

Summary report

*Meeting African Lion Working Group at Mpala Ranch and Research Centre,
Laikipia County, Kenya) 2 and 3 November 2020*



Introduction

The ALWG workshop was organised by an Organising Committee of the ALWG, Coordinated by Hans de longh, Laurence Frank and Francis Lesilau supported and facilitated by the Living with Lions project in Laikipia (Laurence Frank), Leo foundation (Hans de longh, Laura Bertola), WildCRU (Hans Bauer) in collaboration with Kenya Wildlife Service (Francis Lesilau and Monica Chege). The Organizing Committee reports to the Chair of the ALWG (Hans de longh).

The ALWG workshop was synchronised with the annual Carnivore Workshop organised by KWS on 30 and 31 October 2019, which aimed at an exchange of information between (large) carnivore conservationists and researchers working in Kenya. For this occasion, KWS had opened the workshop for international participation. ALWG members were *explicitly* invited to attend the KWS workshop and present their work on lion conservation at the KWS workshop. More than 10 ALWG members attended the KWS carnivore workshop in Nairobi.

The African Lion Working Group (ALWG) meeting held in Mpala Research Centre, Kenya during November 2-6, 2019 two days after the Kenyan Wildlife Service Carnivores Workshop. The first day, after the welcome notes by the president of the organising team, Hans de longh, the new ALWG chair Kelly Marnewick and the Director of Mpala Research Center, we followed presentations on KWS lessons in lion conservation by its director for research, and then on the status of lion all over Africa followed in the afternoon by a session on Lion genetics. I presented the status of lion in West and Central Africa in the morning session.

The organization of these two events within the same period permitted some participants to attend both the Kenyan Wildlife Service Workshop that held in Nairobi and later the African Lion Working Group meeting in Mpala. The ALWG meeting had as objective to bring together participants to share knowledge and experience on lion conservation. In attendance were more than sixty members all working on various aspects of lion conservation from various countries in the world. The West and Central African participants, members of the West and Central African Network for Lion Conservation (ROCAL) were supported to attend this meeting by the Lion Recovery Fund, Houston Zoo and Leo foundation. Thanks to the travel assistance, more members from this sub region participated in this meeting than the previous ALWG meetings. Participating were two members from Cameroon; Pricelia Tumenta and Saleh Adams, Etotepe Soghbohossou from Benin, Ameer Mahamad from Sudan, Hamissou Garba from Niger and Gueye Malle from Senegal. The meeting held for four days; two days of presentations and discussions in the meeting room of the Mpala Research Centre while the last two days were dedicated to field visits to livestock/wildlife ranches within the Laikipia landscape.

The Workshop in the Mpala Research Centre

The Mpala Research Centre located at about 350 km north of Nairobi received more than sixty participants including ALWG members, observers and some members of the Kenya Wildlife Service.

The opening session of the meeting was facilitated by Hans de Longh who introduced the meeting's objectives and gave a run-down of the programme. The next speaker, the director of the Mpala Research Centre welcomed participants and introduced the Centre which was created 25 years back. The Mpala research Centre, a cooperation effort between Princeton University, Smithsonian Institute and Kenya Wildlife Service welcomes researchers from these Institutions and from around the world. The third speaker from the Kenyan Wildlife Service gave the welcome address and expressed how honoured Kenya was to host the African Lion Working group meeting. He spoke on the issues surrounding large carnivore conservation and the lion in particular. Explicit from his discourse was the need to harmonize lion counting methods and the role of researcher to help decision makers take right management decisions. One of the speakers who marked this official phase was the Chair of the ALWG Kelly Marnewick who equally welcomed participants to the meeting.

Presentations first day 2 November 2019

The first session on **the first day** was chaired by Samantha Nicolson who gave an overview of the African lion database with country data from more than 200 persons surveyed in the different range States. The presentations that followed focused on the status of the lion in different geographical regions of Africa as well as the Indian population. The population status of lions in Kenya, West & Central Africa, East Africa, Southern Africa and India were presented. Recent estimates of the Kenyan lion population stood at 1970 significantly lower than previous records. Possible reasons for the difference were the improvement in counting methods and the fact the most of the previous records were based on guesstimate. Nevertheless threats have been on the increase coupled with the recent effects of climate change on wildlife. The West and Central African lion population status presented generally showed a lack of data and systematic monitoring. Lion populations in this region are small, fragmented and less studied. New lions have been observed in two new sites; in the northern part of Sierra Leone and in the Centre region of Cameroon. These are new grounds for research in this region the host the newly discovered northern sub-species of lion. The presentation from Southern Africa seems to demonstrate that lions were doing pretty well in Southern Africa and that Southern Africa is now having an edge over East Africa in terms of lion numbers. The session ended with a presentation on the Gir lions in India, which was so rich in information with a sustainable lion monitoring system in place. The lion population in India has been increasing steadily.

