tigers. Tigers are seemingly being bred ("*Tigers are being*

bred in Gauteng backyards for petting and bone export," Don Pinnock, Daily Maverick, 23 April 2018) with impunity in South Africa:

> "*Because they're not an indigenous species, trade in tigers is unregulated and flying below the radar of the DEA (Department of Environmental Affairs). When asked about it by Ban Animal Trading and the EMS Foundation, the DEA response was that tigers weren't the department's responsibility because they're "exotics". In reply to a request for information on tiger breeding facilities, Limpopo DEA wildlife director Sam Makhubele said the department had never been approached and he seemed surprised that they even existed*."

- The 2015 TRAFFIC/WildCRU report, *Bones of Contention* "*estimated there were at the time 280 tigers in 44 facilities in South Africa. Today there are undoubtedly far more, but because tiger breeding doesn't have to be reported, numbers are hard to establish*."

- "*The Tiger Trade - The Global Trade in Tiger Trophies, Bodies, Skins & Chinese 'Medicines' 2014 – 2018*," May 2020, Campaign to Ban Trophy Hunting

There is clear precedent set by tiger exploitation that South Africa could indeed already be illicitly exploiting the demand for leopard bones.

10.2 Leopard Trophy Hunting and Leopard Skins

Leopard trophy hunting was explored in detail in a submission to the SANBI, February 2017. That submission is given in full at Appendix 2 – "*Leopard Trophy Hunting Quota, February 2017*."

Concerns were raised in 2009 over the sustainability of leopard trophy hunting in South Africa by Balme et al. 2009. According to scientists, high rates of trophy hunting have caused population declines in many sepecies, including African leopards (*Panthera pardus*) (Packer et al. 2009). A recent study (Naude et al. 2020) explored the long-term genetic costs of exploitation-driven changes in targeted leopard populations (poaching, retaliatory conflict killings of 'problem animals' and poorly regulated trophy hunting) in the behaviour of

leopards. The study found long term detrimental impacts in exploited leopard populations through inter-breeding:

> "*in the historically over-exploited population, many young males did not disperse. Instead, their newly established home ranges overlapped with those of their sisters, mothers and aunts. Here, territory "gaps", created by the killing of large males, allowed sons to escape competition and establish territories alongside their mothers.*
>
> *The problem? Males in the exploited population stopped dispersing and, as a result, destabilised the out-breeding mechanism for this population. This increased the likelihood of young males fathering cubs with closely related females.*
>
> *We found evidence of this with a father-daughter and two half-sibling mating events. Known breeding pairs in this population were also highly related, the equivalent of at least half-siblings. While the overall population was growing, it retained signatures of inbreeding despite over 10 years of recovery*" – "*Exploited leopards pay long-term inbreeding costs*," University of Cape Town, 11 May 2020

The IUCN Red List (*Panthera pardus – "Vulnerable"*) with a decreasing population tend – "*there are no robust estimates of the total number of mature individuals range-wide*."

> Leopard population data that does exist indicates that across sub-Saharan Africa, a decline of over 30% has been noted over the past 25 years, with some 67% of the leopards' historic range lost. All of this data points to a downward trend, with threats and pressures that are unlikely to relent - such as habitat loss due to human population growth/land demand, prey decline - IUCN Red List

IUCN considers that the leopard population within "*South Africa appear to be decreasing from previous estimates with Leopards disappearing from areas with increased human development and areas of intensive conflict with humans.*" Furthermore, Swanepeol et al. 2014 stated that "*we found an unequivocal risk of population decline in South Africa as a whole as well as for several provinces."*

The Panthera 2018 report to CITES readily acknowledged the lack of reliable leopard population data within South Africa and across the leopard's range:

> "*Although our knowledge on leopard distribution, and the extent of leopard range loss, has improved markedly (Jacobson et al. 2016, Stein et al. 2016), our understanding of*

> *leopard population trends (i.e., how numbers have changed over time) remains limited. Indeed, in their recent assessment of leopard status for the IUCN Red List, Stein et al. (2016) commented that longitudinal data was only available for a single leopard population (in KwaZulu-Natal, South Africa; Balme et al. 2009) from the ~75 countries considered extant leopard range. Accordingly, there is an urgent need to collect rigorous data on leopard population trends, and at scales that can meaningfully inform conservation policy (including CITES Non-Detriment Findings; NDFs). To address this need, Panthera, in collaboration with the South African National Biodiversity Institute and other partners, developed a national leopard monitoring programme to determine how leopard populations were faring in South Africa. From 2013 to 2017, 94 camera-trap surveys were undertaken at 31 sites across the country*" - Panthera 2018

The 94 camera-trap surveys undertaken across 31 sites in South Africa (2013 - 2017) indicated an 8% leopard population decline per year:

> *"[South African] Sites comprised a combination of state and province-run protected areas, privately-owned wildlife conservancies and commercial game ranches, and community-run nature reserves. Leopard densities were estimated using spatial capture-recapture models (Royle et al. 2009) and ranged from 0–12 leopards/100 km2. Annual population growth (lambda) averaged across all sites with longitudinal data (n = 23), and weighted by baseline population size, was 0.92 ± 0.05 (or an 8% population decline per year; Mann et al. 2018). While this represents the status of leopards in only a single country, it is still cause for major concern. It is the only robust data currently available on leopard population trends, and there is no scientific evidence to suggest that leopard populations elsewhere, and specifically in the 11 other countries that permit trophy hunting, are faring any better"* - Panthera 2018

The "*LEOPARDS (PANTHERA PARDUS) IN AFRICA (AC31 Doc. 29.1)*," review of the "*Roadmap for the Conservation of the Leopard in Africa*" (IUCN - Version 1, Annex 4, September 2019) concurred that leopard population data is scant at best:

> "*Only few reliable data on leopard population trends are available and no recent population estimate over its whole range exists (Stein et al. 2016)*"
>
> Concluding that "*One aspect that I found missing though is a specific reference to sources of funding for assessing and monitoring populations of leopards in range states, the majority of which are cash-strapped. Perhaps it is implied in statements*

such as cooperation but funding is likely to be a challenge to implementation of the road map" - AC31 Doc. 29.1 – p. 3

The main challenges summarised in the "*Roadmap for the Conservation of the Leopard in Africa*" for implementing leopard conservation activities and management measures include a lack of:

1. *Information on current leopard population size, status and trends across its African range;*
2. *Knowledge on the relative importance and impact of different direct and indirect threats on the leopard;*
3. *Awareness of the critical situation for the species and its importance in the ecosystem;*
4. *Capacity and resources (including financial means) on multiple levels, e.g. enforcement officers lack training to recognise protected species or parts of them; and*
5. *Law enforcement and implementation of protection measures.*

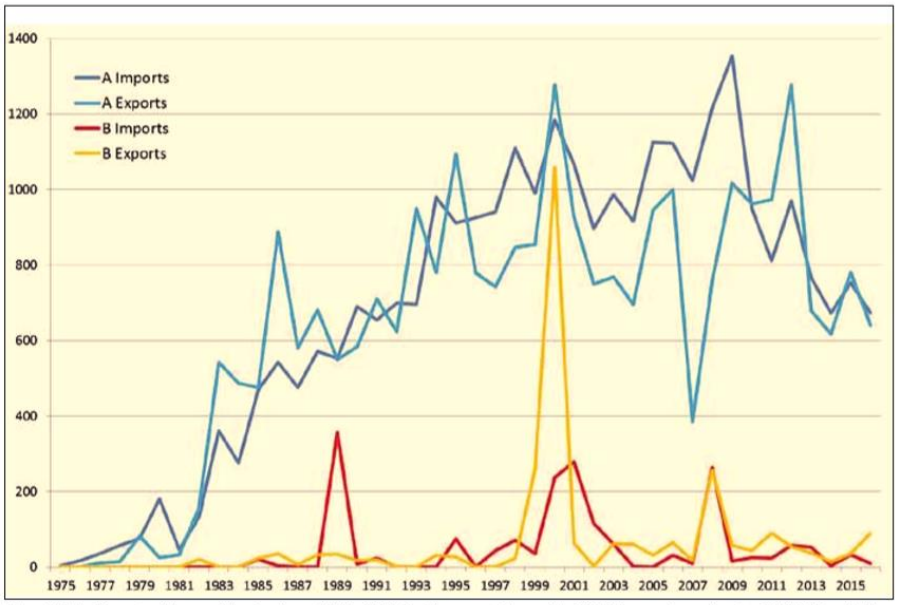


Fig. 2.5.1. Reported leopard trade from 1975–2016 for the countries with CITES export quotas in CITES Resolution Conf. 10.14 (Rev. CoP16; CITES 2013) according to the CITES Trade Database. Category A includes bodies, live animals, skins, skulls and trophies. Category B includes bones, claws and teeth. Light blue: exports for category A from the countries with CITES export quotas as reported by those countries. Dark blue: imports for category A from the countries with CITES export quotas as reported by all member Parties to CITES. Orange: exports for category B from the countries with CITES export quotas as reported by those countries. Red: imports for category B from the countries with CITES export quotas as reported by all member parties to CITES (CITES 2019a).

Figure 8 - *Reported Leopard Trade 1975 – 2016* – "*Roadmap for the Conservation of the Leopard in Africa*," IUCN - Version 1, Annex 4, September 2019

It is estimated that between 2004 and 2014, more than 10,000 leopard trophies have been exported from Africa – CBTH 2019, despite the species' population data being 'unreliable.'

This IUCN report also highlighted the imports and exports of leopard trophies and derivates for the period 1975 – 2016, with one of the threats identified to the species as poorly managed trophy hunting:

> "*Where trophy hunting is poorly managed, it can have negative impacts on the viability of the population through altered age/sex structures, social disruption, deleterious genetic effects (IUCN SSC 2012a). There were a number of concerns raised with regard to the impact of trophy hunting on leopard populations (e.g. Balme et al. 2010b, Pitman 2012, Braczkowski et al. 2015). Inadequate trophy hunting can reduce the genetic diversity by targeting always the fittest (e.g. the largest) individuals (Balme et al. 2010b, Braczkowski et al. 2015). Moreover, if not well managed, hunting can impact demographic patterns and the social organisation of leopard populations (Balme et al. 2010b, Pitman 2012, Kerth et al. 2013, Stein et al. 2016). Repeated removal of resident male leopards can lead to a high turnover of males and result in increased infanticide (Balme et al. 2009, Packer et al. 2009, Balme 2010, Strampelli 2015)*" - "*Roadmap for the Conservation of the Leopard in Africa*," IUCN - Version 1, Annex 4, September 2019

The trophy hunting threat is also identified by Jacobson et al. 2016:

> "*….unsustainable legal trophy hunting, is localized to those countries that allow leopard hunting, and where hunting regulations are not sufficient to ensure off-take is sustainable. However, it is possible, current levels of off-take are not set sustainably in any country that allows leopard hunting (Balme et al., 2010). Balme et al. (2010) argued that no country has comprehensive and detailed leopard population information combined with an understanding of the impact of hunting on leopards within a proper regulatory framework. Despite the popularity and importance of the leopard to the trophy hunting industry, there is scant research on the impacts of hunting (Balme et al., 2010; Lindsey et al., 2011). However, there is evidence that trophy hunting can negatively impact leopard populations, particularly as hunting can disrupt the social structure and spatial dynamics of leopards and contribute to infanticide (Balme, Slotow & Hunter, 2009; Balme, Hunter & Braczkowski, 2012; Packer et al., 2009; Packer et al., 2010)*"

The 2019 IUCN report also reiterated the clear leopard population decline:

> "*The current range-wide population trend is assessed to be decreasing (Stein et al. 2016; Chapter 2.4). Based on high inferred and suspected levels of leopard population declines of over 30% over large parts of its range in the last three generations, the leopard was globally up-listed from Near Threatened (2008) to Vulnerable in 2016 under Criterion A2cd in the IUCN Red List (Henschel et al. 2008, Stein et al. 2016). The population decline is based on habitat loss, prey decrease and actual and potential levels of exploitation. The negative trend is thought to go on in the future unless appropriate conservation measures are taken (Stein et al. 2016)*" - "*Roadmap for the Conservation of the Leopard in Africa*," IUCN - Version 1, Annex 4, September 2019

Regardless of the lack of credible population data, or clear data on the retaliatory killing of leopards (Williams S.T. et al. 2017), the CITES Appendix I listed African leopard has been given an unsubstantiated 2020 trophy hunting quota of 2,648 leopards – "*Whole skins or nearly whole skins (including hunting trophies)*":

> 2020 - Zimbabwe – 500; Uganda – 28; Kenya – 80; South Africa – 150; Mozambique – 120; Malawi – 50; Namibia – 250; Ethiopia – 500; United Republic of Tanzania – 500; Botswana – 130; Central African Republic – 40; Zambia – 300

South Africa's quota of 150 leopards was set in 2005 from the Population and Habitat Viability Analysis (PHVA) and has never been reviewed. But this quota clearly lacks any substantive basis in the absence of credible leopard populations data within South Africa.

The reason for the African leopard's CITES Appendix I listing is duly noted that:

> "*The alarming trend in imports of leopard skins into the United States in the late 1960s, as well as the worldwide trade in leopard skins, was the primary reason for listing the leopard as an endangered species in the United Sates in March 1972 and for including it in Appendix I of the Convention of International Trade in Endangered Species (CITES) in 1975. Commercial trade was, and probably continues to be, the driving economic force behind the illegal hunting (poaching), trapping, and snaring of leopards*" Bailey 1993 – "*The African Leopard; Ecology and Behaviour of a Solitary Felid*" p 368 – 369.

When the leopard was first listed, the heavy flow of leopard skins to the United States ceased, across Africa leopard depletion was curtailed by these bans, but this has been undermined by "*people willing and able to circumvent exiting regulations, as well as the intent of international treaties and conservation laws of the majority of exporting and importing*

countries in the world, for purposes of monetary profit" (Bailey 1993), but any proposals to trade in leopard skins would align with this latter, detrimental exploitation of the species:

> *Any relaxation of existing regulations or amendments that might create loopholes in those regulations should be considered with extreme caution; such loopholes might once again trigger a dramatic increase in the numbers of leopards illegally killed for their skins*" - Bailey 1993

In January 2016 the Republic of South Africa, Department of Environmental Affairs (DEA) set a zero-leopard hunting quota across all provinces (then extended the zero quota through 2017). The DEA accepted the negative non-detrimental finding (meaning it found hunting to have a detrimental effect) to hunt leopards from 2016:

> Balme also reportedly said at the time in 2016 "*We just don't know how leopards are faring in South Africa. They're secretive, mainly nocturnal, solitary and range over huge areas. Counting them requires intensive research using expensive technology such as camera traps, which can only be deployed over small areas, far smaller than the areas in which hunting quotas are determined*" - "*South Africa bans leopard trophy hunting for 2016*," *Africa Geographic,* 25 January 2016

But since 2018, a leopard hunting quota has been re-established within South Africa, though in reality the leopard trophy hunting persecution (Friedmann et al. 2008) never stops even when there is a moratorium on trophy hunting, with many leopards designated as 'problem animals' so a permit could be obtained (and sold on) for trophy hunting purposes.

Williams, S.T. et al. 2017 study "*Population dynamics and threats to an apex predator outside protected areas: implications for carnivore management*":

> "*…..calls into question the sustainability of additive off take through legal mechanisms of leopard removals such as trophy hunting and damage-causing animal destruction permits."*
>
> Furthermore, the report continues *"trophy hunting of large carnivores can be associated with elevated levels of human–wildlife conflict and increased mortality from persecution*." This persecution is "*often in retaliation to perceived [...leopards cause less livestock damage than farmers perceive....] livestock predation or for bushmeat, and this may be driving steep declines in the leopard population*"

> "*It is estimated that as many as 1500 – 2500 leopards are illegally harvested annually to meet the demand for skins by the Nazareth Baptist 'Shembe' Church; The illegal killing of putative DCAs* [Damage Causing Animals, as self-determined by livestock/game farmers in their illegal 'shoot, shovel and shut up' approach to leopards] *is typically indiscriminate, the scale of which is currently unknown since illegal off-take of leopards is poorly monitored, if at all" – "Leopard Quota Review: South Africa" (AC30 Doc 15. Annex 3),* Para 3.e. *"Illegal Off-take," September 2018*

There is clearly bias towards commercial endeavours and the pro-hunting fraternity when it comes to fixed, and/or adaptive leopard hunting quota setting, using old, extrapolated data (reference Appendix 2), or unsubstantiated hunting quotas:

- South Africa has an indicated 8% leopard population decline per year Panthera 2018 and there is no evidence that a trophy hunting quota does anything to reverse that decline;

- Extrapolated data - South Africa's 2017 proposals for reintroducing leopard hunting quotas were based upon 'leopard densities' extrapolated from data first established in 1972 (that has no realistic correlation with any current scientific certainty);

- Assessments of the influence of hunting on leopard populations have produced uncertain and often conflicting results (Stein et al., 2016):

> *"Poorly managed trophy hunting adds to pressure on local Leopard populations. Balme et al. (2009) showed that trophy hunting was a key driver of Leopard population decline prior to intervention in northern KwaZulu-Natal. Similarly, Pitman et al. (2015) demonstrated that Leopards are over-harvested across much of their range in Limpopo Province, South Africa. The concern about unsustainable trophy hunting has lately increased, e.g. South Africa has banned trophy hunting for 2016…..trophy hunting can be detrimental to the population, especially when permits are focused in one geographic area and targeted individuals are in their prime, territorial, reproductively active (Balme et al. 2010). Leopard trophy hunting has been reviewed or closed in Namibia, Botswana, and Zambia within the last five years"* - (Stein et al. 2016)

Safari Club International (SCI), have responded to the challenges given in the "*Roadmap for the Conservation of the Leopard in Africa*" and are seeking to now help establish reliable leopard population numbers across the leopard's range throughout southern and eastern

Africa (despite years of happily encouraging the killing of leopards in the acknowledged absence of the credible science now sought).

The SCI's incentives are suspected of being not altruistic, but are driven to try and give credibility to the ongoing killing of leopards for hunting trophies. However, past experience does not inspire confidence that SCI's endeavours will merit a high degree of scientific certainty:

> *"Plenty left to kill"* motivations and bias were evidenced in 2011 when SCI in partnership with Namibia launched a census "*to manage the sustainability of the leopard population*." The limited returns from the farmers' census were extrapolated, producing a flawed national estimate of leopards of over 14,000 leopards – giving the notion that there were 'plenty left to persecute/kill.' The reality is leopards are a shy and elusive species, there is no feasible means to accurately estimate the population, let alone such a high estimate to justify the killing. Namibia has a CITES trophy hunted export quota of 250 leopards per year, a questionable figure, according to experts of International Union of Conservation of Nature (IUCN), because it is based on "*insufficient ecological information and lack of scientific data*."

It should be noted that SCI promotes leopard trophy killing as a badge of honour, not as any scientifically proven, altruistic endeavour, but encourages the taking of leopards and other big cats as a 'must have' for any worthy hunter seeking peer group acceptance/recognition.

Does any of the above contortions of 'so-called' science-based hunting quota setting seem as if the motivation is conservation of the target species, or to perpetuate the persecution for commercial purposes and the trophy hunters' penchant for killing?

Any suggestion that South Africa can justify a leopard hunting quota when there "*is no rigorous estimate for the size of the South African leopard population, nor reliable estimates of leopard population trends at national or provincial level*" (HLP Terms of Reference), or the HLP can contemplate/recommend a "*Trade in leopard skins*" resulting from leopard trophy hunting is lamentable.

Leopards are generally considered uncommon in South Africa, with estimates of the size of the national population varying from as few as 2,185 to over 23,000, but *"None of these estimates are based on rigorous population counts at regional scales, and their confidence intervals are so wide as to make them meaningless"- Leopard Quota Review: South Africa (AC30, 15-A3)*:

Swanepeol et al (2014), gives a population range of the total South African leopard population of 2,813 - 11,632;

The leopard population estimated within the Leopard (Panthera Pardus) Case Study (2008), suggests a leopard population within South Africa across the core areas assessed as between 2,185 – 6,780 (best estimate of 4,987);

The estimate of 23,400 given by Martin et al 1998 was strongly criticised at the time as unrealistic:

> "*I should be very surprised if there are more than two or three thousand leopards in South Africa at the most. As far as I am concerned, an estimate of over 20 000 is just plain nonsense!*" - "*How many leopards? A criticism of Martin and de Meulenaer's population estimates for Africa*," Norton P, 1990

The IUCN Red List Data study, "*Panthera pardus – Leopard - The Red List of Mammals of South Africa, Lesotho and Swaziland*" also cautions:

> "*Such large variance makes quantitative interpretation difficult and thus these data can only be used as a rough guideline of the South African Leopard population. Caution should therefore be applied when using these data quantitatively (for example, to set hunting quotas)*" - IUCN Red List Data

Perhaps the intention is to develop a "*leopard skin*" derivative product side-line to a captive-breeding "*leopard bone*" trade – neither of which is likely to help conserve the species, promote acceptable captive animal welfare, or deter poaching of leopards when poachers are thus presented with leopard derivative markets to infiltrate and profit from (reference paragraph 12.3 – "*Animal Welfare – A legal Obligation*" and paragraph 12.5 – "*Does Legal Trade Counter Illicit Activity?*")

In South Africa, Norms and Standards for leopard trophy hunting were under development to create a national management plan providing standardized management guidelines (*Leopard Quota Review: South Africa (AC30, 15-A3)*) – the response to the last set of Norms and Standard put out to Gazette in 2018 lacked credible evidenced based science in support (Appendix 2, "*Leopard Trophy Hunting Quota*," February 2017 and as a submission document).

The South African leopard hunting quota set for 2018 was 7, with calls for a zero hunting quota in 2019. In the absence of supporting science, the 2020 quota should be set at zero and endure indefinitely.

10.3 Leopard Skins, Live Exports and Captive Breeding

There is already extensive, unregulated and illicit utilisation of leopards (and many other species) in South Africa to supply traditional 'muti' markets for wildlife products, encompassing 'healing potions' (not a dissimilar market to Traditional Medicine – reference paragraph 5.0 – "*Traditional Medicine*"), wildlife body parts and derivative products – including leopard skins.

Figure 9 - *'Muti' Market, South Africa* (Campaign Against Canned Hunting)

There is no transparent means to assess how these markets sources their wildlife products, whether the methods used to source the products are humane and/or even legal (with mass poisoning to obtain 'product' rampant), not to mention the human health risk stemming from such markets, where wildlife is reportedly skinned and dissected on the 'muti' market premises. There are clear parallels with COVID-19 and the potential release of zoonotic

diseases with global impacts on human health under such unhygienic circumstances – with the export of 'muti' products to Asian markets……presenting an unregulated health risk to all.

Therefore, before any "*Demand management*" for leopard skins (and many other so exploited species) can have the "*dynamics of domestic and international demand, demand for leopard products (skins, claws, teeth), legislative and legal regime for demand management*" (HLP Terms of Reference, issued 22 April 2020) assessed, first the legitimacy and legality of that demand and its conservation impacts need to be established, regardless of any caveats that 'traditional'/heritage trade and 'muti' utilisation of wildlife is above scientific reasoning – zoonotic viruses do not make such a distinctions, as we all now know. Science and understanding are fundamental in all wildlife utilisation if the true intent is to have even remote credibility as having a conservation imperative and concern for global human health.

Such "*Demand management*" assessment would include (using the leopard as an example):

1. A complete, independent, peer-reviewed census of species sub-population/population in the wild (which is clearly lacking for leopards in South Africa);

2. Independent, per-reviewed science that assesses the impacts of any captive-bred programme and/or wild species attrition that categorically proves that such trade is non-detrimental to the wild species;

3. The ability to clearly demonstrate that the Department: Environmental Affairs (DEA) has a grip on regulatory over-sight of:

    a. legal obligation to consider and ensure acceptable animal welfare in the DEA's decision making;

    b. Peer-reviewed science to establish the human health risks in any such trade including the handling, slaughter and consumption practices where applicable;

    c. Peer-reviewed sub-population/population data, where this is clearly lacking for South Africa's leopards – reference paragraph 10.2 – "*Leopard Trophy Hunting and Leopard Skins*").

d. Scientific quota setting, based upon peer reviewed non-detrimental findings (NDF) for the global species survival, not just South Africa's populations (where a precedent for such lack of fundamental forethought is demonstrated by the on-going absence of any continent-wide risk considerations in the setting for the lion bone trade – reference recommendation 13.11.2 – "*The Continent-Wide Risks to Wild Lion Populations*");

e. Transparent, auditable and proven export of any live animal specimen to "*appropriate and acceptable destinations*" that meet conservation criteria where appropriate.

   For example, if African leopards (a CITES Appendix I listed species) are to be legally bred in captivity in South Africa, then the proceeds of trade in such specimens **must** be demonstrably used for proven conservation purposes (not commercial profiteering), where:

   > Appendix I listed species may only be traded as Appendix II listed species if the specimens are captive bred in a breeding facility registered with CITES and the trade is for '**non-commercial**' purposes (EMS Foundation and BAT 2020 p.3), or to put it another way:
   >
   > *"The profit that might result should be used to support the continuation of the programme aimed at the recovery of the Appendix-I species"* – Resolution Conf. 5.10 (Rev. CoP15). Annex, Example e)., *"Captive-breeding programmes"*

f. The DEA should not assume that the acceptability/destination for live specimen exports is not the DEA's concern – the acceptability/destination clearly matters for the DEA to prove its animal welfare obligation, legality of such trade and any claim to a conservation motivated reputation for orchestrating such trade;

When it comes to the 'muti' trade in leopard skins for example, then the scientific evidence to allow such trade to continue is clearly lacking – there is no science to support the legal obligations/criteria of a., b., c. or d. above for the current domestic 'muti' trade in leopard skins. The same applies for other species so exploited, such as cheetahs etc. Where is the harm in those that wish to dress up in 'skins' to purchase faux/synthetic manufactured

replicas – does wearing the 'real thing' have any scientific foundation? No, of course not, so why not provide incentives for synthetic/manufactured substitutes and actually try to save the pointless attrition of the wild species?

In reality, the HLP's ToR to consider the "*dynamics of domestic and international demand, demand for leopard products (skins, claws, teeth), legislative and legal regime for demand management*" lacks the required science to even start a plausible assessment for domestic leopard product demand, let alone any international trade aspirations.

In the absence of the science and the legal obligation for animal welfare to be considered in support of any wildlife trade, domestic or otherwise, then there is a legal imperative for 'muti' markets to be ordered to close/refrain from the sale of products that lack the required legality/science.

11 Rhinoceros (*Diceros bicornis and Ceratotherium simum*)

South Africa's African Rhino Conservation Plan is given in the DEA's, April 2016 "*African Rhino Range States' African Rhino Conservation Plan*." It is duly noted that nowhere in this document is it explicitly stated that a 'legal' CITES sanctioned, international trade in rhinoceros' horn is essential to conserve South Africa's rhino – there are clearly issues regarding illicit trade in rhino horn outlined as detrimental to conservation of course, but only a hint under 'socio-economic' of the perceived need for rhino 'to pay their way' through such trade:

> *"To incentivise and secure support for rhino conservation by improving livelihoods and empowering local people* through the promotion of benefits derived from wildlife resources*;" where local people are defined as "**People living with or near wildlife under different land tenure systems (rural and private sector)"*

It is debateable how "*local people*" would directly benefit from the sale of harvested rhino horn taken from privately owned rhino, private and state-owned stockpiles. It is estimated that there are perhaps 6 tonnes of privately stockpiled rhino horn and perhaps and an additional 20 tonnes in State stockpiles.

The fear is that most privately sold rhino horn would accumulate in profits for captive rhino breeding businesses/owners, with some potential trickle down to "*local people,*" but the vast majority would be held in private funds, potentially outside of South Africa.

State owned rhino horn stockpile sales revenues would presumably accrue into general State coffers, which may, or may not be spent in ways that directly benefit "*local people*." Of course, in any international rhino horn trading 'sustainable utilisation' ideology bonanza, "*local people*" could become private rhino farmers/entrepreneurs, assuming that they could make this investment and there would not be significant barriers to entry. More rhino being held in "*local people's*" private, potentially make-shift facilities is unlikely to promote high animal welfare standards – perhaps it would be easier and cheaper to poach one anyway.

So, the balance between "*benefits derived from wildlife resources,"* animal welfare and any actual conservation imperative from potentially stimulating demand for rhino horn for the conservation of the species remains debateable for any 'legal' international rhino horn trade – the evidence given in support of any 'legal' international rhino horn trade can best be described as weak, conflicted and unsubstantiated by independent, peer-reviewed science

(reference paragraph 11.3 – "*Rhinoceros Horn Trade - White Rhinoceros (Ceratotherium simum)*").

11.1.1 Black rhinoceros (*Diceros bicornis)*

The Black rhinoceros (*Diceros bicornis)* is listed as "*Critically Endangered*" on the IUCN Red List, population increasing and is a (Species+) CITES Appendix I listed, but with a trophy hunting quotas set for Namibia and South Africa.

> "*Appendix I includes species threatened with extinction. Trade in specimens of these species is permitted only in exceptional circumstances*" - CITES

South Africa moved from 5 black rhinos a year to "*harvest*" up to 0.5% of South Africa's black rhino population (CoP18) – at around 2,000 black rhino in South Africa, this gives a quota of around 10 black rhino per year at today's species' population level. There are perhaps a total of 5,000 Black rhinoceros left in the wild across the whole African continent.

11.2 White rhinoceros (*Ceratotherium simum*)

The IUCN Red List categorises the white rhinoceros (*Ceratotherium simum*) as "*Near Threatened.*"

The Southern white rhinoceros (*Ceratotherium simum simum*) is CITES (Species+) Appendix I listed, apart from the populations of Eswantini (formally Swaziland) and South Africa which are Appendix II listed for the "*exclusive purpose of allowing international trade in live animals to appropriate and acceptable destinations and hunting trophies*."

There are about 20,000 white rhinoceros, the vast majority (93%) in South Africa, with an additional 6,000+ (Mass et al., 2016) held privately in captivity, with rhino breeders speculating upon the reinstatement of international trade (banned by CITES since 1977) in rhinoceros' horn.

The Convention first applied to *Ceratotherium simum* on 1 July 1975 with the species listed at Appendix I. However, on 16 February 1995, South Africa's white rhinoceros' population (wild

or captive) received exemption to an Appendix II listing, with the caveat that the exemption was:

> "*For the exclusive purpose of allowing international trade in live animals to appropriate and acceptable destinations and hunting trophies. All other specimens shall be deemed to be specimens of Appendix I and the trade in them shall be regulated accordingly*"

11.3 Rhinoceros Horn Trade - White Rhinoceros (*Ceratotherium simum*)

Any proposed trade in rhino horn from South Africa is predominantly based upon the captive rhino population (some 6,000+ rhino held within South Africa), where the captive-majority are white rhino. Therefore, rhino horn trade proposals are mainly centred and analysed upon white rhino 'sustainable utilisation' within this and past submissions.

IWB's submission (September 2019) to the consultation (Notice 1105, Gazette 42660, Vol. 650, 22 August 2019, issued by the DEA) on the "*Non-detriment findings for Ceratotherium simum simum (white rhinoceros)"* is given at in full at Appendix 3 - "*Rhino Horn Consultation, September 2019*," with analysis of legal trade proposals for rhinoceros horn.

The response given to the Notice 1105 proposals are summarised as follows:

- The Notice 1105, Table 1, NDF 25 "*Effectiveness of strict protection measures*" evidence in support of exploring a legal, international rhino trade is not impartial, exhaustive or complete. The body of impartial science does not categorically support any legal rhino horn trade as not detrimental to the survival of the species – reference Appendix 3 - "*Rhino Horn Consultation, September 2019*";

- Notice 1105 tried to twist an interpretation of CITES Article VII, Paragraph 4 to somehow extend permissible trade exemptions (to encompass rhino horn) and override South Africa's captive-bred white rhinoceros specimens from an Appendix I, to an Appendix II listing:

> "*Specimens of an animal species included in Appendix I bred in captivity for* ***commercial purposes [Source Code D]****, or of a plant species included in Appendix I artificially propagated for commercial purposes, shall be deemed to be specimens of species included in Appendix II*."

Source Code D – "*Appendix-I animals bred in captivity for commercial purposes in operations included in the Secretariat's Register, in accordance with Resolution Conf. 12.10 (Rev. CoP15), and Appendix-I plants artificially propagated for commercial purposes, as well as parts and derivatives thereof, exported under the provisions of Article VII, paragraph 4, of the Convention*"

NB. the ambiguities in CITES Article VII, paragraphs 4 and 5 remain unresolved – 13 January 2020.

- Appendix I listed species may only be traded as Appendix II listed species if the specimens are captive bred in a breeding facility registered with CITES and the trade is for '**non-commercial**' purposes (EMS Foundation and BAT 2020 p.3), or to put it another way:

  "The profit that might result should be used to support the continuation of the programme aimed at the recovery of the Appendix-I species" – Resolution Conf. 5.10 (Rev. CoP15). Annex, Example e)., *"Captive-breeding programmes"*

  Where; specimens captive bred in a breeding facility registered with CITES also includes "*Registration of operations that breed Appendix-I animal species in captivity for commercial purposes*"

- The international trade in rhinoceros horn perpetually proposed by South Africa from 6,000+ captive bred rhino, private and State rhino horn stockpiles stems from 'commercial' purposes:

  - State income will most likely go into general coffers, regardless of any promises to the contrary (as reported in the misappropriated income from ivory stockpiles in 2008);
  - Captive rhino breeder profits will most likely accumulate in business/investor dividends, perhaps with increased security for captive farms, but how does that secure the conservation of the wild species (or privately owned rhino not held for speculative purposes)?
  - How does any of the above "*support the continuation of the programme aimed at the recovery of the Appendix-I species*" when such trade is likely to lead to increased poaching of rhino? (reference paragraph 11.3.3 – "*Rhino Horn Demand Management*").

- The inability of a State (ie. South Africa) to unilaterally declare trade in rhino horn was explicitly answered by CITES in:

> *"The Convention provides that, with the exception of hunting trophies of Southern white rhino, all rhino horn from the rhinos mentioned above are to be treated as specimens of species included in Appendix I. As such, horns from such animals in the wild* cannot be internationally traded if the use is for primarily commercial purposes. Such rhino horn could only be traded commercially if it were to be on Appendix II of the Convention, which is not the case today and can only be determined by the CITES Parties and not unilaterally by one State.*
>
> **The rules are slightly different for rhino horn from animals that have been bred in captivity, but at present, no captive breeding facilities qualify to trade internationally in rhino horns for primarily commercial purposes"* - "Background on the issuance of CITES permits in respect of the export of rhinoceros horn," 24 July 2017, CITES

- It was made clear in the submission (reference Appendix 3 - "*Rhino Horn Consultation, September 2019*") that pretending that any proposed rhino horn trade/export (as given within Notice 1105) is only being orchestrated for "***primarily non-commercial purposes***" is a deceit - it is duly noted that this was not a definitive *"non-commercial,"* but only *"primarily non-commercial"* which would suggest leeway to accommodate some element of *"commercial purpose"* within the trade envisaged at Notice 1105;

- International trade in white rhino horn cannot be from rhino bred in captivity for **commercial purposes** to satisfy CITES Article VII, but somehow simultaneously exported under the disguise of ("*primarily*") **non-commercial** purposes to try and circumvent export/import CITES permit restrictions (not to mention the 1977 CITES ban on international commercial trade in rhinoceros horn). The trade proposed at Notice 1105, can't be both, or it can't be commercial trade poorly disguised as "*primarily non-commercial*" in the hope no one notices the contradiction:

> "*The term 'commercial purposes' should be defined by the country of import as broadly as possible so that any transaction which is not wholly 'non-commercial' will be regarded as 'commercial'*" - CITES Resolution Conf. 5.10 (Rev. CoP15)

- There has not been any acceptance of international trade in rhino horn by CITES since the 1977 ban – reference paragraph 11.3.2 – "*CITES and Rhino Horn Trade*." Notice 1105 somehow sought to circumvent that ban by deception.

Therefore, it is disputed that the assertion made within Notice 1105 that "*specimens bred in captivity for **commercial purposes** are deemed to be specimens of species included in Appendix II (Article VII) of CITES **and therefore may be traded**"* can somehow overturn the caveats set against such trade in the 1995 exemption from Appendix I listing of South Africa's white rhinoceros populations, which to be clear only allows "*international trade in live animals"* and *"hunting trophies"* exports from South Africa's white rhino:

> "*For the exclusive purpose of allowing international trade in live animals to appropriate and acceptable destinations and hunting trophies**. All other specimens [including rhino horn and derivative products] shall be deemed to be specimens of Appendix I and the trade in them shall be regulated accordingly***"
>
> Where;
>
> "*Appendix I includes species threatened with extinction. Trade in specimens of these species is permitted only in exceptional circumstances*"
>
> Article I defines "*Trade*" as meaning *"export, re-export, import*..."
>
> Appendix I and II Specimens – "*An export permit or re-export certificate issued by the Management Authority of the State of export or re-export is required. An export permit may be issued only if the specimen was legally obtained and if the export will not be detrimental to the survival of the species. A re-export certificate may be issued only if the specimen was imported in accordance with the Convention*."

11.3.1 Domestic Rhino Horn Trade

On 26 November 2015, High Court of South Africa, Gauteng Division, Pretoria (Case No. 57221/12) 'approved' a technical challenge by two rhino farmers (John Hume and Johan

Kruger) to sell their stockpiles of 'harvested' rhino horn, overturning a 2009 moratorium on such trade set by the Minster of Water and Environmental Affairs.

A 2012 report by TRAFFIC ("*The South Africa - Viet Nam Rhino Horn Nexus*") on the global rhino trade found that when South Africa did allow domestic horn trade, before 2009, much of the privately owned horn went unaccounted for and may have ended up in illegal hands, trafficked outside the country:

> *"It found that abuses and poor compliance in managing horn stockpiles in government and private hands had helped create a "perfect storm," attracting criminal networks into lucrative rhino poaching*" - "*Debate over rhino horn trade ramps up as South Africa ban is lifted*," Los Angeles Times, 26 November 2015
>
> The Minister's rationale for instituting the moratorium was: … "*to stem the flow of rhino horn into the international market and indirectly to curb the demand for horn and horn products which in turn may reduce poaching…The rationale behind the moratorium on domestic sale in rhino [was] two-fold. Firstly, to curb and reduce poaching of rhinos and secondly, to comply with the international market ban under CITES*" - Collins et al. 2020

It should be borne in mind that there is nothing but a shallow, residual domestic demand within South Africa for rhinoceros' horn – the only domestic market is for speculative stockpiling in the hope that legal international trade will be reinstated (ie. CITES 1977 ban will be lifted), or in the absence of legal international trade, to participate in illicit trade and the illegal trafficking of rhinoceros horn to where there is demand – Asia, where rhino horn is prized for ornamental use and as an ingredient in Traditional Medicine (TM), potions of no proven efficacy (Rademeyer 2012, 2016). In other words, the only explanation to support a domestic rhino horn trade in South Africa as a commercial proposition, is that it provides a mechanism for incumbent and new entrants to illicitly supply an illegal international trade in rhino horn - the same demand that drives poaching of rhino.

The 2009 moratorium was overturned in the High Court in 2015 on a "*technicality*" - that rhino breeders had not been consulted prior to the moratorium being enacted, the moratorium had not been well advertised to the public, with the moratorium therefore lacking pre-requisite 'public consultation'

> The High Court "*nullified the domestic rhino horn trade moratorium not on grounds of unconstitutionality, illegality, irrationality or unreasonableness, but on the ground of lack of substantive due process in the determination and imposition of the moratorium"* – Collins et al. 2020

However, an April 2020 paper published in the "*European Journal of Law and Economic*" (Collins et al. 2020 -*"On the judicial annulment of the 'domestic' trade moratorium in South African rhinoceros horn: a law and economics perspective"*) argues that:

- *".....institutional contradictions have been engendered by the South African High Court ruling in Kruger and another v Minister of Water and Environmental Affairs and others [2015] JOL 34725, whose assumptions are shown to be highly restrictive and seemingly poorly informed about the true nature of demand for rhino horn and the dynamics of poaching;*

- *The shortcoming in the legal decision-making pertains to not taking account of the absence of any evidence for the existence of domestic demand for rhino horns in South Africa;*

- *The key arguments presented herein align with support for the reinstitution of the rhino horn trade moratorium, as well as administrative measures implemented effectively to contain the poaching crisis"*

Initially, the High Court's 26 November 2015 ruling was challenged by South Africa's own DEA, but the DEA/DEFF has since failed to try and curtail the domestic rhino horn trade, or back 'public consultation' on the need to re-instate the moratorium on the domestic rhino horn trade.

In an open letter from the *Wildlife Animal Protection Forum South Africa ("Their Future is Dark" The Rhino Horn Trade 2019)* to the DEFF, it questions the DEA's/DEFF's stance:

> *"After defending the ban [moratorium on domestic trade] through all the legal processes it remains unclear why the DEA did not attempt to re-advertise its intention to ban the domestic trade in rhino horn with required notice period and circulation of information.*

> *Instead, the DEA, under the leadership of Minister Molewa, chose to focus on developing new legislation which included setting out the requirements for the domestic sales of rhino horn. Numerous organizations in South Africa and internationally appealed against this decision.*
>
> *A Committee of Inquiry was appointed by the DEA and tasked with producing a report on the viability of the domestic rhino horn trade in South Africa. Apparently, the full report was completed in 2016 but only a summary report has ever been made available. We would appreciate access to full report in order for us to understand and evaluate the COI's findings*."

In the meantime, the ongoing domestic trade in rhino horn in South Africa remains open to illegal trafficking and abuse:

> *"The legal domestic market in South Africa, we believe, is contributing to the poaching of rhinos in South Africa and in neighboring African countries. The legal domestic trade has undermined demand reduction campaigns and enforcement efforts and it has provided potential routes through which illegally obtained rhino horn might be laundered.*
>
> *The domestic trade in rhino horn weakens the international trade ban under CITES. Over the past two years frequent shipments of farmed rhino horn from South Africa have been intercepted at international border and recently there have been large scale illegal shipments of farmed rhino horn intercepted within South Africa*" - *Wildlife Animal Protection Forum South Africa, "Their Future is Dark" The Rhino Horn Trade 2019)*

A 2019 EIA report, ("*Stop the Slaughter – Close Domestic Rhino Horn Markets*," August 2019) recommends:

> "*Parties [to the Convention on International Trade in Endangered Species of Fauna and Flora (CITES)] to close all existing domestic markets for trade in raw and worked rhinoceros horn or other rhinoceros parts and derivatives as a matter of urgency*."
>
> "*Domestic legal markets for rhinoceros parts and derivatives provide opportunities to launder illegal rhino products, increase the burden on law enforcement, send mixed messages to consumers, and stimulate demand thereby undermining years of demand reduction efforts*."

At CITES, Conference of the Parties (CoP18), Kenya's proposal to insert recommendations to close domestic rhino horn markets into the CITES Resolution on rhinos was not adopted, but Parties did agreed by consensus on Decision 18.116 - "*Parties are urged to close those markets that contribute to poaching or illegal trade,*" directing Parties to close domestic rhino horn markets that contribute to poaching or illegal trade. There is clear indication that domestic rhino horn trading is being illegally abused within South Africa:

> "*SA's largest private rhino breeder, John Hume, says seized rhino horns are his property*," IoL, 30 April 2019

> "*On 13 April 2019, South Africa's Directorate for Priority Crime Investigation arrested two men in North West province in possession of 167 rhino horns, which were destined for "South East Asian markets" according to the official police statement. The horns originated from the private stockpile of John Hume, a rhino breeder and ardent rhino horn trade advocate who possesses the largest privately-owned herd of rhino in the world, who sold the horns to an unnamed buyer in Eastern Cape. The men were allegedly bringing the horns to the buyer, but lacked the required transport permits to do so. Under the sales agreement between Hume and the buyer, Hume was supposed to receive payment after the buyer re-sold the horns, presumably to clients in Southeast Asia based on the allegations made by the police. Because the buyer never received the horns, Hume was never paid and is claiming the horns are still his property*" - "*Stop the Slaughter – Close Domestic Rhino Horn Markets*," Environmental Investigation Agency, August 2019

One of the accused *in the April 2019 rhino horn seizure*, is John Melville, John Hume's nephew ("*Rhino horn trade - why trade is bad for our wild rhino populations*," Africa Geographic, Colin Bell, 4 June 2020), or perhaps not according to Hume's lawyer, Ulrich Roux who has reportedly maintained his client's innocence in the transaction, claiming Melville and co-accused Petrus Steyn were only acting as agents for the 'buyer':

> "*As previously confirmed by Mr Hume, Mr Clive John Melville is the half-brother of Mr Hume's cousin. They are accordingly not directly related*"

So, clearly Mr Melville is within John Hume's family tree regardless. The 167/181 rhino horns seized (worth an estimated R300m (£14m) on the black market) during the case have now been forfeited to the State and the accused fined:

> "*Just received confirmation that Clive John Melville agreed to pay a fine of R50 000, while his co accused Petrus Steyn agreed to pay a fine of R25 000, at the Brits Regional*

Court this morning (for a combined total of R75 000)" or a £3,500 fine in total, which does seem much of a deterrent – Wildlife at Risk, 5 June 2020.