The afternoon session was dedicated to lion genetics and the application of genetics to conservation. An overview of the dichotomy between the Northern and the Southern lion sub species gave the participants a better understanding of the recent discovery. Options on how to conserve biodiversity through the use of genetic banks were discussed as well as technological advancement in the analysis of genetic material. The field of genetics offers a lot of possibilities that can foster lion research and conservation. It was made clear that small fragmented lion populations were at risk of facing genetic inbreeding and its consequences.

The break before lunch was used to demonstrate how to set foot snares to capture wary lions that cannot be approached for free darting. This safe, simple, and cheap method has been used to capture many lions for research and management in Laikipia and the Amboseli region. Discussions followed after every session. Day one ended with dinner, drinks and social bonding.

Presentations second day 3 November 2019

This day was kick started with a presentation on the Outcomes of the Disney supported Lion Footprint Forum that came up with a powerful declaration to conserve lions. This was followed by the presentation on the Lion Recovery Fund, a fund initiated to support range states restore lions and their landscapes. The challenges of lion conservation per region and solutions for West & Central Africa, East African and Southern Africa were presented. Lions in West and Central Africa are more threatened and less managed and studied than in the other regions of Africa.

Other topics presented during this session included lion conservation guidelines and the lion Database website. The session that followed treated coexistence of lions with humans in human dominated landscapes. Options discussed include translocation, the use of enclosures, conservation education and co-management. The last session of the day and for the workshop was on lion bone and lion body parts trade. All body parts of the lion are utilized by humans throughout their range States and are traded either for traditional medicine, magic, witchcraft or other uses. Destinations for this rising trade are China, Nigeria and other Asian countries.

The next two days we dedicated to excursions within the Laikipia landscape to gain a better understanding of the possibility of co-existence with lions. Different categories of game ranches were visited most of which had about four domestic livestock species keep for dairy products and commercial purposes. These excursions to Laikipia ranches and conservancies exposed participants on how to raise livestock commercially in rangelands that also support populations of all the African large carnivores and their wild prey. Two types of enclosures were observed during our visits to the ranches and conservancies; mobile lion-proof enclosures made of metal iron and wire mesh as well as enclosures made of thorny bushes. The existence in the landscape of livestock and large carnivore is possible thanks to protection of livestock in enclosures, local herding practices, the use of GPS collars to aid in lion management and a sound lion monitoring by competent scouts.

The Mpala meeting ended with dinner and drinks and transfer of participants back to Nairobi via buses the following day.

Annex 1. Summary of sessions

First Plenary Session; The African Lion Database (Session Chair Samantha Nicholson)

Notes compiled by the session chair: Sam Nicholson (African Lion Database Coordinator)

Talk 1: Counting cats and where they roam: The African Lion Database (Sam Nicholson)

Although the lion is one of the most researched big cat species – there is still plenty of uncertainty regarding population numbers and distribution. This information is critical because the more we know about a species, the better we can conserve them by guiding conservation effort and prioritizing funding. Data that exists is currently siloed in various organisations (E.g. governments, research institutions, individual researchers etc.). Largely attributed to a lack of a single data repository.

Therefore, in October 2018, with funding from the Lion Recovery Fund and National Geographic and under the auspices of the IUCN SSC Cat Specialist Group, the Endangered Wildlife Trust (a South African based conservation organisation), undertook a project to create the African Lion Database.

The vision is to establish a database as a tool for lion conservation and management by facilitating the sharing of info and data between stakeholders. The goal is that the ALD will be used to compile, analyse and store data on lion distribution, abundance and population trends. The ALD aims to create the most authoritative and up to-date compilation of data on population and distribution for the species

Important to note that all data that is included in the ALD is referenced and data contributors will receive a data summary document that will detail the data they have contributed and the reference that will be used.

In the first year - 240 individuals have been contacted from 170 institutions. 16% provided data from 39 institutions. a further 6% of respondents have provided peer-reviewed publications and reports from 12 different institutions. An additional 41 individuals (17.2%) intend to share data.

Papers, reports, pers comm or data sheets are accepted.

Data templates are available from the ALD coordinator (samanthan@ewt.org.za).

Contributors to the ALD will be acknowledged in outputs (including ALD reports) and the ALD data platform

This is an important project that has the potential to aid in lion conservation but support from all lion researchers is required.

Discussion point: What could you or your project use the ALD for or how could the ALD benefit your project. For example – identifying areas where you could work or expand current projects to.

Talk 2: Lions in West and Central Africa (Etotepe Sogbossou).

Vulnerable in Africa and Critically Endangered in West Africa

Important to update data on populations & actions in order to guide future efforts.

Table 1: Population summaries for lion in West and Central Africa. (Lion numbers extracted from the African Lion Database)

West Africa				
	Country	Area	Number of lions	Reference
1	Senegal	Niokolo Koba and surrounds	~30	Direction des parcs nationaux du Sénégal. 2018.
2	Sierra Leone	Outamba Kilimi National Park	Presence confirmed. Unsure of population	
3	Benin	WAP System	~152	Bouché et al. 2016
4	Burkina Faso		~217	
5	Niger		~49	
6	Nigeria	Kainji Lake National Park	~32	Nyanganji et al. 2012
7	Nigeria	Yankari Game Reserve	~2	Nyanganji et al. 2012
			~ 482 lions	
Central Africa				
8	Cameroon	Waza National Park	~24	Fobuzie & de longh. 2017
9	Cameroon	Faro National Park and blocks	~112	Bauer et al. 2015
10	Cameroon	Bénoué National Park and blocks	~82	Bauer et al. 2015
11	Cameroon	Bouba Ndjida National Park and blocks	~66	Kirsten et al. 2017
12	Cameroon	Mpem and Djem National Park	Presence confirmed. Unsure of population	

13	Chad	Zakouma National Park	~140	African Parks
14	Central African Republic	Central and Western CAR	~675	Aebischer et al. submitted
15	Democratic Republic of the Congo	Garamba National Park	~150	African Parks
16	Democratic Republic of the Congo	Albertine North	~30	Bauer, Page-Nicholson, Hinks, Dickman. 2018
17	Democratic Republic of the Congo	Albertine South (including Virunga, Queen Elizabeth)	~180	Treves et al. 2009 & Omoya et al. 2014
18	Rwanda	Akagera National Park	~37	African Parks
19	Gabon	Batéké National Park	~1	Henschel. Pers Comm. 2019.
			~ 1499 lions	
	GRAND TOTAL		~1,981 lions in W and C Africa	

Threats to lions in West and Central Africa include bushmeat poaching, snaring, unsustainable hunting practices, armed conflict

Potentially new lion populations in Outamba Kilimi National Park in Sierra Leone and in Mpem and Djem National Park in Cameroon.

Discussed the challenges to lions in West and Central Africa:

Threats to lions

Problems of populations estimates – data sharing – training & involvement of local capacities

Funding

Small populations

Talk 3: Lions in East Africa (Nic Elliot).

Much uncertainty around lion numbers in Africa.

Understanding numbers and distribution is important because it is the most meaningful conservation measure that is used to inform local and national decisions.

There are many different methods for counting lions including spoor surveys, call-up surveys, whole counts, distance sampling, aerial counts, camera traps, mark-recapture, expert opinion and spatially-explicit capture recapture.

Many papers present lion numbers and density using various methods and there is then confusion regarding lion numbers.

An example of the Masai Mara was presented.

Some numbers are not accurate and this makes understanding population trends difficult.

The Kenya Wildlife Services carnivore survey was presented.

The KWS survey employed one framework with multiple field techniques to conduct a national-wide census of Kenyan large carnivores.

Discussion points:

Do we need numbers everywhere? Or is occupancy or presence and absence enough?

Without a standardized methods – are we creating more confusion than clarity?

Do we need national figures?

Important source populations?

Talk 4: Lions in Southern Africa (Paul Funston).

Presentation focused on the increasing and stable population in Southern Africa.

“Southern Africa is the new home for Africa’s lions”

Population is generally increasing.

Threats to lions in this region are very similar to those in other regions. E.g. snaring, poaching, habitat loss.