South Africa needs to comply with CITES Decision 18.116 and close its domestic market for rhino horn as its domestic market is clearly contributing to illegal activity and has no recognisable conservation value.

In order to comply with CITES Decision 18.116 the HLP should prepare a challenge the DEA can make to the 2015 judgement and aim to reinstate the moratorium on the domestic rhino horn trade – also taking that position to an overdue public consultation. The HLP should consider the arguments proposed, Collins et al. (*"On the judicial annulment of the 'domestic' trade moratorium in South African rhinoceros horn: a law and economics perspective"* Springer, European Journal of Law and Economics, 10 April 2020), whereby the 2015 judgement made a number of challengeable assumptions:

1. *"that legalizing the domestic rhino horn trade will automatically undermine illegal rhino horn markets;*

2. *it assumes that rhino horn bans are completely ineffective;*

3. *the buoyancy of the illegal rhino horn market emerges as a consequence of shortages created by the ban itself. Logically, this would mean legalizing the rhino horn trade will increase supply to the extent that illegal trade becomes unviable. This notion is extensively explored by Conrad and Lopes (2017) who show that reducing the price of rhino horn would not be effective at curbing poaching, without simultaneously increasing poacher costs. They find, however, that increasing poacher costs is not a realistic policy option since these costs are largely beyond the control of decisionmakers. The sensitivity of price to poaching effort are also found to have limiting implications for other methods advanced to reduce the value of rhino horn, such as synthetic rhino horn marketization and de-horning schemes;*

4. *the ruling assumes that legal rhino horn traders will willingly work together with law enforcement authorities to undermine the illegal market for rhino horn. There is also an assumption in this judgment that there is separability of domestic and international trade as well as between legal and illegal rhino horn markets;*

5. *the court assumes that institutional failure is to be blamed for the poaching crisis. This last assumption is in large measure true. Had institutional effectiveness been more evident, then the moratorium would likely have been more effective"*

11.3.2 CITES and Rhino Horn Trade

There has not been any acceptance of international trade in rhino horn by CITES since 1977, with rejection of Eswantini's CoP18 Proposal 8 in 2019 - "*Rejected at Committee (Rejected, 202 to 25, with seven abstentions), 25 August 2019*."

The Kingdom of Eswatini (formerly Swaziland) made a similar submission to CoP17 Prop. 07, "*To remove the existing annotation on the Appendix II listing of Eswatini's southern white rhino population*" and for:

> "*... Eswatini to sell from existing stock 330 kg of rhino horn to licenced retailers in the Far East and also up to 20 kg p.a., including harvested horn, to those retailers*" along with arguments in support of such trade and rhino farming/horn harvesting - but with no independent science that support such trade as not risking stimulating demand and poaching.

Acceptance of this submission would have potentially opened the way for others (such as South Africa) to follow suit. However, the proposal was resoundingly rejected (again).

It is clear that CITES is not likely to accept any relaxation of the 1977 international rhino trading ban at the next CoP, or anytime thereafter.

Even if captive-bred origin (CBO) proposals are made to CITES that international trade in rhino horn should be permitted only if the horn is sourced from CBO rhino, this does nothing to mitigate the risk of stimulated demand; CBO is potentially unable to meet demand (reference paragraph 11.3.4 – "*Can Harvested Rhino Horn Meet Demand?*") and stimulated demand will incentivise more poaching and the illicit slaughter of wild and/or captive bred rhinoceros.

In the absence of CITES' approval in the past, or any likelihood in the future, South Africa should end disingenuous, speculative endeavours that seek to circumvent CITES 1977 ban on the international trade in rhino horn.

11.3.3 Rhino Horn Demand Management

During the COVID-19 pandemic, trafficking of rhino horn has continued, but with disrupted transportation routes and increased border security, potential detection has perhaps been enhanced:

> *"Sudden and unpredictable aviation security measures such as last-minute flight diversions are also having an unforeseen impact on criminal dynamics. In March, Customs officers at Can Tho airport in the south of Vietnam made a rhino horn seizure from a diverted flight from South Korea. It is known that corrupt officers at airports facilitate the clearance of smuggled products, but new COVID-19 measures mean traffickers are not guaranteed that the shipment will arrive at their (air)port of choice"* - Wildlife Justice Commission, April 2020

The demand for rhino horn, market specifics and market dynamics commands further detailed analysis. In 2019 the SANBI stated:

> "*MacMillan et al. (2017), after interviewing 1,000 animal traditional medicine (ATM) users in Vietnam concluded that….the introduction of a legal supply of rhinoceros horn has the potential to 'crowd out' rhinoceros horns sourced from poachers…"* because of *"**an anticipated overall fall in price due to the loss of prestige and exclusivity of rhinoceros horn within a legal and regulated trade**" – "non-detriment findings for Ceratotherium simum simum (white rhinoceros) made by the Scientific Authority*" as n votified Government Notic2 1105, Government Gazette, Vol. 650, No. 42660, Department of Environmental Affairs (DEA), dated 22 August 2019 - Table 1, NDF 25 "*Effectiveness of strict protection measures*"

It is noted that the wisdom gathered by "*MacMillan et al. (2017)"* is based upon ATM users' views, not economists, academics or those familiar with non-conformist (illicit) market forces. Therefore, how much weight should be given to ATM users' laymen opinions?

The assumption (that "*…..legal supply of rhinoceros horn has the potential to 'crowd out' rhinoceros horns sourced from poachers"* because of resulting reduced commodity prices) is not supported by economic professionals within academia:

> Douglas J. Crooks, James N. Blignaut (Department of Economics, University of Pretoria) concluded that "***demand is relatively insensitive to price**…The system dynamics model we developed, indicates that demand is not sensitive to changes in*

the price of rhino horn. This is consistent with the observations of Milner-Gulland (1993). The implication of this is that lifting the trade ban, even if it results in a reduction in rhino horn price, will not alleviate demand" - "Debunking the myth that a legal trade will solve the rhino horn crisis: A system dynamics model for market demand," Economic Research Southern Africa (ERSA), D. J. Crooks and J. N. Bilgnault, Journal for Nature Conservation, Elsevier, Pretoria, 2015

".....legalizing the rhino horn trade will increase supply to the extent that illegal trade becomes unviable. This notion is extensively explored by Conrad and Lopes (2017) who show that ***reducing the price of rhino horn would not be effective at curbing poaching,*** *without simultaneously increasing poacher costs. They find, however, that increasing poacher costs is not a realistic policy option since these costs are largely beyond the control of decisionmakers" -* Collins et al. 2020

So even if the intention of any legal trade in rhino horn is to reduce the price of the commodity and thus, try to disincentivise poaching by reducing its profitability, this leads to a number of flaws in that theory and disparate motives of actors within the proposed trade:

- In the DEA's March 2019 presentation, "*Demand Management*" it was emphasised that a "*targeted message is needed to change the perceptions on rhino horn in the various audiences*" - to reduce the market price of rhino horn to counter the message to poachers that the "*price of horn is high*" and that "*there is money in it*" and also to deter speculation that "*there is a market*" and "*rhino are going extinct.*" This suggests that the aim of any legal trade is to reduce the price for rhino horn.

- Where is the evidence that poaching will not increase regardless of any drop in the value of rhino horn as a commodity, ie. there could be increased poaching volumes to maintain profitability regardless of price reductions?

- But, reducing price can/will increase demand, as rhino horn could potentially become more affordable to a previously economically excluded market element and short-cut the rhino to extinction:

  "*.....if more legal horn goes on the market not only in SA but in Vietnam and China it would create a niche for people who, in the past, could not afford rhino horn being sold by black-market dealers. Not only are you increasing the market base in countries that consume the horn but you will make it more*

> *affordable, which means the demand for rhino horn is going to go up.... the risk is that if demand increases as more people buy rhino horn and legal trade fails to meet the demand, poaching will spike. Countries with smaller populations of wild rhino will be hardest-hit as they don't have the resources to defend their herds" - "The economics of rhino horns,"* Business Live, 31 August 2017 - Joseph Okori, the Southern Africa Director of the International Fund for Animal Welfare

- However, the consensus among pro-trade advocates would appear to contradict the DEA's 'price reduction philosophy.' Leading pro-trade advocates believe that opening up legal international trade will lead to a speculative return for anyone invested in rhino horn, ie. the value of rhino horn will rise, with a "*stupendous mark-up….*" So, this suggests that the private rhino owners' expectations from a legal international market run counter to the DEA's stated aim to reduce rhino horn prices:

> The idea behind Rhino Coin is to create a speculative index (as per any crypto-currency) for rhino horn based upon the buy/sell orders for the underlying physical commodity - rhino horn held in a vault. Of course, those seeking to profit would like to see the index rise, embracing the old trading adage buy low, sell high.....the suggestion by those promoting Rhino Coin being speculators are "*betting that the international rhino horn trade ban will one day fall away, and that horn can then be sold at a stupendous mark-up in Asia*." Note: Rhino Coin is developed and promoted in association with leading rhino farmer and pro-trade advocate John Hume;

- Rubino et al. 2018 alarmingly concluded that after surveying South African Private Landowners, their preference was for **unregulated trade** and **absent minimal animal welfare provision**, plus a minimum trade income threshold (which as stated previously, still provides profit margin for poaching to persist):

> *"Results indicate that respondents preferred payments of at least ZAR 150,000/kg (USD $11,500) and that legal trade not be regulated by government organizations. Respondents did not have clear preferences about whether market participants should be required to meet a minimum land requirement per rhino"*

> At USD $11,500 and sales of 5,000kg of rhino horn equates to an annual income of some USD $57.5m (or around R1bn ZAR) – which rhino horn speculators (PROA) reportedly claim will fund and secure all the rhino in parks and reserves across South Africa (even after profit taking by the rhino horn speculators) – this does not appear to be a realistic claim when SAN Parks annual budget is some R3bn year before any increase in rhino poaching to meet stimulated demand (Bell 2020b).

- Of course, the way to gain a "*stupendous mark-up*" on private rhino horn stockpiles and captive bred rhino is for the species to become closer to extinct, or extinct in the wild - there is no credible incentive for wild species' conservation if the market aim is to maximise "*stupendous*" returns on investment – this is colloquially referred to as the 'extinction gamble' – which does nothing to help secure wildlife tourism to see wild rhino:

> Douglas J. Crookes, James N. Blignaut (Department of Economics, University of Pretoria) in their 2015 paper, "*Debunking the myth that a legal trade will solve the rhino horn crisis: A system dynamics model for market demand*" concluded "*we find that a legal trade [in rhino horn] will increase profitability, but not the conservation of rhino populations*."

In 2018, the Wildlife Justice Commission concluded that the market value for rhino horn has declined (in parallel with ivory prices), by some 33% in the years 2015 – 2018, to around $17,852 USD/kg (which is in stark contrast to the often media reported value of some $65,000 USD/kg).

In conclusion, even if the value/price of rhino horn is reduced (which is not guaranteed by any legal market intervention, as experienced in ivory stockpile releases – see paragraph 8.3 – "*CITES and Ivory Stockpiling*"), this does not guarantee to counter the poachers' incentive:

> "*Even with the price coming down, there's still a heck of a lot of poaching going on*," Douglas-Hamilton (Save the Elephants) said. "*It's important [ivory] prices have come down but it hasn't killed the trade, we're not out of the woods yet*" - *Story behind China ivory ban*, The Guardian, 29 August 2017

The DEA's March 2019 rhino horn trade presentation, "*Demand Management*" proposed the theory that demand reduction could be conducted in parallel with legal trade, whereby:

Demand Management - Demand Reduction = Legal Demand - Illegal Demand

The 'theory' that demand reduction can be enacted and demand controlled once demand is legitimised by legal trade is not supported by any independent, peer reviewed science as even plausible. It is reminiscent of a Ponzi-scheme, where all 'legal' parties receive optimal satisfactory outcomes, when in reality there is no foundation to the expected returns that are based upon a fallacy.

A crude analogy of the implausibility of the proposed rhino horn Demand Management would be telling people smoking is bad for them (*Demand Reduction*), whilst simultaneously legally supplying cigarettes (*Legal Demand*) in an effort to reduce the market price of cigarettes to deter cigarette smuggling's profitability (*Illegal Demand*) and expecting demand (*Demand Management*) to be controllable and only offer upside results - the likely outcome in this scenario is higher demand and increased illegal supply.

The problem is what happens if "*Demand Management*" and "*Demand Reduction*" conducted in parallel fail, which equates to "*Legal Demand*" and an exponential rise in "*Illegal Demand?*"

Please note, there is no rational read-across, or justification for comparing demands for a 'legal' international rhino horn trade and the implied 'failure' of a tobacco/cigarette sales ban in South Africa initiated on 27 March 2020 (due to the 'lock-down'), which raised cigarette prices, but failed to completely decrease cigarette consumption, which continued via illegal trade.

The University of Cape Town researcher's study "*Lighting up the illicit market: Smokers' responses to the cigarette sales ban in South Africa*" conducted an online survey between April and May that included 1,600 participants. The research team found:

> *".....a packet of Marlboro cigarettes in SA was selling [pre-ban] out for R40 (rand). At present, people are getting the same packet for R220 from illegal means.*
>
> *.....a positive outcome that around 41% of the participants tried to quit smoking of which 39% have won the race against quitting tobacco use.*
>
> *On the split side, they also found a negative outcome which showed that more than 90% of the people are buying cigarettes on higher rates and going against the government' ban on the sale of tobacco which is a threat to life in any form and kills over 6 million people every year, according to The National Center for Biotechnology Information (NCBI)"*

"*Despite Hike in Price, Smokers are Increasingly Buying Cigarettes*," Health Unit, 18 May 2020)

There is no rational correlation between cigarettes and the rhino horn trade (Bell 2020), which can be summarised as follows:

1. Cigarettes contain an addictive substance, nicotine – which makes demand reduction efforts for many users reliant on some form of substitute/therapy to reduce user craving/demand. Rhino horn as used in Traditional Medicine has no proven efficacy or addictive trait – demand reduction is therefore straightforward (in theory) in comparison to cigarettes/nicotine.

2. Demand reduction has not been successful for rhino horn, because of mixed messaging and because legal loop-holes provide incentives to circumvent the international trade ban which has negative species survival implications:

   "*Domestic legal markets for rhinoceros parts and derivatives provide opportunities to launder illegal rhino products, increase the burden on law enforcement, send mixed messages to consumers, and stimulate demand thereby undermining years of demand reduction efforts*" - "*Stop the Slaughter – Close Domestic Rhino Horn Markets*," EIA, August 2019

   "*In just 20 years the, the species population has decreased from 250 to just 80 animals…… The main reason for the Sumatran rhino's population collapse is poaching driven by the Asian black market of traditional medicine, where a kilo of rhino horn can sell at around $US65,000*" - Lam et al. 29 May 2020 – "*Sumatran rhinos on the brink of extinction*," Science (Letters), Vol. 368 Issue 6494

3. Cigarettes are derived from tobacco leaves, a finite, plant-based resource (not a sentient being, such as a rhino) where tobacco plants can be sustainably grown to meet certain levels of demand. Tobacco plants are not listed as an endangered species. Rhino populations (CITES Appendix I species, with exemptions) are slow to expand (perhaps 3 - 4% per annum) their population in comparison and meet what could potentially be unbounded demand (reference paragraph 11.3.4 – "*Can Harvested Rhino Horn Meet Demand*");

4. It is not reasonable to suggest that 'captive bred tobacco plants' are somehow going to prevent poaching of 'wild tobacco plants' – there is no correlation in the risks, or underlying drivers between tobacco and rhino horn, the market dynamics are not comparable beyond a cursory level;

5. There is no pre-existing international ban on the 'legal' trade in cigarettes/tobacco leaves – therefore the illicit suppliers of illegal/counterfeit cigarettes are infiltrating/laundering their product on the back of 'legal' international demand. 'Legal' international rhino horn trading is banned, but lax enforcement has permitted incumbent illicit activity. Inferring any comparison between the market dynamics between cigarettes and rhino horn lacks direct correlation and credibility.

6. Any implied assumption that in the absence of a 'legal' cigarette market (ie. South Africa initiated on 27 March 2020) then illegal trade flourishes as having universal application is unsubstantiated. Implying that this cigarette trade ban example somehow validates a 'legal' trade in rhino horn as a necessity to combat illicit trade is plainly absurd – there is no credible correlation between cigarettes demands/drivers and non-conformist rhino horn market dynamics, incumbent illicit demand and illegal actors.

11.3.3.1 Demand Reduction and Reversibility

"*Demand Reduction*" can and will work given the right platform and support - the example of a massive 90% downturn in 'appetite' in China (2014) for shark fin since the state declared it off the menu for ethical reasons – "*Thanks To China's Anti-Corruption Campaign And Environmental Groups.*" NB. The sharks fins are 'harvested' on a mass scale at sea by 'fishermen,' but the live shark's carcass is discarded overboard, so the 'harvested' shark slowly drowns through lack of water movement through its gills, or its bleeding wounds attract predators to its plight/incapacitation.

In addition, where is the evidence and economic science to support any claimed conclusion that "*demand*" is *"reversible"* in reality?

If things go wrong, then 'legal' actions are not necessarily easily reversible - past experience proves 'easy reversibility' to be an assumption:

> "*Pro-trade proponents have suggested that if things go wrong and poaching escalates further as a result of lifting the ban, rhino horn trade could either be "closed down or restructured" after three or four years. Such plans are both unhelpful and impractical, firstly because it risks setting off an illegal buying and poaching rush to exploit a potentially limited window of opportunity as soon as trade is permitted. Secondly, experience from rising exports of rhino horn as hunting trophies from so called "pseudo hunts" in South Africa has shown that it can take seven years (2003-2009) to recognise and [try to] address such problems*" - "*A quantitative assessment of supply and demand in rhino horn and a case against trade*," Dr Barbara Maas of NABU International, July 2016

Economic science suggests that Demand Management/Legal Trade is not the answer if demand reduction is the true intent:

> "*Our model indicates that less conventional demand management strategies (such as consumer education, behaviour modification), appear to be more effective strategies in managing rhino horn demand than legalising the trade in rhino horns* - "*Debunking the myth that a legal trade will solve the rhino crisis: A system dynamics model for market demand*," ," Economic Research Southern Africa (ERSA), D. J. Crooks and J. N. Bilgnault, Journal for Nature Conservation, Elsevier, Pretoria, 2015

11.3.4 Can Harvested Rhino Horn Meet Demand if Rhino Horn is 'Destigmatised'?

The SANBI stated in 2019:

> "*In relation to potential 'destigmatization' of rhinoceros horn use in consumer markets, Moyle (2018) however argues that there is no strong empirical or theoretical evidence that stigmatizing demand would be at a sufficient scale that it can compensate for the lack of legal competition*" – "*non-detriment findings for Ceratotherium simum simum (white rhinoceros) made by the Scientific Authority*" as notified Government Notice 1105, Government Gazette, Vol. 650, No. 42660, Department of Environmental Affairs (DEA), dated 22 August 2019 - Table 1, NDF 25 "*Effectiveness of strict protection measures*"

However, in December 2017's, Biological Conservation (Vol. 216, page 60 - 68), a paper was published entitled "*Sustainable rhino horn production at the pointy end of the rhino horn trade*

debate" authored by Andrew Taylor, Dave Balfour, Diane Kirsty, Brebner Rynette, Coetzee Harriet Davies-Mostert, Peter A. Lindsey, Jo Shaw and Michael't Sas-Rolfes.

This paper highlights how little is currently known and understood about the viability of any proposed legal, international trade in rhino horn and what could happen if rhino horn demand is destigmatised:

> "*We don't know what will happen to demand if the stigma of buying horn is reduced once it has been legalised. For example, there may be many potential buyers that are not buying because it is illegal, but will start buying if it becomes legal"* - Dr Andrew Taylor
>
> "*If there's increased rhino poaching following trade legalization, even for a brief period and at a relatively low level compared with the present, this could be catastrophic for rhinos*" - *"Legalizing Rhino Horn Trade Won't Save Species, Ecologist Argues*," K. Nowak, National Geographic, 8 January 2015

The key points from the "*Sustainable rhino horn production at the pointy end of the rhino horn trade debate*" paper are given as follows:

> **Key Point 1 – What happened to South Africa's rhinos in the past?**
>
> "*South African populations of black and white rhinos (subspecies C. s. simum), both of which had been nearly extinct in the year 1900 due to uncontrolled hunting, grew in numbers over the last 100 years and were not exposed to the same high levels of poaching seen in countries to the north*" - So, the paper confirms uncontrolled hunting led to the rhinos initial demise.
>
> **Key Point 2 - "*Further research is necessary to assess the likely outcomes of legalising trade*"**
>
> No one knows (despite propaganda and 'beliefs') that the outcomes of any international rhino horn trade can only be positive for the entire global rhinoceros' species.
>
> **Key Point 3 - "*Conventional legal protection and law enforcement are insufficient at currents levels of effort and efficiency*"**

Agreed, but even a 'legal' trade requires efficient "*Conventional legal protection and law enforcement* " to combat illicit markets - a 'legal' trade will not help conserve wild rhino if illicit behaviour goes unchecked in parallel to any 'legal' trade. The theory that a 'legal' trade will compete and is somehow guaranteed to decimate illicit activity remains unproven (reference paragraph 12.5 – "*Does Legal Trade Counter Illicit Activity*").

The international organised criminal networks that traffic wildlife to fund terrorism are highly unlikely to yield readily to pricing and market competition. Without increased pressure and enforcement too, if margins are squeezed (ie. prices for rhino horn drop), what is to say such networks will not increase volume (more poaching) to maintain income streams?

Key Point 4 - "*Legal trade in rhino horn has been proposed but is controversial*"

Yes it is.

Key Point 5 - "*African rhinos are facing high rates of poaching that is threatening their survival*"

Yes they are - successfully tackling poaching is not guaranteed by any flawed, legal rhino horn trading strategy that stimulates demand.

Key Point 6 - "*Annual horn production in South Africa is estimated at 5,319 to 13,356 kg*"

Michael as-Rolfes (The University of Pretoria and independent economist) has reportedly said the estimates ["*Annual horn production in South Africa is estimated at 5,319 to 13,356 kg*"] taking into account "*uncertainty*" surrounding rhino population sizes, mortality rates, horn growth rates and the attitudes of private rhino owners to potential legalisation.

Dr Barbara Maas also assessed the ability of harvested rhino horn stockpiles to meet demand – the conclusion is that if demand is stimulated, then stockpiles (and the ability to replenish from harvested rhino horn to meet demand) could soon be obliterated leaving wild rhino at the mercy of out of control demand:

To illustrate, this upper estimate of 13,356 kg annual availability of rhino horn (at a 50g Traditional Chinese Medicine (TCM) dose) would provide just 267,120 such doses - satisfying just 0.018% of the total estimated Chinese and Vietnam population of 1.471bn (Ref. World Bank data) with a 50g TCM dose - Reference data/mythology from "*Pointless - A quantitative assessment of supply and demand in rhino horn and a case against trade*," NABU International Foundation for Nature, paper authored by Barbara Mass.

"*These simple calculations support the notion that lifting the ban on commercial trade in rhino horn is likely to facilitate the extinction of rhinos, rather than support their survival. Illegal rhino horn trade is an international problem that requires a well-coordinated global response comprising a genuine commitment to strong legislation, uncompromising enforcement and creative demand reduction initiatives" - "A quantitative assessment of supply and demand in rhino horn and a case against trade*," NABU International, Barbara Maas, Berlin, 2016

The "*Sustainable rhino horn production at the pointy end of the rhino horn trade debate*" co-author, Dr Andrew Taylor of the wildlife in trade programme at the Endangered Wildlife Trust (EWT) has also highlighted the many unknowns with regard to the demand side's unpredictability, concluding that:

"….the potential size of the consumer market…..may in fact be considerably bigger if rhino horn were legally available." Concluding *"It's therefore not reasonable to assume that the potential supply of rhino horn can meet potential demand."*

Well indeed, but the unknowns with regard to the viability of any proposed international trade in rhino horn are also expanded upon by Taylor:

"*A major problem is that we don't know the true size of the market. Although one could infer the current extent of rhino horn demand from the amount of illegal horn (our estimate was 5,346kg or the equivalent of 909 white rhino horn sets), there are a number of factors that complicate the situation*."

"W*e don't know much about what the horn is being used for - specifically, what proportions are being used for medicinal purposes, what proportions are used for ornaments, and importantly what proportions are being stockpiled for speculation.*"

> "*We don't know what will happen to demand if the stigma of buying horn is reduced once it has been legalised. For example, there may be many potential buyers that are not buying because it is illegal, but will start buying if it becomes legal. We don't understand the price elasticity of demand for horn - what will happen to the price of horn if there is an increased (legal) supply?*
>
> *These are things we think [we] need to understand before risking legalising trade.*"

There is also the question of the 'quality' of the rhino horn itself to meet consumer demand and whether harvested rhino horn meets that demand. Recent studies published in May 2019 by Professor Vu Hoai Nam Dang and Professor Martin Reinhardt Nielsenhave from the University of Copenhagen have determined that the discerning consumers prefer rhino horn that is derived from wild rhino, not farmed or harvested rhino horn.

This clearly runs counter to the Notice 1105, Table 1 NDF 25 "*Effectiveness of strict protection measures*" finding of *MacMillan et al. (2017)* that *"…after interviewing 1,000 animal traditional medicine (ATM) users in Vietnam concluded….consumers' strong preference for non-lethal harvesting…"* Therefore, the *MacMillan et al. (2017)* consumers' "*strong preference*" for non-lethally harvested rhino horn is disputed.

Furthermore, Douglas J. Crookes, James N. Blignaut (Department of Economics, University of Pretoria) point out ("*Debunking the myth that a legal trade will solve the rhino horn crisis: A system dynamics model for market demand*") that game farms may harvest horn every 1.5 years, whereas for poachers it is optimal to kill a rhino and harvest its horn, even at very low rotation intervals:

> "*This suggests that, even if a rhino poacher encounters a dehorned rhino, it is still optimal to kill the rhino and take what is left of the stump. This casts further doubt on the effectiveness of a legalized trade.*"

In the absence of definitive demand management data and the likelihood expressed that any legitimising of demand for rhino horn presented within a legal international trade environment is a high risk strategy – in terms of profiteering, then an international rhino horn trade fits within a 'sustainable utilisation' ideology, but this ideology has no correlation to species conservation and sound ecological outcomes.

There is the demand reduction hope that the Chinese National Intellectual Property Administration, April 2020 draft document when enacted, will exclude Traditional Chinese Medicine patents for products containing rhino horn (EIA 2020d).

11.3.5 Rhino Horn Stockpiles

South Africa has developed methods for analysing nuclear DNA allowing individual rhinoceros to be identified from horn, blood, tissue, etc. According to DLA Piper's 2014 report, "*This has already proven to be very effective (CITES CoP 16). DNA evidence has been used successfully in a number of rhinoceros-related cases in South Africa and it is routinely used in numerous criminal investigations*."

Rhin horn harvesting continues in South Africa for stockpiling and for the 'legal' domestic market (reference paragraph 11.3.1 – "*Domestic Rhino Horn Trade*"). How well registered and documented is that stockpiling?

Notice 1105, Government Gazette, Vol. 650, No. 42660, Department of Environmental Affairs (DEA), dated 22 August 2019, NDF 19 "*Methods used to monitor the harvest*" states:

> "*Reporting of rhinoceros horn stocks within the private sector continue to increase in part due to improved declaration and reporting*."

However, it is acknowledged that such reporting is not necessarily 100% complete:

> "*A 2014 survey of white rhinoceros owners in South Africa found that privately held stocks totalled 1,697 pieces (6,256 kg) (Balfour, et al., 2016), accounting for approximately 80 85% of the potential estimated weight of stocks expected from natural mortalities (i.e. 7,690 kg). Fear of reporting stockpiles to authorities in some provinces where such information can be leaked to criminals is a factor in under-reporting (Emslie, et al., 2016)*."

In 2014, the DEA recommended in "*The viability of legalising trade in rhino horn in South Africa*:"

> "*Taking into account the facts that the mechanisms for controlling a legal trade in South Africa are not yet in place, that the number of rhino horns in private stockpiles are uncertain, and that some private rhino owners are not yet compliant with*

> *permitting regulations, it is likely that lifting the moratorium at the present time will lead to laundering of illegal horn into legal stockpiles as well as smuggling of horn out of the country. These acts would tarnish South Africa's reputation with CITES Parties and could jeopardise future attempts to legalise international trade in rhino horn."*

This 2014 DEA report suggested South Africa had the capacity to supply 2 tonnes, increasing to 5 tonnes per annum – this has since been given as 5,319kg to 13,356kg (13 tonnes) per annum (Taylor et al. 2017), but the actual demand side remains opaque (reference paragraph 11.3.4 – "*Can Harvested Rhino Horn Meet demand?*").

A 2016 report from IUCN Species Survival Commission (IUCN SSC) African and Asian Rhino Specialist Groups and TRAFFIC to the CITES Secretariat pursuant to Resolution Conf. 9.14 (Rev. CoP15) concluded that South Africa's stockpiles were not fully complaint with illicit stocks removed from potential laundering within any legal trade:

> *"South African private sector stocks also continue to increase in part due to improved declaration and reporting. Whilst problems clearly remain regarding their tracking, the discrepancy between reported and estimated horn has narrowed since CoP16. A 2014 survey of white rhino owners in South Africa found that privately-held stocks totalled 1,697 pieces (6,256 kg) (Balfour et al. 2016), accounting for ~80-85% of the potential estimated weight of stocks expected from natural mortalities (i.e. 7,690 kg). Fear of reporting stockpiles to authorities in some provinces where such information can be leaked to criminals is a factor in under-reporting. It is also noted that some private sector rhino owners are believed to have sold horns into illegal trade (Huebschle 2016)."*

So, this begs the question of how the uncertainty of the "*number of rhino horns in private stockpiles"* has been removed, and thereby mitigated the risk of *"laundering of illegal horn into legal stockpiles as well as smuggling of horn out of the country?"* This is despite the Notice 1105 assurance that *"the RHODIS database to ensure traceability. The system is well managed and rhinoceros horn stock piles are regularly audited."*

There would still seem to be significant questions regarding the credibility of South Africa's declared and undeclared rhinoceros horn stockpiles:

> "*In the interim we ask that the DEFF identify, mark, register secure stockpiles and declare the results. Rumors that South African state stockpiles might have been*

> *compromised during State Capture period abound, South Africa's conservation reputation is at further risk" - - Wildlife Animal Protection Forum South Africa, "Their Future is Dark" The Rhino Horn Trade 2019)*

The stockpiling of rhino horn is not dis-similar to the stockpiling of ivory, in the somewhat futile hope that international legal trade and/or release from stockpiles will be sanctioned by CITES. Stockpiling sends a message that demand is somehow legitimised, thus giving oxygen to the speculative accumulation of rhino horn and ivory as a legitimate endeavour, regardless of how the commodity is obtained.

11.3.6 Rhino Horn Trade - Ethical and Moral Considerations

The use of rhino horn as a symbol of status among Vietnam's burgeoning, wealthy middle-class has been identified as a major driver of the current rhino poaching crisis.

Rhino horn demand is driven (according to Save the Rhino) by 98% for 'ornamental'/ 'status' use in Asia, including traditional '*Jambiya*' (dagger) handles in the Yemen.

Figure 10 - *Ornate 'Jambiya' dagger with rhino horn handle*

The other 2% of the demand side is driven by 'medicinal' use, with rhino horn prescribed as a cure for cancer, after rumours perpetuated in Vietnam around 2006/06 cited the miraculous cure of a prominent Vietnamese official attributed to the taking of powdered rhino horn:

> "*Research reveals that typical users of rhino horn are successful, well-educated men, over the age of 40 who live in Vietnam's main urban centres. They value their luxury*

lifestyle, which is often based around meeting peer group pressures" – Dr. Jo Shaw, World Wildlife Fund

The 'medical' application of rhino horn has been known to lack any scientific proof since the early 1980s, Rhino horn is made from keratin (the same as one's own fingernails):

Prescribed use of rhino horn	Effective?	
	Yes	No
Antipyretic		✓
Analgesic		✓
Anti-inflammatory		✓
Anti-spasmolytic		✓
Diuretic		✓
Bactericidal		✓

Table: Saving Rhinos LLC
Data: 1983. Yemen acts to halt rhino horn daggers; scientific tests fail to show rhino horn effective as medicine. *The Environmentalist* Vol. 3, No. 2

Figure 11 - *Rhino horn efficacy study (1983) - Hoffman-LaRoch, 1983*

Therefore, the demand for rhino horn is driven by demand in Asia – rhino horn is incorporated into Traditional Medicine (TM) products, but such products have no proven efficacy; therefore, any legal international rhino horn exports for incorporation into TM would be perpetuating fraudulent and false health claims.

There have been various campaigns to try to change attitudes and demand for rhino horn 'product' including the Humane Society International and Virgin Group, and other "*Demand Reduction*" campaigns have worked given the right platform and support'- the example of a massive 90% downturn in 'appetite' in China (2014) for shark fin since the state declared it off the menu for ethical reasons.

The amount of detailed professional market research that has been conducted in Vietnam regarding the demand side for rhino horn is extensive. The leading expert groups in this field

such as Breaking The Brand and TRAFFIC Southeast Asia and Education for Nature - Vietnam (ENV) and WildAct and WildAid to name a few, have been studying this subject for years.

The Founder of Education for Nature - Vietnam (ENV) Quyen Vu remarked that South Africa's 2017 Draft Regulations for domestic rhino horn trade undermine Vietnam's sincere efforts for demand reduction:

> "*If they [South Africa] want to legalize domestic trade then don't talk about exports to other countries. If they want to protect rhinos then don't try to sell rhinos to us, to a country like Vietnam or China……that would result in a wave of newly "permitted" rhino horn pouring into Vietnam*" - Education for Nature - Vietnam (ENV) Quyen Vu

11.3.7 Alternative 'Rhino Horn' Sources

Pembient is a Seattle based bio-tech company - Matthew Markus, is the co-founder and CEO. Pembient's original aim was to produce a rhino horn powder to disrupt the illegal market in rhino horn for medicinal purposes. However, this strategy was soon changed as Pembient looked more closely at the market for horn powder and the reasons for rhino horn trade, as Markus Matthew explained;

> *"It's obviously easier to create a powder.....but we pivoted to working on solids because we thought that would have a much bigger social impact, because our research of indicates that the horn carving market is really the intake engine for full horns. "*

Pembient's research indicates that some 90% of the rhino horn powder on the market is in fact ground up water buffalo or other powder. Pembient now have what they are calling a low-fidelity prototype of solid rhino horn using 3D printing. They are at a "*crossroads*" from a technology perspective as they move to produce a high-fidelity product. They are reviewing options such as tissue engineering using stem cells with the plan to bring a high-fidelity product to market within the next 2 years.

Pembient are creating a totally new market in bio-synthetic products. As such, it is not clear which legal framework or appropriate legislation applies to their product. They face significant opposition from a wide range of NGO's - Some "*academics and economists*" have contacted the company about first setting up a system to monitor the bioengineered horn's effect on the marketplace. Once that system is in place, Pembient's plans call for the product to sell for around US$7,600/kg, with a portion of all sales going toward the protection and

management of wild rhinos. According to Markus, that's about one-eighth the price of natural rhino horn.

However, the concept is opposed (July 2016 Statement) by Save The Rhino International and International Rhino Foundation, believing that the production of synthetic rhino horn will increase demand for the 'real thing' – many of these NGOs are focussing on demand reduction for rhino horn and therefore from a principle perspective, they see significant risk from an innovation that might stimulate demand.

> *"Introducing rhino horn from alternative 'legal' sources into an unpredictable market could stimulate further demand….and create huge challenges for enforcement authorities, putting the world's remaining rhinos under even more pressure"* - International Rhino Foundation

From regulatory perspective, Pembient has voluntarily put itself under the remit of the United States Fish and Wildlife Service as well as participating in CITES. At the CITES CoP17 (September 2016), the use of synthetic products was debated within a somewhat hostile reception as CITES grapples on how to align bio-engineered alternatives within existing definitions of "*Trade in readily recognizable parts and derivatives*":

> *"For now, the prevailing mood seems to be that anything that resembles the real thing should simply be regulated as if it were the real thing. In other words, if rhino horn and ivory trade are banned, then anything that closely resembles these products should simply be banned too"* – 't Sas-Rolfes 2018

The regulatory debate regarding "*specimens produced through biotechnology*" has continued, with Pembient surmising that unless CITES reforms and recognises distinct, stand-alone bio-engineered alternatives, then "*CITES could become unenforceable because the parties never intended for an international wildlife treaty to regulate the development of biotechnology*" (Markus 2019).

However, worryingly for Pembient, the concept of bio-engineered rhino horn has been enthusiastically endorsed by China, who along with Japan and South Korea have emerging, rival bio-tech industries that could benefit commercially from also bio-engineering wildlife commodities.

Could synthetic rhino horn act as a catalytic innovation? Using Christensen et al.'s "*Disruptive Innovation for Social Change*" model, this product may have the potential to be a game

changer, but market forces could prove counter-productive to species conservation if demand is stimulated and leads to increased poaching:

Five Qualities of Catalytic Innovators	Fit to Pembient
1. They create systemic social change through scaling and replication.	Potential for this through scaling to elephant tusk, pangolin scales and other species.
2. They meet a need that is either overserved or not served at all.	Yes – perceived need for rhino horn is not yet supplied by legal markets and there is a finite ability to meet stimulated demand from rhino horn stockpiles and harvested rhino horn capacity. However, significant regulatory (CITES) hurdles evident before a bio-engineered market can exist.
3 They offer products and services that are simpler and less costly than existing alternatives.	Yes – assuming the high-fidelity product can be manufactured at reasonable cost.
4 They generate resources, such as donations, grants, volunteer manpower or intellectual capital that are initially unattractive to incumbent competitors.	Partial fit for Pembient. This is somewhat of a 'marmite' product. Loved by some hated by others.
5. They are often ignored, disparaged or even encouraged by existing players for whom the business model is unprofitable.	No existing legal players for comparison, but vested interests within South Africa's captive bred rhino incumbents and their desire for 'legal' international tared mechanisms for rhino horn.

Figure 12 - *Pembient's fit with the Five Qualities of Catalytic Innovators*

The decisions that Pembient take in terms of how they manufacture the high-fidelity product will set them on what Geroski terms "*path dependence.*" These decisions are difficult to reverse and will set Pembient down a certain innovative path as they develop their product set. Using the work from Santos et al. on successful start-ups, Pembient are successfully following the 'Claim' part of the "*C-D-C model*," but further thought is required into how to 'Demarcate' and 'Control' the market, if their strategy is to be successful (not only for business income, but also for the stated aim to conserve wild rhino populations):

Claim – by signalling leadership through choices in regulators and participating in global discussion at CITES conference and "*telling stories*" to set out the vision of synthetic rhino horn and how this could change market dynamics.

Demarcate - as the existing market is illegal, tactics such as revenue sharing are not appropriate. Pembient could consider some "*anti-leader*" positioning – by means of

promoting the Pembient brand vs. illegal black-market product. This would be a suitable demarcation approach during product launch.

Control - by eliminating competing models and blocking entry to new players. Given the interest from China, South Korea and Japan, this element of the C-D-C model will be critical to Pembient's success.

It would be unsafe to assume that there is no need to treat bio-engineered products as being related to, but not the same as, a product harvested from a member of a CITES-listed species. International trade in any bioengineered product should only be allowed, if it is proven that is would not negatively impact the survival of the species in the wild – the same unknows regarding potential, demand dynamics apply as for "*harvested*" rhino horn from captive rhino – the conservation of the species could be imperilled – reference paragraph 11.3.3 – "*Rhino Horn Demand Management*."

Trying to counter illicit trade by developing legal trade mechanisms, even if the legal trade is based upon bio-engineered alternatives and not "*harvested*" bio-logical product, still has no guarantee of conservation success – reference paragraph 12.5 – "*Does Legal Trade Counter Illicit Activity?*"

11.4 CITES and Rhino Trophy Hunting

At CITES CoP18, Namibia's proposal to facilitate live rhinoceros exports and hunting trophies was "*Rejected at Committee (Rejected 82 to 39), 25 August 2019*" - Namibia had sought via its submission to CoP18 to downlist its white rhino from Appendix I protection (to Appendix II) "*For the exclusive purpose of allowing international trade in*:

a) *live animals to appropriate and acceptable destinations; and*
b) *hunting trophies*"

The reasons given by Namibia were: "*Hunting for trophies [referred to as conservation hunting in Namibia] is recognized as a valuable management tool which provides much-needed revenue for rhinoceros conservation. Trade in live animals is similarly important for income generation in support of protection measures. Transferring the population to Appendix II will enable Namibia to export live animals and hunting trophies to more countries and will increase*

revenue through sustainable use." However, no peer-reviewed science was given to support Namibia's claims.

11.5 Live Rhinoceros Exports from South Africa

In February 1995, South Africa's white rhinoceros' population (wild or captive) received exemption to an Appendix II listing, with the caveat that the exemption was:

> "*For the exclusive purpose of allowing international trade in live animals to appropriate and acceptable destinations……."*

South Africa's live rhino specimen exports are not without controversy. Sales of live export of rhino from Kruger National Park to Namibia has resulted in loss of life of 70% the rhino in transit, with the ultimate destination of the rhino being a Russian owned big game hunting outfit in Namibia:

> *"A number of rules govern the cross-border trade in rhinos between Namibia and South Africa, including local regulations in each country. Both countries are also party to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the oldest international conservation agreement that legally binds the voluntary participants.*
>
> *South Africa has an additional set of Threatened or Protected Species (TOPS) laws that oversee the trade in endangered species.*
>
> *These regulations* ***prohibit the export of rhinos for anything but breeding or broader conservation purposes, and also prohibit hunting any rhino within three years of its being moved from an open to an enclosed area****. But, as du Preeze explains, such regulations are not legally enforceable in neighboring Namibia, which does not have a large indigenous rhino population. This is the loophole that has been exploited for the sake of handsome profits for South African and Russian billionaires" – "Rhinos Wanted – Dead or Alive*," Organised Crime and Corruption reporting Project, 20 February 208

There have also been controversial exports from South Africa to China under the pretext of for non-commercial "*scientific research, captive breeding, public exhibition or performances, heritage conservation or other special purposes*" (China's Wildlife Protection Law loop-hole) to *"appropriate and acceptable destinations"* (though South Africa clearly does not accept

verifiable *"appropriate and acceptable destinations"* as its responsibility before issuing export permits for live specimens - EMS Foundation and BAT 2020 p. 37)

Live rhinoceros having become 'utilised' for commercial purposes within Chinese pharmaceutical companies. From 2001, China has sought to establish their own private rhino farms to produce rhino horn for traditional medicine products. Based in Yunnan, China the Shilin Longhui Wildlife Research Center now houses more than 100 rhinos, at least 49 of which have been born at the facility - "*Stop the Slaughter – Close Domestic Rhino Horn Markets*," Environmental Investigation Agency, August 2019.

It is not clear how such commercial, live rhino exports to China aligns with South Africa claiming that it only exports rhino for "*breeding or broader conservation purposes*" under Threatened or Protected Species (TOPS) regulations?

In 2018, China announced a 'legal trade' in rhino and tiger products, overturning a pre-existing ban from 1993. However, the implementation of the 2018 legislation was postponed some three weeks later due to an international outcry against the policy, but the legislation has never formally been withdrawn in entirety leaving a grey area open to manipulation.

However, the DEA has a clear legal obligation for animal welfare to be given consideration in any such export decisions and ensure that welfare standards meet the required standards (TOPS included - "*breeding or broader conservation purposes*") in any existing, or proposed live animal export endeavours.

11.6 Rhinoceros Trophy Hunting and Poaching

The wild African rhino (White and Black rhinoceros) species suffered near collapse in population at the approach of the 1900s – due to over-hunting and poaching, with as few at 50 wild White rhino at the turn of the century (Taylor et al. 2017):

> "*South African populations of black and white rhinos (subspecies C. s. simum), both of which had been nearly extinct in the year 1900 due to uncontrolled hunting….*"

Project 'Operation Rhino' was launched in the 1960s, aimed at increasing rhino populations by moving some of the last remaining rhinos to game reserves across South Africa and the African continent.