Poaching for parts is on the rise (e.g. Mozambique)

Talk 5: Lions in India (Meena Venkataraman).

In 1880, there were 12 lions in India, by 1955 there were 290 lions. Lions in India reached 523 lions in 2015.

In India, they are found in the Gir landscape. Gir PA and buffer forest areas 1883km². Gir National Park and Sanctuary (PA) is 1412 km². The area hosts a range of wildlife including Leopard, hyena, sambar, Nilgai, Chinkara, common langur etc.

68 forest settlements within Gir PA and 97 peripheral villages.

Lion census in Gir PA are carried out every 5 years for 3 days each census. The last census was in 2015 and the next one is planned for 2020.

The census is systematic and consistent to understand population trends and fluctuation across years

The total count method has been reliable and consistent for comparison across the years.

Dispersing lions are vulnerable to various threats

Table 2: Lion numbers in India in 2015

	Area	Lions
1	Gir National Park and surrounds	~523
2	Girnar WLS	~33
3	Mitiyala WLS, Liliya and Bhavanagar	~136
4	Coastal forest areas	~50
	Total	~742

Threats to lions in India: accidents due to falling in open wells, accidental electrocution, road/railway accidents, disease, habitat loss, habitat degradation and disturbance.

Asiatic lions occur as a single population in the Gir landscape

Points for discussion: Related to niche occupied by Asiatic lions in the international scenario:

Is the “Endangered” red-listing from “Critically Endangered status” justified?

Given lion distribution and numbers, is the re-classification of lions *leo leo* in place of *leo persica* a mere taxonomic reclassification matter?

Second Plenary Session; Lion genetics (Session Chair Laura Bertola)

Session

The session consisted of 6 presentations, highlighting different aspects of the use of genetics in the field of lion conservation.

Dr. Laura Bertola (session chair) highlighted what is currently known about the distribution of genetic diversity in the lion, applications for genetic data (i.e. informing translocation decisions), and possible integration of other data types, such as remote sensing data.

Dr. Susan Miller presented the case of lion management in South Africa, where multiple isolated (fenced) populations are managed as a meta-population, including prevention of inbreeding.

Dr. Caitlin Curry showed data from her study on lions in Zambia, illustrating population diversity and connectivity.

Dr. Simon Morgan & Ellie Armstrong talked about an on-going project aiming to sequence genomes of lions throughout Africa with the goal to help inform conservation efforts.

Dr. Nobuyuki Yamaguchi stressed how much lion diversity is already lost, or vulnerable to being lost, and talked about other means of safeguarding diversity, such as captive stocks and biobanks.

Dr. Simon Dures presented the outcomes of the Lion Traceability Meeting which was held in 2018, and made a case for a genetics based African lion traceability tool for forensic purposes.

Discussion

One of the main questions to be answered in this session was: how can we make genomic data and genomic tools more accessible to conservation practitioners. If the available data/tools are not being optimally used, why is this the case?

Although most participants acknowledged that genetics can contribute to conservation, it is generally seen as a potentially complicated, expensive, time-consuming and impractical component. Managers are often constrained by budget and time, and often other drivers (i.e. political) influence decision making.

The point was made that in-country analysis can be challenging, because there may not be a suitable lab available. Current developments in sequencing technology, now reduced to handheld devices (Oxford Nanopore MinION, Oxford Nanopore SmidgION in development), may help bringing this technology directly to the field. Also, the point was made that exporting scat samples usually is associated with fewer permit requirements, which makes international collaboration more feasible. However, due to the low quality and quantity of DNA in scat, this is not a suitable sample type for all types of analyses. It depends on the technology you are using and the genetic marker you are targeting.

Some participants mentioned that conservation practitioners need to be more open minded to including genetics as a possible tool in their toolkit. It was stressed that we don't want to push expensive and time-consuming analyses, but rather we point to the data already available, and how they can contribute to the decision making process. In addition, we need to have an open

conversation about what genetics can and cannot do, and what the implications may be for managers. We need to acknowledge that managers often are under time pressure to find a solution to a problem (i.e. a problem individual which needs to be relocated).

Translocations were discussed in more detail, since overarching lion-specific guidelines are still missing. The question was asked to what degree moving animals around across the continent will be detrimental for diversity, especially since this has also happened historically. We highlight here that by extensive mixing diversity will be lost. Best practice is to find a source population similar to the target population, to mimic natural gene flow. If translocations take place over a distance or a trajectory which would not have been covered by natural migration, care must be taken in order to not disrupt existing patterns of diversity and possible local adaptation. The fact that people have moved lions around historically is not directly relevant, because at that stage lions were not of conservation concern like they are now.

Some ALWG members are currently drafting lion-specific guidelines for translocations to help inform managers. In this document we also refer to the IUCN translocation guidelines, which cover a genetic component, but also highlight other (such as socio-economic, cultural, political) aspects, which need to be taken into account.

Third Plenary Session; Challenges and solutions per region (Session Chair Laurence Frank)

The challenges of lion conservation per region and solutions for West & Central Africa, East African and Southern Africa were presented. Lions in West and Central Africa are more threatened and less managed and studied than in the other regions of Africa.

Talk 1: Laurence Frank: Living With Lions and Livestock

- Laikipia County, Kenya is semiarid rangeland and nearly all privately owned
- Communally-owned traditional pastoralist areas
- High density of people and livestock
- Badly degraded by overgrazing
- Little wildlife, very few predators
- Commercial ranches/conservancies
- 3,500 km² wildlife area
- Healthy rangeland – light and carefully managed grazing
- Abundant wildlife
- Robust and stable lion population ~ 6/100/km²
- Ranchers take expensive measures to minimize stock losses to predators and tolerate some loss

Research has shown that ranches with good livestock management had fewer problem lions, and the resulting stable prides of 'well-behaved' lions took fewer livestock than on ranches which shot many problem animals. The adoption of mobile lion-proof bomas made of interlocking panels of chain link fencing and iron water pipe has essentially eliminated night time losses.

As a result, some prides increased day time attacks on grazing cattle, and ranchers responded by creating incentive schemes to encourage better vigilance by herders. Real time movement data from GPS – Iridium collars being used by researchers from the University of California, Santa Cruz and Living With Lions was made available to ranchers on a website, allowing them to see morning lion locations, and thus direct herders to other areas. These innovations decreased shooting of problem lions by 90% from 2002 to 2016.

Talk 2: Amy Dickman: Informing Lion Conservation Strategies by Considering Both Ecological and Sociopolitical Factors.

Lions have lost 94% of their historical range in Africa but an estimated 22,500 still occur over 1.7 million km² in 24 countries. However, half of those countries account for less than 1% of remaining lion range.

With limited resources, should triage efforts focus on maintaining the larger, more resilient lion populations, or restoring the most vulnerable?

Isolation and edge effects are important ecological considerations, but human sociopolitical factors such as governance, population size, economic status, and conservation policy are very important, although often ignored. Sociopolitical fragility of range states also affects conservation decisions; southern Africa and Tanzania are relatively stable, South Sudan and Somalia very fragile, and the other range countries fall in between.

Amy followed with an analysis of ecological fragility of lion populations, in terms of cattle density, human density, lion population size, area, isolation, edge effects and edge to area ratio, and overlap with protected areas.

She then presented a factor analysis of both ecological and sociopolitical fragility of range countries and of individual lion populations. She ended by discussing how these analyses can inform decision-making in allocation conservation effort and resources.

Talk 3: Pricelia Tumenta: Challenges and Solutions in Lion Conservation in West and Central Africa

Lion populations are declining drastically and most are at high risk of local extirpation due to the rate of decline and lack of conservation action.

These populations are particularly important, as the West and North African lions have recently been given subspecific status as *Panthera leo leo*. Fortunately, some of the remaining populations have been relatively stable, with the potential for growth where management efforts are in place.

The most important populations are those in the WAP complex, Benoue complex, and the Central African Republic. Threats include small isolated lion populations, high human populations, insecurity and lack of law enforcement, increased illegal grazing in protected areas, habitat degradation, poaching, encroachment by agriculture, mining and other activities, depleted prey, livestock-lion conflict, lack of involvement and economic incentives by local communities, lack of public interest and political will, lack of capacity and resources, lack of nationals involved in conservation, and absence of NGO's and lion conservation projects.

The involvement of African Parks has benefitted Pendjari National Park in Benin.

Solutions need to be tailored to local circumstances and the need for local incentives to make lion conservation profitable and sustainable.