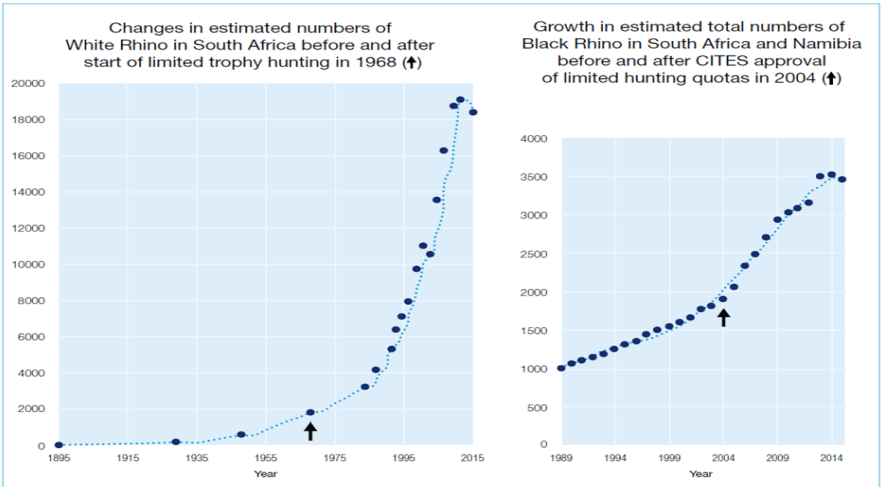


Figure 13 - *The Recovery of African White and Black Rhinos* – Roe, D.; Cremona, P., 2016 – "*Informing decisions on trophy hunting: A Briefing Paper for European Union Decision-makers regarding potential plans for restriction of imports of hunting trophies*," IUCN

A rhino trophy hunting ban was initiated at the same time as Operation Rhino's launch. As the rhino populations started to recover in the reserves, more land was needed. Private game farms were incentivized to take surplus rhinos, but in return the ban on trophy hunting of white rhino was lifted with 'controlled' hunting re-introduced in the 1970s. This encouraged the private game farmers to breed rhino stock.

So, since the 1960s South Africa has allowed the privatising of South African wildlife by a dominant, white, game farming cartel (Hübschle 2016b) to take control of responsibility (and accountability) for breeding and controlling 'stock,' with a tight-knit secrecy within the industry that obscures transparency in terms of the size of operations, objectives, rhino horn stockpiling, illicit behaviour and ethics etc:

> "*what happens behind this game fence is my business…*" – Hübschle 2016b, page 259

The CITES 1977 ban on international trade in rhino horn and linking pressure to comply with the ban upon trade, ie. the United States applied pressure for non-compliant countries to comply with rhino horn trade ban during the 1980s (Bell 2020), rhino poaching numbers dropped to zero/single digits by 1994.

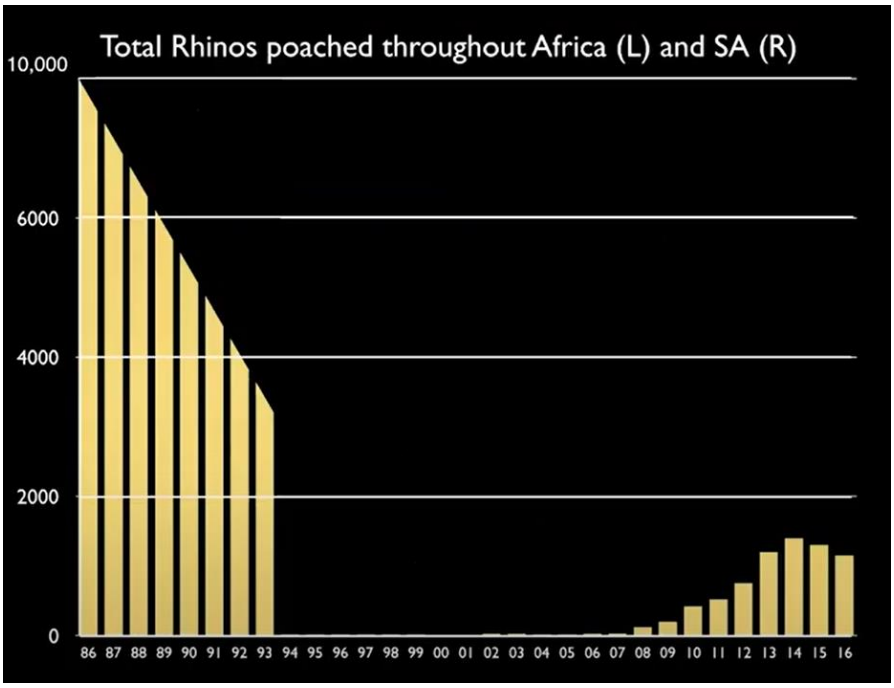


Figure 14 - *Total Number of Rhinos Poached Throughout Africa, 1986 – 2016* (Bell 2020)

However, once CITES Appendix I exemptions were sought to exploit rhino populations for trophy hunting from 1994, then the loop-hole has always existed to allow pseudo hunting to obtain rhino horn, plus it sent out the message that rhino were now a legitimate commercial commodity – which allowed demand to flourish from 2007. Where there is demand, there is poaching seeking to also profit from the commodity. South Africa's white rhinoceros received exemption to Appendix II listing for trophy hunting and live exports (with caveats) in 1995:

> "*For the exclusive purpose of allowing international trade in live animals to appropriate and acceptable destinations and hunting trophies. All other specimens [including 'meats' or derivative products] shall be deemed to be specimens of Appendix I and the trade in them shall be regulated accordingly*"

Prior to 2007, rhino poaching figures in South Africa remained low. But in 2009 there was a notable 'upswing' in the level of poaching observed in South Africa which rose to a peak in 2014 at 1,215 rhino, but with a slight decline to 1,175 rhino recorded as poached in 2015 (TRAFFIC 2016) – totalling 5,309 rhino lost to poaching between 1980 and 2015.

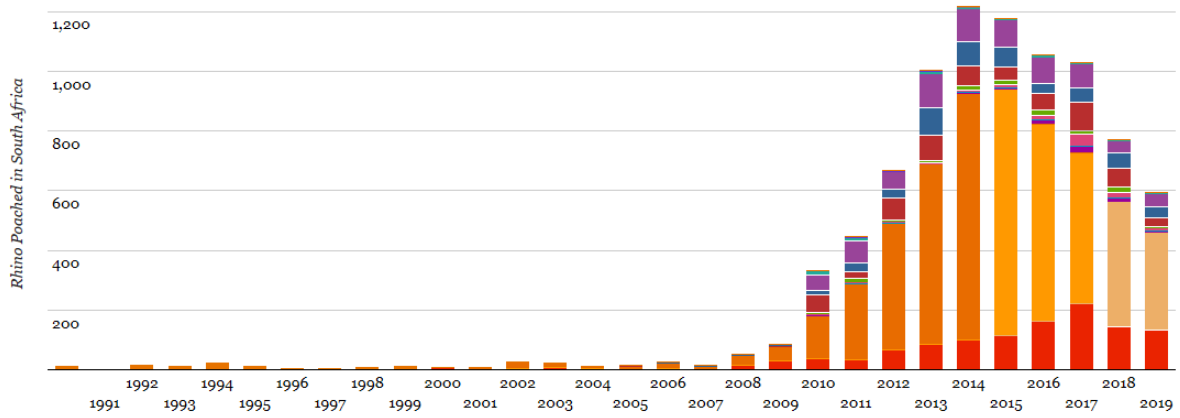


Figure 15 - *Recorded Rhino Poached per Year (1990 – 2019) in South Africa (Poaching Facts)*

This 2009 'upswing' in rhinoceros poaching in South Africa could be attributed to an exponential rise in demand for rhino horn in a newly wealthy Asian middle class and the misguided 'belief' perpetuated around 2005/06 in Vietnam (Guardian 2011) that rhino horn could be a "*cure for cancer*." Regardless of the origin, or reason, the 'upswing' has been sharp and sustained.

It has been suggested (by the pro-trade advocates) that this 'upswing' coincided with a 2009 South African moratorium on 'legal' domestic trade in rhino horn being initiated (to stem the flow of rhino horn from unregistered stockpiles into the international market) and because of "*pseudo hunting*" to obtain rhino horn:

> "*Some hunters have been abusing permits to shoot rhinos and export illegally obtained rhino horns – probably poached and directly linked to organised crime – as "hunting trophies"*" – "*South Africa freezes rhino horn trade*" - TRAFFIC 2008

However, if it had not been for the 1995 CITES Appendix 1 exemption of South Africa's white rhinoceros for trophy (pseudo) hunting, then demand would not have been legitimised and the upswing could never have legally (via pseudo hunting) been allowed to manifest and give rise to the notion rhino horn was still obtainable for inclusion in Traditional Medicine (TM).

Therefore, excessive rhino trophy hunting helped cause the initial 1960's low in rhino populations. Illicit laundering of unregistered rhino horn stockpiles and "*pseudo hunting*" – using trophy hunting loop-holes to obtain rhino horn (also reference paragraph 6.1.1 – "*Pseudo Hunting*") - led to a moratorium on the domestic rhino horn trade in 2009.

It's questionable if the modern-day trophy hunting of wild, or captive rhino actually serves an altruistic conservation purpose. How does anyone know the motives for the desire to obtain a rhino hunting trophy – is it just to obtain rhino horn as a tradeable commodity? The latest rhino trophy hunting data suggests Chinese nationals are directly 'legally' killing rhino for trophies/horns (CITES Trade Database):

South African Imports into China as Hunting ('H') origin:

2014 – 3 'Specimens'; 3 'Horns'; 4 'Trophies';

2015 – 2 'Skins'; 3 'Trophies';

2016 – 4 'Bodies'; 40 'Feet'; 8 'Leather Products (Small)'; 4 'Skeletons'; 14 'Skins'; 2 'Skulls'; 3 'Tails'; 12 'Trophies';

2017 – 2 'Bodies'; 36 'Feet'; 1 'Leather Products (Large)'; 8 'Skins'; 1 'Skull'; 1 'Specimen'; 1 'Tail'; 10 'Trophies'

2018 – 4 'Leather Products (Small)'; 1 'Skeleton'; 8 'Trophies'

South African Exports to China as Hunting ('H') origin:

2014 – 3 'Horns'; 4 'Trophies';

2015 – 1 'Horn'; 21 'Trophies';

2016 – 2 'Feet'; 6 'Horns'; 1 'Skin'; 26 'Trophies';

2017 – 9 'Trophies'

2018 – 8 'Trophies'

Does anyone really think this is legitimate 'non-commercial' (sic) activity, whereby any hunting trophy so obtained is not being imported into China for subsequent onward commercial sale to perpetuate demand for rhino horn as ornaments and TM ingredients for example?

> "*Ten years ago Chinese hunters sought only 18 hunting trophy import permits from CITES officials. By 2017 that figure had soared to 2,142, a rise of nearly 1200%.... Today, China is second only to the US for the total number of 'hunting trophy' imports of wild animals, having leapfrogged long-established markets such as Germany and Spain"* - Gonçalves 2020

It is estimated that the captive rhinoceros' population within South Africa totals more than 6,000 animals:

> "….*some 6,000 rhinos live on privately owned farms (Knight 2016, DEA 2014). Many of them are regularly dehorned in anticipation of trade and dependent on supplementary food (Warren 2015)*" - "*Pointless - A quantitative assessment of supply and demand in rhino horn and a case against trade*," NABU International Foundation for Nature, paper authored by Barbara Mass.

These captive rhino live a synthetic existence and are also subject to trophy hunting attrition, plus the pro-trade campaign to re-establish an a international rhino horn trade (IWB 2019c), banned by CITES since 1977. Illicit activity to profit from rhino horn abounds (Ginkel 2016), but 'legal' trade is not a guaranteed solution (Milliken and Shaw 2012, Appendix 3 to this submission - "*Rhino Horn Consultation, September 2019*").

Therefore, it is essential that action is taken to prevent the rhinoceros being exploited by pseudo/trophy hunting to illicitly obtain rhino horn, as any legitimising of demand potentially stimulating poaching to meet demand.

11.6.1 Canned/Captive Rhino

The trophy hunting of captive bred wildlife is not restricted to just lions of course, but also rhino.

As a working example, I am reminded of the "*Kuruman canned rhino hunt*" (as described in "*Kalahari Dream*" (Bevan, P; Mercer, C., 2011)) and the apparently 'legal' "*reasonable, sustainable…..use of natural [rhino] resources.*"

> Note: A summary of this 'hunt' was published in a "*BBC Wildlife*" article (April 2007), "*Tales from the bush*," "*It won't do what is says on the tin*" - authored by Chris Mercer (Campaign Against Canned Hunting).

Basically, what happens when an adult, female (cow), White rhino is not sufficiently aware, or absently forgets that it has been deemed a "*sustainable resource*" earmarked to be executed by a fun-loving trophy hunter?

David Erwee in this case, was just out for kicks and a bit of "*sport*" (sic) after legally buying said rhino at a game auction in 2001. Of course, somewhere the delusion is conjured, that this particular 'captive/canned' female rhino's killing somehow positively contributed to conservation of the wild species.

Regardless, the account of this rhino's killing in a fenced-off Kuruman industrial park started at 9am the same day of said purchase at a nearby game auction:

Rather than 'risk' darting the rhino for transportation (rhino health/survival is at risk under anaesthetic), why not just move the rhino into a nearby fenced area and let the hunt/fun begin there and then?

> The 'hunter' first approached towards the "*sustainable*" female rhino on foot (i.a.w regulations), but the hunting party's initial shots (taken from approved calibre rifles of course, i.a.w. regulations), did not do sufficient harm;
>
> The rhino refused to be so easily 'sustainably utilised' it would seem, or perhaps she wanted to dutifully provide 'value' for the hunter's outlay of cash (thereby, providing the hunting party with a feeling of 'euphoria' perhaps and some beneficial "*health or wellbeing"* i.a.w the Constitution);
>
> Over a period of some 8 hours of being shot at, marshalled from her cover within a thicket by the hunting party from their 'safari' vehicle, flushed out of a thicket using a helicopter, eventually this unruly, but stubborn female rhino succumbed to her wounds;
>
> The female rhino knelt down to slowly (and presumably, painfully) expire i.a.w. regulations - her "*sustainable*" contribution to South Africa's benefit dutifully complete (bless her);
>
> Her tormenters drank beers in celebration of their fun, within the fenced-off industrial park enclosure - which must have somehow been transformed with no effort whatsoever into an approved 'wildlife enclosure' suitable for such hunting of a mercifully 're-wilded' rhino (for a half-day's torture) and the rhino's "*active management*" i.a.w regulations;
>
> However, a troublesome resulting court case ensued for Erwee et al. as some accusations were levelled by a bunch of "*antis*"/"*greenies*"/conservationists "*with*

fundamentalist tendencies" that in fact this female rhino's hunt had not been conducted completely i.a.w regulations after all;

Luckily the prosecutor (allegedly, an avid hunter) was not fooled for one minute – case dismissed as it was impossible to 'prove' the target rhino had actually suffered (presumably, because no such animal is a sentient being, capable of suffering pain when sustainably utilised i.a.w the South African Constitution).

The above "*sustainable use of our natural resources*" does not appear "*reasonable*" when considering ethics, morals, the suffering/exploitation and dubious contribution of anything meaningful to conservation. This rhino trophy hunting 'sport' should not be permissible.

11.7 Rhinoceros Meat

There is now the question of rhinoceros being listed under "*…proposed update to Schedule 1, as provided for in section 1(2) of the Meat Safety Act, 2000 (Act No 40 of 2000), listing the animals to which the Act applies*" - Gazette no. 43050, Notice 201/2020, dated 28 February 2020.

It is assumed that the privately owned captive bred rhinoceros within South Africa are proposed as the main source for inclusion of rhinoceros' meat within Schedule 1 of the Meat Safety Act, 2000 (Act No. 40 of 2000).

These privately held rhinoceros within South Africa are predominantly southern white rhinoceros (*Ceratotherium simum simum*). So the inclusion of other complete genus within Notice 201 – Diceros, Ceratotherium, Dicerorhinus, Rhineceros – remains something of a mystery, unless the plan is to increase the scope and inclusion of other rhinoceros genus into intensive breeding facilities within South Africa for meat production, or the intention is to set a precedent for other countries to follow suit and therefore perhaps theoretically raise the prospect of support for a submission to CITES for regulatory approval for international exports of South African rhinoceros meat?

11.7.1 White rhinoceros (*Ceratotherium simum*)

The proposed listing of *Ceratotherium simum,* and/or *Ceratotherium simum simum* Schedule 1, as provided in section 1(2) of the Meat safety act, 2000 (Act No. 40 of 2000) could at this time only be theoretically self-approved (based on the caveats given with regard to evidenced based risk assessment supporting such trade), for domestic market purposes within South Africa.

Is there any publicly available science (from the South African National Biodiversity Institute (SANBI) or otherwise) that assesses:

- The risk to the wild species' conservation status, not just within South Africa, but globally, from any proposed trade expansion into rhinoceros 'meats'?

- What demand side risk assessment has been completed for potential domestic, and/or any 'legal' international export of rhinoceros 'meats,' or derivative products that encompass the given 'meats'?

- What risk assessment of the potential for zoonotic or otherwise disease transmission to humans during any subsequent species handling, breeding, slaughter, processing, packaging, and indeed consumption of rhinoceros 'meats' as proposed under Notice 201?

There is 'legal' trophy hunting of white rhinoceros in South Africa, but no quota to specifically kill white rhino just for their meat (unless "*pseudo hunting*" is again employed a deceit to obtain wildlife commodities, such as 'meats'). Of course, the meat obtained from a legitimate trophy hunt would need to remain fit for human consumption, despite the meat donor animal in question being slaughtered in an unlicensed, open air 'abattoir' - unless the intention is to usher any given *Ceratotherium simum simum* meat donor animal into an enclosure to be slaughtered, but of course this would then not be a legal, fair chase trophy hunt – but canned slaughter.

In the absence of any evidence-based science in support of extending rhinoceros utilisation and the potential expansion of intensive captive breeding activities that could no doubt ensue as a result (ie. rhinoceros private ownership expands in an unregulated fashion), then such commercial business endeavour to promote these species' 'meats' for human consumption, a precautionary risk approach is recommend – that until such independently sourced, peer reviewed science is available, then the meat of any species lacking that specific evidenced/scientific backing should not be added to Schedule 1, as provided in section 1(2) of the Meat safety act, 2000 (Act No. 40 of 2000).

The export of rhinoceros meat from South Africa sourced from *Ceratotherium simum,* and/or *Ceratotherium simum simum* would be in contravention of CITES Appendix I restrictions - there are no current CITES regulations in place that would allow the legal export of *Ceratotherium simum,* and/or *Ceratotherium simum simum* meat (or derivative products) for commercial purposes.

There is no exemption to Appendix I listing of South Africa's white rhinoceros apart from live animal exports and hunting trophies, where the 1995 exemption states:

> "*For the exclusive purpose of allowing international trade in live animals to appropriate and acceptable destinations and hunting trophies. All other specimens [including 'meats' or derivative products] shall be deemed to be specimens of Appendix I and the trade in them shall be regulated accordingly*"

As per the analysis given at paragraph 11.3 – "*Rhinoceros Horn Trade – White Rhinoceros*" – there is no scope for the DEA to legitimately try to utilise CITES Article VII to somehow misconstrue 'meats' sourced from commercial purposes, captive bred white rhinoceros should somehow only be given CITES Appendix II protection:

> "*specimens bred in captivity for **commercial purposes** are deemed to be specimens of species included in Appendix II (Article VII) of CITES **and therefore may be traded**" -* Notice 1105, Gazette 42660, Vol. 650, 22 August 2019

This is unfounded with regard to "*animal products*" such as 'meats' or indeed rhino horn – only live animal exports (for non-commercial purposes) and hunting trophies are given specific trade allowances in accordance with South Africa's white rhinoceros' population's 1995 exemption.

11.7.2 Black rhinoceros (*Diceros bicornis)*

The Black rhinoceros (*Diceros bicornis)* is listed as "*Critically Endangered*" on the IUCN Red List, population increasing and is a (Species+) CITES Appendix I listed, but with a trophy hunting quotas set for Namibia and South Africa.

> "*Appendix I includes species threatened with extinction. Trade in specimens of these species is permitted only in exceptional circumstances*" - CITES

South Africa moved from 5 black rhinos a year to "*harvest*" up to 0.5% of South Africa's black rhino population (CoP18) – or around nine black rhino per year at today's species' population level. There are perhaps a total of 5,000 Black rhinoceros in left in the wild across the whole African continent.

Therefore, because of its listing, sourcing of wild *Diceros bicornis* meat would be limited to obtaining the meat from a maximum of 0.5% of South Africa's wild black rhino population when slaughtered as a hunting trophy.

Of course, the meat would need to remain fit for human consumption, despite the meat donor animal in question being slaughtered in an unlicensed, open air 'abattoir' - unless the intention is to usher any given wild *Diceros bicornis* meat donor animal into an enclosure to be slaughtered, but of course this would then not be a legal, fair chase trophy hunt.

11.7.3 Rhinoceros Diseases

Just to list some common illnesses, haemolytic anaemia (the accelerated destruction of red blood cells and breakdown of haemoglobin, resulting in fatigue and shortness of breath with the potential of developing into heart failure), mucocutaneous ulcerative syndrome (ulcers that develop in the mouth and nose and on the skin of the animal) and fungal pneumonia (a fungal infection of the lungs that causes impaired breathing, fever, and shivers.

Tapeworms are often found in the gut of rhinos. These flatworms are usually ingested as larva, which hatches and grows in the intestine of the animal. If left untreated, a tapeworm can live inside the gut for approximately 20 years and can grow to 50 metres in length.

Salmonella Spp are bacteria, some of which may be pathogenic and known causes of disease. This disease is commonly associated with outbreaks of disease in various domesticated species but also rhinoceros:

> "*A survey was mailed to 72 institutions in the USA requesting information on Salmonella spp. cultures in black rhinoceroses (Diceros bicornis), white rhinoceroses (Ceratotherium simum), and Indian rhinoceroses (Rhinoceros unicornis). Sixty-one institutions responded (85% return rate), with seven reporting positive cultures (11% prevalence rate; 10% if survey nonresponders had negative cultures). There were 17 positive cultures from 16 different animals, with nine different serotypes of Salmonella and 2 additional cultures identified to the group level*" – Kenny 1999

Streptococcus equisimilis also occurs in rhinoceros' populations and is also reported in horses, cattle, sheep, pigs and humans in which it normally occurs in the upper respiratory tract.

12 Summary and Conclusions

12.1 Secure Ecologically Sustainable Development and Use of Natural Resources

South Africa's Constitutional rights on the issue of 'sustainable' wildlife utilisation are enshrined at Section 24, "*Chapter 2, Bill of Rights, Environment*."

This section refers to ensuring everyone's right "*to an environment that is not harmful to their health or wellbeing;*" "*to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that*" amongst other criteria "*promote conservation,*" whilst ensuring "*secure ecologically sustainable development and use of natural resources…*"

"*Sustainable utilisation*" is not an explicit term used within the Constitution. 'Sustainable utilisation' does not directly equate as "*ecologically sustainable development and use of natural resources*" – the former, 'sustainable utilisation' is used as an umbrella term for the commercial, speculative exploitation of wildlife, regardless of proven conservation benefits, or indeed even if such utilisation is detrimental to species conservation it would seem.

A definition of 'sustainable use' is set-out within a 2017 IUCN Council briefing paper, which makes clear the intertwining of biodiversity, ecology and conservation within 'sustainable use.' However, it often seems that the majority of 'sustainable utilisation' decisions (such as the lion bone trade, or rhino horn trade) rely upon readily quantifiable economic arguments, which are not proven to be compatible with enshrining biodiversity, ecology and conservation:

> *"As economic benefits are easier to quantify than ecological benefits, there is a tendency to neglect ecological benefits and harms that are far more difficult to quantify, whether in economic/financial terms or in terms of conservation efficiency. Policy positions based on economic considerations often neglect critical ethical issues such as ecological justice, human rights and human responsibilities. The implication is that a preconceived level of economic benefit justifies (a degree of) ecological harm; especially if that benefit could be used to advance the human development project. If the economic benefit, as perceived by humans, is sufficient, then any ecological harm can be justified, whereas the "value" of maintaining ecological integrity is never stated*

> *or used as a counter balance to economic arguments"* – World Commission on Environmental Law (WCEL) Ethics Specialist Group (ESG), 2017
>
> *"Illich, a prophetic voice, understood that the more we viewed nature as a disposable commodity or a convenient resource, the less we would worry about its degradation"* - Nikiforuk 2019
>
> *"Many of us seem to have lost all sense of restraint towards animals, an understanding of natural boundaries, a respect for them as beings with needs and wants and a place and purpose of their own. Too often, too casually, we assume that our interest always come first, and if it's profitable or expedient that is all we need to know"* - Scully 2011

Conservation requires a precautionary risk approach that enshrines ecological principles. The stark reality of 'sustainable utilisation' to exploit wildlife regardless of animal welfare, or conservation imperative has been amply demonstrated by the risks prevalent in wild animal farming and the COVID-19 pandemic. Is this model of poorly regulated trade and animal exploitation a reputation South Africa wishes to further engender in is disparate pursuit of 'sustainable utilisation' via farming more species of wildlife, expanding into wildlife meat production and further endangering animal welfare within poorly regulated captive breeding facilities – all of which lack any scientific basis or justification as anything other than wildlife/animal exploitation?

The question is, how the "s*ustainable development and use of natural resources"* element of the Constitution being manipulated to make it "*reasonable*" to privately own, some 6,000 'captive' bred rhinoceros, for any proposed international rhino horn trade (reference paragraph 11.3 – "*Rhinoceros Horn Trade*"), or some 8,000 – 12,000 'captive' bred lions for speculative canned hunting/lion bone trade purposes (reference paragraph 9.3 – "*Conservation Claims of CLB Industry*") when these very trades risk jeopardising and promoting conservation of the species so exploited?

There is no clear audit record for captive breeding facilities – for example, in terms of captive lion/big cat facilities:

> *The 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) - Harvey 2018

"*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……that SAPA has no stud books, no national level breeding plan and no rigorous disease screening programmes*" (Harvey 2018)

So, the SAPA, or indeed the DEA has no idea what takes place in a considerable percentage of lion breeding facilities (assuming the SAPA indeed even audits its own members' facilities for any form of compliance with the SAPA's self-proclaimed standards), or indeed how many such facilities there are in South Africa without a complete and thorough, long-overdue audit.

Therefore, any animal welfare oversight, a legal obligation in the DEA's own decision making, lacks any credibility of being seen to be implemented in reality – therefore, how can the DEA be seen to be taking "*reasonable legislative and other measures"* when there is no clear compendium of facilities and how animal welfare is being conducted?

Using the CLB industry as a case study, it is clear that South Africa's own Constitutional Court has a clear interpretation of the Constitutional requirements for "*secure ecologically sustainable development and use of natural resources"* that conflicts with the DEA's own embrace of 'sustainable utilisation' ideology.

In 2010, "*The Supreme Court of Appeal of South Africa Judgement*," Case No. 72/10, 29 November 2010 declared CLB as 'farming' and of no conservation value. This legal judgement has not changed in the intervening years to the present day. Therefore, how can the CLB industry fulfil the Constitutional requirement to "*promote conservation*" in a manner that is "*ecologically sustainable development and use of natural resources"* when CLB has been legally declared as being of no conservation value whatsoever?

In 2016 the Constitutional Court of South Africa gave judgement on a case brought by the National Society for the Prevention of Cruelty to Animals (NSPCA) versus the Minister of Justice and Constitutional Development and Another, the Constitutional Court ruled that:

> "*Animal welfare is connected with the constitutional right to have the environment protected (Section 24) through legislative and other means. This integrative approach correctly links the suffering of individual animals to conservation and illustrates the extent to which showing respect and concern for individual animals reinforces broader environmental protection efforts. Animal welfare and animal conservation together reflect two intertwined values.*"

In August 2019, the Pretoria High Court (Judgement, Case No. 86515/2017, dated 6 August 2019), Judge Kallopen found that the lion skeleton export quotas the DEA had set in 2017 and 2018 were "*unlawful and constitutionally invalid*" because welfare requirements are routinely violated in the industry, reiterating:

> "[70] …..*welfare considerations and animal conservation together reflect intertwined values"*

> "[71] *Even if they are ultimately bred for trophy hunting and for commercial purposes, their suffering, the conditions under which they are kept and the like remain a matter of public concern and are inextricably linked to how we instil respect for animals and the environment of which lions in captivity are an integral part of."*

Furthermore, Judge Kallopen stated "*the rationale for protecting animal welfare has shifted from merely safeguarding the moral status of humans to placing intrinsic value on animals as individuals*" and the DEA's signalled support for the lion bone trade is in contravention of the Constitutional mandate:

> *"*[74]*…….It cannot be correct to assert that such signalling can occur at the same time as indicating to the world at large and to the same industry that the manner in which lions in captivity are kept will remain an irrelevant consideration in how the quota is set. It is illogical, irrational and against the spirit of Section 24 and how our courts have included animal welfare concerns in the interpretation of Section 24."*

Therefore, there is clear divergence between the Constitutional Court's ruling that the treatment of individual animals matters in respect to the Constitution (Section 24, "*Chapter 2, Bill of Rights, Environment*") and the ideological pursuit of 'sustainable utilisation' as exposed within the lion bone trade, rhino horn trade, or indeed trophy hunting. With regard to the latter, the mantra of 'sacrificing one to save the many' conservation claim in the name of 'sport' clearly does not respect "*intrinsic value on animals as individuals*." Trophy hunting's claimed pursuit of species' conservation regardless of an individual animal's suffering as a trophy is incompatible. Either way, evidence does not overwhelmingly support trophy hunting's conservation claims anyway – reference paragraph 6.0 – "*Trophy Hunting*"

It is doubtful that the vast majority of "*future generations"* will view the negative impacts of past wildlife 'sustainable utilisation' ideology as a favourable historic legacy and inheritance:

> "*South Africa's wildlife conservation reputation is effectively in tatters…*" - EMS Foundation and BAT 2020

12.2 Meat Safety Act

Without peer-reviewed science to back the extended 'sustainable utilisation' of elephant, rhinoceros, hippopotamus, giraffe et al. as proposed within Notice 201 for meat, then developing trade has no evidential base. In the absence of supporting evidence, therefore the Notice 201 proposals remain unproven as non-detrimental to the survival of the specific species listed for inclusion under Schedule 1 of the Meat Safety Act, 2000 (Act No. 40 of 2000).

Without substantiated science, the utilisation of species with CITES Appendix listing cannot logically be considered a "*reasonable legislative*" measure that "*promotes conservation*" when there is no independent scientific evidence that the proposal utilisation provides any conservation value, or indeed such trade does not directly threaten conservation and "*secure ecologically sustainable development and use of natural resources…*"

The National Environmental Management Biodiversity Act, 2004 (NEMBA), as amended by Act No. 14 of 2013 and the National Environmental Management Laws Amendment Bill (NEMLAB) (as adopted by the Portfolio Committee on Environmental Affairs on 19 June 2018) clearly states the necessity to substantiate sustainable use proposals pre-enactment of such 'utilisation':

> "*the protection of species and ecosystems that warrant national protection; the sustainable use of indigenous biological resource*" – ACT Summary;
>
> *"the use of indigenous biological resources in a manner that is ecologically sustainable, including taking into account the well-being of any faunal biological resource"* - "*Objectives of the Act*," 2. (a)(ii)), where well-being is defined as; *"'well-being' means a state where the living conditions of a faunal biological resource are conducive to its health"*

> *"must collect, generate, process, coordinate and disseminate information about biodiversity and the sustainable use of indigenous biological resources, and establish and maintain databases in this regard" – "Functions,"* 11.(1)(j)
>
> *"may undertake and promote research on indigenous biodiversity and the sustainable use of indigenous biological resource" – "Functions,"* 11.(1)(l)
>
> ''*…. the use of indigenous biological resources in a [sustainable] manner that is ecologically sustainable, including taking into account the well-being of any faunal biological resource involved..*'' Section 2, 42.(ii)
>
> *"The Minister must promote research done by the Institute and other institutions on biodiversity conservation, including the sustainable use, protection and conservation of indigenous biological resource" – "Research,"* 50.(1)
>
> "*vulnerable species, being any indigenous species facing an extremely high risk of extinction in the wild in the medium-term future, although they are not a critically endangered species or an endangered species*" - "*Listing of species that are threatened or in need of national protection*," 56.(c)
>
> "*protected species, being any species which are of such high conservation value or national importance that they require national protection, although they are not listed in terms of paragraph (a), (b) or (c)*" - "*Listing of species that are threatened or in need of national protection*," 56.(d)
>
> *"ecologically sustainable utilization of biodiversity*" - Chapter 8, "*Regulations by Minister*," 97.(1)(b)(viii))

The critically endangered, endangered, vulnerable and protected species (February 2007) as amended lists:

> White rhinoceros and African elephant as *"protected species"*; Black rhinoceros as an *"endangered species."*

Neither the NEMBA of the Threatened or Protected Species Regulations (TOPS) (as amended 2013) has no provision for "*meat*" for any species listed within the categories of "*critically endangered*," "*endangered*," "*vulnerable*" or "*protected"* species.

"*Trade in listed threatened and protected species*" (NEMBA, Paragraph 59.(b), "*Functions of Minister*") makes clear that The Minister "*must consult the scientific authority on issues*

relating to trade in specimens of endangered species regulated by such an international agreement" – with that international agreement being South Africa's agreement to abide by CITES regulations. Therefore, the SANBI should be providing 'scientific' evidence for public scrutiny if any legal international trade in meat derived from TOPS, such as rhinoceros and/or elephant is envisaged.

In response to questions raised by the Portfolio Committee on the DALRRD proposals, Minister Creecy gave the impression that the plan was to approach CITES in in the future in an attempt to sanction international trade:

> *"The first set of questions to be asked under SANBI's presentation was directed at the Department whether it was aware of the amendment to the Meat Safety Act gazetted by the Department of Agriculture, Land Reform and Rural Development (DALRRD), which allowed for the inclusion of threatened species under Schedule I, meaning these species could be slaughtered in abattoirs for export; how the two departments would address the tensions between them, as DALRRD tended to act unilaterally when it came to the amendment of regulations and acts, which had an indelible impact on the conservation of wildlife species under DEFF; whether there would be any changes to be made to the Convention on International Trade in Endangered Species (CITES) in light of the COVID-19 pandemic and hence the export of live wildlife, considering that South Africa was the number one exporter to Asia and the ensuing risks associated with this trade; whether South Africa should not act progressively by banning this kind of trade; and other alternative solutions that the Department might be contemplating if it did not consider banning the trade.*
>
> *The Minister of Environment, Forestry and Fisheries, Hon Barbara Creecy responded to these questions regarding DALRRD and CITES, which she considered important, but they did not fall under the purview of SANBI. There were broader issues related to the amendment of the Meat Safety Act, which she had raised with Ms ThokoDidiza, the Minister of Agriculture, Land Reform and Rural Development. She had taken personal independent legal advice, and had been assured that the environmental legislation that protected these relevant wildlife species took precedence over the regulations relating to the trade of these threatened species. Prior to the lockdown, the two departments had been scheduled to meet to discuss the matter, but other issues had come to the forefront. However, this matter remained very important and had to be resolved. Minister Creecy further stated that her Department could indeed make recommendations to the CITES and in due course, the CITES would be convening a meeting to facilitate consultation. This is pertinent as there had been statements by*

the United Nations concerning the transfer of the virus from animal species to humans" - - "*Report of the Portfolio Committee on Environment, Forestry and Fisheries on the Strategic Plan 2019/20—2023/24, Annual Performance Plans (Apps) 2020/21 and the Budget Vote 32 of the Department Of Environment, Forestry and Fisheries (Deff),"* 20 May 2020.

12.3 Animal Welfare – A Legal Obligation

In August 2019, the Pretoria High Court (Judgement, Case No. 86515/2017, dated 6 August 2019) stated that:

> [70] …..*welfare considerations and animal conservation together reflect intertwined values"*
>
> "[71] *Even if they are ultimately bred for trophy hunting and for commercial purposes, their suffering, the conditions under which they are kept and the like remain a matter of public concern and are inextricably linked to how we instil respect for animals and the environment of which lions in captivity are an integral part of."*

The evidence presented in that case demonstrates anything but "*welfare considerations*" or "*respect for animals and the environment of which lions in captivity are an integral part"*:

- 'EK11' – 'EK14' Case No. 86515/17 catalogued a plethora of poor animal welfare evidence - National Society for the Prevention of Cruelty to Animals against the Minister of Department: Environmental Affairs (DEA) (and co Respondents);

- *"Although SAPA claims that no welfare issues exist among their member lion facilities, earlier this year, as an example to the contrary, the owner of a facility in the North West Province (a SAPA member and member of their Council [Jan Steinman]) was charged by the NSPCA with animal cruelty. Inspectors found 27 lions with severe mange, two lion cubs unable to walk due to Meningoencephalitis, obese caracal unable to groom themselves, overcrowded and filthy enclosures, inadequate shelter, lack of water, and parasitic conditions*" - "*Public Participation Submission of the Coalition to Stop the Captive Breeding and Keeping of Lions and Other Big Cats for Commercial Purposes*," June 2019;

- The National Geographic recently (report published 21 November 2019) investigated Jan Steinman's Pienika Farm and found that for animal welfare advocates, Pienika "*symbolizes everything that's wrong with South Africa's lion farms.*" But since the NSPCA's damming assessment in April 2019, Pienika has perhaps improved its standards…but standards from an abhorrent low point – with the recovery of neglected cubs (Karlos and Ivana) 'surrendered' by Pienika now recovering in privately funded sanctuary. But Pienika's past wrong-doing, cruelty and neglect cannot be excused.

- In July 2016, the NSPCA (National Council - Society for the Prevention of Cruelty to Animals (SPCA)) wildlife division was called in to inspect three Limpopo Province properties owned by Walter Slippers ('Ingogo Safaris'). Vets completed checks on all the lions and big cats held captive, with some noted to be in very poor condition. The Limpopo Provincial Government (Limpopo Department of Economic Development, Environment and Tourism (LEDET)), Nature Conservation office issued the required Permit for Walter Slippers' 'facilities';

- In March 2019, the Department of Environment, Forestry and Fisheries (DEFF) (officially charged with overseeing welfare of captive bred lion facilities) reported that nearly 40% of the 227 registered lion breeding facilities inspected in four of the Provinces were non-compliant with regulations and many were operating with expired permits. Yet the vast majority of the latter expired permits were subsequently renewed without further follow-up recommendations, penalty or work to ensure future on-going compliance;

- In April/May 2020, the NSPCA (National Council - Society for the Prevention of Cruelty to Animals (SPCA)) inspected two Limpopo Province lion breeding facilities owned by Mr Walter Slippers, after receiving a complaint about underweight lions (again) on his facilities:

  > *"The NSPCA is in the process of laying charges in terms of the Animals Protection Act No 71 of 1962, with the submission of scientific and medical evidence from what the veterinarian witnessed during the inspection.*
  >
  > *On 12 May 2020, the NSPCA was informed that seven of the lions housed at one of the two facilities had escaped – this only supports the NSPCA's findings that the owner of these lions is negligent in the way in which these lions are*

kept, not only within welfare parameters, but public safety as well. The lions were re-captured in the early evening of 12 May 2020 and photographs circulating show a deterioration in the lions' condition.

"We believe that permits should never have been granted to keep lions, or any other predators like the tigers, as not only was the fencing wholly inadequate, but there are specific dramatic shortfalls on the welfare of these animals – and their welfare has consistently been compromised" said Senior Inspector Douglas Wolhuter, manager of the NSPCA's Wildlife Protection Unit"

The High Court's 2019 2019 Judgement regarding the lion bone quota, reiterated that animal welfare and conservation are entwined values. Therefore, animal welfare should have been considered by Limpopo Department of Economic Development, Environment and Tourism (LEDET) and a permit withheld for these facilities due to the historically poor condition of the animals, facilities, animal welfare and inadequate fencing present:

"During inspections in April and May 2020, the NSPCA found deplorable conditions underweight lions, lack of adequate shelter, lack of veterinary treatment, as well as unhygienic and small enclosures. Slippers has 72 lions on his farm that is in liquidation and he allegedly feeds them one giraffe every two to three weeks" - Blood Lions, 13 May 2020

"On Tuesday [12 may 2020] news broke that 7 lions had broken out of the terrible breeding facility in Alldays town. I rushed off to assist as I really care for those lions and regardless of my feelings about the owner or the lion industry, I knew I could help the vet safely recapture them before any lions or people were killed. I want to make it clear that I am in no way associated with that facility. We did try to save those lions before in 2018, we spent a huge amount of money and time fixing the enclosures so they were at least liveable, clean and we got the lions healthy and to the correct body condition. We did this for a year and then the contract was broken and we were kicked out and the place slipped back to this deplorable hell for lions.

I helped to recapture those lions because I love those lions. If this went wrong the lions would have been shot and somebody in our local community could have died. We took meat and my staff and know those lions well. Such a sad situation. That place is the reason I started Lion Watch....after seeing what was

happening to lions there and knowing how long it had been going on!" - Lion Watch Project, 14 May 2020

Figure 16 - *Animal Welfare, May 2020 – Captive lion breeding in South Africa - NSPCA*

Animal welfare within the CLB industry is typified by such neglect, symptomatic of an industry (under the auspices of the Republic of South Africa) that demeans iconic wildlife to mere disposable, ill-treated commodity. This neglect is compounded by the absence of regulatory over-sight for even minimum animal welfare standards (see catalogue of abuses above), with 'welfare' responsibility fragmented between the Republic of South Africa DEA/DEFF, DAFF and the Provinces – regardless the legal obligation for animal welfare persist. If any authority actually cared about animal welfare, then Walter Slippers' abhorrent facilities and all others like it would not be issued Permits to perpetuate their cruelty.

The ongoing inability to implement the legal obligation for animal welfare intensifies the need to develop an CLB industry wide exit strategy, as given in the Parliamentary Portfolio Committee on Environmental Affairs (PPCEA) reported (November 2018) - reference paragraph 9.2 – "*Captive Lion Breeding (CLB) – Calls for Closure*" and Recommendation 13.10.1 – "*CLB Industry – Animal Welfare, Lion Bone Trade and Stockpiling*"

12.3.1 What is Animal Welfare?

Animal welfare within any environment (captive environments included), is more than just making animals' 'comfortable' with supplies of food and veterinary health care to hand (which would be a vast improvement in some cases it would seem). This general animal welfare concept is encapsulated within the "*Five Freedoms*" (Bramwell 1979):

- *Freedom from hunger or thirst by ready access to fresh water and a diet to maintain full health and vigour;*
- *Freedom from discomfort by providing an appropriate environment including shelter and a comfortable resting area;*
- *Freedom from pain, injury or disease by prevention or rapid diagnosis and treatment;*
- *Freedom to express normal behaviour by providing sufficient space, proper environment and company of the animal's own kind;*
- *Freedom from fear and distress by ensuring conditions and treatment which avoid mental and physical suffering;*

In terms of lions in the wild, lions live in complex social structures and natural challenges over large ranges, none of these needs are even vaguely replicated in the captive environment.

Therefore, any notion of 'acceptable animal welfare' within a captive environment is a misnomer – each species has its specific needs, there is no single template that works for all species in captivity. The more controlled the captive environment is, the more the physiology of the captive animal stresses (Broom et al. 1993).

Any notion of 'well-being' of 'biological resources 'enshrined within the NEMLAB is unachievable in the captive environment for lions (and many other species) because the environment in which they are held is by definition unnatural, stressful and non-conducive to any given captive lion's 'health'/'well-being' beyond basically keeping a given lion alive long enough to fulfil the 'sustainable utilisation' purpose to which it is ultimately fated – butchered for its skeleton, or killed for a trophy and then butchered.

Therefore, there is a clear incompatibility between NEMLAB resolution whereby *"the use of indigenous biological resources in a manner that is ecologically sustainable, including taking into account the well-being of any faunal biological resource"* ("*Objectives of the Act*," 2.

(a)(ii)), where well-being is defined as; *"'well-being' means a state where the living conditions of a faunal biological resource are conducive to its health"*) and the inability to deliver 'animal welfare' within a captive environment that provides specific needs that deliver 'well-being' - as defined above.

Figure 17 - *"Captive lions in deplorable condition," NSPCA, 13 May 2020*

Intensive captive wildlife breeding/farming is incompatible with animal welfare – where the captive breeding is a business model based upon intensive production at the lowest costs possible.

Such breeding/farming practices do not have an inbuilt commercial incentive to care about 'animal welfare,' only as so far as it produces animals that meet 'utilisation' trade standards (which can also be low standards, or absent completely), plus any public perception required in 'marketing' the end product – ie. there is no incentive to breed lions that are genetically pure and fine physical specimens for the lion bone trade – the skeleton is all that matters in terms of profit margin, not lion 'well-being' (or indeed the basic five freedoms it would seem). In addition, the end user market seemingly cares not one bit for the welfare of the lion (or any other species) that provided the bones/skeleton/derivative within any TM product for example.

So, when it comes to canned/captive lions (and other 'sustainable utilisation' species held captive), animal welfare is incompatible with the practice – which is unnatural, stressful and non-conducive. Regardless, there is no confidence that animal welfare in any form is given

due concern by either the breeders, or the fragmented authority over-sight (or lack thereof), with buck passing of legal responsibility for animal welfare passed between the Republic of South Africa DEA/DEFF, DAFF and the Provinces.

12.3.2 Smart Regulation and Animal Welfare

The IUCN SULi authors have advocated for "*Smart Regulation,*" as a means to improve the wildlife trade, by devolving overarching policy to "*self-regulation and co-regulation using commercial interests and non-government organisations (NGOs) ……as regulatory surrogates.*"

In the context of CLB industry, this does not sound dissimilar to the South African Predator Association's (SAPA's) suggestion it could self-regulate the captive predator breeding industry ("*The "800 skeletons" – "captive produced lion bone trade under the quota system*," IWB, 27 January 2017 - comments section, Rooi Jan, 13 February 2017).

"*Regulatory surrogates*" require appropriate overarching regulatory policy to enforce, which has been historically lacking in the CLB industry – and even "*regulatory surrogates*" need to be effectively monitored/regulated, or potentially "*Smart Regulation*" puts the fox in charge of the hen house doesn't it?

The SAPA does not represent the entire CLB industry (perhaps 10% are SAPA members) and it's debateable if all SAPA membership are regularly audited and comply with SAPA self-proclaimed industry standards and ethics anyway. Even the DEA lacks a transparent audit trail for all captive breeding facilities (reference recommendation 13.4 – "*Complete Audit of All Captive Breeding Facilities*").

In the 2015 documentary ("*Safari, Paying to Kill*," Magneto Presse, published onto YouTube in March 2016), then president of the SAPA, Professor Pieter JJS Potgieter is interviewed by the documentary maker, Olivia Mokiejewski. In the documentary, the Professor explains to Olivia that he can't possibly know what all SAPA members are doing. This begs the question what possible value and 'reassurance' is any SAPA accreditation possibly worth then? In the absence of SAPA oversight of compliance with the Professor's self-proclaimed standards for the predator breeding industry, the SAPA is nothing more 'valuable' than a complicit bystander.

The documentary highlighted that at that time (2015), Professor Pieter JJS Potgieter was a one-man band and the only paid employee of the SAPA, but stated that he was determined" *that it is my mission to clean up this industry*." But at the time the documentary was made, he had only managed to visit 5 breeding farms (out of some 200 plus such farms in South Africa). The Professor's response is "*I don't see it as my function*".....which again suggests that SAPA 'accreditation' the Professor speaks of as assuring a clearly differentiated and superior element of the industry, is in fact a meaningless rubber stamping exercise in exchange for cash (which in any other sphere would be declared a scam).

The Professor becomes increasingly riled during the documentary when questioned over the SAPA's role in defending the predator breeding industry when the Professor has clearly stated he has no real over-sight and does not see it as his/the SAPA's function.

Clearly The Professor has no idea what the SAPA's 'accredited' members are actually doing (the Professor was defending the indefensible and he knows it), but bizarrely The Professor chooses to question the interviewers professionalism and ethics concluding that Olivia "*you are now talking like an NGO 'greenie'*" and the interview is thankfully cut short before the Professor is faced with more 'difficult' and embarrassing questions he clearly cannot answer from a solid defence/foundation.

It is questionable if the SAPA's accreditation has provided any reassurance since the Professor's car-crash interview in 2015 – with an SAPA Council member charged with animal cruelty in 2019:

> "*Although SAPA claims that no welfare issues exist among their member lion facilities, earlier this year, as an example to the contrary, the owner of a facility in the North West Province (a SAPA member and member of their Council [Jan Steinman]) was charged by the NSPCA with animal cruelty. Inspectors found 27 lions with severe mange, two lion cubs unable to walk due to Meningoencephalitis, obese caracal unable to groom themselves, overcrowded and filthy enclosures, inadequate shelter, lack of water, and parasitic conditions*" - *"Public Participation Submission of the Coalition to Stop the Captive Breeding and Keeping of Lions and Other Big Cats for Commercial Purposes," June 2019*

In terms of the applicability of "*Smart Regulation*" to the CLB industry, the SAPA lacks any credibility. Any attempts to shift the onus of captive industry wide 'animal welfare' responsibility from the Republic of South Africa DEA/DEFF, DAFF and the Provinces to organisations such as the SAPA provides no credible answers, or hopes of universally improved animal welfare standards across the whole captive wildlife industry. Suggestions

that charity based organisations, such as the National Society for the Prevention of Cruelty to Animals (NSPCA), should be called upon (via some notion of devolved "*Smart Regulation*" or otherwise) ensure compliance throughout the CLB and wider captive wildlife industry is neither appropriate or fair – the responsibility (and a legal obligation) for smarter regulation lies with the Republic of South Africa DEA/DEFF, DAFF and the Provinces.

12.4 Threatened or Protected Species (TOPS) Regulatory Uncertainty

It remains unclear if the TOPS Regulations, 2007 (as amended 2013) are to be replaced in entirety by the "*Regulations Pertaining to Threatened or Protected Terrestrial Species and Freshwater Species*" ("*the 2019 draft regulations*") which, according to a letter signed by Ms Barbara Creecy, The Minister for Environment, Forestry and dated 18 November 2019, are intended to replace the TOPS Regulations, 2007.

However, no public consultation has taken place in over 5 years on TOPS Regulations, contrary to NEMBA stipulations – "*Proposed Publication of Amended Threatened or Protected Species Regulations and Lists*," EMS Foundation via Cullinan & Associates attorneys, 16 March [2020]:

> *"There are substantive changes between the 2015 published amendments and the 2019 amended Regulations, including that the 2019 draft regulations have:*
>
> - *removed the African Elephant, lion and leopard from additional information requirements related to hunting permits effectively making it easier for these permits to be issued on the basis of less information;*
> - *expanded on the information required when applying for various permits;*
> - *amended the circumstances in which a risk assessment is necessary in relation to the application for a TOPS permit;*
> - *introduced an additional factor to be taken into account by the issuing authority for a permit, specifically related to captive breeding facilities;*
> - *introduced additional factors to be taken into account by the issuing authority when considering an application for an export permit in respect of a rhinoceros hunting trophy;*

- *introduced a new circumstance in which a permit application must be refused;*
- *prohibited the hunting of lion using dead bait which was previously allowed in limited circumstances; and*
- *allowed the hunting of serval with spotlights which was previously not permitted;*

These amendments can in no way be considered "non-substantial" within the ordinary meaning of the word"

The proposed TOPS amendments do not reflect that biodiversity has intrinsic value in and of itself, outside of its commercial/exploitable value as a hunting trophy and/or commodity, where the "*National Biodiversity Framework*," "*Context for implementation of the National Biodiversity Framework*," "*2.5 Principles of the NBF*" states:

> "***Biodiversity has intrinsic value and but (sic) also constitutes critical natural capital which is essential for sustainable and resilient economic and social development***. *Management of biodiversity and ecological infrastructure should be directed to meet conservation objectives, and should also be people-centred and strive to meet multiple transformational benefits, by placing strategic protection, wise management, and sustainable use of natural capital at the core of the country's sustainable development agenda*."

In August 2019, the Pretoria High Court (Judgement, Case No. 86515/2017, dated 6 August 2019) expanded upon the 2016 judgement of the Constitutional Court of South Africa a case brought by the National Society for the Prevention of Cruelty to Animals (NSPCA) reiterating that even captive bred lions "*are part of the biodiversity challenge."*

TOPS Regulations and the NEMBA should enshrine the intrinsic conservation and biodiversity value of all listed species, such as lions, elephants and leopards etc. and not seek to exploit such species based purely upon commercial 'sustainable utilisation' ideology valuations.

TOPS Regulations should make clear with regard to captive breeding facilities the contribution such activities make towards a given species' conservation. While the requirement in draft TOPS Regulation 21(3) states a pre-requisite requirement for an issuing authority to refuse a permit for the breeding of specimens of large listed predators, black rhinoceros or white rhinoceros, unless the applicant can demonstrate how the breeding in captivity of these specimens will directly contribute to the species' conservation, there is no clear guidance as

to what the term "*contribute to its conservation*" means, or how this can be consistently evaluated pre-permit and/or during any given captive breeding facility's operation.

There are many other concerns raised by the Draft TOPS Regulations, hence why there is not only clear legal grounds for TOPS Regulations and any proposed amendments to be offered for public consultation, but clear moral and ethical reasons too.

12.5 Does Legal Trade Counter Illicit Activity?

There is an implied assumption in any 'sustainable utilisation' ideology wildlife trade proposals, be that lion bone trade, rhino horn trade, or meat from wildlife etc., that a 'legal' trade in certain species' can somehow compete with and deter illegal poaching attrition of the same species. This is a fallacy - illicit activities have no business overheads (such as employees, regulatory compliance etc. of legal enterprises). Poachers just need a gun and complicit parties to help traffick their product and share the profits.

A 2016 United Nations Office on Drugs and Crime (UNODC) report, "*World Wildlife Crime Report – Trafficking in protected species*" explored policy areas to counter poaching and trafficking, making one clear point that 'legal' commercial trade routes provide opportunities for criminals:

> "*Case studies show that when illegally traded wildlife is introduced into legal commercial streams, criminals have access to a much larger source of demand than they would have had on the black market alone*."

One only has to look at the evidence in a comprehensive report on the 'legal' lion bone trade, "*The Extinction Business, South Africa's 'Lion' Bone Trade*" (EMS Foundation and Ban Animal Trading, July 2018) where the conclusion is:

> South Africa's lion bone trade has "*….created a situation where the legal trade in 'lion' bones is fuelling the illegal trade in lion and tiger bones and providing laundering opportunities for tiger bones in Asian markets*" - "*The Extinction Business, South Africa's 'Lion' Bone Trade*," EMS Foundation and Ban Animal Trading, July 2018.

It seems unlikely that any form of legal trade from elephant, leopard or rhino will be immune from fuelling an established and incumbent illicit trade when the 'legal' lion bone trade has been such a failure in terms of countering illicit activity.

CITES is in urgent need of reform, or replacement still using antiquated paper trails open to corruption and lacks any oversight of wildlife consumption, wet markets, human health, animal health, invasive species within its competence (reference recommendation 13.6 – "*Wildlife Trade, Live Exports and CITES*").

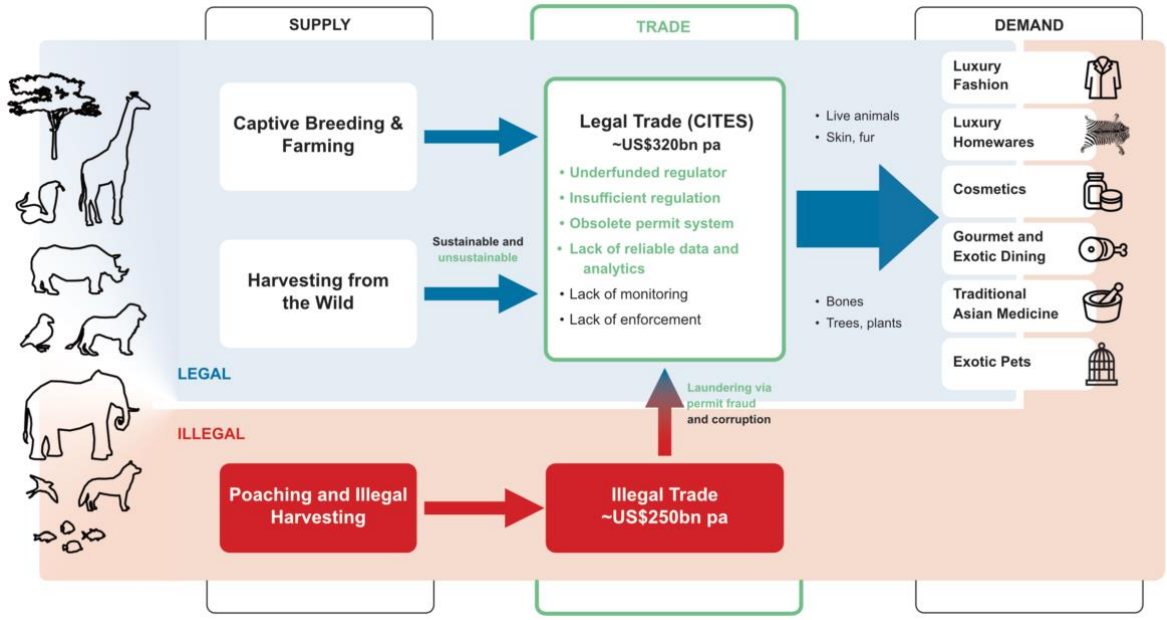


Figure 18 - "*Nearly 50 Years of Perception Management*," *Nature Needs More, 10 June 2020*

According to the theory of pro-trade advocates:

> *"…scarcity caused by trade bans, produces high prices which leads to higher poaching rates. Instead of combating illegal poaching, according to this argument, scarcity should be eliminated through legal supply from wildlife farmers and state stockpiles. Legalising markets would then reduce or even eliminate profitability for poachers while maintaining high returns for legal suppliers"*- Nadal et al., 2014

The pro-trade assumption being that markets which are currently dominated by illicit forces, somehow can be countered by legal trade and reach some kind of natural equilibrium.

These assumptions are not supported by economic professionals within academia - the academic conclusion is that 'legal' trade does not potentially counter and combat illicit activity – legal and illegal trade does not necessarily reach a natural equilibrium:

> The pro-trade argument *"relies on highly unrealistic assumptions, one of which is that legal trade is able to fully substitute for illegal trade. This points to a failure to understand illegal markets. Market legalisation, they suggest, would actually increase demand as well as provide avenues for illegal traders to launder poached products……Governments, economists and conservationists who think they can curb poaching by selling rhino horn and ivory legally have little understanding of macroeconomics or the sophistication of international crime syndicates*"- Prof Nadal and Mr Aguayo, "*High-level report calls SA wildlife trade policy reckless*," Conservation Action Trust, Don Pinnock, 13 June 2013

Prof Nadal's and Mr Aguayo's 2014 paper *"Leonardo's Sailors: A Review of the Economic Analysis of Wildlife Trade"* (2014) sought to "*…evaluate the scope and limitations of the economic analysis of wildlife trade that has been carried out in the past three decades.*" This paper highlights the pro-trade arguments 'misguided' economic theory:

- "*The pro-market argument starts from the premise that poaching and illegal trade are a consequence of trade bans imposed by bodies like CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora).*"

- "*One of the most striking features in the economic analysis of wildlife trade is the level of misinformation concerning the evolution of market theory over the last six decades. To anyone who comes in contact with the corpus of literature on wildlife trade, and in particular the literature recommending the use of market-based policies, the uncritical use of theoretically discredited analytical instruments is a striking revelation. Perhaps the most important issue here is the conviction that markets behave as self-regulating mechanisms that smoothly lead to equilibrium allocations and therefore to economic efficiency. This belief is not sustained by any theoretical result, a fact that is well known in the discipline since at least the early seventies."*

The illicit rhino horn trade also demonstrates "*how it is possible for criminal networks to go about their criminal business by capitalizing on legal and regulatory loopholes*" - Hübschle 2017 (reference paragraph 6.1.1 – "*Pseudo Hunting*").

Therefore, it is disputed that there is any substantive, theoretical evidence to support the notion that legal wildlife trade mechanisms derived from 'sustainable utilisation' have any certainty to counter illegal trade mechanisms – or that illicit trade is a direct result of trade 'bans.' The issue is not the trade ban itself - the issue is the lack of ban enforcement, plus initiatives and messages that undermine any given trade ban (for example, the decision by CITES to undermine its own international ivory trading ban – reference paragraph 8.3 "*CITES and Ivory Stockpiling*").

12.6 The 'Buffer' Theory

Does exploitation of a captive bred stock of a given species provide a buffer for the same given wild species' population from unnatural attrition?

Williams, V.L. et al. 2019 did not conclusively prove any conservation benefits stemming from South Africa's captive lion breeding industry, but stated:

> "*Aside from considering **a possible buffer effect** of legal body part exports, questions remain in the conservation role of captive lion breeding for hunting……*"

The South African Predator Association (SAPA) claims that the hunting of captive bred lions presents direct conservation benefits to wild lions by the supply of 'legal' body parts and taking hunting pressure away from wild lion populations – this is the "*possible buffer*" theory perpetuated by Williams, V.L. et al. 2019.

The SAPA claims that if captive lion hunting is stopped, increased pressure will be placed on wild populations (for hunting and poaching). Yet the SAPA (and/or Williams, V.T. et al. 2019) have not provided any scientific evidence whatsoever to substantiate this theory/claim.

There is no conclusive, peer-reviewed science that supports the 'buffer' theory and hence, the relevance of canned/captive lion hunting and the by-product/stand-alone lion bone trade:

> *"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" - Harvey 2018

Even after the shut down on 'canned'/captive lion hunting imports into the USA, there was no recorded surge in demand for wild lion hunting (Harvey 2018). Of course, even if closing down 'canned'/captive lion hunting there was a surge in demand for wild lion trophy hunting then surely the hunting industry's self-declared "*well regulated*" practices and 'scientifically' set hunting quotas would curtail any such surge from over-harvesting wild lions of course, unless "*well regulated*" wild lion trophy hunting is a myth?

Therefore, there is no proven 'buffer' of wild species provided by exploiting captive/wild species populations. Everatt et al. (2019) concludes that the captive lion industry/lion bone trade is potentially increasing demand for lion body parts and derivatives, with 'conflict killings' of wild lions being used as an excuse to harvest lion body parts to try and profit from the demand/trade.

There are clear policy contradictions across United Nation (UN) bodies - the United Nations Environment Programme (UNEP) Strategic Development Goals (SDG) and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES):

- UNEP SDG "*No. 15 - Life on land*" - with the main message being protection through "*Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss*";

- CITES should adopt IUCN's Motion 009 (WCC 2016 Res. 13) – "*Terminating the hunting of captive-bred lions (Panthera leo) and other predators and captive breeding for commercial, non-conservation purposes*" because conservation of the lion breeding/bone trade is clearly lacking (reference paragraph 9.3 – "*Conservation Claims of the CLB Industry*"). The lion bone trade presents a clear contradiction to SDG 15, by lacking "*sustainable use*" that is compatible with halting biodiversity loss - the trade is not "*well regulated*" and threatens the species' conservation (Everatt et al. 2019);

- CITES should withdraw an "*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…*"

12.7 Precautionary Risk

Perhaps too many 'sustainable utilisation' practices are enacted without any pre-risk assessment of the potential negative ecological impacts or potential negative conservation consequences. Only when the inevitable ecological/negative conservation impacts arise post-trade implementation is there any consideration seemingly given to such issues. Even then, the negative impacts of such trade are seemingly ignored, wished away, or scapegoated as someone else's fault for pointing out the negative consequences.

Post-COVID-19, 'sustainable utilisation' of wildlife and the inherent risks in that trade for profit is only making an "*environment protected, for the benefit of present and future generations"* a secondary consideration to profiteering, potentially risking human health, with the potential to de-stabilise global economic security.

The risks present where recently echoed by the Portfolio Committee on Environment, Forestry and Fisheries:

> *"South Africa should ensure that its trade in wildlife and wildlife products is closely linked to proper pathogen surveillance focused on wildlife trade and to protect global human health, although the human health risks associated with live animal trade can never be eliminated entirely. There were concerns about lion bone trade and tuberculosis. This becomes important in terms of product liability, given the fact that these concerns were articulated in the country of origin"* - "*Report of the Portfolio Committee on Environment, Forestry and Fisheries on the Strategic Plan 2019/20—2023/24, Annual Performance Plans (Apps) 2020/21 and the Budget Vote 32 of the Department Of Environment, Forestry and Fisheries (Deff),"* 20 May 2020.

Therefore, a precautionary risk principle approach is recommended – if the evidence/peer-reviewed science does not support trade, then the 'try and let's see' approach must be abandoned. Once a 'legal' market/trade is in place, the liability for closing it down once the negatives appear, becomes an order of magnitude more onerous.

12.8 Assessment Criteria Conclusions

In terms of the criteria set at paragraph 1, "*Introduction*" of this submission the following conclusions are drawn.

12.8.1 Human Health Risks

"Which elements (if any) of any legal, or proposed wildlife trade is acceptable in terms of human health risks."

There is a clear lack of peer-reviewed science that demonstrates the risks are negligible for known and emerging zoonotic diseases transmission in the handling, slaughter, processing and consumption derived from the targeted species – lions, leopards, elephants and rhinoceros. This lack of scientific foundation includes the proposed listing (Notice 201) into the Meat Safety Act 2000 (Act No. 40 of 2000) of rhino and elephant meat for human consumption.

Letters has been sent on the issues of existing and/or any proposed wildlife trade and coronavirus:

> The Honourable Ms Thoko Didiza, Minister for Agriculture, Land Reform and Rural Development - "*Wildlife Trade and Coronavirus*," EMS Foundation, via Cullinan & Associates attorneys, 15 April 2020
>
> The Honourable Dr Zwelini Mkhize, Minster for Health - "*Wildlife Trade and Coronavirus*," EMS Foundation, via Cullinan & Associates attorneys, 15 April 2020

There is also the clear contradiction between United Nations Environment Programme (UNEP) Strategic Development Goals (SDG), and International Union for Conservation of Nature (IUCN) Sustainable Use and Livelihoods Specialist Group (SULi):

- UNEP SDG "*No. 3 - Ensure healthy lives and promote well-being for all at all ages*" to end the TB epidemic by 2030.

- IUCN SULi argument that the legal wildlife trade, if "*well regulated*" remains vital for rural economies/livelihoods, when that very trade presents a clear contradiction to

SDG 3, by threatening human health with the potential to spread zoonotic diseases (reference paragraph 1.1 – "*A Risk Based Approach – Zoonotic Diseases*").

12.8.2 Does Legal Wildlife Utilisation Mitigate or Deter Illicit Activities?

Does any proposed legal wildlife trading help to mitigate and deter illegal activities such as wildlife poaching and illegal trafficking, or does legal trade legitimise and stimulate demand, giving oxygen to illicit trafficking routes and thus exacerbate illegal activities? Are there potential detrimental impacts for species conservation and biodiversity?

Past experience from the lion bone trade suggests legal wildlife derivative product trading stimulates illicit activity, creating parallel markets (reference paragraph – 12.5 "*Does Legal Trade Counter Illicit Activity?*"). The same issue arose with regard to the CITES sanctioned releases of ivory from stockpiles (reference paragraph 8.3.1 – "*Elephant Ivory Demand Management and Regulatory Failure*"). The sentiment was echoed the Portfolio Committee on Environment, Forestry and Fisheries:

> *"The Department should ask hard questions about what it would mean to seriously tackle the wildlife trade, both legal and illegal trade. There is a need to review the link between the two, as animal products procured from illegal sources are often laundered through legal channels and sold as more valuable "wild-caught". For instance, wildlife products that derive from licensed breeding centres for endangered species (e.g., rhinos, lions, tigers, etc.) could be used as avenues for laundering endangered wildlife products, which are illegally sourced"* - "*Report of the Portfolio Committee on Environment, Forestry and Fisheries on the Strategic Plan 2019/20—2023/24, Annual Performance Plans (Apps) 2020/21 and the Budget Vote 32 of the Department Of Environment, Forestry and Fisheries (Deff),"* 20 May 2020.

There is no substantiated precedent that suggest a legal, international trade in rhinoceros' horn can only have upside benefits in terms of tackling incumbent illicit activity (reference paragraph 11.3 – "*Rhinoceros Horn Trade – White Rhinoceros* (*Ceratotherium simum*)" and Appendix 3 – "*Rhino Horn Consultation, September 2019*").

Similarly, there is no peer reviewed science to substantiate any claim that rhino, or elephant (or giraffe, hippopotamus for that matter) meat consumption could deter illegal activities such as poaching for bushmeat.

12.8.3 Animal Welfare – "*Well-being*"

"Is animal welfare being considered as an overring priority in any captive-breeding environment, slaughter facility etc. that any trade encourages for a given species?"

The captive breeding of lions (reference Paragraph 12.3, "*Animal Welfare - A legal Obligation*") proves that South African authorities lack the co-ordination and clear designation of responsibility for animal welfare within its pursuit of sustainable utilisation ideology, though it has been proven that there is a legal obligation for animal welfare to be given consideration that welfare meets the required standards in any existing, or proposed animal/wildlife utilisation/trade endeavour.

The welfare, or 'well-being' of wildlife as a "*biological resource*" has clearly been absent in consideration of captive bred lions. The NEMBA clearly states that *"the use of indigenous biological resources [must be conducted] in a manner that is ecologically sustainable, including taking into account the* ***well-being*** *of any faunal biological resource"* - "*Objectives of the Act*," 2. (a)(ii)), where well-being is defined as; *"'****well-being****' means a state where the living conditions of a faunal biological resource are conducive to its health***."

Facilities conducive to 'its' health have been clearly absent not only in the DEA's consideration of trade and/or within regulation, but of course is lacking in the self-proclaimed custodians for overseeing conducive practices by its members, namely the SAPA's own failure to ensure compliance of the SAPA's own council member's facility. The read across applies to any other captive breeding facility for other species that either already exist or are proposed (also reference paragraph 12.3.1 – "*What is Animal Welfare*").

12.8.4 Consequentialism versus Deontology

Does the "Consequentialism" end result of legal trade and utilisation of wildlife justify the means (industrial breeding of wildlife, animal welfare issues/abuse, killing attrition and wildlife "utilisation," human health risk etc.). Or should the "Deontological" ethical and moral arguments take precedence?"

The moral and ethical issues are explored at paragraph 6.2 – "*Deontology vs. Consequentialism*" and paragraph 6.3 – "*Ethical/Moral Leadership*." The consequentialist claims given in support of 'sustainable utilisation' ideology is found lacking – plus public sentiment on the issues raised by 'sustainable utilisation' ideology are moving towards the deontological end of the spectrum.

I suspect some members of the HLP might consider it invalid (morally and ethically) for commentators outside of South Africa to be allowed to submit to the panel – ie. should overseas commentators (those that do not reside in South Africa, such as myself) be allowed to comment on South African activities such as captive lion breeding, trophy hunting etc.? I would respond that there is a clear moral imperative for all to comment, no matter where one resides:

- The same moral objections are not raised by wildlife utilisation advocates within South Africa and beyond to the opinions of outside forces when these opinions align with their own opinions and self-interest. Safari Club International (SCI) (a USA based organisation) have stated blanket support for a range of vested interest groups within the wildlife utilisation/animal abuse business in many jurisdictions outside of the USA, not to mention SCI's overseas members paying to hunt within South Africa. It is ethically/morally unsustainable to cherry-pick which 'foreign' commentators have a right to an opinion when it comes to wildlife utilisation and exploitation that clearly has global impacts;

- COVID-19 has clearly demonstrated that wildlife utilisation and abuses are not exclusively an animal rights issues, but a global human health issue (and always has been, but has been demonstrated as such in stark relief during the COVID-19 pandemic);

- Just because something is declared 'legal' does not make it beyond challenge either by peaceful protest, legal challenge, or indeed response to an open public consultation on the issues such 'legal' activities raise;

- If everyone had turned a blind eye, then 'legal' apartheid, or 'legal' slavery would have potentially endured even longer than they did. I doubt anyone would say, the abolition of the 'legal' status once given to both practices was a mistake. Fortunately, the world did not turn and look the other way and allow such practices to endure. Would anyone

say, in the case of apartheid that it is morally right that only South African's should have been allowed to protest against apartheid?

- So, is it morally acceptable for anyone, from anywhere to protest against South Africa's 'legal' captive lion breeding for example and/or lion trophy hunting? Of course, it is morally and ethically acceptable to comment from anywhere against the 'legal' status of wildlife utilisation ideology:

> *"People come to my Motherland, people come to South Africa, to brutally murder the White Lions of Timbavati in the name of manliness and in the name of sport … And I ask myself: Did we win our freedom for this?"* – Credo Mutwa

12.8.5 Alternatives

"*Are there alternatives to consumptive wildlife practices that offer transparent conservation benefits?*"

There are always alternatives (reference paragraph 7.0 – "*Alternatives*") to current wildlife consumptive practices and transformative change away from wildlife utilisation ideology practices, particularly in light of the COVID-19 pandemic:

> "*Perhaps most importantly, we need transformative change – the kind highlighted last year in the IPBES Global Assessment Report (the one that found a million species of plants and animals are at risk of extinction in coming decades): fundamental, system-wide reorganization across technological, economic and social factors, including paradigms, goals and values, promoting social and environmental responsibilities across all sectors. As daunting and costly as this may sound – it pales in comparison to the price we are already paying*" – IPBES Guest Article, 27 April 2020

Closing any practices to innovations and transformative change is unlikely to meet the challenges the globe faces – be that habitat loss, land use, climate change and species conservation.

The World Bank's Wildlife Conservation Bond (WCB) concept is potentially an exciting transformative change and marks progress towards an alternative future for non-consumptive, not invasive 'sustainable utilisation' conservation.

13 Recommendations

13.1 High Level Panel (HLP) Constitution

There is a clear perception (Harvey 2020c, Harvey 2020e, News24, Pinnock 2019d, Pinnock 2020c) that the majority of the current HLP membership (only the October 2019 list has been made public) seems to have been constituted by persons wedded to a certain 'sustainable utilisation' ideology with vested interests (breeding, hunting, game meat industry etc.) in sustaining that ideology regardless. This potentially closes off the group's ability to think outside the box (even if the group wanted too) and embrace transformation. The potential conflicts of interest within the current HLP's constitution and Terms of Reference recovering old ground was highlighted by the Portfolio Committee on Environment, Forestry and Fisheries:

> *"Further questions were connected with whether the High Level Panel would take into account the report of the colloquium convened by the previous Portfolio Committee on Environmental Affairs; the rational for the High Level Panel to get involved in elephant matters when there is already "National Norms and Standards for the Management of Elephants in South Africa"; and South Africa's position on lion bone trade, and whether the Department is satisfied by the calibre of individuals on the High Level Panel to produce a credible report. The Minister indicated that she had met with the High Level Panel that was constituted to review policies, legislation and practices related to the management, breeding, hunting, trade and handling of elephant, lion, leopard and rhinoceros. Minister Creecy said that she had stressed the important role of the Panel and the expectation of the Committee and other stakeholders on the Panel to do a proper work and deliver a credible report. She pointed out to the panelists the need for objective, evidence-based decisions, and encouraged the Committee to give the High Level Panel chance"* - "*Report of the Portfolio Committee on Environment, Forestry and Fisheries on the Strategic Plan 2019/20—2023/24, Annual Performance Plans (Apps) 2020/21 and the Budget Vote 32 of the Department Of Environment, Forestry and Fisheries (Deff),"* 20 May 2020.

All of the concerns raised require a formal response from the Minister of Environment, Forestry and Fisheries, Hon Barbara Creecy:

> *"The Minister should submit a detailed response to the Committee on all the recommendations made in this report within 90 days after the adoption of this report by the National Assembly."*

The majority of the HLP's current membership is hardly a surprise, because the Government Gazette 42247 (Notice No. 243), 25 February 2019 and press notice of 1 March 2019 made it explicitly clear that any nominee for the HLP must be committed to "*the objectives and principles of conservation and sustainable use...*" (where "*sustainable use*" is not necessarily the same at the Constitution's "*ecologically sustainable development and use of natural resources*" – reference paragraph 12.1 – "*Secure Ecologically Sustainable Development and Use of Natural Resources*").

The caveat for HLP membership could clearly be used against those less convinced by the misuse of "*sustainable utilisation*" as a catch all and justification for all wildlife exploitation past, present and future.

A letter, dated 26 November 2019, signed by scientists and environmentalist was sent to the DEA (the Director General, Ms Nosipho Ngcaba and Minster Barbara Creecy) highlighting the potential bias within the constitution of the HLP's membership criteria:

> *"A candidate with vested interests in the continuation of captive predator breeding or captive-origin lion hunting," they write, "appears unlikely to uphold the parliamentary resolution to put an end to these practices.*
>
> *"Similarly, those with a vested interest in trading in rhino horn or ivory or trophy hunting may unduly influence the deliberations of the panel to secure an outcome on which their direct and/or future revenue depends.*
>
> *"Given the urgent nature of the matters to be reviewed, the qualifications, skills, commitment to the Constitution and freedom from institutional bias among this panel should be beyond reproach. This may not have been achieved."*

Closing off the HLP group's ability to entertain any disruptive, innovative concepts and dismissing them out of hand because they do not fit the established 'sustainable utilisation' ideology and vested interest creates a potential vacuum. There's a real problem if you have a collection of people from the same background, the same field, the same institutions; that can lead to blind-spots and groupthink. Diversity of membership and thinking is clearly important for better decision-making (Syed 2019, The Arbinger Institute 2010, Erikson 2019).

There is an urgent need for transformative change (IPBES, "*Nature's Dangerous Decline 'Unprecedented',*" May 2019):

> *"The Report also tells us that it is not too late to make a difference, but only if we start now at every level from local to global," he said. "Through 'transformative change', nature can still be conserved, restored and used sustainably – this is also key to meeting most other global goals. By transformative change, we mean a fundamental, system-wide reorganization across technological, economic and social factors, including paradigms, goals and values"*

The lack of diversity in the membership of the HLP not only risk's the HLP's credibility for welcoming impartial science, by potentially closing off rigorous evidence-based policy making and recommendations, shutting out ideas or evidence that runs counter to incumbent 'sustainable utilisation' ideology. Closing off such avenues makes innovative solutions to some issue unlikely and hence, potentially limits progressive, transformative outcomes for all parties concerned.

Science is not static, or should not be blind to evidence and data that runs counter to past, or current 'thinking.' Neither should decision making ignore science, or thinking because it does not fit the narrative enshrined in a currently held ideology. For example, regardless of anyone's like, or dislike of trophy hunting as a 'sustainable utilisation' policy, it does not change the fact that trophy hunting is attracting less hunters and hence generating less revenue (reference paragraph 6.6 – "*Trophy Hunting is Running Out of Steam*"), not to mention wide-spread public condemnation of trophy hunting and hence ramifications for any given host country's image as an non-consumptive wildlife tourism destination. Alternative thinking is needed regardless of any accusations of ideology from those in favour of trophy hunting and those not in favour.

Therefore, it is recommended that the membership of the HLP is opened up to more diverse thinking and/or external advisory groups, with a *charrette* approach bringing diverse groups and opinions on a given subject/project into a joint process for decision-making.

13.2 COVID-19 External Advisory Panel

Felines and felids, are seemingly susceptible to COVID-19 transmission from humans, therefore potentially acting as a reservoir for transmission of COVID-19 back to humans. There are potential risks from COVID-19 in the handling, slaughter and processing of captive bred lions, where captive bred lions are farmed for hunting and/or to supply the lion bone trade. The science required to assess the risks of COVID-19 in this context needs to be established, so in the meantime precautionary risk principles should be applied.

The HLP has a clear need for independent, external expert advice from scientists - virologists, veterinarians, epidemiologists – and public health officials to assess the currently available science regarding COVID-19's impact on felines and felids in particular, due to their susceptibility to COVID-19 infection and onward transmission within species, plus of course the potential risk for onward transmission to humans.

The HLP should be prepared to adapt and transform as the research in this area develops. In the meantime, the precautionary risk approach is required and the recommendations that follow align with that precautionary risk approach.

> "*Responding to the COVID-19 crisis calls for us all to confront the vested interests that oppose transformative change, and to end 'business as usual'. We can build back better and emerge from the current crisis stronger and more resilient than ever – but to do so means choosing policies and actions that protect nature – so that nature can help to protect us*" – IPBES Guest Article, 27 April 2020

13.3 Animal Welfare

Within CITES regulations, animal welfare is not given a stage – the concept of animal welfare on ethical and moral grounds alone appears to be absent, but animal welfare is clearly intertwined with the fundamental principles of species' conservation. If a species is being conserved, then that species' welfare and well-being is key to maintaining healthy populations:

> *"We conclude that the suffering wildlife endures because of humans is a collective responsibility that presents a moral imperative for animal welfarists and conservationists alike. Habitat destruction and impoverishment deprives species of life requisites, causing trauma, prolonged suffering, and eventually death. We suggest that a shared doctrine of animal welfare principles is needed, such as a modified*

> *version of the internationally-recognised Five Freedoms. In essence, this would be an ethical affirmation for conservationists and animal welfarists"* - Paquet et al. 2010

South Africa's reputation for animal welfare has been damaged by the poor record displayed in relation to captive-bred lions/big-cats (reference paragraph 12.3 – "*Animal Welfare – A Legal Obligation*" and paragraph 12.8.3 – "*Animal Welfare – "Well-being""*). There is a clear legal obligation for animal welfare to be considered within all domestic policy decision relating to the 'use' of wildlife as a natural resource.

In the 2020 paper, "*Biodiversity, Species Protection, and Animal Welfare Under International Law*" (Futhazar 2020 p.106), Futhazar suggests:

> "*Consideration for animal welfare could also be added to the normative corpus of existing regimes. For instance, the CBD's Aichi Targets will be renewed in 2020. Putting consideration of animal welfare into the renewed targets could ensure that all biodiversity related conventions are implemented not only to ensure conservation but also welfare. Indeed, these Targets have been widely adopted by other multilateral environmental agreements and now constitute commonly shared goals*."

South Africa should seek to enshrine animal welfare within its own biodiversity targets as a fundamental principle that is managed in a transparent, auditable manner at Ministerial level. However, it must be acknowledged, that practices such as captive lion breeding are not compatible with 'animal welfare' (reference paragraph 12.3.1 – "*What is Animal Welfare?*") as evidenced within the 2019 judgement, which also accentuates animal welfare is not given relevant consideration within 'sustainable utilisation' ideology within South Africa.

13.4 Complete Audit of All Captive Breeding Facilities

The DEA has no publicly available, transparent audit record of lion/big cat, rhinoceros, tiger etc. captive breeding facilities – an industry that is clearly out of control. Without such registers and a transparent audit trail, the DEA cannot transparently fulfil its legal obligation to ensure animal welfare is considered within any of its decision making regarding the captive breeding industry, or indeed the DEA's legal obligation to monitor compliance (via the DAFF or otherwise) with the DEA's own decisions with regard to animal welfare.

The DEA should conduct a long-overdue audit of all breeding facilities and make access to a register of such facilities (and each facility's compliance, or otherwise with regulations, standards and laws) publicly available. Only then can the DEA's legal mandate possibly be seen as potentially being met.

This audit should include 'exotic' species, such as tigers bred in captivity in South Africa:

> *"Because they're not an indigenous species, trade in tigers is unregulated and flying below the radar of the DEA (Department of Environmental Affairs). When asked about it by Ban Animal Trading and the EMS Foundation, the DEA response was that tigers weren't the department's responsibility because they're "exotics". In reply to a request for information on tiger breeding facilities, Limpopo DEA wildlife director Sam Makhubele said the department had never been approached and he seemed surprised that they even existed……*
>
> *However, a 2015 TRAFFIC/WildCRU report, "Bones of Contention," estimated there were at the time 280 tigers in 44 facilities in South Africa. Today there are undoubtedly far more, but because tiger breeding doesn't have to be reported, numbers are hard to establish" –* "*Tigers are being bred in Gauteng backyards for petting and bone export*," Don Pinnock, Daily Maverick, 23 April 2018

Tiger breeding in South Africa and exports violate commitments to CITES regulations. If tigers are being bred for international trade in establishments without accreditation, it's in violation of CITES Resolution Conf. 12.10, which requires registration of Appendix I breeding facilities operating for commercial purposes. South Africa's exporting of perhaps 78 tigers to China in 2017 – 2019, is clearly a violation of CITES regulations, there is no non-detrimental finding (NDF) to support such trade – which clearly undermines the species conservation (EMS Foundation and BAT 2020 p. 34 -35)

There's also CITES Decision 14.69, obligation on South Africa which requires captive breeding 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 derivatives.'

CITES Resolution Conf. 12.5 (Rev. CoP18), 1.(h) 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.*"

Regardless, animal welfare clearly remains the DEA's legal obligation for all species bred in captivity (including tigers), but first the DEA has to have a full picture of where those facilities are and their compliance, or otherwise.

13.5 End Self-Created Trade Detrimental to Wildlife

'Sustainable Utilisation' needs to be reviewed and applied with proven evidence of its contribution to ecology/conservation as a pre-requisite before any trade is undertaken. If that benefit is unproven and remains purely hypothetical, or the potential risks due to demand stimulation might manifest, then the pre-cautionary principle should be applied and the trade mechanism should not be deployed in the first place.

Statements like the one given in Notice 1105 (reference Appendix 3 – "*Rhino Horn Consultation, September 2019*") that "*It is however highly unlikely that current investment from government, external donors and private rhinoceros owners in the protection of this species can be sustained in the long term, and it is recommended that a legal trade in rhinoceros horn as an alternative source of funds be explored*" is not justification in itself for a legal trade in rhinoceros horn – 'because funds are needed a legal rhino horn trade must be established' (sic) is a false argument if it lacks any proven correlation to ecological or conservation benefits.

The bottom line being, no-one forced rhino breeders (for example) to breed rhinos based upon speculative hopes of returns from lucrative, international rhino horn sales - not a purely altruistic conservation imperative. The fact that international trading of rhinoceros' horn remains banned due to fears of a potential exponential rise in demand that could result, is not an excuse to lift the ban so rhino breeders can pay for their speculative investment in rhino breeding (reference Appendix 3 – "*Rhino Horn Consultation, September 2019*").

Any claim that captive bred rhinoceros could be considered for release into the wild if genetic modification (reference paragraph 2.1 – "*Animal Improvement Act (AIA)*) is permitted within the captive bred specimens, it then blows apart any entitlement to any claimed conservation benefits, regardless of any claims that captive bred rhinoceros have not been "*imprinted*" (incapable of survival in the wild).

The precursor embedded in the Constitution, NEMBA is for "*ecologically sustainable development and use of natural resources.*"

Ignoring ecological and conservation imperatives in the pursuit of funds via a 'legal' mechanism for exploitation of the very species the endeavour is supposed to protect remains unproven and opaque – there is no categorical peer-reviewed science that supports a legal, international rhino horn trade. Indeed, much of the impartial science suggests that legal trade in rhino horn will further imperil the species. The reason rhinos are imperilled due to poaching is because of the lack of enforcement of the 1977 CITES ban on such trade – the ban itself is not the problem, enforcement is and the lack of enforcement would endure regardless of any 'legal' rhino horn trade mechanism (reference paragraph 12.5 - "*Does Legal Trade Counter Illicit Activity?*").

The pursuit of 'sustainable utilisation' ideology as a necessity without supporting science is a flawed misuse of the enshrined purpose of "*ecologically sustainable development and use of natural resources."*

The same principle applies to the lion bone trade – there is no supporting science that proves it is anything other than a profiteering endeavour dominating the setting of quotas, not science:

> "*…..because they [the lion breeders] have surplus stockpiles of lion bones and they want to get rid of them*" - "Dodgy skeleton traders and lion slaughterhouses exposed in damning report," Don Pinnock, Daily Maverick, 19 July 2018

The excuse that the current 'legal' lion bone trade must be maintained because if it is shut down it could threaten wild lion populations is a potential self-fulfilling prophecy – if a legal trade could result in threats to wild lion populations (due to market stimulation), then a legal lion bone trade should never have been unleashed in the first. Instead, the opposite of the precautionary principle is being promoted in the argument for the legal lion bone trade to be perpetuated, because of the very risks the legal trade itself set in motion (reference paragraph 9.4 – "*The 'Buffer' Theory*").

It is recommended that an 'integrative' (Bilchitz 2017) policy is adopted, promoting ecological principles, tangible ecological sustainability, conservation and exemplary animal welfare as a guiding objective with respect for individual animals – not an 'aggregative' 'sustainable utilisation' ideology where such criteria are given cursory consideration (if any), in the pursuit of animal exploitation for income:

> *"The 'aggregative approach' – which has been the dominant policy approach adopted by the legislature and executive – focuses on broad collective environmental goals such as the long-term survival of a species, the health of ecosystems or conserving*

biodiversity. The 'integrative' approach, on the other hand, – which has recently been referenced with the approval by the Constitutional Court – requires the adoption of an attitude of respect to the individuals that make up a species, an eco-system or the components of biodiversity. The article makes several arguments as to why the integrative approach is preferable and attempts to demonstrate that the aggregative approach is self-defeating in its own terms" - Bilchitz 2017

13.6 Wildlife Trade, Live Exports and CITES

The 'legal' mechanisms for the exportation of live wildlife specimens is clearly being exploited in South Africa, under the pretext it is for non-commercial "*scientific research, captive breeding, public exhibition or performances, heritage conservation or other special purposes"* (China's Wildlife Protection Law loop-hole) to *"appropriate and acceptable destinations,"* when in reality such live specimen exports are fraudulently orchestrated to circumvent CITES restrictions with the export to supply commercial zoos, breeding facilities in China and for TM production and/or that supply international laboratories with marmosets (for example) for vivisection.

This lack of transparent regulatory over-sight also has clear human health and bio-security risks – the export of potentially infected and/or genetically impure specimens is a global risk, not just an animal right issue (it never was).

The hope that "*…suitably improved regulation*..." can somehow plaster over the cracks seems farcical, when such a regulatory nirvana has proven in the past to be unobtainable, through lack of will, funding and the corrupting influence between the wildlife trade and its burgeoning influence over bodies such as CITES and IUCN for example. 'Improved regulation' is not going to manifest in such an environment where the wildlife trade is seemingly driven by profiteering, not conservation imperatives – there is considerable risk that 'improved regulation' is being promoted as the solution, regardless of the recognition that such trade is detrimental to conservation and presents clear human health risks.