Among her recommendations are establishment of ecological corridors to reconnect small isolated populations, efforts to reduce livestock losses, better anti-poaching efforts, development of ecotourism initiatives, would reduce lion killing, more research in order to inform lion management and trophy hunting quotas, and training of local conservationists.

Talk 4: Laly Lichtenfeld: Challenges and Solutions for East Africa's Lions, presented by Alayne Cotterill.

Based on a survey of ALWG members

Although Kenya has only about 18% of the regions lions, it has 60% of the lion conservation organizations in East Africa, with another four in Tanzania and one in Ethiopia.

Human-lion conflict was listed as the primary threat to their lions by ten organizations, followed by habitat fragmentation and loss (six organizations), and low prey availability(four organizations).

Engaging local communities on conservation and monitoring, conflict prevention, and monitoring/surveys were considered the most effective conservation programs by five organizations in each, while four listed community scouts/game rangers, and three listed compensation for livestock losses.

Twelve organizations listed monitoring data and formal evaluations as their evidence of success

These presentations were followed by discussion of ALWG members from throughout the lion's geographic range. Participants discussed the situation in West and Central Africa, Sudan and India. Given the worrying situation of populations for the northern subspecies of the lion, it is of utmost importance that conservationists from these range states were included in these discussions. Participants were able to form new collaborations, expand their network, and be inspired by and learn from other participants during the ALWG meeting and the associated project visit in Laikipia

Fourth Plenary Session; Challenges and solutions per region (Session Chair Hans Bauer)

Four talks were scheduled in this session, a talk on translocation was cancelled due to the absence of Monica Chege. The following talks were delivered:

The role of conservation education in Cameroon, by Elise Bakker and Iris Kirsten

Options for boma improvement in Laikipia, by Steven Ekwanga

Co-management in practice; Human Lion conflicts in Kenya, by Francis Lesilau

These talks highlighted different aspects of co-existence: education, awareness and mitigation of depredation such as bomas, fencing, corridors, flashlights etc. Powerpoints of these presentations will be available on the ALWG website. Below we capture the ensuing discussions.

The discussions focused on the role of communities. It is clear that indiscriminate killing of lions is a major threat to lions, and that depredation is one of the drivers, but not the only one. Environmental education is another important topic, and initiatives for environmental education in lion habitat have been reported from several projects. Common elements include visits to Protected Areas by local children and community members and common challenges include sustainable funding and integration into the national education curriculum. Results are monitored in terms of awareness but not in terms of outcome for lion numbers. Several questions were raised about the content of education and on the involvement of communities in project design from the earliest stage, including the design of education materials. A particular context of West African was highlighted, where resident communities have livestock as a supplements to cropland agriculture and where most livestock are owned? by nomadic communities and farmers and herders increasingly come into conflict over land use. This context limits the applicability of models for community-based management that have been successful in eastern and Southern Africa

There is a common ensured understanding that lion killing is motivated by livestock depredation. Many projects address livestock depredation with the objective of reducing the burden on communities, shifting attitudes and behaviours and promoting peaceful coexistence. Bomas have been the method of choice in many areas. Bomas have been almost universally adopted on the commercial ranches across Laikipia and have been very effective. In part this is due to the exceptional socio-economic circumstances of Laikipia where tourism and cattle production are both important. In Nairobi National Park for example, the situation has been more challenging. Bomas, flashlights, 'geo-fencing' and fences on the northern boundary have all been implemented but have not provided a fundamental solution that allows for continued connectivity of Nairobi Lions to the South. Technical interventions are challenged by a long term transitions in urban sprawl, human population growth and spread of infrastructure is such as railways. One of the conclusions ones that we have solutions for some problems but can improve our pro-active communication with decision makers; adaptation of policy is easier during formulation, recommendations are less likely to be accepted when decisions have already been taken.