A new central body is perhaps needed to replace CITES (Pinnock 2020d), because any reform advocated by John Scanlon (ex-CITES Secretary-General, now an advisor to the Elephant Protection Initiative (EPI)) are too little too late:

> *"To better understand CITES, it helps to consider some other things that it's not. The convention is solely focused on wildlife which moves across international borders and not within countries or a bloc, like the EU.*
>
> *Nor does the convention address human health, animal health or how invasive a species might be to a country. It doesn't tackle wildlife markets or consumption"* - "*Confront illegal wildlife trafficking with international criminal laws, former global trade chief says*," The Independent, 2 June 2020

However, it is agreed that "*The status quo ought not be allowed to prevail*" [Scanlon said] - The Independent 2020n, where CITES needs urgent modernisation:

- There is a growing lobby (Nature Needs More, *"e-permits"*) seeking for modernisation of the CITES permit system in order to try to stamp out misuse and corruption, but electronic permits – *eCITES BaseSolution* system has been discussed for nearly a decade with no progress made apart from a trial roll-out in Sri Lanka in 2019 (Nature Needs More, "*In 44 Years, CITES And IUCN Have Provided NO Proof Sustainable Use Is Working"*). It is recommended that all CITES signatories universally adopt *eCITES BaseSolution;*

- Adopt a reverse species listing approach, ie. all species are delisted and deemed not tradable as the default, with scientifically (peer-reviewed and independent) proven species-specific trade exceptions only;

- A levy on the legal wildlife trade, to adequately fund CITES;

- Enforcement against the illegal wildlife trade embedded into the international criminal justice system – at the moment, this effort is co-ordinated via the International Consortium on Combating Wildlife Crime (ICCWC) (formed in November 2010), as an alliance between CITES, INTERPOL, The United Nations Office on Drugs and Crime (UNODC), The World Bank and The World Customs Organisation (WCO).

Or perhaps, an alternative international body to oversee wildlife trade is needed that has a clear mandate to transparently regulated the wildlife trade, that ensures animal welfare and conservation as guiding principles (not trade), but also has 'competence' in the inherent human health implications of such wildlife trade - particularly poignant in the post-COVID-19 pandemic era.

> *"Alternatively, a new agreement on wildlife trade could be added to the Conventional on Biological Diversity or with the World Health Organisation, as has been done to recognise the risks associated with tobacco"* - The Independent 2020n

In the meantime, South Africa needs to review its entire 'sustainable utilisation' ideology in the light of the harm it is doing by promoting fraudulent live wildlife exports. With such widespread abuses and a clear absence of transparent regulatory over-sight, then a moratorium should be placed on all live animal/wildlife exports.

13.7 Animal Improvement Act and Meat Safety Act

The species added to the AIA Table 7 was at the behest of Minster Senzeni Zokwana (Department of Agriculture, Forestry and Fisheries (DAFF)) as notified in Gazette 42464, 17 May 2019, Amendment to AIA, Table 7. However, no public consultation took place before the listed species were added to the AIA, in clear contravention of the AIA, Paragraph 2(2):

> "*In the **case of a new kind of animal** or a new breed of such kind of animal to be imported into or to be bred in the Republic, the Minister shall make such declaration after considering the request, taking the international law into consideration and after considering comments received in response to an invitation by the registrar to **interested persons** to comment on a proposed declaration that had been published in the Gazette at least 30 days prior to such declaration*"

There is also a clear contradiction between the inclusion of wildlife species within the Animal Improvement Act and the risks of genetic pollution, as identified as a major threat within South Africa's own National Biodiversity Strategy and Action Plan as a research priority:

> "*Research priorities that emerged through the process of developing the revised NBSAP include research on/into….The impact of current and future threatening processes on biodiversity, and mechanisms for adaptation, management and mitigation for example research to address genetic pollution (e.g. colour variance) linked to requirements of the hunting industry and research on risk assessments and how they are conducted*" – "*2nd National Biodiversity Strategy and Action Plan 2015 – 2025*," Republic of South Africa, Department: Environmental Affairs

A 2018 report and a number of academic papers have highlighted the extensive tail risks to game breeding and genetic manipulation practices in some elements of ranching that are diametrically opposed to conservation outcomes.

In light of serious health risk that the wildlife trade from South Africa poses then the AIA amendments are likely to increase that risk to:

a) abattoir workers and other workers in the wildlife industry in South Africa;
b) consumers of wildlife products in South Africa and globally; and
c) animals in countries to which South Africa allows exports

Plus of course, the potential onward human consumption risk of proposed wildlife "*meats*" and/or "*animal products*" which the DALRRD is responsible for ensuring are fit for animal and/or human consumption. Therefore, there is a need for an immediate risk assessment of all such existing and proposed wildlife trade in "*meat*" and "*animal products*" emanating from South Africa, with restrictions and moratoriums on such trade an urgent precautionary risk requirement.

In the circumstances, the DALRRD should immediately rescind in full the amendments announced in Gazette 42464, 17 May 2019, Amendment to AIA, Table 7 (reference paragraph 2.1 – "*The Animal Improvement Act (AIA)*") and rescind the inclusion of additional species within the "*Meat Safety Act, 2000 (Act No 40 of 2000), listing the animals to which the Act applies*" - Gazette no. 43050, Notice 201/2020, dated 28 February 2020 (reference paragraph 8.2 - "*Elephant Meat*" and paragraph 11.7 – "*Rhinoceros Meat*"):

> Winkler, H.S. MP – DA Deputy Shadow Minister Environmental Affairs, Forestry and Fisheries, 25 May 2020 - "*Didiza's attempt to legalise the consumption of wild animals is unfathomable*"
>
> "*Outrage as South Africa law change could put elephants and giraffes on dinner table*," The Express, 29 May 2020
>
> "*Coronavirus: Why South Africa's breeding farms could be 'petri dish' for next pandemic*," The Express, 12 May 2020

13.8 Tourism Interaction with Captive Wildlife

To encourage some level of morally and ethically acceptable tourist/wildlife interactions, all agencies should adopt and ensure compliance with the principles set out within the Southern Africa Tourism Services Association (SATSA), 2019 - "*Evaluating Captive Wildlife Attractions & Activities*."

13.9 Enforcement

13.9.1 Prosecutions and Justice for Wrong-doing

First and foremost, there has to be adequate prosecution and penalties for wrong-doing against existing laws and rules when it comes to wildlife abuses – ie. poaching needs to be prosecuted harshly as a deterrent.

The 'Groenewald Gang' was uncovered in 2010. Dawie Groenewald (game farm owner and owner of 'Out of Africa Adventurous Safaris') and his wife Sariette and nine others, including professional hunters, veterinarians, a pilot and farm labourers, were arrested by the South African authorities. Groenewald was charged for numerous crimes, these included racketeering, money-laundering, fraud, intimidation, illegal hunting and dealing in rhino horns. He was accused of killing fifty-nine of his own rhinos, and then getting rid of the evidence by burying them, burning them or selling them to a local butchery. He was also charged for illegally dehorning 384 rhino horns over a four-year period. Groenewald first started selling rhino hunts on his farm in about 2008.

In September 2010, Dawie Groenewald was arrested (along with his wife, Sariette, veterinarians Karel Toet and Manie du Plessis, plus a host of "*professional hunters*"), for his alleged involvement in the illegal rhino horn trade. Shortly after Dawie's arrest, 20 dehorned rhinos were found in a mass grave on his property (a 10,600 acre farm in Musina, Limpopo Province). However, Dawie and his alleged accomplices are yet to face final justice. Dawie Groenewald faces a reported 1,736 (with his syndicate facing 1,872) counts related to illegally selling rhino horn, racketeering, money laundering and fraud:

> *"allegedly having illegally sold at least 384 rhino horns over a four-year period, having killed more than 39 of his own rhinos for their horns, and illegally dehorning more than 80 others."*

One Hugo Ras was also implicated with Dawie Groenewald. Ras was arrested in August 2011 and charged with illegal possession of a firearm and restricted veterinary drugs (used to sedate and track big game, contravening the Medicine and Related Substance Control Act). It is reported that Ras has a conservation crime record stretching back to 2001. In 2014, Ras was arrested again with 9 accomplices:

> The ten (including Ras) accused were "*arrested on 19 September in a countrywide operation. They face a total of 318 charges, including the killing of rhino, the sale of rhino horns, intimidation, money laundering and racketeering. A conservative estimate of the 84 illegally obtained horns is said to be around R16 million. The alleged Syndicate's activities have been described as the ruthless serial killing of rhino*" – The Citizen, 29 September 2014

For their 'activates' between 2005 and 2010, Dawie Groenewald and his brother, Janneman have been indicted with using their Out of Africa Adventurous Safaris company to organise and promote (at between $3,500 USD and $15,000 USD a time) White rhinoceros hunting trips in South Africa, Botswana, Tanzania and Zimbabwe. No CITES permits (for trading in rhino horn) were obtained by the Groenewald brothers, or anyone else at Out of Africa Adventurous Safaris. The accusation is that the Groenewald brothers 'duped' and defrauded hunters, attending Safari Club International (SCI) conventions etc., where Out of Africa Adventurous Safaris also generously donated a safari to an SCI auction of hunts.

In 2016 Dawie Groenewald (not forgetting accomplices) was yet to face trial in South Africa (6 years after Dawie's initial arrest).

In a 2012 interview detailed in *"Killing for Profit"* (Julian Rademeyer), Dawie Groenewald was confident that he would beat the South African case:

> "*They [the South African prosecutors] will eventually come and say there has been a mistake on a permit here, or something wrong there, let's sort it all out. Let's make arrangements for a fine*.
>
> "*I am not a poacher*," he told Rademeyer. "*That word makes me sick. It is not necessary for me to poach a rhino.*
>
> "*I don't enjoy killing rhinos*," he continued. "*But I'm killing them because of the system. We are forced to shoot them because that is the only way the trophies can be sold and exported. You have to kill the animal to sell its horns.*"

> He went on to tell Rademeyer that he makes a lot of money from hunting, saying, "*For me, to do these hunts is very good money. It is really good money*."

So, for someone that professes to hate poaching and does not enjoy killing rhino, Dawie Groenewald appears to be deluded, very much a poacher that has 'enjoyed' killing rhino, but he chooses to use the excuse of "*look what the system made me do to profit from animal exploitation.*" No one forced Dawie Groenewald to be a rhino farmer, or rhino hunter of course, there are other ways to make a living I think if one finds 'legalities' regarding rhino farming/killing a little too restrictive for one's needs. Lax enforcement for wrong-doing encourages individuals with Dawie's mentality to show contempt for such legalities, no-one gets to choose which legalities they will comply with and which ones they will not – or the rule of law evaporates.

After his September 2014 arrest, Hugo Ras was due to go on trial in Petoria (along with brother-in-law Arno Smit, "*Rhino Poaching 'Kingpin' Leaves Trail of Crime in USA*") in 2016. In 2018, the trial of Ras was reportedly delayed again for another year, with Ras released on bail.

In 2018, the prosecution of the 'Groenewald Gang' was reported as due to go ahead in 2021, some 11 years after charges were first laid.

These cases reinforce the impression that wrong-doing is left virtually unchallenged when it comes to wildlife abuses in South Africa - is it any wonder that rhino poaching is prevalent in South Africa as a consequence?

13.9.2 Strengthening Enforcement

Enforcement needs to be strengthened to deter known poaching activity within South Africa, focused upon the porous Mozambique frontier:

- Close off South Africa's domestic rhino horn trade – it feeds illicit activity (reference paragraph 11.3.1 – "*Domestic Rhino Horn Trade*");
- Implement legislation to enable prosecutors to charge alleged poachers with the primary act (rather than poachers that are caught being typically prosecuted using offences such as trespassing or illegal firearm possession) - Collins et al. (2020);
- Negotiate an extradition treaty with Mozambique – closing off the alleged poachers' potential escape from justice - Collins et al. (2020).

There is also scope to embrace technology to enforce compliance to tackle illicit wildlife trafficking:

> "*There's a real opportunity for markets to become more effective at spotting illicit wildlife trade because an increasing proportion of the selling and distribution is going to take place online.*
>
> *Artificial Intelligence (AI) and other tech innovations offer a creative solution to fight traffickers shifting into the digital realm.*
>
> *AI applies machine learning to vast quantities of data attributes, those with specific characteristics, to build data sets that can spot patterns of suspicious activity across a wider network.*
>
> *AI is going to provide the market with the ability to become much more proactive and effective at finding the illicit activity and therefore will allow organisations to try and disrupt it without waiting for that tip-off that they've been reliant on for so long"*

13.10 Elephants

13.10.1 Elephant Norms and Standards

A public consultation was launched in 2018 regarding the Norms and Standards for the Management of Elephants in South Africa (the Elephant Norms and Standards) in Government Gazette No. 42015 (Notice No. 1208) on 2 November 2018.

These Elephant Norms and Standards are yet to be signed into legislations. The question is why is the DEA and its HLP seeking to revisit so many questions and reinvent the wheel, when so much past work has led to the formation of the Elephant Norms and Standards that have passed consultation and await the DEA's sanction?

The DEA should not delay in signing Norms and Standards for the Management of Elephants in South Africa (the Elephant Norms and Standards) in Government Gazette No. 42015 (Notice No. 1208, 2 November 2018) into legislation immediately.

13.10.2 Elephant Ivory

In the absence of any realistic prospect that international ivory trading will one day be restored and justify speculative stockpiling, perhaps the right thing to do is declare an amnesty for illicitly stockpiled ivory to be handed into appropriate authorities and all stockpiles, including State stockpiles destroyed. Kenya has clearly shown global leadership by burning stockpiles of ivory and rhino horn in 2016 – Kenya's president, Uhuru Kenyatta stating at the time:

> "*The future of the African elephant and rhino is far from secure so long as demand for their products continues to exist*"

13.10.3 Elephant Population Management and Culling

The present management strategy of the South African National Parks is focused on how elephants use their resources in relation to their distribution rather than absolute elephant numbers (reference paragraph 8.5 – "*Elephant Population Management and Culling*").

It is suggested that this current policy is maintained, rather than any rush to unscientifically justify elephant culling, or an increased elephant trophy hunting quota – both of which would put any semblance of South Africa's conservation reputation in further jeopardy.

13.11 Lions

13.11.1 CLB Industry – Animal Welfare, Lion Bone Trade and Stockpiling

There is clear precedent set by the PPCEA to close down the commercial exploitation of captive bred lions. That close-down is yet to be accepted and actively pursued as a DEA policy.

In the light of the absence of an exit strategy for the captive bred lion/big-cat industry, then the COVID-19 pandemic and felines and felids being seemingly susceptible to transmission, there is limited confidence that the CLB industry is prepared for such risks.

The potential negative impacts of COVID-19 and the CLB industry's past reliance on overseas income from tourism (cub-petting etc.) and trophy hunting is unlikely to return anytime soon, so some scenario planning is clearly required.

In the absence of any strategy from the DEA to end the commercial exploitation of lions and big cats, then in the ongoing COVID-19 fallout, the CLB industry needs increased DEA oversight, guidance and regulatory scrutiny to ensure:

i. An immediate minimum two-year moratorium on the setting of any lion bone trade quota;

ii. A complete risk review is undertaken to assess the human health risks of the wildlife trade that such practices present, in light of the ongoing zoonotic pandemic (COVID-19) – this includes the handling, breeding, and consumption of lion bones (and derivative products);

iii. The welfare of those lions and other big cats held within CLB facilities should be given priority. The DEA is under a legal obligation to consider animal welfare in the making of its on-going decisions and no lion or big cat held within CLB facilities should be made to suffer further neglect at this time;

iv. The killing of captive-bred lions should only be via euthanasia where absolutely necessary on welfare grounds, but euthanasia on welfare grounds should not encourage the starvation of captive-bred lions on economic grounds in the current

COVID-19 pandemic – the CLB industry and the DEA has a legal obligation to ensure exemplary animal welfare for the captive breeding of lions regardless of economic downturns. The DEA has supported policies that have encouraged the expansion of captive lion/big cat breeding, but the DEA has an obligation for all such facilities and the animals held captive;

v. During such a moratorium (i), there might be a temptation for the CLB industry to rush to slaughter lion stock and stockpile lion bones in the speculative hope that the international trade in lion bones can be re-established as soon as the DEA can foment a scientifically justifiable, 'legal' lion bone trade quota that meets with the DEA's legal obligations and Constitutional requirements (reference paragraph 12.1 – "*Secure Ecologically Sustainable Development and Use of Natural Resources*") to consider animal welfare within its decision making, not to mention the inherent human health risks (reference paragraph 9.6 – "*Lion Bone Trade – Human Health Risks*").

vi. The DEA's animal welfare obligation endures regardless of any potential CLB industry economic collapse that results from the COVID-19 pandemic. Such measures the DEA should consider for immediate implementation are:

a. Cancel or amend any permits (standing permits or other permits) that allow the killing of lions and other big cats for any purpose other than euthanasia where absolutely necessary on welfare grounds. The fear is that the CLB industry could seek to 'off-load' its stock via mass, inhumane and unhygienic slaughter (storing lion bones in speculative stockpiling) in the absence of DEA pre-intervention, or that excess lions and other big-cats are 'released' from CLB facilities to reduce the welfare burden;

b. Impose an enduring moratorium for the foreseeable future on the issuing of permits to allow CLB facilities to expand, and/or new CLB facilities to be built and registered;

There is already the clear risk that the CLB industry is 'over-stocked.' In the absence of a clear DEA mandated exit strategy for the whole CLB industry, then in the current circumstances allowing new facilities to open would seem futile, as does the unregulated breeding of more big cats to add to CLB facilities' over-stocking;

c. Impose an enduring moratorium on permits allowing the transfer of lion/big cat stocks between CLB facilities. Strict bio-security measure such as this are necessary to ensure that any COVID-19 infected stock is not moved and allowed to potentially spread COVID-19 infection to other captive bred stock and potentially spreading COVID-19 back to humans;

d. There are also the potential increased human health risks for those charged with handling lions and big cats held within CLB facilities – not to mention slaughtering and processing risk in addition to those highlighted at paragraph 9.6.1 – "*Bovine Tuberculosis (bTB)*" but also COVID-19. Therefore, the DEA has a clear duty of care to ensure the safety of those working in the CLB industry, ensuring these workers are fully informed of the risks they face, have adequate training and protective equipment in order to fulfil their role.

Where is the clarity that any 'captive' lion bones/skeletons being exported by South Africa do not carry TB organisms harmful to human health, and which department is responsible for checking the exports of lion bones/skeletons - the DEA/DEFF, the DAFF, or the Provincial offices? The complete historical record of all the testing for TB of all of South Africa's captive bred lion stock should be made public.

e. There is also the ongoing risk (EMS Foundation and BAT 2020 p. 37 - 38), of mass, poorly regulated 'live' exports of specimens from the CLB industry to supplement income as a proxy for lion bone exports – this live specimen export industry has no quota limitations, so could become a desperate industry exit route without clear DEA management, intervention and a permit moratorium – the clear risk is that South Africa could unwittingly be exporting COVID-19 infected lions/big-cats:

> "*Lion farming may increase in consumer countries, and some South African farmers appear willing to export live lions to these countries which would help establish/increase farming. As live lions are not explicitly detailed in the CITES listing-annotation it is not clear how this will be addressed, although the South African CITES Scientific Authority*

is treating permit applications for live lions with caution in case they are acting as a proxy for skeleton exports" - SC70, Doc. 54.1, page 12, para 4 - Note: There is no quota on the live export of lions from South Africa, so the South African Scientific Authority's reported "*caution*" could evaporate if commercial incentives take priority.

In the provisions of the Animal Health Act, the national executive officer may in certain prescribed circumstances prohibit the exportation of a particular animal or thing, or a particular consignment of animals or things to any country.

The prescribed circumstances include the situation where the national executive officer is of the opinion that the export thereof would be detrimental to the animal health status of the country to which it is intended for export (Section 5(a) and (b)).

As set out above, wildlife products from South Africa have the potential to infect animals in countries of export with viruses and to contaminate other animal products in markets.

vii. There has been a clear lack of co-ordination in the past with DAFF/DEFF departments on the regulatory oversight of CLB facilities. COVID-19 has highlighted that the exploitation of wildlife through trade facilitates have increased opportunities for animal–human interactions and facilitated zoonotic disease transmission. So, it is essential that a comprehensive response is quickly formed to get a clear grip on testing of big cats held within CLB facilities, to assess the risks to the industry and all those that work within it.

viii. The DEA needs to form an exit strategy for the CLB industry – not only to comply with the PPCEA recommendation to end the commercial exploitation of lions (reference paragraph 9.2 – "*Captive Lion Breeding (CLB) – Calls for Closure*"), but also as an exit strategy should the COVID-19 pandemic lead to the conclusion that the health risks associated with captive lion/big-cat breeding prove overriding, or the economic fallout leads to collapse of the CLB industry, or there is a withdrawal of international wildlife trade mechanisms that enable the CLB to profit from lion bone trade exports – ie.

CITES withdraws the 2016 "*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*" as a result of detrimental impacts (Everatt et al. 2019) on wild lion populations.

ix. In the absence of supporting science, the lion bone trade quota should be set at zero and endure until either the industry is disbanded, or categoric, independent peer-reviewed science exists to support a specific lion bone trade quota. In parallel, the export of live lion specimens should also be set at zero, to curb the abuse of this mechanism as a deceptive way to export live lions, only for the lions to be slaughtered upon arrival at an "*acceptable destination*" (sic) and supply the lion bone trade.

13.11.2 The Continent-Wide Risks to Wild Lion Populations

In June 2017, the DEA undertook to deliver a 3 year SANBI study to look into the effects of the lion bone/skeleton trade on wild lion populations on a continent wide basis:

> "*The South African National Biodiversity Institute (SANBI) has initiated a study aimed at increasing the understanding of the lion bone trade in South Africa and the captive lion breeding industry*."

The research needs to be published as a matter of priority to inform the HPL's decision making and subsequent recommendations.

13.11.3 'Wild' Lion Trophy Hunting

How does luring healthy male lions to their death from a photographic tourism area support the pro-trophy hunting claims that their 'sport' conserves lion habitat not suitable for photographic tourism?

Therefore, any attrition of South Africa's 'wild' lions for hunting trophies lacks a credible conservation claim.

The killing of Skye in 2018 (reference paragraph 6.1.7 – "*Cover-ups and Denial*"), a protected 'wild' lion also brings into question the claim made of how captive bred lions act as buffer for wild lion attrition and therefore, captive bred lions have conservation value (reference paragraph 9.4 – "*The 'Buffer' Theory*")?

13.12 Leopard

13.12.1 Leopard Trophy Hunting and 'Trade' in Leopard Skins

The leopard is a CITES Appendix I listed species and classed as "*Vulnerable*," (IUCN Red List), with a decreasing population trend (but there are no robust estimates of the total number of mature individuals range-wide), with leopards subspecies ranging across Africa and Asia.

High rates of trophy hunting have caused population declines in many sepecies, including African leopards (Packer et al. 2009, Balme et al. 2009, Swanepoel et al. 2014, Naude et al. 2020), reference paragarph 10.2 – "*Leopard Trophy Hunting and Leopard Skins*"

Recent leopard declines in Africa are also related to prey declines (medium and large-sized wild herbivores) and the unsustainable and increasingly commercialized bushmeat trade, leading to collapses in prey populations across large parts of savanna Africa (Lindsey et al. 2013b), plus the unregulated attrition to supply skins to unregulated 'muti' markets.

In reality, leopards are a shy and elusive species, so there is no feasible means to accurately estimate the population, let alone 'sustainable' trophy hunting quotas.

Therefore, any suggestion that South Africa can categorically justify a leopard hunting quota when there "*is no rigorous estimate for the size of the South African leopard population, nor reliable estimates of leopard population trends at national or provincial level*" (HLP Terms of Reference, issued 22 April 2020), or contemplate a "*Trade in leopard skins*" resulting from leopard trophy hunting is lamentable.

South Africa own 2018 submission to CITES, "*Leopard Quota Review: South Africa AC30 Doc. 15 Annex 3*" also makes the lack of solid leopard population data clear:

> "*Leopards are generally considered uncommon in South Africa, however estimates of the size of the national population vary so widely as to make them meaningless*"

Using historical leopard densities to extrapolate present day leopard estimates is likely to be error prone and unreliable - this was explored in full at Appendix 2 – "*Leopard Trophy Hunting Quota, February 2017*."

The ongoing persecution of leopards and trophy hunting attrition serves no recognisable conservation purpose in reality (reference paragraph 10.2 – "*Leopard Trophy Hunting and Leopard Skins*") and has no substantiated science to support leopard trophy hunting.

Any import, or export of anything that could constitute a leopard hunting trophy (including leopard skins) should be discarded/curtailed as likely to be detrimental to the species' survival in the absence of rigorous population data and/or scientific quota setting.

The wild leopards' salvation is unlikely to be found in resorting to 'captive breeding' – evidenced by the lack of any conservation credentials of the CLB industry – reference paragraph 9.3 – "*Conservation Claims of the CLB Industry*."

In the absence of the science and the legal obligation for animal welfare to be considered in support of any wildlife trade, domestic or otherwise, then there is a legal imperative for 'muti' markets to be ordered to close/refrain from the sale of products that lack the required legality/science.

13.12.2 Leopard Bone Trade

There is a fear the South Africa, under the guise of the AIA (reference paragraph 2.1 – "*The Animal Improvement Act (AIA)*") could seek to add leopards to intensive, captive-breeding under the umbrella of 'sustainable utilisation' ideology to seek to profit from the non-sensical and fraudulent demand in Asia for lion, tiger, jaguar and leopard bones for Traditional Medicine (TM).

The experience of the animal welfare and looming conservation disaster South Africa's captive lion breeding (CLB) and lion bone trade has presented (reference paragraph 9.2 - "*Captive Lion Breeding (CLB) – Calls for Closure*" and paragraph 12.3 – "*Animal Welfare – A Legal Obligation*"), adding another big cat species to be cruelly exploited would be a retrograde step.

In addition, as a CITES Appendix I listed species, then leopards may only be traded as Appendix II listed species if the specimens are captive bred in a breeding facility registered with CITES and the trade is for '**non-commercial**' purposes (EMS Foundation and BAT 2020 p.3), or to put it another way:

> *"The profit that might result should be used to support the continuation of the programme aimed at the recovery of the Appendix-I species"* - Resolution Conf. 5.10 (Rev. CoP15). Annex, Example e)., "*Captive-breeding programmes*"

Based upon the lion bone trade experience (and South Africa's misappropriated ivory stockpile income not going to conservation as stipulated by CITES pre-sale), there is no realistic expectation that any proceeds from the captive exploitation of leopards will "*support the continuation of the programme aimed at the recovery of the Appendix-I species*"

13.13 Rhinoceros

13.13.1 International Rhino Horn Trade

The signalling given within HLP's Terms of Reference gives no consideration to not pursing an international trade in rhino horn, but reiterates an ideological stance to "*Review and provide advice on the submission of the Rhino [rhino] related trade proposals to the next coming CITES COP.*"

This policy of demanding (unprompted by the international CITES community) started in 2014 when the Republic of South Africa, Department: Environmental Affairs (DEA) issued "*The viability of legalising trade in rhino horn in South Africa*" and presented it to CITES CoP.

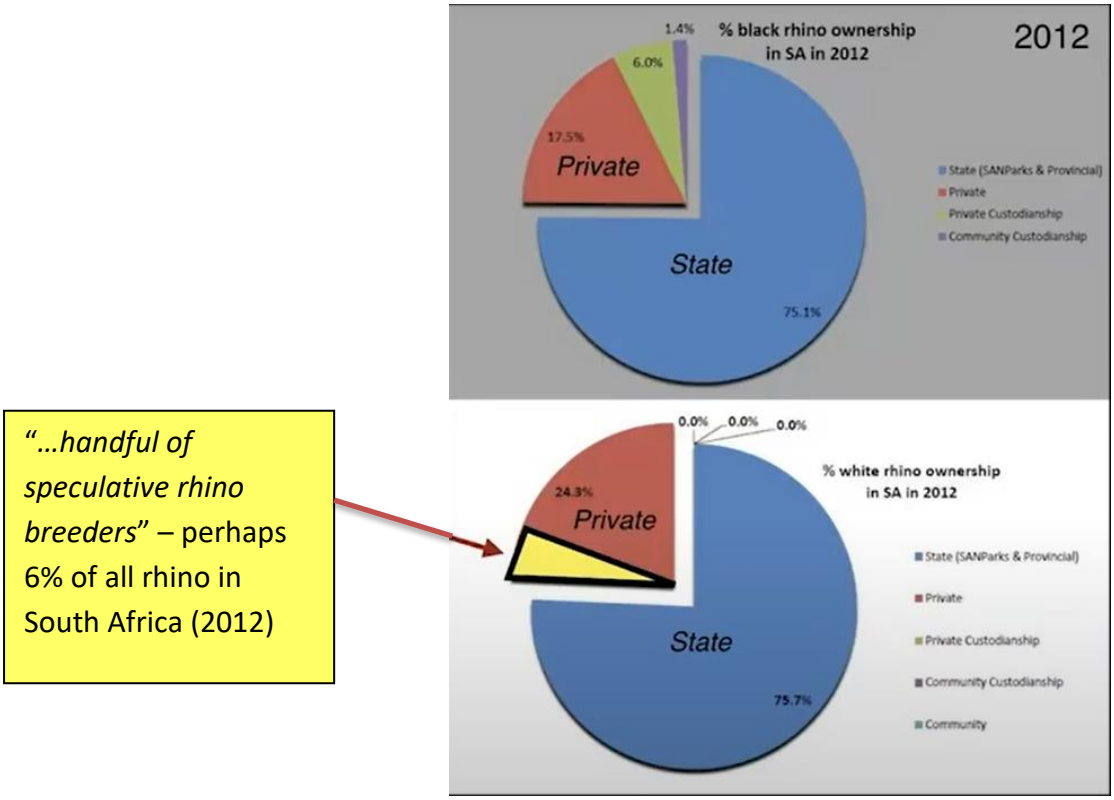


Figure 19 - *South African Rhino Ownership (2012 – last reliable public data)* (Bell 2020)

But the policy presented to CITES 2013/14 is embedded in providing income to the State (from the sale of stockpiles) and profits to a handful of speculative rhino breeders that decided (of their own volition) to speculate on the future lifting of the 1997 CITES ban on international trade in rhino horn – not driven by an altruistic conservation imperative. There is no 2020 census that proves the PROA represents the majority of private rhino owners' views (Bell 2020b), but clearly the majority of South Africa's rhino 'pay' (via general tourism mainly) for their existence in reserves, private ownership and parks without resorting to demanding any rhino horn trade.

There is no guarantee that any income/profits derived from such 'legal' international rhino horn sales will go to conservation:

- State income will most likely go into general coffers, regardless of any promises to the contrary (as reported in the misappropriated income from ivory stockpiles in 2008);

- Speculative captive rhino breeder profits will most likely accumulate in business/investor dividends, perhaps with increased security for captive farms, but how does that secure the conservation of the wild species?

- In fact, private rhino ownership profiteering increases if wild rhino/wild rhino horn sources become increasingly scarce – there is no built-in incentive for speculation driven rhino farmers to give away profits to protect wild rhino (or to help secure private rhino not bred for trading in rhino horn for that matter should poaching pressure increase as demand is legitimised by any 'legal' international trade in rhino horn).

There is no categorical evidence that supports an international trade in rhinoceros' horn as likely to deter poaching of rhinoceros – reference paragraph 11.3.2 – "*CITES and Rhino Horn Trade*," paragraph 11.3.3 – "*Rhino Horn Demand Management*," paragraph 11.3.4 – "*Can Harvested Rhino Horn Meet Demand?*" and Appendix 3 – "*Rhino Horn Consultation, September 2019*")

At the CITES Conference of Parties (CoP) in CoP 17 and again at CoP 18, there was a clear rejection of proposals made by Eswatini (formally Swaziland) "*to sell from existing stock 330 kg of rhino horn to licenced retailers in the Far East and also up to 20 kg p.a., including harvested horn, to those retailers*" - "*Rejected at Committee (Rejected, 202 to 25, with seven abstentions), 25 August 2019*"

There is clearly no appetite for CITES CoP to withdraw the 1977 ban on international rhino horn trading and therefore, South Africa should accept there are no "*rhino related trade proposals*" that are realistically likely to bring CITES parties on-board at the next CoP or anytime thereafter.

Introducing bio-engineered alternatives has potential to be scalable to meet a level of demand as a direct substitute for 'real' rhino horn in crafted and ornamental applications, but has met with resistance due to concerns not only about the potential to stimulate demand for all rhino horn sources, but also from a regulatory perspective – could a bio-engineered alternative be regulated differently to the bio-logical 'real thing' – judging by CITES reaction at CoP17 (reference paragraph 11.3.7 – "*Alternative 'Rhino Horn' Sources*"), it would seem not. Plus, there is evidence that for utilisation within Traditional Medicine (TM), proven wild sourced rhino horn (where the bloodied, poached rhino's stump is offered as 'wild' sourced authentication) will not be overridden by either bio-engineered, or captive bred "*harvested*" rhino horn alternatives (reference paragraph 11.3.4 – "*Can Harvested Rhino Horn Meet Demand?*").

The only clear option to 'save the rhino' thus remaining is "*Demand Reduction*" initiatives, which are constantly undermined whilst market supply trade alternatives are touted, which compete and blur the message. Asian consumers will also seek demand whilst the tacit message is given that such demand is legitimate and will be satisfied 'if' only international trade was resumed – despite the risk (reference paragraph 11.3.4 – "*Can Harvested Rhino Horn Meet Demand?*").

In the meantime, perhaps the best way to safeguard rhino from the ongoing poaching onslaught is to dehorn them. But putting the harvested horns into stockpiles does little to change the long-term mixed-message that such speculative stockpiling (private and State, legally declared and illicit) is maintained in anticipation of liberating international trade in rhino horns and the money to be made, which in turn perpetuates demand and poaching to meet it – a classic vicious circle of its own making.

13.13.2 Domestic Rhino Horn Trade

South Africa's, Pretoria High Court's November 2015 approval for reinstating a domestic rhino horn trade was made on the grounds that public consultation did not take place before the 2009 moratorium on domestic rhino horn trade. So, it is long overdue for a specific

consultation on domestic rhino horn trading – perhaps the consensus will agree the moratorium should be reinstated.

Rather than consider reinstating the moratorium on domestic trade in rhino horn, the signalling given within HLP's Terms of Reference is to *"Develop the Lobby/Advocacy strategy for rhino horn trade in different areas*" including:

- "*…..domestic trade in rhino horn and assessment of its relationship with illicit trade in rhino horns*"

- "*Review current legislation and process on domestic rhino horn and provide recommendations on the domestic rhino horn trade*"

- "*Identification of new or additional interventions required to create an enabling environment to create an effective rhino horn trade*"

These areas have already been studied extensively (reference paragraph 11.3.1 – "*Domestic Rhino Horn Trade*"), with the conclusion:

> "*A fictional domestic market simply makes it easier to launder legally traded items and divert them into an illegal export supply chain…. The legalization of rhino horn trade in the 'domestic' market of South Africa serves to set in motion consequential market forces that can escalate the poaching crisis in ways that spell doom to rhino species*" – Collins et al. 2020

South Africa also has an obligation to comply with CITES Decision 18.116 - "*Parties are urged to close those markets that contribute to poaching or illegal trade*" as there is evidence to suggest that the domestic rhino horn trade is indeed offering opportunities for unregistered and 'legal' rhino horn stockpiles to be laundered and trafficked internationally – reference paragraph 11.3.1 – "*Domestic Rhino Horn Trade*").

The HLP should consider the arguments proposed, Collins et al. ("*On the judicial annulment of the 'domestic' trade moratorium in South African rhinoceros horn: a law and economics perspective*" Springer, European Journal of Law and Economics, 10 April 2020), whereby the 2015 judgement made a number of challengeable assumptions:

1. *"that legalizing the domestic rhino horn trade will automatically undermine illegal rhino horn markets;*

2. *it assumes that rhino horn bans are completely ineffective;*

3. *the buoyancy of the illegal rhino horn market emerges as a consequence of shortages created by the ban itself. Logically, this would mean legalizing the rhino horn trade will increase supply to the extent that illegal trade becomes unviable. This notion is extensively explored by Conrad and Lopes (2017) who show that reducing the price of rhino horn would not be effective at curbing poaching, without simultaneously increasing poacher costs. They find, however, that increasing poacher costs is not a realistic policy option since these costs are largely beyond the control of decisionmakers. The sensitivity of price to poaching effort are also found to have limiting implications for other methods advanced to reduce the value of rhino horn, such as synthetic rhino horn marketization and de-horning schemes;*

4. *the ruling assumes that legal rhino horn traders will willingly work together with law enforcement authorities to undermine the illegal market for rhino horn. There is also an assumption in this judgment that there is separability of domestic and international trade as well as between legal and illegal rhino horn markets;*

5. *the court assumes that institutional failure is to be blamed for the poaching crisis. This last assumption is in large measure true. Had institutional effectiveness been more evident, then the moratorium would likely have been more effective"*

13.13.3 Rhino Trophy Hunting

In the past, excessive rhino trophy hunting helped cause the initial low in rhino populations and trophy hunting has led to "*pseudo hunting*" abuses – using trophy hunting to obtain rhino horn (also reference paragraph 6.1.1 – "*Pseudo Hunting*").

It is questionable if the trophy hunting of wild, or captive rhino actually serves an altruistic conservation purpose, how does anyone know the motives for the desire to obtain a rhino hunting trophy – is it just to obtain rhino horn as a tradeable commodity? Once a 'legal' rhino

trophy is imported into Vietnam for example, the notion of any follow-up to ensure compliance and the rhino horn 'trophy' not being laundered illicitly is lamentable.

Therefore, based upon past illicit rhino trophy hunting activity and the acknowledged decline of trophy hunting (IUCN 2019b (Chardonnet)) and trophy hunting's losing its appeal within South Africa (reference paragraph 6.6 – "*Trophy Hunting is Running Out of Steam*"), rhino trophy hunting contributing to wild rhinoceros conservation appears an unsustainable policy.

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"Embracing Innovation to Conserve the World's Animal Kingdom."

Appendix 1 – Lion Bone Trade Consultation, 2019

Submission to the consultation on the "*2019 export quota for trade in the bones, bone pieces, bone products, claws, skeletons, skulls and teeth of lion for commercial purposes, which have been derived from captive breeding operations in South Africa*" in accordance with sections 61 and 62 of the National Environmental Management: Biodiversity Act (Act No. 10 of 2004)

1 Introduction

First of all, we need a working definition of 'science' so one can determine relevant "*scientific information*" for consideration within the referenced consultation:

> "*Science is the pursuit and application of knowledge and understanding of the natural and social world following a systematic methodology based on evidence*" - *Science Council*

Furthermore, 'science' is not static, but is based upon the best available evidence and should be impartial to politics, or a wedded (biased) to any theoretical dogma (such as 'sustainable utilisation') - credible 'science' is impartial.

> "*Speaking as a scientist, cherry picking evidence is unacceptable.....when public figures abuse scientific argument.....to justify policies that they want to implement for other reasons, it debases scientific culture*" - *Stephen Hawking*

So, based upon the above definition of 'science' let's explore the current knowledge, understanding and evidence surrounding the "*lion bone trade*" and justification (or lack thereof) for any "*export quota*":

> Where; "*lion bone trade*" means lion bones, bone pieces, bone products, skeletons and derivative products such as lion claws, skulls and teeth of lion.

Based upon a review of the best available data (the science) as detailed below, the conclusion is clearly drawn that there is no 'science' that suggests the lion bone trade provides any conservation benefits - though trade advocates cling to the self-delusion that the trade has some theoretical self-justification, the potential risk to wild lion populations the lion bone trade has started to create means the lion bone trade 'must' be perpetuated.

This self-justification appears to be motivated by self-interest in perpetuating profiteering from captive lion breeding, not some altruistic endeavour to conserve wild lion populations.

The lion bone trade and any past quotas have been driven purely by exploitation for profiteering.

Therefore, in the absence of any conservation benefits and to reduce any potential future risk to wild lion populations manifesting and escalating, the lion bone trade should be shut down with a zero quota - until such time that any proven, independent, peer-reviewed scientific evidence can support such a quota.

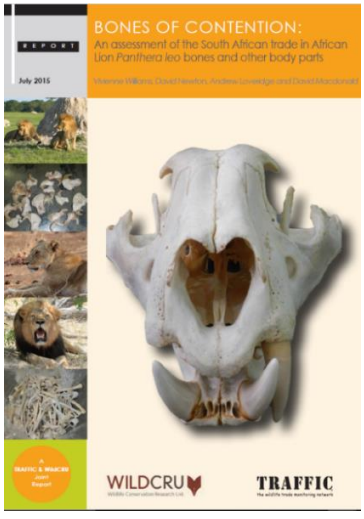
2 Does the lion bone trade serve any scientific purpose?

In the past, the Department of Environmental Affairs (DEA) has consistently referenced two reports that it has suggested supports a lion bone trade quota:

- In the DEA's 28 June 2017 media statement – "*Lion export quota for 2017 communicated to the CITES Secretariat in line with CITES requirements*" the DEA referenced a 2015 study, "*Bones of Contention*" authored by TRAFFIC/WildCRU – "*Report 1*"

- To questions raised (NW750, June 2017) by Mr P Van Dalen to the Minister, DEA, the DEA referenced the 2016 study commissioned by the DEA and the South African National Biodiversity Institute (SANBI) - "*Southern Africa wildlife trade - An analysis of CITES trade in South African Development Community (SADC) countries*" – "*Report 2*"

2.1 Report 1 - "*Bones of Contention: An assessment of South African trade in African lion bone and other body parts*"



"*Bones of Contention: An assessment of South African trade in African lion bone and other body parts*"

This 2015 report by WildCRU/TRAFFIC is a detailed analysis of the 'legal' trade, the corruption and the illicit profiteering. Some key points of note:

a. "***There appears to be a growing trade in Tigers and their parts and products from South Africa**, and there have been calls for more transparency on the matter. An emerging concern is that Tiger bones from South Africa may be laundered as Lion bones using CITES Appendix II (instead of Appendix I) permits. Limitations in the South African legislation applying to endangered exotic animals have made it possible for an unregulated domestic trade in Tigers*."

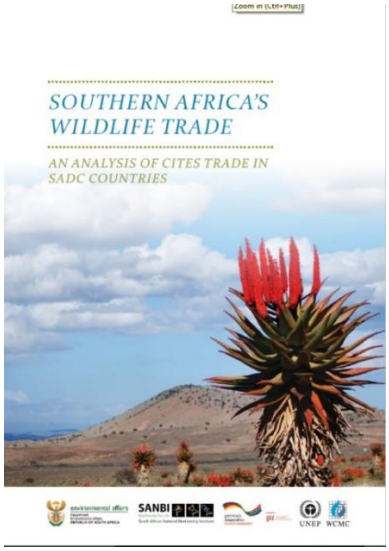
b. "*In South Africa, the trade in Lion bones currently has a negligible impact on wild Lion populations. The trade in bones appears to be a sustainable by-product of the sizeable trophy hunting industry in South Africa, and Lions that are hunted are almost exclusively captive-bred. There are few records of wild-hunting and poaching in the country, especially at a level that could supply the sizeable bone trade**. The impact of the bone trade on wild Lion populations outside of South Africa, however, has yet to be determined***"

Recent evidence (August 2017) suggest this latter threat, might be manifesting as the 'trade' develops. In fact some countries have taken pre-emptive action to try to deter the likely onset of wild lion poaching in the wake of South Africa's 2017 "*800 skeletons*" quota – in July 2017, Namibia, introduced a N$1m fine/10 year jail term for possessing lion bones (with proposals to increase this to a potential N$15m/15 year jail term for illegal possession of wildlife products).

Field observations indicate that wild lions in southern Africa, specifically Mozambique, have been under increasing threat for their parts. The Greater Limpopo Carnivore Programme has recorded an escalation in the number of wild lions poached on the Mozambican side of the Great Limpopo Transfrontier Conservation Area, with a marked increase since 2015. They report that 26% of the lion population in this park has been lost due to poaching for their body parts.

These signs are a pre-cursor/warning that allowing a stand-alone lion bone trade (and/or a by-product lion bone trade from captive lion trophy hunting) to become legitimised and flourish poses a threat to the future survival of the African lion species on a continent-wide basis. Therefore, the best course of action to mitigate such a risk to wild lion populations is to curtail any form of lion bone trade.

2.2 Report 2 – "*Southern Africa wildlife trade - An analysis of CITES trade in South African Development Community (SADC) countries*"



"*Southern Africa wildlife trade - An analysis of CITES trade in South African Development Community (SADC) countries*"

This 2016 report reads like a company report and account, of units shifted, cash-flow and profits. It does not consider the specific issue of a lion bone trade quota, or the continent-wide risks posed to wild lion populations from such a lion bone trade quota.

Therefore, this report's relevance when the DEA has previously sought to justify a lion bone trade quota remains a mystery.

2.3 Report 3 - "South African Lion Bone Trade – Report for the South African National Biodiversity Institute (SANBI)"

A further report, "*South African Lion Bone Trade – Report for the South African National Biodiversity Institute (SANBI)*" appeared in November 2017. This interim report is an analysis of past trade data and an analysis of lion breeders participating within that industry/trade. Again, this report does not make any specific recommendations regarding an actual lion bone trade quota, or consider the potential continent-wide implications on wild lion populations of a lion bone trade.

At paragraph 3.1 of this November 2017 report ("*Reasons for keeping and/or breeding lions, and the main purpose of the facilities*"), there was no conservation imperative of the African lion stated as a priority by any South African lion breeder.

Alarmingly, within the conclusions at paragraph 6.1 of this report, the authors exposed the lion breeders' true intent and motivations to profit regardless of any legal mechanism for a lion bone trade – the majority of captive lion breeder respondents expressed a willingness to utilise illicit means to profit if a 'legal' mechanism is denied to them:

> *"The fact that a large proportion of survey respondents have stated that they will seek 'other markets' [if no 'legal' quota is available] 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 enterprise, the effects could be irreversible (as with the rhino horn trade) and result in greater and more widespread threat of focused commercial – scale poaching of felids."*

Such illicit actions will potentially have an enduring, negative impact on the species' conservation; however such threats/blackmail from lion breeders should not be used as an excuse to authorise and condone a 'legal' quota that has no scientific merit - the rule of law should override any such illicit activity threats (or else mob rule will be allowed to prevail in the absence of law enforcement and a clear scientific foundation for a legal mechanism).

2.4 Have the DEA's past lion bone trade quotas been based upon recognisable science?

It is reported that one of the SANBI's study's key researchers seemed startled by the "*1,500 lion skeleton quota*" set for 2018 after the publishing of the "*South African Lion Bone Trade – Report for the South African National Biodiversity Institute (SANBI)*" – Report 3 above.

To reiterate, this report did not seek to recommend any actual lion bone trade quota, but sought to provide baseline data and research on lion breeding and its motivations within South Africa.

> "*The wording of that quota letter … is a bit unclear concerning our involvement. All decisions were made by the Scientific Authority [SANBI] and DEA and we provided no input on what the quota should, or should not, be. We correctly excluded ourselves from this process, and we'll clarify that soon. Since DEA weren't obliged to keep us informed about the decision on making the quota, it might surprise you to know that I didn't hear about it until yesterday afternoon*" - "*Dodgy skeleton traders and lion slaughterhouses exposed in damning report*," Don Pinnock, Daily Maverick, 19 July 2018

It seems clear that the "*scientific*" reasons given by Ex Minister Molewa (DEA) for the 2018 lion skeleton quota had no grounding in any scientific reality. In response to journalist Adam Cruise's questions, Mpho Tjlane (the DEA's "*media queries contact*") apparently responded that the lion skeleton quota had been upped for 2018:

"…..*because they [the lion breeders] have surplus stockpiles of lion bones and they want to get rid of them*" - "*Dodgy skeleton traders and lion slaughterhouses exposed in damning report*," Don Pinnock, Daily Maverick, 19 July 2018

2.5 Conclusions - Does the lion bone trade serve any scientific purpose?

It is clear that Reports 1, 2 and 3 referenced by the DEA (as given above):

1. Do not specifically consider any lion bone trade quota implementation and/or make specific recommendations on such a quota;

2. Do not specifically consider the impact of South Africa's lion bone trade on wild Lion populations outside of South Africa.

   Note: Reports 1 and 2 pre-date the CITES CoP17, Sept - Oct 2016 gathering that facilitated an "*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.*"

In conclusion, where is the "*science*" and claimed conservation imperative in such blatant commercial endeavours to profit from animal exploitation from any lion bone trade quota?

None of the DEA's/SANBI's referenced reports (as given above) provide any recommendations, or scientific grounding for a lion bone trade quota. To date, the lion bone trade quotas (2017/2018) that have been set by the DEA appear to have been based upon some notion of demand and/or the lion breeders' "*surplus stockpiles of lion bones"* – not any recognisable science that has a purpose beyond profiteering for profiteering's sake.

3 Does the lion bone trade provide any scientific basis to suggest it promotes conservation of the African lion species?

A 2010 South African legal ruling ("*The Supreme Court of Appeal of South Africa Judgement*," Case No. 72/10, 29 November 2010) declared captive lion breeding as 'farming' and of no conservation value. This legal opinion has not changed in the intervening years to the present day.

3.1 The South African Predator Association (SAPA) and Captive Lion Breeding

In a 7 March 2016 article (Note: *published by Wildboere, but no longer available on-line*) entitled "*9 Myths About Captive-bred Lions*," written by Professor Pieter JJS Potgieter (then President of the South African Predator Association (SAPA)), the claim was made that the captive-bred "*ranch lions*" (sic) industry is all about the industry's 'love of lions and conservation.' Note: The SAPA likes to confuse and blend 'captive' lion breeding with wildlife ranching, when no true comparison actually exists, as explained below.

In an open letter (dated 29 November 2017) to Secretary Zinke (then head of the United States Fish and Wildlife Service (USFWS)), the African Lion Conservation Community's posted response to the South African Predator Association's letter (pleading for the lifting of captive lion trophy hunting import restriction) made the distinction clear between wildlife ranching and the SAPA's captive breeding. The African Lion Conservation Community summarised the conservation claims of the captive breeding industry as follows:

> "*The [SAPA] letter appears to associate the captive lion breeding industry with the wildlife ranching industry as a single entity. While there have been conservation benefits stemming from the expansion of South Africa's wildlife ranching industry, we point out that captive lion breeding cannot claim any of the conservation successes that the wildlife ranching industry has achieved. Captive bred lions are kept in small, intensively-managed enclosures that have been cleared of most of their indigenous vegetation, thus removing the natural habitat of the area. In no way does this type of land management contribute to biodiversity conservation, or support claims of benefits for mesocarnivores and veld rehabilitation, linked with lion breeding*."

Furthermore, the open letter from the African Lion Conservation Community made clear that:

> *"[SAPA] claims that captive bred lions are required for reintroduction and species restoration are not based on any scientific evidence and are contradictory to the published, peer reviewed evidence of several of the world's leading lion conservationists……..South Africa, where free ranging lions have recently been down-listed from Vulnerable to Least Concern conservation status. This is due to ongoing, concerted conservation action and concerted reintroductions, all of which have no connections with the captive lion industry."*

In an attempt to 'prove' that any captive raised lion (no matter its background) can indeed be rehabilitated into the wild, Professor Pieter JJS Potgieter ("*9 Myths About Captive-bred Lions*," 7 March 2016) cited Elsa the lioness as a key example of successful rehabilitation (one example from the 1960s duly noted).

Elsa's rehabilitation was of course the theme of the 1966 'Born Free' film and Professor Pieter JJS Potgieter stated in his article "*Elsa the lioness made the transition from pet lion to wild lion mama pretty easily.*" Professor Pieter JJS Potgieter's reference to Elsa is puerile and lacks any scientific weight that might give a modicum of credibility to the captive lion breeder's otherwise unsubstantiated conservation claims.

Furthermore, according to Professor Pieter JJS Potgieter "*There are numerous cases where captive-bred lions have successfully made the transition to become wild lions. And they did it with little fuss and with little if any coaxing. Currently there are two studies of note, one on captive-bred lions in the wild in Zambia and another in the Zambezi River region.*" The exact scientific citations to this purported work are sadly lacking.

3.2 Conclusion - Does the lion bone trade provide any scientific basis to suggest it promotes conservation of the African lion species?

There has been no conclusive, independent, peer-reviewed scientific evidence that any captive bred lion within South Africa has been successfully rehabilitated into the wild, and/or the captive breeding industry has positively contributed to conservation. The need for the captive lion breeding industry within South Africa to contribute to free ranging lion conservation within South Africa has also been conclusively negated by the African Lion Conservation Community.

4 The African lion species is under threat, but does the lion bone trade increase, or decrease that threat within South Africa and/or on a continent-wide basis?

The SAPA claims that the hunting of captive bred lions presents direct conservation benefits to wild lions. This is relevant to any lion bone trade quota, because lion bones, skeletons etc. are a by-product of the captive lion trophy hunting industry as well as being obtained from the direct slaughter of captive lion stock.

The SAPA claims that if captive lion hunting is stopped, increased pressure will be placed on wild populations. Yet the SAPA provides no scientific evidence whatsoever to substantiate this claim - there is no published, peer-reviewed evidence to support this claim.

Evidence suggests the SAPA's claims are false with regard to the lion skeleton by-product that results from the captive lion trophy hunting and/or the killing of captive lions specifically for their skeletons/bones. The legal lion bone trade is acting as a catalyst for illicit trade and is starting to put pressure on wild lion populations (reference paragraph 2.1 above). More legal trade is not the cure to counter illicit trade. Legal trade is fuelling the potential escalation of illicit trade.

In a comprehensive report, "*The Extinction Business, South Africa's 'Lion' Bone Trade*," EMS Foundation and Ban Animal Trading, July 2018 the conclusion is:

> South Africa's lion bone trade has "*….created a situation where the legal trade in 'lion' bones is fuelling the illegal trade in lion and tiger bones and providing laundering opportunities for tiger bones in Asian markets.*"

The main conclusions that can be drawn from the "*The Extinction Business, South Africa's 'Lion' Bone Trade*" report are that South Africa's lion skeleton/bone trade:

- is supplying known illegal wildlife trafficking syndicates in Asia, again offering no glimmer of redemption – but instead is stimulating and perpetuating demand, thus imperilling targeted, wild species' survival – such as tiger, lion…..with the leopard next. Will South Africa also try to cash in on the leopards' exploitation as well?

- is not just a by-product of South Africa's captive ('canned') hunting industry, but is being developed as a stand-alone commercial endeavour – both 'canned/captive hunting' and the 'lion bone trade' are based upon animal exploitation for profit, with no proven conservation merit whatsoever;

What does the SANBI's recommendation say on the potential continent wide threat to wild lion and wild tiger species in Asia by perpetuating the demand for these species for TCM?

These issues were not examined in the referenced reports *"Bones of Contention" and/or "Southern Africa wildlife trade - An analysis of CITES trade in South African Development Community (SADC) countries"* and/or the 2015 *"Biodiversity Management Plan (BMP) for the lion (Panthera leo) in South Africa."*

"*Biodiversity Management Plan (BMP) for the lion (Panthera leo) in South Africa*" - (last sentence, para 3.8, page 28) says "***The impact of the lion bone trade on wild lion populations outside of SA however has yet to be determined.***"

It is understood that the DEA has proposed 3 year SANBI study to look into the effects of the lion bone/skeleton trade on wild lion populations a continent wide basis:

> *"The South African National Biodiversity Institute (SANBI) has initiated a study aimed at increasing the understanding of the lion bone trade in South Africa and the captive lion breeding industry."*

If an SANBI study is needed on the continent-wide impacts of the current lion bone trade, if the potential effects on wild species are not fully understood, if the DEA suggests that without a lion bone trade quota there is potentially a risk to wild lion/tiger populations, where is the DEA's/SANBI's current scientific proof (not a hypothesis based on a wedded devotion to 'sustainable utilisation') of the conservation purpose of the lion bone trade/captive bred lion breeding?

Any support of a current lion bone trade quota in the absence of knowing the potential continent-wide risks to the conservation of the African lion species also contradicts International Union for Conservation of Nature (IUCN) when IUCN concluded in September 2016:

> "*the prohibition by the South African Government on the capture of wild lions for breeding or keeping in captivity*" and "*terminating the hunting of captive-bred lions (Panthera leo) and other predators and captive breeding for commercial, non-conservation purposes.*"

4.1 Conclusions - The African lion species is under threat, but does the lion bone trade increase, or decrease that threat within South Africa and/or on a continent-wide basis?

There has been no science presented by the SANBI (or anyone else) that conclusively proves that perpetuating the lion bone trade is necessary to reduce the perceived threat to the wild species. The opposite would seem to be more likely – that "*….the legal trade in 'lion' bones is fuelling the illegal trade in lion and tiger bones*" - "*The Extinction Business, South Africa's 'Lion' Bone Trade*," EMS Foundation and Ban Animal Trading, July 2018

5 Does the lion bone trade substitute as a supply to make up for the 'absence' of tiger derivative products?

The DEA appears to be under the delusion that the trade in tiger bones has subsided because of the 2007 (CoP14) CITES "*ban*" (decision 14.69):

> "A *2015 study commissioned by TRAFFIC* ["*Bones of Contention*"] *raised concerns around the shift in lion and tiger bone trade; namely that when the trade in tiger bone was banned; the trade shifted and bones were sourced from South Africa, available as a by-product of the hunting of captive bred lions*" - DEA's 28 June 2017 media statement

The DEA's perceived absence of tiger derivative products is used by the DEA as justification for South Africa to substitute 'a lack of tiger derivative products' (sic) with a lion bone trade quota to meet demand in Asia for Traditional Chinese Medicine (TCM) ingredients derived from felids.

However:

- the 2015 "*Bones of Contention*" report [page 7 - 10] cited by the DEA suggests South Africa was/is still supplying tiger bones/parts (in contravention of CITES decision 14.69);

- The 2017, Environmental Investigation Agency (EIA), "*The Lion's Share*," suggests there are more than 6,000 tigers held in captive breeding facilities in China, Laos and Vietnam to supply tiger bones to the TCM industry (more than in 2008 when CITES' "*ban*" guidance was supposed to be implemented), plus South Africa's exportation of tiger parts.

"*The Lion's Share*"- *Environmental Investigation Agency, July 2017*

> *"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"* - "*The Lion's Share*"
>
> *"South Africa allows lion and tiger farming for commercial trade in parts and derivatives….in 2015, 280 tigers were estimated to be in at least 44 facilities in South Africa"* - "*The Lion's Share*"

So, South Africa is playing an active role is circumventing CITES decision 14.69 to end the commercial farming of tigers. Tigers are seemingly being bred ("*Tigers are being bred in Gauteng backyards for petting and bone export*," Don Pinnock, Daily Maverick, 23 April 2018) with impunity in South Africa:

> *"Because they're not an indigenous species, trade in tigers is unregulated and flying below the radar of the DEA (Department of Environmental Affairs). When asked about it by Ban Animal Trading and the EMS Foundation, the DEA response was that tigers weren't the department's responsibility because they're "exotics". In reply to a request for information on tiger breeding facilities, Limpopo DEA wildlife director Sam Makhubele said the department had never been approached and he seemed surprised that they even existed."*
>
> The 2015 TRAFFIC/WildCRU report, *Bones of Contention* "*estimated there were at the time 280 tigers in 44 facilities in South Africa. Today there are undoubtedly far more,*

but because tiger breeding doesn't have to be reported, numbers are hard to establish."

Therefore, South Africa's 'captive' lion bone/skeleton exports are supplementing, not replacing any diminished supply of tiger bones/parts – any follow up enforcement of CITES' "*ban*" (decision 14.69) to end tiger framing, has failed (including within South Africa itself).

5.1 Conclusions - Does the lion bone trade substitute as a supply to make up for the 'absence' of tiger derivative products?

The science/evidence does not support the DEA's claim that a lion bone trade quota is 'necessary' to make up for a supply shortfall in tiger derivative products since the CITES (decision 14.69) "*ban*" – this DEA justification for perpetuating the 'captive' lion bone/skeleton trade in the non-existent 'absence' of continued tiger farming within South Africa and Asia is a delusion.

6 Does any element of the lion bone trade pose a potential risk to human health?

In a question (Question No. NW1581, raised by Mr N Singh, May 2017) to the Minister (DEA), concerning the human health issue of the transfer of Tuberculosis (TB) from lions to humans [reference "*Dying for a Myth"*], only a partial and wholly inadequate response was given.

The 'captive' lion breeding industry's 'stock' is not subject to regular TB testing and the whole arena of the 'captive' industry was not addressed in the Minster's reply. So, the question remains, how can it be known if the export of 'captive' lion bones/skeletons for human consumption are a hazard to human health? Or do we assume the Minister/DEA do not know, or wish to care about this potential human health hazard from lion bone/skeleton exports sanctioned by the DEA?

> "*I am therefore of the opinion that uncontrolled exposure of humans to bones from animals, in particular lion bones, poses a risk for development of the form of TB known as bovine TB in particular, although not necessarily being limited to this form of TB only*" - Professor Paul van Helden, Director of the South African Medical Research Council's Centre for Molecular and Cellular Biology and Co-Director, DST/NRF Centre of Excellence for Biomedical TB Research - "*Dying for a Myth*"

The Minster's written reply suggests "*the National Department for Agriculture* [*Agriculture, Forestry and Fisheries (DAFF)*] *would be in a better position to respond.*"

So where is the clarity that any 'captive' lion bones/skeletons being exported by South Africa do not carry TB organisms harmful to human health, and which department is responsible for checking the exports of lion bones/skeletons - the DEA, the DAFF, or the Provincial offices?

6.1 Conclusions – Does any element of the lion bone trade pose a potential risk to human health?

In the absence of any surety that any lion bone trade is fit for human consumption, the trade quota should be set at zero based upon the precautionary principle (that the risks are currently unknown and therefore the risk should be mitigated by halting such trade), not to mention the potential liability being built up by South Africa by perpetuating such trade in the absence of knowledge of the risks posed.

7 Summary and Conclusions

South Africa's constitutional rights on the issue of 'sustainable' wildlife utilisation are enshrined at Section 24, "*Chapter 2, Bill of Rights, Environment*."

This section refers to ensuring everyone's right "*to an environment that is not harmful to their health or wellbeing;*" "*to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that*" amongst other criteria "*promote conservation,*" whilst ensuring "*secure ecologically sustainable development and use of natural resources…*"

So, how is the 'captive' breeding of African lions and the lion bone trade for example, considered a "*reasonable legislative*" measure that "*promotes conservation*" when there is no independent scientific evidence that the 'captive' big cat breeding industry/lion bone trade provides any conservation value (and never has since its manifestation in the 1990s)?

The African lion (*Panthera leo*) is a "*Protected Species*" within the NEMBA listings:

- NEMBA, specifically Chapter 4 ("*THREATENED OR PROTECTED ECOSYSTEMS AND SPECIES*"), Part 2 ("*Protection of threatened or protected species*") and Part 3 ("*Trade in listed threatened or protected species*") are therefore applicable.

- NEMBA, Chapter 4, Part 2 ("*Listing of species that are threatened or in need of national protection*") section 56.(1)(d). states "*protected species, being any species which are of such high conservation value or national importance that they require national protection…*" So the African lion is clearly stated as being of "*high conservation value*" as a "*protected species*."

- NEMBA, Chapter 4, Part 2 applies ("*Restricted activities involving listed threatened or protected species*") with section 57.(2)(a) stating that the Minister may prohibit any activity "*which is of a nature that may negatively impact on the survival of a listed threatened or protected species without a permit issued in terms of Chapter 7*" ("*Permits*").

The South African lion breeders themselves sought to establish trade in lion bones/skeletons from 2008 ("*Bones of Contention*" [page 7 – 10]) not only as a by-product of the 'canned' lion

hunting industry, but also by slaughtering captive lion stocks specifically to supply a lion bone trade export quota – for profit and nothing else.

In the past, the DEA has cited (DEA's 28 June 2017 media statement) the theory that halting this very lion bone/skeleton trade and the legitimised demand so created, could increase the potential threat to wild lion populations as justification for perpetuating "...*the trade in bones originating from captive bred lion…"*

If the establishment of a lion bone trade itself potentially created a risk to the wild species – stimulating and giving credence to demand - any self-fulfilling prophecy of the potential risks posed to the wild species should have been negated by the precautionary principle in the first place. The lion bone trade should never have been sanctioned. Instead cavalier risks were taken to establish the lion bone trade based upon purely commercial motivations. Perpetuating that mistake is not supported by any scientific evidence. The opportunity should be taken to try to reverse that mistake and close the lion bone trade down in its entirety.

Neither the captive breeding of lions for trophy hunting, and/or the export of lion bones, bone pieces, bone products, skeletons and derivative products such as lion claws, skulls and teeth of lion bones/skeletons has any scientifically proven conservation purpose, only a profiteering incentive – however any such exploitation/trade could clearly escalate to become "*of a nature that may negatively impact on the survival of a listed threatened or protected species…..*" – NEMBA, Chapter 4, part 2

The Minster should act to prohibit the proliferation of the potential continent-wide threat the lion bone trade poses to wild lion populations – in the absence of any science that says that proliferation threat is mitigated, then the precautionary principle should now be applied and the 2019 lion bone trade quota set at zero and endure at zero for the foreseeable future.

In summary:

- There is no independent scientific justification in existence to support the notion that the self-established lion bone trade must be perpetuated because if it is stopped, then illicit behaviour will inevitably flourish in its absence – this threat of increased illicit behaviour in the absence of a legal lion bone trade quota should be countered by strict law enforcement to ensure the rule of law prevails;

- The pro-trade theory that ending legal trade will put pressure on wild lion populations is not supported by any independent, peer-reviewed science;

- There is no science that says a 'legal' mechanism (such as the lion bone trade) is guaranteed to counter and can control illicit behaviour. The likelihood is that the opposite is true "*….the legal trade in 'lion' bones is fuelling the illegal trade in lion and tiger bones*" - "*The Extinction Business, South Africa's 'Lion' Bone Trade*," EMS Foundation and Ban Animal Trading, July 2018. Therefore, any legal lion bone trade is likely to escalate the pressure on wild lion populations as demand is stimulated, legitimised and expanded, providing opportunities to launder illicitly sourced lion, tiger and leopard body parts;

- The whole notion of any 'legal' wildlife trade (be that a lion bone trade, rhino horn, ivory etc.) is based upon the false assumption that such 'legal' trade means the entire market will be within the control of those orchestrating such 'legal' trade and will reach some kind of natural equilibrium (and quash any illicit activity that also seeks to profit). This is an economic fallacy that has been known within academic circles to be a delusion for some considerable time:

  > "*One of the most striking features in the economic analysis of wildlife trade is the level of misinformation concerning the evolution of market theory over the last six decades. To anyone who comes in contact with the corpus of literature on wildlife trade, and in particular the literature recommending the use of market-based policies, the uncritical use of theoretically discredited analytical instruments is a striking revelation. Perhaps the most important issue here is the conviction that markets behave as self-regulating mechanisms that smoothly lead to equilibrium allocations and therefore to economic efficiency. This belief is not sustained by any theoretical result, a fact that is well known in the discipline since at least the early seventies*" - Alejandro Nadal's and Francisco Aguayo's 2014 paper ("*Leonardo's Sailors: A Review of the Economic Analysis of Wildlife Trade*")

- The lion bone trade (by legal and/or illicit means) is seemingly perpetuated by those that seek to profit and not motivated by any greater altruistic purpose (such as species' conservation). There is no scientific justification (and never has been) for any lion bone trade quota – conservation was not a driver when the lion bone trade was established as a stand-alone commercial endeavour in 2008 and conservation is not a driver for a lion bone trade quota in 2019;

- There is a potential human health risk (transmission of Tuberculosis (TB)) and potential build-up of liability for South Africa in perpetuating any form of lion bone trade;

- The science/evidence does not support the DEA's claim that a lion bone trade quota is 'necessary' to make up for a supply shortfall in tiger derivative products since the CITES (decision 14.69) "*ban*" – this DEA justification for perpetuating the 'captive' lion bone/skeleton trade in the non-existent 'absence' of continued tiger farming within South Africa and Asia is a delusion

- The lion bone trade quota should be set at zero for 2019 and endure at zero until such time as any independent, peer-reviewed scientific justification for such trade can be established;

- There is no scientific justification for any captive lion/big cat breeding industry (and the by-product of captive trophy hunting being fed into any lion bone trade quota) – the captive breeding of lions serves no conservation purpose and the entire industry should be shut down as a matter of urgency.

"Embracing Innovation to Conserve the World's Animal Kingdom."

Appendix 2 – Leopard Trophy Hunting Quota, February 2017

Draft norms and standards for the management and monitoring of the hunting of leopard in South Africa for trophy hunting purposes

Please find below "*written representations or objections*" to the proposed "*Draft norms and standards for the management and monitoring of the hunting of leopard in South Africa for trophy hunting purposes*" - (the "*draft norms and standards*"), as notified in Government Gazette, Vol. 620, No. 40601, Notice 75, Department of Environmental Affairs (DEA), dated 8 February 2017.

Due to the lack of fully published data within Notice 75 draft norms and standards, it is impossible for anyone to independently assess the SANBI's proposed leopard hunting quota, because the basis for estimated leopard densities and populations in potentially outdated, with no publicly available data that gives confidence that a SANBI leopard population estimate (not published) is valid.

Concerns were raised in 2009 over the sustainability of leopard trophy hunting in South Africa by Balme et al (2009) [1], what has improved since? What evidence is there that leopard populations today within South Africa are able to sustain the hunting quotas proposed in Notice 75 draft norms and standards?:

- The IUCN Red List (*Pathera pardus – "Vulnerable"*) considers the leopard population within "*South Africa appear to be decreasing from previous estimates with Leopards disappearing from areas with increased human development and areas of intensive conflict with humans.*" Furthermore, - Swanepeol et al (2014) [2] stated that "*we found an unequivocal risk of population decline in South Africa as a whole as well as for several provinces."* How does the trophy hunting of leopards help offset that acknowledged decline in the leopard population within South Africa and where is the independent scientific evidence to prove it?

- The financial contribution of leopard trophy hunting (and trophy hunting in general) is minimal to South Africa's GDP, so why take the risk? Again and again, trophy hunting has been proven as a broken theory (alluded to within Swanepeol et al (2014) [2]; Leopard (Panthera Pardus) Case Study (2008) [3] and Balme et al (2009) [1]) unable to deliver the promised regulatory conformity and any notion of

sustainability, or any overwhelming positive contribution to the species' conservation.

- In January 2016 [4] the DEA set a zero leopard hunting quota across all provinces. The DEA accepted the negative non-detrimental finding (meaning it found it detrimental) to hunt leopards from 2016. The DEA's directive/statement concluded that "*the number of leopards in the country is unknown and, for this reason, the sustainability of hunting cannot be accurately assessed"* [5]

    - The directive, issued by the DEA appeared as a "*negative non-detrimental finding,*" ie as leopard specialist Guy Balme of Panthera explained at the time "*that this means hunting is likely to have a detrimental effect*." [5]

    - Guy Balme also reportedly said at the time in 2016 "*We just don't know how leopards are faring in South Africa. They're secretive, mainly nocturnal, solitary and range over huge areas. Counting them requires intensive research using expensive technology such as camera traps, which can only be deployed over small areas, far smaller than the areas in which hunting quotas are determined.*" [6]

- What does the SANBI/DEA think the 2017 leopard population is within South Africa that can be quantitatively applied to any hunting quota, when in 2016 leading experts stated that leopard populations with South Africa were unknown and virtually unknowable?

- Where are the SANBI's estimates for male leopards ≥ 7 years old in any given province with a proposed hunting quota? Where is the confidence that the hunting quotas proposed within the Notice 75 norms and standards (also given at Figure 4 – Appendix 1) are sustainable and not likely to be detrimental to the species' survival?

- Why is there no published data for the "*province-wide camera-trapping efforts* - (SANBI unpub. Data) that is supposed to support the SANBI's knowledge and understanding of South Africa's leopard population?

If a leopard hunting quota is issued based upon weak and passive penalties as proposed at (7) of the Notice 75 draft norms and standards, then wrong-doing will most likely go unpunished.

Leopards face many threats (persecution as cited by Leopard (Panthera Pardus) Case Study (2008) [3]), none of these threats are considered or offset by the contents of the Notice 75 draft norms and standards.

In the absence of credible data to work from (the SANBI has not been explicit in the quantitative leopard population estimates is has used to derive the proposed hunting quotas), the concept of the cautionary principle is required, always erring on the pessimistic scenario, rather than a best case scenario, or 'hope' to try to justify a desire to perpetuate a delusion "*there must be plenty of leopards left to kill.*"

How do any of the deficiencies in Notice 75 draft norms and standards, or hunting's minimal positive contributions, offset the proposed trophy hunting of baited leopards and the export of trophies that are likely to be "*detrimental to the survival of the species?*"

All of these points are expanded upon below.

"***Written representations or objections***" to the proposed "***Draft norms and standards***"

1 Penalty for Wrong-doing

At 4.(2) of the draft norms and standards, the penalty for non-compliance (for a given hunt not "*harvesting*" a male leopard (*Panthera pardus*) ≥ 7 years old) is the passive threat that the "*issuing authority*" at some point in the future (next hunting season) "***may***" not allocate a leopard hunt quota for the affected Leopard Hunting Zone (LHZ).

How likely is it that the "*issuing authority*" has the motivation to impose any such threatened penalty for a single offence, or repeated offences? What happens if there are repeated offences within a given LHZ, will the threat of perhaps the affected LHZ being removed from next season's hunting allocation still be delayed and consideration "***may***" be given just before next season's commencement?

The risk is, that there will be no immediate potential for re-percussions for singular, or repeated wrong-doing (intentional, or otherwise) within a given hunting season with regard to the affected LHZ's having a hunting quota removed at some point, potentially a point far off in the future.

The deterrent for wrong-doing as currently written at 4.(2) appears passive and weak, so the "***may***" should be removed and the withdrawal of an affected LHZ's hunting quota instilled with immediate effect upon any instance of wrong-doing.

At (7) of the draft norms and standards, again there is a weak and passive disincentive for wrong-doing (intentional, or otherwise) for a given hunt not "*harvesting*" a male leopard ≥ to 7 years old (i.a.w. 4.(1)). There only exists a subjective, passive threat of repercussions for the "*hunting of a leopard…….in a manner that could contribute to a disruption in the stability of the population, it* ***could result*** *in the following disincentives…..*"

How will the impact of that "*disruption*" be scientifically assessed by the "*issuing authority*" and how likely is it that the "*issuing authority*" has the motivation to impose any such threatened penalty if offered alternative incentives not to?:

(a) the hunter being punished; and/or

(b) meaningful restrictions on the hunting outfitter; and/or

(c) meaningful restrictions on the professional hunter; and/or

(d) trophy export permit withdrawn; and/or

> Note: The passive "***could result***" at norms and standards (7)(d) is contradicted at Appendix 1, where a definitive *"No export permits will be awarded for unsuitable trophies (i.e. female leopards or males <7 years old). The hunting permit will also be withheld from the affected LHZ for at least one year to allow the leopard population time to recover."* So is non-compliance a definitive "*no export permit"* and the "*hunting permit*" withheld for one year, or a "***could result***" in the trophy export permit being withdrawn and "c***ould result***" in "*the hunting permit"* being withheld *"from the affected LHZ?*"

(e) seizure of the hunting trophy; and/or

(f) criminal charges being pursued.

The obvious concern is that without mandated repercussion at (7) of the Notice 75 draft norms and standards, there will be only limited incentive for adherence to 4(1)'s "*only an adult male leopard that is seven years or older may be hunted*" restriction and any wrong-doing either covered-up, or any repercussions waived.

1.1 Monitoring of Leopards

At 5.(2)(a) and (b) of the Notice 75 draft norms and standards it is proposed that photographs will be taken as some sort of verification via a "*hunting report*" of each leopard kill "*harvested*." What systems will be in place to stop the fraudulent reuse of photographs from other kills to cover-up wrong doing? For example, previously taken male leopard kill pictures reused to cover-up the killing of a sub-adult male, or female?

1.2 Management of Leopard Hunts

The Notice 75 draft norms and standards states "*Packer et al. (2009) showed that harvesting male leopards ≥ 7 years old had little impact on population persistence."* However, within the same reference, Packer et al. (2009) [7] it also states how sensitive leopard sustainability is to the male age harvested for a trophy:

> *"Sport hunting is an inherently risky strategy for controlling predators as carnivore populations are difficult to monitor and some species show a propensity for infanticide that is exacerbated by removing adult males……..Leopards (Panthera pardus) may be more sensitive to sport hunting than solitary lions (with a safe minimum age of 6–7 yrs of age)"*

So, the penalties and incentive for any leopard harvesting that does not ensure by all means available adherence to harvesting male leopards ≥ 7 years old could have devastating impacts if/when younger leopards are taken either through wilful deceit, or perhaps genuine mistakes.

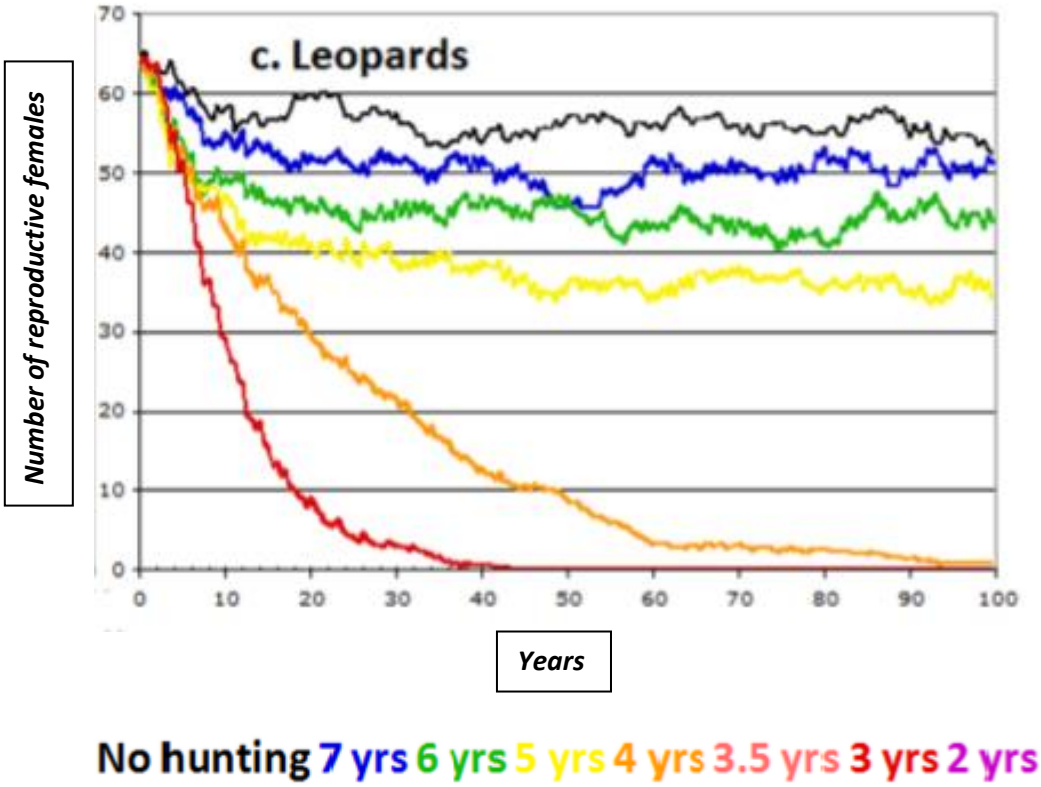


Figure 1 – "*Average number of adult females in population simulations where all eligible males are removed during a 6-mo hunting season each year for 100 yrs. Colors indicate outcomes for different age minima for trophy males; each line indicates average from 20 runs. C. Population changes for leopards based on long-term data from Phinda Private Game Reserve and other sources*" - Packer et al. (2009) [7]

With regard to the accuracy of ageing a male leopard via a given leopard's dewlap size (Balme et al. (2012)) [8] states:

> "*….excessive trophy hunting can artificially elevate male turnover and increase infanticide, potentially to unsustainable levels. Simulation models show that the likelihood of safe harvests can be improved by restricting offtakes to males old enough to have reared their first cohort of offspring to independence; in the case of African leopards, males were ≥7 years old.*"

Balme et al. (2012) [8] states a high confidence level for "*discerning males ≥7 years old were high (83–100%)*" by dewlap assessment – so not the "*90-100%*" quoted within Notice 75 draft norms and standards.

In addition Balme et al. (2012) [8] stated that the study results implied "*the aging ability of hunters could theoretically improve with appropriate training.*" So, the improvement of hunters' ability to accurately age leopards remains an unproven "*theory*" when applied in the field and the application for successful (essential for conservation) leopard hunting…….concluding "*implementation would require major reform within the regulatory framework and the hunting industry"* also stipulating that the age limitation proposed "*would require strict enforcement by government authorities to be effective*."

In this respect, the Notice 75 draft norms and standards proposes that "*Hunting outfitters will also be required to complete of an online leopard trophy selection examination to be able to apply for a leopard hunt*" via a website "*Under Construction*" – www.saleopardhtunign.com/exam-options

How will this examination be administered to ensure it is not subject to fraud to obtain results favourable to the hunting fraternity, for example:

- One person taking the on-line "*trophy selection examination*" on behalf of another to falsely create the appearance of compliance?

- How will the website's contents be adapted per exam to ensure set questions and answers are not widely distributed leading to fraudulent examination success?

- Who will administrate the examinations to ensure independence and fraud detection?

2 Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) Regulation

The African leopard (*Panthera pardus*) is CITES Appendix I listed, but hunting is currently permitted within CITES 'approved' hunting quotas, with South Africa's proposed quota yet to be approved.

The 'abundance' (or lack thereof) of leopards is virtually unknowable - the leopard is highly elusive and it would take vast resources to count every one in existence - but still hunting quotas exist. So, any reference to leopard population numbers is based on modelled estimates - any proposal to base hunting quotas on leopard species numbers is scientifically subject to risk/confidence levels that the source data cannot always reliably substantiate.

3 Proposed SANBI Leopard Hunting Quota and Leopard Population Source Data

The overall proposed (SANBI) annual leopard hunting quota of 88 male leopards ≥ 7 years old and the claimed "*maximum sustainable harvest rate of 3.6%*" of male leopards is duly noted (draft norms and standards, Appendix 1, "*Key principles informing the leopard hunting norms and standards*," Table 1, "*Proposed annual leopard hunting quota for each province. Figures in parentheses indicate quotas for provinces which have traditionally not permitted trophy hunting of leopards*").

It is understood that the SANBI has established proposed leopard hunting quotas per province (given at Figure 4 below) as detailed in the methodology at Notice 75 draft norms and standards, Appendix 1, "*Key principles informing the leopard hunting norms and standards.*"

The basis for the methodology employed by the SANBI is referenced as:

- "*population density according to Swanepeol et al (2014)*" [2];
    - *Population density based upon assessing factors such as range overlap, prey density, camera trapping data, home range analysis, GPS collar tracking, sign survey data*
- "*province-wide camera-trapping efforts" (SANBI unpub. Data)* - as per *"Method 2, leopard density was estimated by applying mark recapture frame work to camera trapping data presumably?*" *Swanepeol et al (2014), Appendix 2"* [2]

This raises a number of fundamental questions on how any current, applicable estimated leopard population sizes have been derived:

- How can any credibility be given to "*efforts*" for "*province-wide camera trapping*" (an essential tool in leopard population estimate methodology) if verification of any published data is denied for public/independent scientific scrutiny?:

- The SANBI's mission is "*To champion the exploration, conservation, sustainable use, appreciation and enjoyment of South Africa's exceptionally rich biodiversity for all people*."

- How can the aim of "*sustainable use*" or claims of "*maximum sustainable harvest rate*" of leopards be publicly scrutinised if the base data used in any proposed leopard hunting quota in not fully published and shared for public, or independent scientific scrutiny?

- The SANBI's base estimated leopard populations sizes have been derived from Swanepeol et al (2014), Appendix 2 "*Leopard densities (no./km^2) in each provincial biome that was used to estimate leopard population size in South Africa*" [2] – Given at Figure 2 below:

    - However, the estimated population size (Figure 2 below) is based upon an estimated leopard density using various methods dated from 1972 – 2010. The 'source' is given (where published) as between 1984 – 2011;

APPENDIX 2. Leopard densities (no./100 km²) in each provincial biome that was used to estimate leopard population size in South Africa.

Study no.	Province	Biome/bioregion	Study site	Density	Method	Year	Source
1	Mpumalanga	Lowveld	Southern Kruger National Park	15.63	1[a]	1972	Bailey (2005)
2	Mpumalanga	Lowveld	Central Kruger National Park	15.4	1	1972	Bailey (2005)
3	Mpumalanga	Lowveld	Central Kruger National Park	4.25	1	1972	Bailey (2005)
4	Mpumalanga	Lowveld	Southern Kruger National Park	3.01	1	1972	Bailey (2005)
5	Limpopo (Botswana)	Lowveld	Tuli Game Reserve	8	2[b]	2005–2006	Steyn (2008)
6	Limpopo	Lowveld	Northern Kruger National Park	6.33	1	1972	Bailey (2005)
7	Limpopo	Bushveld	Soutpansberg	19.97	2	2008	Chase-Grey (2011)
8	Limpopo	Bushveld	Welgevonden Game Reserve	4.33	2	2008–2010	L. H Swanepoel, unpubl.
9	Limpopo	Bushveld	Waterberg Biosphere farms	3.18	2	2009	L. H Swanepoel, unpubl.
10	Limpopo	Bushveld	Lapalala Wilderness	3.05	2	2008–2010	L. H Swanepoel, unpubl.
11	KwaZulu-Natal	Lowveld	Mkuze National Park	11.11	2	2005	Balme *et al.* (2010)
12	KwaZulu-Natall	Lowveld	Phinda Private Game Reserve	7.51	2	2005	Balme *et al.* (2010)
13	KwaZulu-Natal	Lowveld	Zululand Rhino Reserve	4.2	2	2006	Chapman & Balme (2010)
14	KwaZulu-Natal	Lowveld	Game farm area in KZN-Natal	2.49	2	2005	Balme *et al.* (2010)
15	North West	Bushveld	Madikwe Nature Reserve	3.86	3[c]	2003	H.L.P. Kelly, unpubl.
16	North West	Bushveld	Pilansberg Nature Reserve	3.45	4[d]	2007	Hayward *et al.* (2007)
17	Western Cape	Fynbos	Cederberg Mountains	2.3	5[e]	2004–2007	Martins (2010)
18	Western Cape	Fynbos	Cederberg Mountains	1.8	5	2004–2007	Martins (2010)
19	Western Cape	Fynbos	Cederberg Mountains	0.8	3	1985	Norton & Lawson (1985)
20	Western Cape	Karoo	Cederberg Mountains	0.9	5	2004–2007	Martins (2010)
21	Western Cape	Karoo	Cederberg Mountains	0.25	5	2004–2007	Martins (2010)
22	Eastern Cape	Fynbos	Baviaanskloof	1.3	5	2007	McManus (2009)
23	Eastern Cape	Fynbos	Baviaanskloof	0.3	5	2007	McManus (2009)
24	Eastern Cape	Lowveld	Baviaanskloof	1.3	5	2007	McManus (2009)
25	Eastern Cape	Lowveld	Baviaanskloof	0.3	5	2007	McManus (2009)
26	Northern Cape	Kalahari	Kgalagadi National park	0.62	5	1984	Bothma & Le Riche (1984)
27	Northern Cape	Karoo	Orange River Basin	0.35	6[f]	1988	C. Stuart & T. Stuart, unpubl.

[a]Method 1; leopard density was estimated by using home range overlap and prey density.
[b]Method 2, leopard density was estimated by applying mark recapture frame work to camera trapping data.
[c]Method 3, leopard density was estimated by using home range analysis and overlap.
[d]Method 4, leopard density was estimated by making predictions on prey density and prey preferences.
[e]Method 5, leopard density was estimated with GPS collar home range data.
[f]Method 6, leopard density was estimated by using sign survey data.

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Figure 2 - from Swanepeol et al (2014) [2], Appendix 2 "*Leopard densities (no./km²) in each provincial biome that was used to estimate leopard population size in South Africa*"

Which begs the question, if the Swanepeol et al (2014) [2] estimated leopard densities are outdated (for example, Mpumalanga (Kruger National Park), 1972, employing "*Method 1: leopard density was estimated by using home range overlap and prey density*") and there is no publicly available "*province-wide camera trapping*" data to say how, or indeed if any efforts has been made to update data, for densities and estimates, what credibility can there be that the SANBI, or DEA has any real idea of current 2017 leopard populations?

The 2005 source given for the Mpumalanga (Kruger National Park) leopard density used by the Swanepeol et al (2014) [2] (given Figure 2) is Bailey, T.N. (2005) [9], "*The African leopard: ecology and behaviour of a solitary felid.*" However, at Table 5.3, page 86; Bailey, T.N. (2005) [9], the observed data used for modelling is again taken from 1973 – 1975 – given at Figure 3 below:

TABLE 5.3 *Estimate of Leopard Populations*

Area	Year	Adults		Subadults and Older Cubs		Total
		Marked	Unmarked	Marked	Unmarked	
Sabie River study area	1973	2	3	2	2	9
	1974	3	2	4	1	10
	1975	4	0	4	0	8
Nwaswitshaka River study area	1973	1	8	1	2	12
	1974	7	2	3	0	12
	1975	8	1	2	0	11
South side of Sabie River, west of Skukuza	1973	1	3	1	?	5+
	1974	0	3	1	?	4+
	1975	0	3	0	?	3+
South side of Sabie River,east of Skukuza	1973	0	4	?	?	4+
	1974	2	2	?	?	4+
	1975	1	2	?	?	3+
North side of Sand River	1973	1	1	?	?	2+
	1974	1	1	?	?	2+
	1975	1	1	?	?	2+

Figure 3 – from Bailey, T.N. (2005) [9], page 86,"*The African leopard: ecology and behaviour of a solitary felid* - Table 5.3"

So, it would appear that the SANBI is using estimate leopard population densities to extrapolate leopard populations estimates via Swanepeol et al (2014) [2] that in some cases, the observed base data used from Bailey, T.N. (2005) is over 42 years old (Mpumalanga (Kruger National Park)), itself based on a method using "*home range overlap and prey density*." Surely, the "*prey density"* has changed over the past 42 years?

Or perhaps the source data has been overlaid by Swanepoel et al. (2013) [10] ("*Extent and fragmentation of suitable leopard habitat in South Africa*") and/or by "*province-wide camera-trapping efforts*" (SANBI "*unpub. Data*")?

However, the plausibility of using such old 1972 data as valid in a 2017 leopard population assessment seems dubious, regardless of the use in 2014 by Swanepeol et al (2014) [2] (and Swanepoel et al. (2013) [10] referencing Bailey, T.N. (2005)).

The SANBI is funded by the DEA. So where is the independent, 2017 scientific verification that is not under the direct control of the DEA?:

"*SANBI is a public entity under the Department of Environmental Affairs (DEA), and derives its mandate from the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) (NEMBA)*" – SANBI Annual Report 2015 -16 [11]

4 Inferred Leopard Population

The only possible way to infer any SANBI estimated leopard population size from the data supplied within Notice 75 draft norms and standards is to work back from the hunting quota proposed based on a "*maximum sustainable harvest rate of 3.6%*" (given at Figure 4 below).

Province	***Year of "population density" - Swanepoel et al (2014)*** [2]	***SANBI Proposed Male ≥7 years Hunting Quota 2017***	***Inferred Male Leopard Population[1]***	***Inferred Leopard Population[2]***	***Trophy Hunting Swanepoel et al (2014)*** [2] ***2010***	***Damage Control Animal Swanepoel et al (2014)*** [2] ***2010***
Eastern Cape	*2007*	*3*	*83*	*276*		
Free State	*?*	*0*	*?*			
Gauteng	*?*	*0*	*?*			
KwaZulu-Natal	*2005/2006*	*9*	*250*	*833*	*5 (male)*	*8*
Limpopo	*1972 – 2010*	*59*	*1,638*	*5,460*	*50 (10 male, 5 female, 1 sub-adult female, 34 unknown)*	*63*
Mpumalanga	*1972*	*11*	*305*	*1,016*		
North West	*2003 -2007*	*2*	*55*	*183*	*7 (4 male, 3 unknown)*	
Northern Cape	*1984*	*0*	*?*			
Western Cape	*1985 – 2007*	*4*	*111*	*370*		
TOTAL		***88***	***2,442***	***8,138***	***62***	***71***

Notes: 1 - Based on a "maximum sustainable harvest rate of 3.6%" as recommended by Caro et al (2009) [12]

*2- Inferred male leopard population based on "30%" of male leopards in any population and an assumed maximum of 3.6% males leopards ≥ 7 years old - "60% of the population is mature, (**30%***

> ***males**, 30% females), 15% sub-adult males and females and 10% juveniles" - Swanepeol et al (2014)* [2]

Figure 4 - "*Proposed annual leopard hunting quota for each province*" and inferred leopard population

The 2,442 male leopards ≥ 7 years old inferred at Figure 4, suggests a much greater leopard population (mature males and females, sub-adults, and juveniles) of 8,138.

The SANBI has not published its own quantitative estimates of South Africa's leopard population.

5 Leopard Population Range Modelled

What does the SANBI/DEA think the leopard population actually is within the provinces and South Africa as a whole?

Swanepeol et al (2014) [2], (Figure 5) has a population range of the total South African leopard population of 2,813 to 11,632. However, the IUCN Red List Data [13] study, "*Panthera pardus – Leopard - The Red List of Mammals of South Africa, Lesotho and Swaziland*" suggests caution:

> "*Such large variance makes quantitative interpretation difficult and thus these data can only be used as a rough guideline of the South African Leopard population. Caution should therefore be applied when using these data quantitatively (for example, to set hunting quotas)*" - IUCN Red List Data [13]

Table 1. The range of leopard population sizes and maximum levels of trophy harvest and retaliatory killing used for the simulations for each South African province.

Province	Population size[a]		Trophy harvest Maximum[b]	Retaliatory mortality Maximum[c]
	Minimum	Maximum		
Limpopo	1682	7168	204	348
Mpumalanga	338	1851	32	169
North West	174	255	40	54
Gauteng	25	31	4	8
Northern Cape	68	262	14	27
Free State	8	26	4	8
KwaZulu-Natal	247	1120	20	118
Western Cape	200	619	32	65
Eastern Cape	71	299	16	33
South Africa	2813	11632	366	826

[a]Minimum and maximum population sizes were calculated by multiplying the lowest and highest recorded density in each major biome by spatially derived explicit probabilities of leopard occurrence derived from a habitat suitability model (Appendix 2, Appendix 3).

[b]Represents four times the maximum recorded trophy harvest per year over the period 2002–2010 (Appendix 4), or for provinces without existing harvest the average proportional harvest based on the provinces with existing harvest. Minimum levels were set to zero for each province.

[c]Represents the maximum number of damage-causing leopards killed or translocated per year over the period 2002–2010 (Appendix 4) and an estimated number of illegally killed leopards. Minimum levels were set to zero for each province.

Figure 5 - from Swanepeol et al (2014) [2]**, *"The range of leopard population sizes and maximum levels of trophy harvest and retaliatory killing used for the simulations for each South African province."***

In 2008, (Leopard (Panthera Pardus) Case Study (2008) [3]) the following (negative) assessments were made regarding South Africa's leopard population (the question is, what has improved since?):

> *"The Leopard population size in South Africa is unknown, but it has however, become apparent that Leopard populations are smaller and more fragmented than previously appreciated."*
>
> *"There is generally poor information on Leopard population because of censusing difficulties. As a solitary and nocturnal animal Leopards are not easily seen. The more successful methods of determining Leopard numbers are spoor counts and camera traps. The spoor count technique is used to determine presence/absence as well as the assessment of numbers using indices. This technique is only effective with high "detectability" of tracks e.g. sandy environments and special tracking skills are needed. Camera traps are also used to determine presence/absence data and monitoring trends."*

The leopard population estimated within Leopard (Panthera Pardus) Case Study (2008) [3] (given at Figure 6 below), suggests a leopard population within South Africa across the core areas assessed as between 2,185 – 6,780 (best estimate of 4,987).

Population Area	***Est. Population Size***			***Sat. Level***	***Est. K_{Best}***
	Min.	***Best.***	***Max.***		
Great Kruger	*750*	*1200*	*1500*	*100%*	*1200*
Northern Limpopo	*500*	*1250*	*2000*	*80%*	*1563*
Waterberg & Mpumalanga	*400*	*850*	*1600*	*80%*	*1063*
Northern KwaZuku-Natal	*200*	*400*	*600*	*90%*	*444*
Kalahari	*30*	*50*	*70*	*90%*	*56*
Orange River	*20*	*30*	*60*	*50%*	*60*
Western Cape	*200*	*350*	*600*	*80%*	*438*
Eastern Cape Mountain	*35*	*40*	*80*	*65%*	*62*
Eastern Cape Valley	*30*	*50*	*150*	*70%*	*71*
Wild Coast	*20*	*30*	*120*	*100%*	*30*
TOTAL	***2185***	***4250***	***6780***	***86%***	***4987***

Figure 6 – *"Population and carrying capacity estimates for each of the 10 identified core Leopard habitats in South Africa"* - Leopard (Panthera Pardus) Case Study (2008) [3]

So, in order to set hunting quotas, what quantitative leopard population data has the SANBI actually used and applied with Notice 75 draft norms and standards?

Does the SANIB 'know' what the % of male leopards ≥ 7 years old is per province? If so, why have the figures not been released in full within Notice 75 draft norms and standards with the actual 2017 science and backing behind it? The only exception being a claim from a 2013 study in the Sabi Sand GR (Balme et al., 2013) [14] had "*a male leopards ≥ 7 years old comprised 10-16% of the study population*" – the cited report remains elusive for examination:

- What is the actual scientifically proven split within any province's leopard population where "*60% of the population is mature, (30% males, 30% females)* (Swanepeol et al (2014) [2])" - how many of the "*30%*" of mature adult males are ≥ 7 years old? Has the

SANBI just assumed that "*30%*" of mature adult male leopards sub-set encompasses ≥ "*3.6%*" male leopards ≥ 7 years old?

- If an assumption is being used by the SANBI of how many of the "*30%*" of mature adult males encompasses male leopards ≥ 7 years old, then this leads to an inferred leopard population (reference Figure 4) within South Africa of some 8,138 leopards (based upon a "*maximum sustainable harvest rate of 3.6%*") – This inferred leopard population is substantially higher than the maximum given at Leopard (Panthera Pardus) Case Study, (2008) [3] (Figure 6).

6 Maximum Sustainable Harvest Rate

This "*maximum sustainable harvest rate of 3.6%*" is referenced by the SANBI as taken from Caro et al (2009) [12] which states (at para 3.3) that this is a recommendation of a dual sex model based on male leopard "*harvesting*" where "*if we add a 30% incidental take of adult females, the sustainable [leopard population] offtake is reduced to 3.6% [from 3.8%]:*"

- The Caro et al (2009) [12] model cited is based on "*harvesting*" adult male leopards (of various mature ages), with potential incidental adult female take;

- The SANBI needs a model for a "*maximum sustainable harvest rate*" scientifically proven as specific to the proposals within Notice 75 draft norms and standards – male leopards ≥ 7 years old? The Caro et al (2009) [12] model cited is not male leopard ≥ 7 years old specific. So how does the SANBI know what "*maximum sustainable harvest rate*" should be when applied to "*harvesting*" male leopards ≥ 7 years old if the Caro et al (2009) [12] model is inappropriate?

- The Caro et al (2009) [12] model is based on studies in Tanzania – how is that applicable to the terrain, prey density, mortality rates or stochastic incident etc. of South Africa?

7 Main Threats to Leopards

The main threats to the leopard identified within the Leopard (Panthera Pardus) Case Study (2008) [3]:

- At para 1.5.3 - threats were identified as *"Habitat Loss/Degradation, Harvesting [hunting/gathering], Persecution (e.g. Pest control) and trade (illegal and legal) and habitat fragmentation."*

The main problems, challenges or difficulties found on the elaboration of non-detrimental findings within the Leopard (Panthera Pardus) Case Study (2008) [3]:

- Ineffective monitoring of leopards and data management by authorities (data accumulation, collation, access, interpretation and availability);

- Lack of capacity and resources in government to implement effective monitoring of leopards and to implement legislation to control the illegal offtake.

The IUCN Red List (*Pathera pardus – "Vulnerable"*) leopard population data that does exist indicates that across sub-Saharan Africa, a decline of over 30% has been noted over the past 25 years, with some 67% of the leopards' historic range lost. All of this data points to a downward trend, with threats and pressures that are unlikely to relent - such as habitat loss due to human population growth/land demand, prey decline. The downward trend in leopard populations includes South Africa:

> "*Numbers of sub-Saharan Leopards are declining within large portions of their range, particularly outside of protected areas. The populations within Angola, Zambia, Mozambique, Zimbabwe and South Africa appear to be decreasing from previous estimates with Leopards disappearing from areas with increased human development and areas of intensive conflict with humans (Hatton et al. 2001, du Toit 2004, Fusari et al. 2006, Lindsey et al. 2014)*" - IUCN Red List (*Panthera pardus*)

The African leopard (*Panthera pardus*) face numerous threats (including hunting):

> **"***The population of leopards within South Africa is under threat due to habitat loss through agricultural development and human population encroachment in their ranges. The other threats are illegal and legal trade of leopard goods, hunting by*

> *humans and poisoning. Leopard skins and canines are widely traded domestically in some central and West African countries where parts are used in traditional rituals and sold openly in villages and cities. Leopards may be hunted and poisoned by humans in defence of their livestock. The trophy hunting of female leopards may have a significant impact on the demographic and population level of leopards within an area*" - SANBI
>
> *"Our results call for concern regarding the sustainability of the South African leopard population. Although our simulations suggested that the extinction risk of the South African leopard population was negligible within the next 25 years, we found an unequivocal risk of population decline in South Africa as a whole as well as for several provinces"* - Swanepeol et al (2014) [2]
>
> *"Leopards are not only harvested as trophies, but are persecuted as a result of human-wildlife conflict in which Leopards are blamed for livestock losses and depredation, often not as a result of the Leopard but other carnivores (including domestic dogs). They are also persecuted in response to competition for resources as they compete directly with people on commercial game farms for their natural prey (wild ungulates). The harvesting or persecution of Leopards is not seasonal but may increase (in the case of human-wildlife conflict) in breeding seasons due to increased conflict"* - Leopard (Panthera Pardus) Case Study (2008) [3]

Concerns over the sustainability of leopard trophy hunting in South Africa was raised by Balme et al (2009) [1] ("*Impact of conservation interventions on the dynamics and persistence of a persecuted leopard (Panthera pardus) population*") - also summarised at reference Swanepeol et al (2014) [2] page 116 as:

> *"These concerns are founded in a doubling of the harvest quota since 2005 (75 to 150 animals), as well as increased incidents of legal and illegal retaliatory killing (Daly et al. 2005). Coupled with recent concerns that poorly managed trophy hunting may be partly responsible for declining leopard populations (Balme e t al. 2009; Packer e t al. 2011), there thus appears to be a need for a formal evaluation…."*

How can any such "*evaluation*" of concerns over the sustainability of leopard hunting in South Africa be seen to have abated if Notice 75's draft norms and standards, Appendix 1 provides no means to assess the credibility of the actual, quantitative 2017 leopard population data the SANBI has used to arrive at its proposed hunting quotas with Notice 75 draft norms and standards?

I don't believe the SANBI/DEA has proved within Notice 75 draft norms and standards that any of the above threats have been considered and/or addressed.

8 Trophy Hunting's Contribution

The argument used that trophy hunting income is essential to ensure local communities are encouraged to tolerate wildlife is scientifically unproven:

- As little as 3% of hunting income trickles down to local communities, so wildlife is treated by communities regardless of any such meagre trickle down, sometimes well, sometimes not (reference "*The $200 Million Question*," Economists at Large, 2013 [15]);

- "*New report reveals big game hunting makes minimal contribution to African economies and jobs*," Humane Society International, 1 February 2017 [16] and "*The Lion's Share*," Economists at Large, 2017 [17] – Compared with general tourism, hunting contributes very little in comparison:

    - Tourism vs Hunting income to South Africa:

        - Visitor numbers (mean 2003 – 2013) – Table 2 [17]:
            - Hunting visitors – 8,387
            - Tourism visitors – 9,360,000

        - Contribution to South Africa's @ GDP $349.9bn USD (2014) – Table 5 [17]:
            - Hunting - $141.2m USD (2015) - 0.04% of GDP
            - Tourism - $12.4bn USD (2014) - 3.5% of GDP

        - Employment contribution – Table [17]:
            - Hunting's share of tourism employment in South Africa – 0.88%

How does trophy hunting's financial contribution of 0.04% of South Africa's GDP (2014) [17] offset the risks of the negative impacts of trophy hunting that are unproven as "*not detrimental to the survival of the species?*"

9 Baiting

How is the baiting ("*Most leopards in South Africa are hunted over baits at a distance of 50-80m*" - Notice 75 norms and standards, Appendix 1) of leopards so they can be executed for trophies in any way honourable, noble, sporting, ethical, moral, or acceptable?

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"Embracing Innovation to Conserve the World's Animal Kingdom."

Appendix 3 – Rhino Horn Consultation, September 2019

Submission to the consultation on the "*Non-detriment findings for Ceratotherium simum simum (white rhinoceros) - Consultation in Terms of Section 62(3) of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)*"

1 Introduction

Before any "*written scientific information*" can be debated, we need a working definition of 'science' so one can determine relevant "*scientific information*" for consideration within the referenced consultation:

> "*Science is the pursuit and application of knowledge and understanding of the natural and social world following a systematic methodology based on evidence*" - *Science Council*

Furthermore, 'science' is not static, but is based upon the best available evidence and should be impartial to politics, or wedded (biased) to any theoretical dogma (such as 'sustainable utilisation') - credible 'science' is impartial:

> "*Speaking as a scientist, cherry picking evidence is unacceptable.....when public figures abuse scientific argument.....to justify policies that they want to implement for other reasons, it debases scientific culture*" - *Stephen Hawking*

Based upon the above, let's explore Notice 1105 "*to publish non-detriment findings [(NDF)] for Ceratotherium simum simum (white rhinoceros) made by the Scientific Authority*" and the recommendation to explore rhino horn trade "*for primarily non-commercial*" purposes.

Notice 1105, Table 1 NDF 6 "*National Abundance*" surmises that there are some 20,375 (*Emslie et al., 2016*) white rhinoceros within South Africa, and the "*largest captive breeding operation for white rhinoceros has a population of 1,517 (as of November 2017) animals*."

However, is it estimated that the captive rhinoceros population within South Africa totals some 6,000 animals:

> "*….some 6,000 rhinos live on privately owned farms (Knight 2016, DEA 2014). Many of them are regularly dehorned in anticipation of trade and dependent*

on supplementary food (Warren 2015)" - "*Pointless - A quantitative assessment of supply and demand in rhino horn and a case against trade*," NABU International Foundation for Nature, paper authored by Barbara Mass.

The "*Summary of Findings*" given in the referenced Notice 1105/Gazette 42660 concludes:

> "*It is however highly unlikely that current investment from government, external donors and private rhinoceros owners in the protection of this species can be sustained in the long term, and it is recommended that a legal trade in rhinoceros horn as an alternative source of funds be explored. The export,* ***for primarily non-commercial purposes****, of rhinoceros horn that has been legally sourced, either through natural mortalities and/or horn harvest from wild populations, or from captive breeding facilities, will not be detrimental to the survival of the species in the wild provided that (1) the income derived from these exports contributes directly to the conservation of wild rhinoceros populations and (2) the captive breeding facilities meet the Scientific Authority's approved criteria for the captive breeding of white rhinoceros. Considering the data and information presented in this NDF, it is clear that C. simum simum does not meet the biological criteria for inclusion in Appendix I of CITES and a proposal to effect a straight Appendix II listing (i.e. without an annotation) can be considered. The registration of captive breeding facilities in accordance with CITES Resolution Conf. 12.10 (Rev. CoP15) in order to allow for the commercial trade in rhinoceros horn can also be considered*."

It would appear that the intent of Notice 1105 is to utilise the assertion that "*specimens bred in captivity*" are only afforded Appendix II protection under the Convention on International Trade in Endangered Species of Flora and Fauna (CITES) - Notice 1105 suggests that a blanket Appendix II protection of rhinoceros bred in captivity would permit the export of harvested/natural attrition rhino horn, in addition to the current permission to export live rhinos and hunting trophies of wild/captive source:

> "*The South African population of Ceratotherium simum simum (white rhinoceros) is included in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), for the exclusive purpose of allowing international trade in live animals to appropriate and acceptable destinations and the export of hunting trophies. All other specimens, including the horn, are deemed to be specimens of species included in Appendix I, meaning that the export of specimens for commercial purposes is prohibited (Article lll).* ***However, specimens bred in captivity for commercial purposes are deemed to be specimens of species included in Appendix II***

> ***(Article VII) of CITES and therefore may be traded***. *In terms of Article IV of the Convention, an export permit shall only be granted for an Appendix II species when a Scientific Authority of the State of export has advised that such export will not be detrimental to the survival of that species*."

The Convention first applied to *Ceratotherium simum simum* (white rhinoceros) on 1 July 1975, with the species listed at Appendix I. However, on 16 February 1995, South Africa's white rhinoceros population (wild or captive) received exemption to an Appendix II listing, with the caveat that the exemption was:

> "*For the exclusive purpose of allowing international trade in live animals to appropriate and acceptable destinations and hunting trophies****. All other specimens [including any harvested or natural attrition stockpiled rhinoceros' horn and derivative product] shall be deemed to be specimens of Appendix I and the trade in them shall be regulated accordingly***."

In 1977, CITES introduced a ban on all international commercial trade in rhinoceros horn and their products - where under Article I definitions *""Trade" means export, re-export, import*..."

This 1977 ban has not been rescinded by CITES since 1977, despite some CITES signatory countries (Parties) challenging the ban on commercial trade in rhinoceros horn - most recently at the CITES, eighteenth Conference of the Parties (CoP 18) held in Geneva, August 2019:

> At the CoP18, Proposal 8 was rejected at the committee (25 August 2019) and plenary (27 August 2019) stages. The Kingdom of Eswatini (formerly Swaziland, which made a similar submission to CoP17 with Proposal 7) resubmitted a submission, Proposal 8, "*To remove the existing annotation on the Appendix II listing of Eswatini's southern white rhino population*" and for:
>
> "*... Eswatini to sell from existing stock 330 kg of rhino horn to licenced retailers in the Far East and also up to 20 kg p.a., including harvested horn, to those retailers*"

Therefore, as recently as the 27 August 2019, CITES signatories have again rejected any international rhinoceros horn trade proposals on the grounds that such trade is likely to be detrimental to the species.

Since the CoP18 rejection of Proposal 8 on 25/27 August 2019, 40 years after CITES 1977 ban on international commercial trade in rhinoceros horn and derivative products, 24 years since

South Africa's 1995 white rhinoceros population (wild or captive) received a caveated exemption to an Appendix II listing, Notice 1105 now seeks to overturn the 1995 caveat set for South Africa's white rhinoceros population's Appendix II listing – namely:

> Notice 1105 seeks to apply CITES Article VII, Paragraph 4:
>
> > "*Specimens of an animal species included in Appendix I bred in captivity for **commercial purposes**, or of a plant species included in Appendix I artificially propagated for commercial purposes, shall be deemed to be specimens of species included in Appendix II*."
>
> Whereby, the South African National Biodiversity Institute's (SANBI's) hypothesis is that Article VII, Paragraph 4 somehow overturns the February 1995 exemption South Africa's white rhinoceros population to an Appendix II listing where the following caveat remains valid:
>
> > "*All other specimens [including any harvested or natural attrition stockpiled rhinoceros' horn and derivative products] shall be deemed to be specimens of Appendix I and the trade in them shall be regulated accordingly*" – ie. whether the intended trade is commercial, or non-commercial, this caveat to the Appendix I listing (and CITES 1977 trade ban) applies to rhinoceros horn and derivative product.

Therefore, it is disputed that the assertion made at Notice 1105 statement that "*specimens bred in captivity for commercial purposes are deemed to be specimens of species included in Appendix II (Article VII) of CITES **and therefore may be traded***" can somehow overturn the caveat set against such trade in the 1995 exemption of South Africa's white rhinoceros populations.

In addition, Notice 1105 is claiming that proposed trade is only being orchestrated "***for primarily non-commercial purposes***" (it is duly noted that this is not a definitive *"non-commercial,"* but only *"primarily non-commercial"* which would suggest leeway to accommodate some element of *"commercial purpose"* within the trade envisaged by Notice 1105).

So, Article VII, Paragraph 4 would not appear to be applicable anyway, as it only applies to "*animal species included in Appendix I bred in captivity for **commercial purposes**…….*":

> South African white rhinoceros bred in captivity can't be bred for exclusively commercial purposes to satisfy Article VII, Paragraph 4 whilst simultaneously, the harvested horns from the same captive bred rhino are somehow deemed only to be traded for non-commercial purposes.

The proposed rhino horn trade to be explored within Notice 1105 is either being proposed to facilitate trade for non-commercial, or commercial purpose. It can't be both, or it can't be commercial trade poorly disguised as "*primarily non-commercial*:"

> "*The term 'commercial purposes' should be defined by the country of import as broadly as possible so that any transaction which is not wholly 'non-commercial' will be regarded as 'commercial'*" - CITES Resolution Conf. 5.10 (Rev. CoP15)

Clearly, the whole spirit of Notice 1105 "*The export, **for primarily non-commercial purposes**, of rhinoceros horn*" is a poor attempt to disguise potential international rhino horn trading, in contravention of the February 1995 exemption South Africa's white rhinoceros population to an Appendix II listing and in contravention of the CITES 1977 ban on all international commercial trade in rhinoceros and their products - where under Article I definitions ""*Trade*" *means export, re-export, import*..."

Regardless, of the above 'anomaly' in Notice 1105's logic and the contestable reliance of Notice 1105 on the applicability of Article VII, Paragraph 4, there are also a number of elements within the Notice 1105 that have strong scientific counter arguments. These counter arguments suggest any trade in rhinoceros horn could be detrimental to the species and therefore, any export permit would not be permitted by CITES regardless of any "***for primarily non-commercial purposes"*** intent whether genuine, or disingenuous**.**

1.1 The Need for Income from a Legal Rhino Horn Trade

> Notice 1105 states "*It is however highly unlikely that current investment from government, external donors and private rhinoceros owners in the protection of this species can be sustained in the long term.*"
>
> The financial contribution private rhinoceros owners (captive bred rhino) make to the protection of the wild species is questionable, when these private rhinoceros owners businesses are commercial endeavours – which they have to be to meet the overriding Article VII, Paragraph 4 "*commercial purposes*" criteria to make the use of this Article applicable. Perhaps the private rhinoceros owners' commercial burden of maintaining

6,000 privately owned rhinoceros (bred primarily for speculative gain and the hope of lucrative international trade) is perhaps the overriding motivation behind Notice 1105's intent to trade rhinoceros horn?

This is not dis-similar from the DEA's unlawful 'lion bone trade' quota being established based upon lion breeders' stockpiles/commercial ambitions, not science or any altruistic conservation imperative - "…..*because they [the lion breeders] have surplus stockpiles of lion bones and they want to get rid of them*" - "*Dodgy skeleton traders and lion slaughterhouses exposed in damning report*," Don Pinnock, Daily Maverick, 19 July 2018

It should be borne in mind, that no one forced any rhino breeder to breed rhino, and/or breed rhino numbers to a financially unsustainable levels in the speculative, commercial hope that one day the CITES 1977 ban on all international commercial trade in rhinoceros horn and derivative products would be lifted (and the rhino breeders and the State would make "*stupendous*" financial gains from commercial sales of stockpiled rhino horn):

> The idea behind Rhino Coin is to create a speculative index (as per any crypto-currency) for rhino horn based upon the buy/sell orders for the underlying physical commodity - rhino horn held in a vault. Of course, those seeking to profit would like to see the index rise, embracing the old trading adage buy low, sell high…….the suggestion by those promoting Rhino Coin being speculators are "*betting that the international rhino horn trade ban will one day fall away, and that horn can then be sold at a stupendous mark-up in Asia*." Note: Rhino Coin is developed and promoted in association with leading rhino farmer and pro-trade advocate John Hume.

Such breeding/stockpiling endeavours were no doubt established with the prospect of profiteering from rhino horn looking commercially favourable in the future, not because of some purely altruistic imperative to protect and conserve the wild species.

The fact that such captive breeding business ventures have not reached fruition and have the increasing burden of financing anti-poaching measures, should not be used as an excuse to force through a trade mechanism that has no scientific merit – ie. there is scientific proof counter to the SANBI's evidence within Notice 1105 Table 1, NDF 25 "*Effectiveness of strict protection measures*" – ie. the proposed legal trade in rhino horn could be detrimental to the species.

There is an implied assumption within the SANBI's evidence such trade "*will not be detrimental to the survival of the species"* if certain pre-conditions are met. But the pre-conditions proposed do not in themselves provide any guarantees such rhino horn trade "*will not be detrimental to the survival of the species."*

1.2 *"(1) the income derived from these exports contributes directly to the conservation of wild rhinoceros populations"*

Where is the SANBI's evidence that income derived by "*these exports*" (be that from private, or State-owned rhino horn stockpiles and harvested rhino horn re-supply) will contribute directly to the conservation of wild rhinoceros populations and such income not absorbed in profit taking, or diverted into other State funding unrelated to wild rhinoceros' conservation? Where is the mechanism to guarantee such a claim?

Where is the acknowledgment of the science/evidence (given at Paragraph 2 below) that any rhinoceros horn trade could potentially increase the threat to rhinoceros (wild/captive) by stimulating demand, potentially increasing the commodity value of rhino horn (as demand is legitimised) and thus increase the poaching risk to wild and captive rhinoceros?

1.3 *"(2) the captive breeding facilities meet the Scientific Authority's approved criteria for the captive breeding of white rhinoceros"*

One only has to look at the DEA's failure to even consider animal welfare in the setting of the 'lion bone trade' quota to see that animal welfare is not a priority when it comes to 'sustainable utilisation.'

In August 2019, the Pretoria High Court concluded (Judgement, Case No. 86515/2017, dated 6 August 2019) that the DEA's lion bone quotas set for 2017/18 were unlawful and unconstitutional because animal welfare was not considered (by the then Minister) to be a function in the Minister's decision making – the DEA's approach has been proven to be a fallacy in contravention of the Republic of South Africa's Constitution.

The lack of adequate regulation of animal welfare within privately owned, captive breeding facilities is clearly illustrated by the fact that the self-declared, independent

custodians of lion breeding welfare, the South African Predator Association (SAPA) own council member, Jan Steinman is being prosecuted for animal cruelty:

> "*Although SAPA [South African Predator Association - the Third Respondent in the above case] claims that no welfare issues exist among their member lion facilities, earlier this year, as an example to the contrary, the owner of a facility in the North West Province (a SAPA member and member of their Council [Jan Steinman]) was charged by the NSPCA with animal cruelty. Inspectors found 27 lions with severe mange, two lion cubs unable to walk due to Meningoencephalitis, obese caracal unable to groom themselves, overcrowded and filthy enclosures, inadequate shelter, lack of water, and parasitic conditions*" - "*Public Participation Submission of the Coalition to Stop the Captive Breeding and Keeping of Lions and Other Big Cats for Commercial Purposes*," June 2019

In March 2019, the Department of Environment, Forestry and Fisheries (DEFF) (officially charged with overseeing welfare of captive bred lion facilities) reported that nearly 40% of the 227 registered lion breeding facilities inspected in four of the Provinces were non-compliant with regulations and many were operating with expired permits. Yet the vast majority of the latter expired permits were subsequently renewed without further follow-up recommendations, penalty or work to ensure full on-going compliance. How does this poor standard of oversight instil any confidence that the DEFF is any better at overseeing captive rhino breeding facilities?

If the proposed rhino horn trade stimulates further expansion of rhino breeders in South Africa, where is the evidence/trust that safeguards are in place within South Africa to ensure animal welfare is at the forefront of the DEFF's systems/thinking, or that any self-declared custodian of captive animal welfare can be trusted?

The National Council of SPCAs is not convinced that the re-opening of the domestic rhino horn trade in 2015 helps animal welfare, let alone any "*primarily for non-commercial*" purposes international trade now proposed:

> *"We fear that if the judgment stands, a further consequence will be our rhino will become farmed animals. Unethical practices may be used to increase profits, which are likely to include confining animals to the smallest spaces possible, feeding animals unnatural diets, and physically altering or maiming*

animals to prevent them from injuring one another when confined in limited spaces."

"Above all, rhinos are wild animals. Captivity, confinement and manipulation are foreign and stressful to them" - NSPCA

1.4 Introductory Conclusions

The SANBI's recommendation "*that a legal trade in rhinoceros horn as an alternative source of funds be explored*" would appear to be based only on cherry-picked claims that such trade will be non-detrimental to the species, to support a pro-trade policy stance:

> To reiterate "*Speaking as a scientist, cherry picking evidence is unacceptable.....when public figures abuse scientific argument.....to justify policies that they want to implement for other reasons, it debases scientific culture*" - *Stephen Hawking*

There is a statement within Notice 1105 that:

> "*A plethora of peer-reviewed papers recently published in the scientific literature also argue for a legal trade in rhinoceros horn …… to establish a legal, well-regulated international market for trading rhinoceros horn (Biggs et al., 2013; Conrad, 2012; Di Minin et al., 20'15; Ferreira, Pfab & Knight, 2014). Ayling (2013) further argues that "where the knowledge base is poor and existing strategies seemingly ineffectual, one can certainly argue under a precautionary approach that any action that could reduce poaching and quash the illegal trade ought to be tried."*

This 'pro-trade' evidence is not fully expanded, or specific examples of success in other wildlife trade ('sustainable utilisation') scenarios cited – or any reference to the debacle that is the 'lion bone trade' perhaps indicating that such pro-trade "*ought to be tried*" optimism is ill founded in the face of past corruption, incompetence and poorly regulated international trading/animal welfare in wildlife commodities emanating from South Africa.

Table 1, NDF 25 "*Effectiveness of strict protection measures*" of Notice 1105 references Di Minin, E., Laitila, J., Montesino-Pouzols, F., Leader-Williams, N., Slotow,

R., Goodman, P.S., Conway, A.J. and Moïlanen, A., 2015. "*Identification of policies for a sustainable legal trade in rhinoceros horn based on population projection and socioeconomic models*" Conservation Biology, 29:545 -5 as support for a legal rhino horn trade.

Enrico Di Minin, an economist at the University of Helsinki, stated in the referenced study that the trade in rhino horn could bring *"$717m USD per annum"* to South Africa's economy and help protect its rhino populations. However, this study failed to consider that there could be any link between encouraging a 'legal' trade whilst simultaneously stimulating the negative species' conservation impact of illicit trade to also profit from infiltrating the 'legal' market and the potential demand rise/profiting envisaged. Therefore, this study is hardly a sound endorsement of policy for legal trade in rhinoceros' horn.

The recommendation to explore such trade as a means to help rhino breeders fund their operations is explored at Notice 1105 Table 1, NDF 25 "*Effectiveness of strict protection measures*", that "*a large portion of the rhinoceros security and enforcement budgets in a number of provinces are funded by international donors and are thus at risk of donor fatigue."* There is a theory espoused within Notice 1105 that any rhino horn trade income could be used to subsidise and fund security.

However, there is a body (a plethora) of science/evidence to suggest any such rhino horn trade could have potentially negative impacts upon species' conservation (explored at Paragraphs 2 and 3 below) and a detrimental impact on species' survival.

Plus, there is the a lack of trust in the ability of the DEFF to prioritise and adequately ensure animal welfare with its unlawful pursuit of wildlife exploitation in the name of "*sustainable utilisation*" – namely the abhorrent captive lion breeding and lion bone trade industry.

2 Stimulation of Demand for Rhino Horn

The non-detrimental finding (NDF) analysis contained in the referenced Notice 1105/Gazette 42660, Table 1, NDF 25 "*Effectiveness of strict protection measures*" considers a one-sided review of the likely impact of the probable stimulation of demand from instigating a legal, international rhino horn trade (supposedly for "*non-commercial purposes*") and the potential impact on the poaching of rhinoceros (both wild and captive/farmed).

There is credible science that says any legal trade will increase profiteering, but not conservation:

> Douglas J. Crookes, James N. Blignaut (Department of Economics, University of Pretoria) in their 2015 paper, "*Debunking the myth that a legal trade will solve the rhino horn crisis: A system dynamics model for market demand*" concluded "*we find that a legal trade [in rhino horn] will increase profitability, but not the conservation of rhino populations*."

Let's explore four main areas regarding the non-conformist (illicit) market for rhino horn:

- Rhino Horn Price
- Demand Management and Case Studies (elephant ivory and the vicuña)
- Countering Illegal Markets for Rhino Horn
- Can Harvested Rhino Horn Meet Demand if Rhino Horn is 'Destigmatised'?

2.1 Rhino Horn Price

> The SANBI (at Notice 1105, Table 1, NDF 25 "*Effectiveness of strict protection measures*") states:
>
> "*MacMillan et al. (2017), after interviewing 1,000 animal traditional medicine (ATM) users in Vietnam concluded that….the introduction of a legal supply of rhinoceros horn has the potential to 'crowd out' rhinoceros horns sourced from poachers…"* because of *"**an anticipated overall fall in price due to the loss of prestige and exclusivity of rhinoceros horn within a legal and regulated trade**."*
>
> It is noted that the wisdom gathered by "*MacMillan et al. (2017)"* is based upon ATM users' views, not economists, academics or those familiar with non-conformist (illicit)

market forces. Therefore, how much weight should be given to ATM users' laymen opinions?

The assumption (that "*.....legal supply of rhinoceros horn has the potential to 'crowd out' rhinoceros horns sourced from poachers"* because of resulting reduced commodity prices) is not supported by economic professionals within academia:

> Douglas J. Crooks, James N. Blignaut (Department of Economics, University of Pretoria) concluded that "*demand is relatively insensitive to price…The system dynamics model we developed, indicates that demand is not sensitive to changes in the price of rhino horn. This is consistent with the observations of Milner-Gulland (1993). The implication of this is that lifting the trade ban, even if it results in a reduction in rhino horn price, will not alleviate demand*" - "*Debunking the myth that a legal trade will solve the rhino horn crisis: A system dynamics model for market demand*," Economic Research Southern Africa (ERSA), D. J. Crooks and J. N. Bilgnault, Journal for Nature Conservation, Elsevier, Pretoria, 2015

So even if the intention of any legal trade in rhino horn is to reduce the price of the commodity and thus try to disincentivise poaching by reducing its profitability, this leads to a number of flaws in that theory:

- In the DEA's March 2019 presentation, "*Demand Management*" it was emphasised that a "*targeted message is needed to change the perceptions on rhino horn in the various audiences*" - to reduce the market price of rhino horn to counter the message to poachers that the "*price of horn is high*" and that "*there is money in it*" and also to deter speculation that "*there is a market*" and "*rhino are going extinct.*" This suggests that the aim of any legal trade is to reduce the price for rhino horn.

- Where is the evidence that poaching will not increase regardless of any drop in the value of rhino horn as a commodity, ie. there could be increased poaching volumes to maintain profitability regardless of price reductions?

- But, reducing price can/will increase demand, as rhino horn could potentially become more affordable to a previously economically excluded market element and short-cut the rhino to extinction:

  > "*.....if more legal horn goes on the market not only in SA but in Vietnam and China it would create a niche for people who, in the past, could not afford rhino*

> *horn being sold by black-market dealers. Not only are you increasing the market base in countries that consume the horn but you will make it more affordable, which means the demand for rhino horn is going to go up.... the risk is that if demand increases as more people buy rhino horn and legal trade fails to meet the demand, poaching will spike. Countries with smaller populations of wild rhino will be hardest-hit as they don't have the resources to defend their herds"* - *"The economics of rhino horns*," Business Live, 31 August 2017 - Joseph Okori, the Southern Africa Director of the International Fund for Animal Welfare

- However, the consensus among pro-trade advocates would appear to contradict the DEA's 'price reduction philosophy.' Leading pro-trade advocates believe that opening up legal trade will lead to a speculative return for anyone invested in rhino horn, ie. the value of rhino horn will rise, with a "*stupendous mark-up….*" So, this suggests that the private rhino owners' expectations from a legal market are counter to the DEA's stated aim to reduce rhino horn prices:

> The idea behind Rhino Coin is to create a speculative index (as per any crypto-currency) for rhino horn based upon the buy/sell orders for the underlying physical commodity - rhino horn held in a vault. Of course, those seeking to profit would like to see the index rise, embracing the old trading adage buy low, sell high.....the suggestion by those promoting Rhino Coin being speculators are "*betting that the international rhino horn trade ban will one day fall away, and that horn can then be sold at a stupendous mark-up in Asia*." Note: Rhino Coin is developed and promoted in association with leading rhino farmer and pro-trade advocate John Hume.

In conclusion, even if the value/price of rhino horn is reduced (which is not guaranteed by any legal market intervention – see case studies below at Paragraphs 2.3 and 2.4), this does not guarantee to counter the poachers' incentive:

> "*Even with the price coming down, there's still a heck of a lot of poaching going on*," Douglas-Hamilton (Save the Elephants) said. "*It's important [ivory] prices have come down but it hasn't killed the trade, we're not out of the woods yet*" - *Story behind China ivory ban*, The Guardian, 29 August 2017

2.2 Demand Management

The DEA's March 2019 rhino horn trade presentation, "*Demand Management*" also proposed the theory that demand reduction could be conducted in parallel with legal trade, whereby:

Demand Management - Demand Reduction = Legal Demand - Illegal Demand

The 'theory' that demand reduction can be enacted and demand controlled once demand is legitimised by legal trade is not supported by any independent, peer reviewed science as even plausible. It's a bit like telling people smoking is bad for them (Demand Reduction), whilst simultaneously legally supplying cigarettes (Legal Demand) in an effort to reduce the market price of cigarettes to deter cigarette smuggling's profitability (Illegal Demand) and expecting demand (Demand Management) to be controllable and only offer upside results - the likely outcome in this scenario is higher demand and increased illegal supply.

The problem is what happens if "*Demand Management*" and "*Demand Reduction*" conducted in parallel fail, which equates to "*Legal Demand*" and an exponential rise in "*Illegal Demand?*"

In addition, where is the evidence and economic science to support any claimed conclusion that "*demand*" is *"reversible"* in reality?

If things go wrong, then 'legal' actions are not necessarily easily reversible - past experience proves 'easy reversibility' to be an assumption:

> "*Pro-trade proponents have suggested that if things go wrong and poaching escalates further as a result of lifting the ban, rhino horn trade could either be "closed down or restructured" after three or four years. Such plans are both unhelpful and impractical, firstly because it risks setting off an illegal buying and poaching rush to exploit a potentially limited window of opportunity as soon as trade is permitted. Secondly, experience from rising exports of rhino horn as hunting trophies from so called "pseudo hunts" in South Africa has shown that it can take seven years (2003-2009) to recognise and [try to] address such problems*" - "*A quantitative assessment of supply and demand in rhino horn and a case against trade*," Dr Barbara Maas of NABU International, July 2016

Economic science suggests that Demand Management/Legal Trade is not the answer if demand reduction is the true intent:

> "*Our model indicates that less conventional demand management strategies (such as consumer education, behaviour modification), appear to be more effective strategies in managing rhino horn demand than legalising the trade in rhino horns* - "*Debunking the myth that a legal trade will solve the rhino crisis: A system dynamics model for market demand*," D. J. Crooks and J. N. Bilgnault, Journal for Nature Conservation, Elsevier, Pretoria, 2015

2.3 Failed Demand Management Case Study 1 – Elephant Ivory

It can be argued that CITES' attempted ivory trade intervention strategy increased demand and elephant poaching. Elephant poaching has reached unsustainable levels. African elephant poaching might be stabilising (2015 CITES data), but not at a level that will allow elephant population numbers to recover - continent wide elephant numbers are only set to decline ("*The Great Elephant Census*," 2016):

> It is estimated that 230,000 elephants have been poached between 2009 and 2015, and maybe as few as 500,000 wild elephants now remain (from an early 20th century population of as many as 3-5 million elephants).

In 1989/90 CITES introduced a ban on all ivory trade and 'uplisted' the elephant to CITES Appendix I status.

Prior to the 1989/90 ban, in 1986/87 CITES registered 89.5 tonnes and 297 tonnes respectively, of ivory in Burundi and Singapore. However, by 1997, CITES sought to 'find ways' (delisting relevant elephant populations by country to CITES Appendix II, where only an export license is required) to meet 'demand' for ivory from stockpiles – not dis-similar to any proposed rhino horn trade.

CITES permitted the export of 47 tonnes of 'stockpiled' ivory to Japan from Botswana, Namibia and Zimbabwe. The suggestion is that this initiative gave the tacit message to previous ivory trading and poaching syndicates that "*the game was back on*."

In 2000, CITES repeated its 1997 'thinking,' when South Africa's elephants were delisted to CITES Appendix II with CITES' blessing and 6 tonnes of 'stockpiled' ivory permitted for export to Singapore in 2002. In addition, in 2002 some 60 tonnes of ivory from South Africa, Botswana and Namibia was 'released' with CITES' blessing to Japan (were ivory controls appeared lacking, with a reported 25% of traders not even registered).

In 2008 (to "*quell*" demand and "*reduce prices*") CITES once more blessed 'stockpiles' of ivory for export. Since 2008, ivory demand and prices paid have risen exponentially (the price of ivory rose from USD $5/kg in 1989 to a wholesale price of USD $2,100/kg in China in 2014).

The recent clampdown on ivory carving factories in China has significantly lowered the price demanded for ivory, but the pressure applied to the criminal syndicates' margins has not fully crushed on-going poaching of wild elephants to still profit from demand and speculative stockpiling:

> "*Even with the price coming down, there's still a heck of a lot of poaching going on*," Douglas-Hamilton (Save the Elephants) said. "*It's important prices have come down but it hasn't killed the trade, we're not out of the woods yet*" - *Story behind China ivory ban*, The Guardian, 29 August 2017

Conclusion - Market demand and market pricing for ivory has moved contrary to CITES' stated expectation – the release of ivory from stockpiles stimulated demand and the price of the commodity rose. It is estimated that as much as 450 tonnes of poached ivory might have been trafficked in 2013 alone to meet the demand. Even with more recent market price reductions for ivory, elephant poaching still continues at unsustainable levels. How can any Demand Management proposals for rhino horn trading expect different results from the ivory experience?

2.4 Failed Demand Management Case Study 2 – The Vicuña

The South American vicuñas' 'Demand Management' should also serve as a lesson as to why any legal wildlife trade strategy's intentions can fail when they meet the hard realities of non-conformist (illicit) market forces.

Many rhino horn trade advocates (including John Hume, rhino farmer) falsely tout the Andean vicuña — an iconic South American mammal in the camel family that's related to llamas, alpacas, and guanacos—as an example of successful conservation through sustainable utilisation. The vicuña has a fine, wool coat that was farmed to supply the high-end apparel industry.

Excessive hunting for European markets drove vicuñas to the brink of extinction in the 1960s. The animals were usually shot and the fleeces sheared off their carcasses.

In the early 1970s, CITES and the countries where the vicuñas range in the wild took measures that included a ban on trade in their wool, putting them on a path to recovery. By the 1990s, their numbers had rebounded to more than 200,000 (most of them in Peru), and regulated legal trading in wool resumed. Indigenous families sought to derive their subsistence livelihoods from corralling the migrating vicuña and harvesting their wool coats in a sustainable, non-consumptive manner.

At the time, ecologist Cristian Bonacic, of Pontifical Catholic University of Chile, in Santiago, was at the forefront of developing best practice guidelines for sustainable, ethical, non-consumptive utilisation of vicuñas.

However, the value of vicuña products became so highly prized as demand was stimulated, that vicuña poachers sought to cash in, with some 5,000 animals slaughtered (the poachers don't worry about non-consumptive sustainability) in five years to obtain the animal's wool coats.

This experience has changed ecologist Cristian Bonacic's view of 'sustainable utilisation' and he fears that a legal trade in rhino horn could be catastrophic for the species:

> "*Bonacic explains his recent shift away from the notion of sustainable use of wildlife, why a legal trade in vicuña wool has led to more -not less - poaching, and why he thinks a legal trade in rhino horn could be catastrophic for the species*" – "*Legalizing Rhino Horn Trade Won't Save Species, Ecologist Argues, What can South Africa's rhino horn trade proponents learn from experiences with the South American vicuña?*" Katarzyna Nowa, National Geographic, 8 January 2015

The poaching escalated to the point that by 2015, 90% of exports were found to have been sourced from illegally killed and shaved poached vicuña. Perhaps this is an example of how market dynamics and criminality collude to produce negative results. The ongoing exploitation and plight of the vicuña still persist.

So, the vicuña as a species was not enhanced by 'utilisation' and 'legal trade' – sustainable utilisation encouraged poaching to profit from the stimulation in demand, threatened those communities that were supposed to profit from the trade and led to thousands of vicuña being slaughtered. Many scientists are concerned that the vicuñas' population levels remain of concern:

> "*....but most experts agree that there is cause for concern. Vicuña populations now hover at 400,000 to 500,000 animals, but their numbers have remained stagnant or, in the case of Chile, declined over the past two decades*" - "*Poaching upsurge threatens south America's iconic vicuña*," Scientific American, 24 November 2015

2.5 Countering Illegal Markets for Rhino Horn

The SANBI states at Notice 1105, Table 1, NDF 25 "*Effectiveness of strict protection measures*" that:

> "*Two further concerns around the potential effects of legalisation relate to whether legalised trade competes with existing illegal markets or simply creates new parallel ones, and whether legalised trade leads to reduced enforcement against illegal traders.*"

One only has to look at the evidence in a comprehensive report on the 'legal' 'lion bone trade,' "*The Extinction Business, South Africa's 'Lion' Bone Trade*" (EMS Foundation and Ban Animal Trading, July 2018) where the conclusion is:

> South Africa's lion bone trade has "*….created a situation where the legal trade in 'lion' bones is fuelling the illegal trade in lion and tiger bones and providing laundering opportunities for tiger bones in Asian markets.*"

What makes the SANBI/DEA think any form of legal trade in rhinoceros' horn will be immune from fuelling an established and incumbent illicit rhino horn trade when the 'lion bone trade' has been such a failure in terms of countering illicit activity?

According to the theory of pro-trade advocates:

> *"…scarcity caused by trade bans, produces high prices which leads to higher poaching rates. Instead of combating illegal poaching, according to this argument, scarcity should be eliminated through legal supply from wildlife farmers and state stockpiles. Legalising markets would then reduce or even eliminate profitability for poachers while maintaining high returns for legal suppliers."*

This theory is reiterated by the SANBI within Notice 1105, Table 1, NDF 25 "*Effectiveness of strict protection measures,*" the assumption being that markets which are currently dominated by illicit forces, somehow can be countered by legal trade and reach some kind of natural equilibrium:

> "*MacMillan et al. (2017), after interviewing 1,000 animal traditional medicine (ATM) users in Vietnam concluded that….the introduction of a legal supply of rhinoceros horn* ***has the potential to 'crowd out' rhinoceros horns sourced from poachers****…"*

These assumptions are not supported by economic professionals within academia - the academic conclusion is that 'legal' trade does not potentially counter and combat illicit activity – legal and illegal trade does not necessarily reach a natural equilibrium:

> The pro-trade argument *"relies on highly unrealistic assumptions, one of which is that legal trade is able to fully substitute for illegal trade. This points to a failure to understand illegal markets. Market legalisation, they suggest, would actually increase demand as well as provide avenues for illegal traders to*

> *launder poached products……Governments, economists and conservationists who think they can curb poaching by selling rhino horn and ivory legally have little understanding of macroeconomics or the sophistication of international crime syndicates*"- Prof Nadal and Mr Aguayo, "*High-level report calls SA wildlife trade policy reckless*," Conservation Action Trust, Don Pinnock, 13 June 2013

Prof Nadal's and Mr Aguayo's 2014 paper *"Leonardo's Sailors: A Review of the Economic Analysis of Wildlife Trade"* (The Leverhulme Centre for the Study of Value, Manchester, 2014) sought to "*…evaluate the scope and limitations of the economic analysis of wildlife trade that has been carried out in the past three decades.*" This paper highlights the pro-trade arguments 'misguided' economic theory:

- "*The pro-market argument starts from the premise that poaching and illegal trade are a consequence of trade bans imposed by bodies like CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora)*."

- "*One of the most striking features in the economic analysis of wildlife trade is the level of misinformation concerning the evolution of market theory over the last six decades. To anyone who comes in contact with the corpus of literature on wildlife trade, and in particular the literature recommending the use of market-based policies, the uncritical use of theoretically discredited analytical instruments is a striking revelation. Perhaps the most important issue here is the conviction that markets behave as self-regulating mechanisms that smoothly lead to equilibrium allocations and therefore to economic efficiency. This belief is not sustained by any theoretical result, a fact that is well known in the discipline since at least the early seventies."*

In the 2017 study, Ross Harvey (Senior researcher with SAIIA, PhD at the University of Cape Town, School of Economics) concluded:

> "*Even if farmed supplies from South Africa satisfied a portion of the demand globally, it will not alter demand among consumers drawn to wild product, or those who are indifferent about the source. South Africa will most likely soon be home to parallel markets, with extensive laundering of illegal horn. That may be acceptable*

to breeders, but it defies reason for those trying to conserve wild rhinos" - "*South Africa's Rhino Paradox*," Project Syndicate, 2017

The November 2013 report, "*The Horn of Contention*," *("A review of literature on the economics of the rhino horn trade,"* Economists at Large/IFAW) found the following:

"The formal studies suggest that predicting the outcome of liberalising trade is complex and difficult to determine. Although it may decrease pressure on poaching, as rhino horn becomes increasingly supplied through the non-lethal legal trade, there is also a real risk that trade could drive an increase in poaching through any combination of five mechanisms:

- *Through legal and illegal markets coexisting and interacting in complex ways.*
- *Through reducing the stigma attached to consumption of the product.*
- *By potentially reducing the supply costs of illegal supply.*
- *By potentially facilitating the laundering of illegal supply in with legal supply.*
- *As a result of uncertainty around the response of illegal suppliers to competition from a legal market."*

"The articles from the grey literature are all overtly pro-trade, generally assuming that:

- *Legal markets will "hijack" consumers from illegal markets and that legal and illegal horn would be perfectly substitutable.*
- *Stigma effects are small and that efforts to reduce demand through education and information would be ineffective.*
- *Increased surveillance funded by rhino horn sales would increase poaching costs.*
- *Technical advances such as DNA technology would minimise laundering.*
- *Smugglers with market power would respond to the introduction of a legal trade passively, accepting reduced sales, rather than competing to retain market share."*

"Little empirical evidence is offered to support these views. Under certain conditions these assumptions may hold, but it is unclear if these conditions are in place in either supplying or consuming countries. We suggest further research should be undertaken before any formal steps are taken towards legalising trade in rhino horn."

The emphasis on law enforcement needs to be much higher up the trafficking chain, this would require actual enforcement for criminal activity in recipient States (China, Vietnam, Laos, Yemen etc). At the moment there are no signs that the historical corruption and complicity in recipient States will change and provide the required focus or visibility anytime soon. As Julian Rademeyer puts it in "*Tipping Point – Transnational organised crime and the 'war' on poaching*:"

> "*Entities like INTERPOL, Europol, CITES and the World Customs Organisation are only as good as the government officials in member states who are delegated to work with them. Again and again, their efforts to target syndicates in multiple jurisdictions are hamstrung by corruption, incompetence, governments that are unwilling or incapable of acting, a lack of information-sharing, petty jealousies and approaches to tackling crime that wrongly emphasise arrests and seizures over targeted investigations and convictions as a barometer of success.*"

There is little evidence/science that supports any theory that "*legalised trade competes with existing illegal markets."* However, legal trade mechanisms always make enforcement against illegal activity more challenging – in the absence of legal mechanisms for a given commodity it is easier to see that any trade in that given commodity must be illicit. As soon as there is a blurring and legal mechanisms exist, then legal and illegal markets coexist and interact in complex ways – thereby "*legalised trade leads to reduced enforcement against illegal traders."*

However, perhaps the principal problem with the endless campaign to adopt some form of legal 'sustainable utilisation' as the only solution is the notion that it's justified regardless of any imposing law. Modern-day game farmers are a powerful commercial and political lobby and do not see acting on the periphery of legality as 'criminal,' thus exacerbating illicit activity:

> "*The notion of 'contested legality' was introduced as a legitimation strategy of important actors who justify their participation in illegal or grey flows of rhino horn based on the perceived illegitimacy of the rhino horn prohibition*" - "*A Game of Horns*" (page 366), Annette Michaela Hübschle, International Marx Plank Research School on the Social and Political Constitution of the Economy (IMPRS SPCE), Köln, Germany, 2016

This 'mob rule' mentality is also evident within the domestic rhino horn trade (Paragraph 2.5.1) and lion breeders (Paragraph 2.5.2).

Therefore, it's not just a question of "*legalised trade leads to reduced enforcement against illegal traders*" – those seeking 'legal' trade mechanism for rhino horn, lion bone etc. feel that it is their right to act outside of the law in the first place and exacerbate illicit activity.

Such illicit actions will potentially have an enduring, negative impact on the species' conservation; however such threats/blackmail from breeders should not be used as an excuse to authorise and condone a 'legal' trade or quota that has no scientific merit - the rule of law should override any such illicit activity threats (or else mob rule will be allowed to prevail in the absence of law enforcement and a clear scientific foundation for a legal mechanism).

2.5.1 Domestic Rhino Horn Trade

On 26 November 2015, South Africa's, Pretoria High Court 'approved' a technical challenge by two rhino farmers (John Hume and Johan Kruger) to sell their stockpiles of 'harvested' rhino horn, overturning a 2009 moratorium on such trade.

A 2012 report by TRAFFIC ("*The South Africa - Viet Nam Rhino Horn Nexus*") on the global rhino trade found that when South Africa did allow domestic horn trade, before 2009, much of the privately owned horn went unaccounted for and may have ended up in illegal hands, trafficked outside the country:

> *"It found that abuses and poor compliance in managing horn stockpiles in government and private hands had helped create a "perfect storm," attracting criminal networks into lucrative rhino poaching*" - "*Debate over rhino horn trade ramps up as South Africa ban is lifted*," Los Angeles Times, 26 November 2015

The 2009 moratorium was overturned in the High Court on a convenient "*technicality*" that the moratorium had not been well advertised to the public and lacked 'public consultation.' Initially, the High Court's 26 November 2015 ruling was challenged by South Africa's own DEA, but the DEA/DEFF has since failed to try and curtail the domestic rhino horn trade, or back 'public consultation' on the need to re-instate the moratorium:

> In an open letter from the *Wildlife Animal Protection Forum South Africa ("Their Future is Dark" The Rhino Horn Trade 2019)* to the DEFF, it questions the DEA's/DEFF's stance:

> *"After defending the ban [moratorium on domestic trade] through all the legal processes it remains unclear why the DEA did not attempt to re-advertise its intention to ban the domestic trade in rhino horn with required notice period and circulation of information.*
>
> *Instead, the DEA, under the leadership of Minister Molewa, chose to focus on developing new legislation which included setting out the requirements for the domestic sales of rhino horn. Numerous organizations in South Africa and internationally appealed against this decision.*
>
> *A Committee of Inquiry was appointed by the DEA and tasked with producing a report on the viability of the domestic rhino horn trade in South Africa. Apparently the full report was completed in 2016 but only a summary report has ever been made available. We would appreciate access to full report in order for us to understand and evaluate the COI's findings*."

In the meantime, the ongoing domestic trade in rhino horn in South Africa remains open to illegal trafficking and abuse:

> "*SA's largest private rhino breeder, John Hume, says seized rhino horns are his property*," IoL, 30 April 2019
>
> *"The legal domestic market in South Africa, we believe, is contributing to the poaching of rhinos in South Africa and in neighboring African countries. The legal domestic trade has undermined demand reduction campaigns and enforcement efforts and it has provided potential routes through which illegally obtained rhino horn might be laundered.*
>
> *The domestic trade in rhino horn weakens the international trade ban under CITES. Over the past two years frequent shipments of farmed rhino horn from South Africa have been intercepted at international border and recently there have been large scale illegal shipments of farmed rhino horn intercepted within South Africa*" - *Wildlife Animal Protection Forum South Africa, "Their Future is Dark" The Rhino Horn Trade 2019*)

2.5.2 Captive Lion Breeders

Alarmingly, within the conclusions at paragraph 6.1 of *South African Lion Bone Trade – Report for the South African National Biodiversity Institute (SANBI),*" November 2017 report, the authors exposed the lion breeders' true intent and motivations to profit regardless of any legal mechanism for a 'lion bone trade' – the majority of captive lion breeder respondents expressed a willingness to utilise illicit means to profit if a 'legal' mechanism is denied to them:

> *"The fact that a large proportion of survey respondents have stated that they will seek 'other markets' [if no 'legal' quota is available] 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 enterprise, the effects could be irreversible (as with the rhino horn trade) and result in greater and more widespread threat of focused commercial – scale poaching of felids."*

2.6 Can Harvested Rhino Horn Meet Demand if Rhino Horn is 'Destigmatised'?

Notice 1105, Table 1 NDF 25 "*Effectiveness of strict protection measures*" states:

> "*In relation to potential 'destigmatization' of rhinoceros horn use in consumer markets, Moyle (2018) however argues that there is no strong empirical or theoretical evidence that stigmatizing demand would be at a sufficient scale that it can compensate for the lack of legal competition*"

However, in December 2017's, Biological Conservation (Vol. 216, page 60 - 68), a paper was published entitled "*Sustainable rhino horn production at the pointy end of the rhino horn trade debate*" authored by Andrew Taylor, Dave Balfour, Diane Kirsty, Brebner Rynette, Coetzee Harriet Davies-Mostert, Peter A. Lindsey, Jo Shaw and Michael't Sas-Rolfes.

This paper highlights how little is currently known and understood about the viability of any proposed legal, international trade in rhino horn and what could happen if rhino horn is destigmatised (regardless of whether such trade is initially disguised as "*primarily for non-commercial*" purposes, or not):

"*We don't know what will happen to demand if the stigma of buying horn is reduced once it has been legalised. For example, there may be many potential buyers that are not buying because it is illegal, but will start buying if it becomes legal" -* Dr Andrew Taylor

"*If there's increased rhino poaching following trade legalization, even for a brief period and at a relatively low level compared with the present, this could be catastrophic for rhinos" - "Legalizing Rhino Horn Trade Won't Save Species, Ecologist Argues,"* K. Nowak, National Geographic, 8 January 2015

The key points from the "*Sustainable rhino horn production at the pointy end of the rhino horn trade debate*" paper are given as follows:

Key Point 1 - What happened to South Africa's rhinos in the past?

"*South African populations of black and white rhinos (subspecies C. s. simum), both of which had been nearly extinct in the year 1900 due to uncontrolled hunting, grew in numbers over the last 100 years and were not exposed to the same high levels of poaching seen in countries to the north"* - So, the paper confirms uncontrolled hunting led to the rhinos initial demise.

Key Point 2 - "*Further research is necessary to assess the likely outcomes of legalising trade*"

No one knows (despite propaganda and 'beliefs') that the outcomes of any international rhino horn trade can only be positive.

Key Point 3 - "*Conventional legal protection and law enforcement are insufficient at currents levels of effort and efficiency*"

Agreed, but even a 'legal' trade requires efficient "*Conventional legal protection and law enforcement* " to combat illicit markets - a 'legal' trade will not help conserve wild rhino if illicit behaviour goes unchecked in parallel to any 'legal' trade. The theory that

a 'legal' trade will compete and is somehow guaranteed to decimate illicit activity remains unproven.

The international organised criminal networks that traffic wildlife to fund terrorism are highly unlikely to yield readily to pricing and market competition. Without increased pressure and enforcement too, if margins are squeezed (ie. prices for rhino horn drop), what is to say such networks will not increase volume (more poaching) to maintain income streams?

Key Point 4 - "*Legal trade in rhino horn has been proposed but is controversial*"

Yes it is.

Key Point 5 - "*African rhinos are facing high rates of poaching that is threatening their survival*"

Yes they are - successfully tackling poaching is not guaranteed by any flawed, legal rhino horn trading strategy that stimulates demand.

Key Point 6 -"*Annual horn production in South Africa is estimated at 5,319 to 13,356 kg*"

Michael't Sas-Rolfes (The University of Pretoria and independent economist) has reportedly said the estimates ["*Annual horn production in South Africa is estimated at 5,319 to 13,356 kg"*] take into account "*uncertainty"* surrounding rhino population sizes, mortality rates, horn growth rates and the attitudes of private rhino owners to potential legalisation.

Dr Barbara Maas also assessed the ability of harvested rhino horn stockpiles to meet demand – the conclusion is that if demand is stimulated, then stockpiles (and the ability to replenish from harvested rhino horn to meet demand) could soon be obliterated leaving wild rhino at the mercy of out of control demand:

To illustrate, this upper estimate of 13,356 kg annual availability of rhino horn (at a 50g Traditional Chinese Medicine (TCM) dose) would provide just 267,120 such doses - satisfying just 0.018% of the total estimated Chinese and Vietnam population of 1.471bn (Ref. World Bank data) with a 50g TCM dose - Reference data/mythology from "*Pointless - A quantitative assessment of supply and demand in rhino horn and a*

case against trade," NABU International Foundation for Nature, paper authored by Barbara Mass.

"*These simple calculations support the notion that lifting the ban on commercial trade in rhino horn is likely to facilitate the extinction of rhinos, rather than support their survival. Illegal rhino horn trade is an international problem that requires a well-coordinated global response comprising a genuine commitment to strong legislation, uncompromising enforcement and creative demand reduction initiatives" - "A quantitative assessment of supply and demand in rhino horn and a case against trade*," NABU International, Barbara Maas, Berlin, 2016

The "*Sustainable rhino horn production at the pointy end of the rhino horn trade debate*" co-author, Dr Andrew Taylor of the wildlife in trade programme at the Endangered Wildlife Trust (EWT) has also highlighted the many unknowns with regard to the demand side's unpredictability, concluding that:

> *"….the potential size of the consumer market…..may in fact be considerably bigger if rhino horn were legally available."* Concluding *"It's therefore not reasonable to assume that the potential supply of rhino horn can meet potential demand."*

Well indeed, but the unknowns with regard to the viability of any proposed international trade in rhino horn are also expanded upon by Taylor:

> "*A major problem is that we don't know the true size of the market. Although one could infer the current extent of rhino horn demand from the amount of illegal horn (our estimate was 5,346kg or the equivalent of 909 white rhino horn sets), there are a number of factors that complicate the situation*."
>
> "W*e don't know much about what the horn is being used for - specifically, what proportions are being used for medicinal purposes, what proportions are used for ornaments, and importantly what proportions are being stockpiled for speculation.*"
>
> "*We don't know what will happen to demand if the stigma of buying horn is reduced once it has been legalised. For example, there may be many potential buyers that are not buying because it is illegal, but will start buying if it*

> *becomes legal. We don't understand the price elasticity of demand for horn - what will happen to the price of horn if there is an increased (legal) supply?*
>
> *These are things we think [we] need to understand before risking legalising trade.*"

There is also the question of the 'quality' of the rhino horn itself to meet consumer demand and whether harvested rhino horn meets that demand. Recent studies published in May 2019 by Professor Vu Hoai Nam Dang and Professor Martin Reinhardt Nielsenhave from the University of Copenhagen have determined that the discerning consumers prefer rhino horn that is derived from wild rhino, not farmed or harvested rhino horn.

This clearly runs counter to the Notice 1105, Table 1 NDF 25 "*Effectiveness of strict protection measures*" finding of *MacMillan et al. (2017)* that *"…after interviewing 1,000 animal traditional medicine (ATM) users in Vietnam concluded….consumers' strong preference for non-lethal harvesting…"* Therefore, the *MacMillan et al. (2017)* consumers' "*strong preference*" for non-lethally harvested rhino horn is disputed.

Furthermore, Douglas J. Crookes, James N. Blignaut (Department of Economics, University of Pretoria) point out ("*Debunking the myth that a legal trade will solve the rhino horn crisis: A system dynamics model for market demand*") that game farms may harvest horn every 1.5 years, whereas for poachers it is optimal to kill a rhino and harvest its horn, even at very low rotation intervals:

> "*This suggests that, even if a rhino poacher encounters a dehorned rhino, it is still optimal to kill the rhino and take what is left of the stump. This casts further doubt on the effectiveness of a legalized trade*".

3 Proposed Quota for the Export of Rhinoceros Horn for "*primarily non-commercial purposes*"

The Notice 1105 states at Table 1, NDF 14 "*Quotas*" that "*There is currently no quota for the export of rhinoceros horn for non-commercial purposes*."

How will "*non-commercial purposes"* be assessed as a genuine motivation before any such exportation, or potential abuses for 'commercial purposes' eradicated with any degree of certainty?

CITES definition applies where:

> "*the term 'commercial purposes' **should be defined by the country of import** as broadly as possible so that any transaction which is not wholly 'non-commercial' will be regarded as 'commercial'*" - Resolution Conf. 5.10 (Rev. CoP15)

It would seem that the assessment of the commercial intent of any rhino horn to be traded by the proposed mechanism "*for primarily non-commercial purposes*" will be left up to the country of import, which means the DEA/DEFF can seek to absolve itself if in fact an importing country (such as Vietnam, or China for example) does in reality import rhino horn for commercial purposes.

This is made more alarming by the Notice 1105 stating at Table 1, NDF 14 "*Quotas*" "*There is currently no quota for the export of rhinoceros horn for non-commercial purposes*."

Therefore, the proposed "*primarily non-commercial*" rhino horn trade has no cap, or quota, but relies on the integrity of an importing country that such trade is not commercial. Where are the proposed precautionary safeguards that trade masquerading as "*non-commercial*" will not be exploited for commercial purposes? Who will vet any importing entity posing as a university, or museum etc. seeking non-commercial specimens of rhino horn that are subsequently found to be a front (and the rhino horn so imported has indeed been sold on for commercial gain)?

One only has to look at the precedent set by South Africa's lion bone trade flaws to see the potential traceability, verification of the importer and abuse of exported weights on CITES Permit that will potentially exist in any proposed "*primarily non-commercial*" rhino horn trade:

- Although the official CITES export permits contain a name and address of the supposed exporter and importer, many of the destination addressees and addresses could not be satisfactorily verified, and telephone numbers and identification or passport numbers were often missing - "*The Extinction Business - South Africa's lion bone trade*," EMS Foundation & Ban Animal Trading, 2018

- There are also discrepancies between permits issued in South Africa, exports recorded on the CITES Trade Database and what the importing country records as having been received - "*Public Participation Submission of the Coalition to Stop the Captive Breeding and Keeping of Lions and Other Big Cats for Commercial Purposes*," June 2019

- Further anomalies have been suspected in the 'lion bone trade' with the number of CITES permits issued allegedly exceeding the actual 2017 quota. Williams and 't Sas-Rolfes (2017) confirm the there is indeed "*sufficient reason to believe that some consignments had more bones than allowed by the [CITES] permits*." EMS Foundation & Ban Animal Trading, 2018 ("*The Extinction Business - South Africa's lion bone trade*") findings showed an average weight per exported skeleton of between 11-30 kg, whereas a full lion skeleton weights on average only 9 kg. One consignment of 71 lion skeletons weighted 1,580 kg or an average of 22 kg per skeleton!

How much "*non-commercial*" trade in rhino horn does the South African National Biodiversity Institute (SANBI) consider to be scientifically justifiable, or is there no intention to establish such precautionary limits?

There is also the postulation given in Notice 1105 that:

> "*…..the Private Rhino Owners Association (PROA) launched Rhino Horn Trade Africa (RHTA), an initiative that will facilitate the legal trade of rhinoceros horn via an online trade desk, which aims to provide a managed, efficient platform from which genuine buyers and sellers can trade in legal, humanely acquired rhinoceros horn*."

How will this privately funded RHTA brokerage service (acting on behalf of private rhino owners seeking to sell rhino horn) ensure "*genuine buyers*" of "*non-commercial*" intent?

How will the DEA ensure South Africa oversees CITES compliance? There is an obligation on parties (including the Republic of South Africa and any CITES Management Authority in any

given signatory country of import) to CITES encompassed at Article VIII, "*Measures to Be Taken by the Parties*," whereby:

> "*1. The Parties shall take appropriate measures to enforce the provisions of the present Convention and to prohibit trade in specimens in violation thereof.*
>
> *These shall include measures:*
>
> *(a) to penalize trade in, or possession of, such specimens, or both; and*
>
> *(b) to provide for the confiscation or return to the State of export of such specimens*."

The obligation on Parties to "*take appropriate measures to enforce the provisions of the present Convention and to prohibit trade in specimens in violation thereof*" includes all Parties' (including South Africa's) adherence not to facilitate trade in contravention of the CITES 1977 ban on all international commercial trade in rhinoceros and their products - where under Article I definitions *""Trade" means export, re-export, import*..."

3.1 Draft Regulations relating to Domestic Trade in Rhinoceros Horn

The proposed 2018 (Government Notice 986 "*Draft Regulations relating to Domestic Trade in Rhinoceros Horn*" ("draft regulations") as notified in Government Gazette, Vol. 639, No. 41919, Department of Environmental Affairs (DEA), dated 21 September 2018), draft regulations encompassed the issuing of a Permit to potentially facilitate a buyer to export a rhinoceros horn purchased by the exploitation of draft regulations 13.(1)(c) and 13.(2) using the excuse that such export is "*for primarily non-commercial purpose.*"

The draft regulations are clearly open to complicit parties (ie. a willing CITES Management Authority importing into Vietnam for example) to facilitate South Africa in the export of rhinoceros horn under the pretence it is not for commercial purposes, when in reality the use of such loopholes clearly invites abuse purely for commercial purposes.

The spirit of these draft regulations and export mechanisms clearly undermines CITES' 1977 ban on any international rhinoceros horn trade. The arguments opposing opening-

up this export mechanism have been expanded upon previously in response (Dated 19 October 2018) to the draft regulations, but are reiterated as follows.

Regulation 13.(2) states "*A person may export or re-export rhinoceros horn contemplated in subregulation (1) for primarily non-commercial purpose*." This implies that the draft regulations seek to facilitate commercial, international export provided it is stated on the pre-requisite Permit (in accordance with the "*Biodiversity Act*" (National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004)) that commercial gain is not the primary reason for the export. How will the burden of proof be levelled on any Permit applicant to prove such export is not for commercial purposes, or will each applicant be taken upon their self-declared word alone? How many Permit applications for export would it take for any given person (company or trust) to trigger the notion that such exports are actually for commercial purposes? Clearly, this export loophole is open to potential widespread misuse and abuse when no international agreement exists for the international, commercial trade in rhinoceros horn.

The Permit system outlined at Chapter 7 of the relevant Biodiversity Act provides opportunity for the issuing authority to sanction Permits provided it meets with certain conditions:

(a) the applicable provisions of this Act;
(b) the national environmental management principles;
(c) the national biodiversity framework;
(d) any other relevant, plan as adopted or approved in terms of Chapter 3;
(e) any applicable international agreements binding on the Republic;
(f) the Promotion of Administrative Justice Act, 2000 (Act No. 3 of 2000);
(g) *any requirements that may be prescribed.*

The 1977 CITES ban on the international trade in rhinoceros horn is binding on the Republic of South Africa. So, the export of rhino horn, regardless of any flimsy statement that it is for "*primarily non-commercial purpose,"* is clearly not permissible under the Biodiversity Act's own international obligations. Will Permits be issued 'unconditionally' and if so, how does this comply with Chapter 7, "*PERMITS*," Part 1, 88.(2)(e), or will CITES' ban on the international trade in rhinoceros horn be wilfully subverted and/or ignored?

There are monitoring criteria proposed at regulation 13.(6), but no clear restrictions stated on the frequency and/or volume of rhinoceros horn that may be exported or re-

exported via this mechanism/loophole either per person, or as an overall limit - there appears to be no export boundary. What happened to any (but ill-conceived and defined) proposed "*export a maximum of two rhinoceros horns*" limit contained within the "*Domestic Trade in Rhinoceros Horn, or Part, Product or Derivative of Rhinoceros Horn,*" as notified in Government Gazette, Vol. 620, No. 40601, Notice 74, Department of Environmental Affairs (DEA), dated 8 February 2017?

In the absence of any obvious export boundary limits, how can these latest draft 'Domestic' regulations be seen as anything but a blatant attempt to circumvent the spirit of CITES' 1977 ban on international trade in rhinoceros horn, no doubt with the DEA's anticipated complicity of CITES "*Management Authority*" in a willing recipient country, such as Vietnam for example.

How does the DEA propose to detect fraud with the pre-condition given at regulations 15.(2)(a) and 15.(2)(d) in any "*import permit issued by the Management Authority*" and/or 15.(2)(e) "*written confirmation from the Management Authority*" stipulations? How easy will it be to fabricate or obtain by deception/corruption such paperwork?

3.2 Conclusions on the Proposed Quota for the Export of Rhinoceros Horn for "*primarily non-commercial purposes*"

Where has the SANBI taken risks associated with an unbounded quota into account in the NDF given (Notice 1105, Table 1, NDF 14 "*Quotas*") in support of its statement:

> "*The export, for primarily non-commercial purposes, of rhinoceros horn that has been legally sourced, either through natural mortalities and/or horn harvest from wild populations, or from captive breeding facilities, will not be detrimental to the survival of the species in the wild provided that (1) the income derived from these exports contributes directly to the conservation of wild rhinoceros populations and (2) the captive breeding facilities meet the Scientific Authority's approved criteria for the captive breeding of white rhinoceros.*

At the August 2019 CITES, Conference of the Parties (CoP18), Proposal 8 was rejected at the committee and plenary stages. The Kingdom of Eswatini (formerly Swaziland, which made a similar submission to CoP17 Prop. 07) resubmitted a submission, Proposal 8, "*To remove the existing annotation on the Appendix II listing of Eswatini's southern white rhino population*" and for:

> "*... Eswatini to sell from existing stock 330 kg of rhino horn to licenced retailers in the Far East and also up to 20 kg p.a., including harvested horn, to those retailers*" along with arguments in support of such trade and rhino farming/horn harvesting - but with no independent science that support such trade as not risking stimulating demand and poaching.

So how does the Notice 1105 recommendation to explore unbounded, "*primarily non-commercial*" exports of rhino horn from South Africa correlate with the rejection at CITES CoP18 of a proposal to seek any legal trade in rhino horn (at up to 20kg per annum)?

Conclusion - It can be seen that CITES signatories have now rejected any such legal trade in rhinoceros' horn on the grounds that such trade is likely to be detrimental to the species.

4 Rhino Horn Stockpiles

Notice 1105, NDF 19 "*Methods used to monitor the harvest*" states "*Reporting of rhinoceros horn stocks within the private sector continue to increase in part due to improved declaration and reporting*." However, it is acknowledged that such reporting is not necessarily 100% complete:

> "*A 2014 survey of white rhinoceros owners in South Africa found that privately held stocks totalled 1,697 pieces (6,256 kg) (Balfour, et al., 2016), accounting for approximately 80 85% of the potential estimated weight of stocks expected from natural mortalities (i.e. 7,690 kg). Fear of reporting stockpiles to authorities in some provinces where such information can be leaked to criminals is a factor in under-reporting (Emslie, et al., 2016)*."

In 2014, the DEA recommended in "*The viability of legalising trade in rhino horn in South Africa*:"

> "*Taking into account the facts that the mechanisms for controlling a legal trade in South Africa are not yet in place, that the number of rhino horns in private stockpiles are uncertain, and that some private rhino owners are not yet compliant with permitting regulations, it is likely that lifting the moratorium at the present time will lead to laundering of illegal horn into legal stockpiles as well as smuggling of horn out of the country. These acts would tarnish South Africa's reputation with CITES Parties and could jeopardise future attempts to legalise international trade in rhino horn."*

A 2016 report from the IUCN Species Survival Commission (IUCN SSC) African and Asian Rhino Specialist Groups and TRAFFIC to the CITES Secretariat pursuant to Resolution Conf. 9.14 (Rev. CoP15) concluded that South Africa's stockpiles were not fully complaint with illicit stocks removed from potential laundering within any legal trade:

> *"South African private sector stocks also continue to increase in part due to improved declaration and reporting. Whilst problems clearly remain regarding their tracking, the discrepancy between reported and estimated horn has narrowed since CoP16. A 2014 survey of white rhino owners in South Africa found that privately-held stocks totalled 1,697 pieces (6,256 kg) (Balfour et al. 2016), accounting for ~80-85% of the potential estimated weight of stocks expected from natural mortalities (i.e. 7,690 kg). Fear of reporting stockpiles to authorities in some provinces where such information can be*

> *leaked to criminals is a factor in under-reporting. It is also noted that some private sector rhino owners are believed to have sold horns into illegal trade (Huebschle 2016)."*

So, this begs the question of how the uncertainty of the "*number of rhino horns in private stockpiles"* has been removed, and thereby mitigated the risk of *"laundering of illegal horn into legal stockpiles as well as smuggling of horn out of the country?"* This is despite the Notice 1105 assurance that *"the RHODIS database to ensure traceability. The system is well managed and rhinoceros horn stock piles are regularly audited."*

There would still seem to be significant questions regarding the credibility of South Africa's declared and undeclared rhinoceros horn stockpiles:

> "*In the interim we ask that the DEFF identify, mark, register secure stockpiles and declare the results. Rumors that South African state stockpiles might have been compromised during State Capture period abound, South Africa's conservation reputation is at further risk" - - Wildlife Animal Protection Forum South Africa, "Their Future is Dark" The Rhino Horn Trade 2019*)

5 Summary and Conclusions

South Africa's constitutional rights on the issue of 'sustainable' wildlife utilisation are enshrined at Section 24, "*Chapter 2, Bill of Rights, Environment*."

This section refers to ensuring everyone's right "*to an environment that is not harmful to their health or wellbeing;*" "*to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that*" amongst other criteria "*promote conservation,*" whilst ensuring "*secure ecologically sustainable development and use of natural resources…*"

So, how is the privately owned, 'captive' breeding of some 6,000 rhinoceros for speculative purposes and any proposed legal rhino horn trade considered a "*reasonable legislative*" measure that "*promotes conservation*" when there is a risk that such trade could jeopardising the species' survival?

The Notice 1105 statement that *"It is however highly unlikely that current investment from government, external donors and private rhinoceros owners in the protection of this species can be sustained in the long term, and it is recommended that a legal trade in rhinoceros horn as an alternative source of funds be explored"* is not justification in itself – because funds are needed a legal trade must be established.

In summary:

- What is the guarantee that the "*income derived from these [rhinoceros horn] exports contributes directly to the conservation of wild rhinoceros populations"* – where is the evidence of a mechanism that scientifically guarantees such income will contribute directly to recognisable species' conservation in the wild, and will not just fuel profiteering from the expansion of privately owned, captive rhinoceros exploitation?

- No one forced any rhino breeder to breed rhino, or breed rhino numbers to a financially unsustainable level. Such breeding endeavours were no doubt established with the prospect of profiteering from rhino horn and derivative products (based upon the hope of legal trade) as well as rhino trophy hunting, not because of some purely altruistic imperative to protect and conserve the wild species. The fact that such captive breeding business ventures have not reached fruition and have the increasing burden of financing anti-poaching measures, should not be used as an excuse to force

through a trade mechanism that has no scientific merit – ie. there is scientific proof counter to the SANBI's evidence within Notice 1105 Table 1, NDF 25 "*Effectiveness of strict protection measures*" - the proposed trade in rhino horn could be detrimental to the species.

- There is the a lack of trust in the ability of the DEFF to prioritise and adequately ensure animal welfare with its unlawful pursuit of wildlife exploitation in the name of "*sustainable utilisation*" – namely the abhorrent captive lion breeding and lion bone trade industry.

- The SANBI Notice 1105 Table 1, NDF 25 "*Effectiveness of strict protection measures*" quotes "*MacMillan et al. (2017), after interviewing 1,000 animal traditional medicine (ATM) users in Vietnam concluded….an anticipated overall fall in price due to the loss of prestige and exclusivity of rhinoceros horn within a legal and regulated trade.*"

  Douglas J. Crooks, James N. Blignaut (Department of Economics, University of Pretoria) concluded ("*Debunking the myth that a legal trade will solve the rhino horn crisis: A system dynamics model for market demand*") that "*demand is relatively insensitive to price…*"

- The consensus among pro-trade advocates is that opening up legal trade will lead to a speculative return for anyone invested in rhino horn, ie. the value of rhino horn will rise "*betting that the international rhino horn trade ban will one day fall away, and that horn can then be sold at a stupendous mark-up in Asia*." So, this suggests that the rhino farmers' expectations from a legal market are counter to the DEA's stated aim to reduce rhino horn prices by legal trade and Demand Management.

- The DEA's March 2019 presentation, "*Demand Management*" also proposed the theory that demand reduction could be conducted in parallel with legal trade, whereby:

  Demand Management - Demand Reduction = Legal Demand - Illegal Demand

  This 'theory' is not supported by any independent, peer reviewed science as even plausible. What happens if "*Demand Management*" and "*Demand Reduction*" conducted in parallel fail, which equates to "*Legal Demand*" and an exponential rise in "*Illegal Demand?*"

Where is the evidence and economic science to support the claimed conclusion that "*demand*" is *"reversible"* in reality? If things go wrong, then 'legal' actions are not necessarily easily reversible - past experience proves 'easy reversibility' to be an assumption.

- Case studies (elephant ivory and the vicuña) on Demand Management/sustainable utilisation, do not support a legal trade in rhinoceros horn being able to combat non-conformist (illicit) market forces – quite the opposite; legal trade stimulates demand and fuels illicit activity.

- There are concerns around the potential effects of legalisation relating to whether legalised trade competes with existing illegal markets or simply creates new parallel ones. One only has to look at the evidence in a comprehensive report on the 'legal' lion bone trade, "*The Extinction Business, South Africa's 'Lion' Bone Trade*," EMS Foundation and Ban Animal Trading, July 2018 where the conclusion is - South Africa's lion bone trade has "*….created a situation where the legal trade in 'lion' bones is fuelling the illegal trade in lion and tiger bones and providing laundering opportunities for tiger bones in Asian markets.*" There is no evidence to suggest that a legal trade in rhino horn will not fuel illegal trade, quite the opposite is likely – professionals within academia conclude that 'legal' trade does not potentially counter and combat illicit activity – legal and illegal trade does not necessarily reach a natural equilibrium.

- There are concerns *"whether legalised trade leads to reduced enforcement against illegal traders."* As soon as there is a blur and legal mechanisms exist, then legal and illegal markets coexist and interact in complex ways – thereby "*legalised trade leads to reduced enforcement against illegal traders."*

- However, perhaps the principal problem with the endless campaign to adopt some form of legal 'sustainable utilisation' as the only solution is the notion that it's justified regardless of any imposing law:

> "*The notion of 'contested legality' was introduced as a legitimation strategy of important actors who justify their participation in illegal or grey flows of rhino horn based on the perceived illegitimacy of the rhino horn prohibition*" - "*A Game of Horns*" (page 366), Annette Michaela Hübschle, International Marx

Plank Research School on the Social and Political Constitution of the Economy (IMPRS SPCE), Köln, Germany, 2016

- Therefore, it's not just a question of "*legalised trade leads to reduced enforcement against illegal traders*" – those seeking 'legal' trade mechanism for rhino horn, lion bone etc. feel that it is their right to act outside of the law in the first place and exacerbate illicit activity. Such illicit actions will potentially have an enduring, negative impact on the species' conservation; however such threats/blackmail from breeders should not be used as an excuse to authorise and condone a 'legal' trade or quota that has no scientific merit - the rule of law should override any such illicit activity threats (or else mob rule will be allowed to prevail in the absence of law enforcement and a clear scientific foundation for a legal mechanism).

- The proposed "*non-commercial*" rhino horn trade has no cap, or quota, but relies on the integrity of an importing country that such trade is not commercial. Where are the proposed precautionary safeguards that trade masquerading as "*primarily non-commercial*" will not be exploited for commercial purposes? The spirit of the draft regulations (Government Notice 986 "*Draft Regulations relating to Domestic Trade in Rhinoceros Horn,*" October 2018) and export mechanisms (Notice 1105) clearly undermines CITES' 1977 ban on any international rhinoceros horn trade.

- The Kingdom of Eswatini (formerly Swaziland, which made a similar submission to CoP17 Prop. 07) resubmitted a submission, Proposal 8, "*To remove the existing annotation on the Appendix II listing of Eswatini's southern white rhino population*" and for... *"Eswatini to sell from existing stock 330 kg of rhino horn to licenced retailers in the Far East and also up to 20 kg p.a., including harvested horn, to those retailers.*"

  At the August 2019 CITES, Conference of the Parties (CoP18), Proposal 8 was rejected at the committee and plenary stages. Surely, it can be seen that CITES signatories have now rejected such trade proposals twice before on the grounds that such trade is likely to be detrimental to the species.

- Recent papers highlights how little is currently known and understood about the viability of any proposed legal, international trade in rhino horn and what would happen if rhino horn is destigmatised - "*We don't know what will happen to demand if the stigma of buying horn is reduced once it has been legalised. For example, there*

may be many potential buyers that are not buying because it is illegal, but will start buying if it becomes legal" - Dr Andrew Taylor

- How has the uncertainty of the "*number of rhino horns in private stockpiles"* been removed, and thereby mitigated the risk of *"laundering of illegal horn into legal stockpiles as well as smuggling of horn out of the country?"* This is despite *"the RHODIS database to ensure traceability. The system is well managed and rhinoceros horn stock piles are regularly audited."*

- There is an obligation on Parties to "*take appropriate measures to enforce the provisions of the present Convention and to prohibit trade in specimens in violation thereof*" includes all Parties' (including South Africa's) adherence not to facilitate trade in contravention of the CITES 1977 ban on all international commercial trade in rhinoceros and their products - where under Article I definitions *""Trade" means export, re-export, import*..." and undermine the February 1995 exemption South Africa's white rhinoceros population to an Appendix II listing and the caveat that this exemption did not include trade in rhinoceros horn.

In final summary, the Notice 1105, Table 1, NDF 25 "*Effectiveness of strict protection measures*" evidence in support of exploring a legal rhino trade is not impartial, exhaustive or complete. The body of impartial science does not categorically support any legal rhino horn trade as not detrimental to the survival of the species. Therefore, the CITES requirement for export (even for claimed "*primarily non-commercial purposes*") are not met:

> Appendix I and II Specimen – "*An export permit or re-export certificate issued by the Management Authority of the State of export or re-export is required. An export permit may be issued only if the specimen was legally obtained* ***and if the export will not be detrimental to the survival of the species****. A re-export certificate may be issued only if the specimen was imported in accordance with the Convention*."