Fifth Plenary Session; Challenges and solutions per region (Session Chair Vivienne Williams)

Key Points-Lion Bone Trade and Traditional Chinese Medicines Discussion

- Why is the SA government so keen to hang onto this practise (captive breeding)
- How are products labelled for consumers in Asia, how do researchers know what the product contains
- What is defined as wild and captive lions
- Is there any hard evidence of lion products in tiger wine
- Nature of the demand in China? Chinese traditional medicine diplomas, professional Chinese traditional healers are not using lion parts but rather, parts are being used by other groups in China
- Evidence of what lion parts are used to cure illnesses in traditional medicine
- Lions: new products on the market-when are we going to draw the line of captive bred lions to supply this demand
- Do not have an idea of demand dynamics
- What constitutes conservation benefits? Collar lion to show tourists
- Canines are very important in China, can come across these quite easily in China
- More demand than Quota
- Breeders trying to constrain their activities
- Communities can play a crucial role in helping reduce trade
- Conservation value according to species
- Legal hunting-are parts entering the market this way-left over bones etc.?
- Economies of criminality, linkages of different products (one commodity to another)
- Projects linking human populations and consumption
- Resource of poaching and use of lion per region-not sure what the regulations are

Annex 2. Programme alwg meeting in Mpala research centre, Kenya

DAY 1. SATURDAY 2 NOVEMBER 2019 DAY CHAIR HANS DE IONGH		
<i>Morning session</i>		
7:30 - 8:45	Late Registration (first registration also upon arrival in Mpala on 1 November 2019)	
8.45-8.50	Short welcome and introduction morning sessions plus announcement break out groups by Day Chair	Hans de Iongh
8:50 - 9:00	Short welcome by Chair ALWG	Kelly Marnewick
9:00 - 9:15	Opening speech	Chair Board of Directors KWS
9:15 - 9:30	Welcome speech	Director General KWS
9:30 - 10:00	Lion conservation in Kenya, lessons learned	Director Research
10:00 - 10:25	Tea/coffee break	
10:25 – 12.45	FIRST PLENARY SESSION ON THE AFRICAN LION DATA BASE CHAired BY: SAMANTHA NICHOLSON	
10:25 - 10:40	African Lion data base	Samantha Nicholson
10:40 - 10:50	Lion numbers in West and Central Africa	Etotepe Sogbohossou
10:50 - 11:00	Lion numbers in East Africa	Nic Elliot
11:00 - 11:10	Lion numbers in Southern Africa	Paul Funston
11:10 - 11:20	Lion numbers in India	Meena Venkataraman
11:20 - 12:30	Discussion	
12:30-12:45	The Wildlife Conservation Network's Lion Recovery Fund	Peter Lindsey
12:45-13:00	Questions	

13.00-13:05	Closure by Day Chair and announcements	Hans de longh
13:05 - 14:00	Lunch	
<i>Afternoon Session</i>		
14.00-14.05	Short introduction afternoon sessions and announcements by Day Chair	Hans de longh
14:05 – 16.55	SECOND PLENARY SESSION ON LION GENETICS	
	CHAired BY LAURA BERTOLA	
14:05- 14:15	Phylogenetic relationships in the lion and application of genetics for conservation management	Laura Bertola
14:15 - 14:25	Lion genetics and metapopulation management: A South African perspective, by	Susan Miller
14:25 - 14:35	Genetics of Zambia lions	Caitlin Curry
14:35 - 14:45	The African lion genome project	Simon Morgan/Ellie Armstrong
14:45 - 14:55	Availability of materials (including live animals) for understanding the lions' diversity (including its genetic diversity), by	Noboyuki Yamaguchi
14.55-15.05	Development of a collaborative lion traceability network	Simon Dures
15:05 – 15:30	Tea/coffee break	
15:30 – 16.55	Discussion	
16.55-17.00	Short introduction by Day Chair	Hans de longh
17:00 - 17:15	Collaboration, Inclusion and Diversity in lion conservation	Members of Pride Lion Conservation Alliance (Amy Dickman, Shivani, Alayne Cotterill)
17:15 - 17:25	Discussion	
17.25-17.30	Closing remarks Day Chair (announcements)	Hans de longh
<i>Evening</i>		
18:30 - 20:00	Dinner	

20:00 - 20:30	Applauding the going Chair Sarel van der Merwe, and welcoming the new Chair of the ALWG; presentation on governance issues ALWG	Kelly Marnewick
20:30 - 21:30	Discussion and social gathering with drinks	Kelly Marnewick

DAY 2. SUNDAY 3 NOVEMBER 2019 DAY CHAIR KELLY MARNEWICK		
<i>Morning session</i>		
8:30 - 8:35	Opening and introduction morning sessions by Day Chair and announcements	Kelly Marnewick
8:35 - 8:50	Outcomes of the Disney supported Lion Footprint Forum	Paul Thomson
8:50 – 9:00	Questions	Kelly Marnewick
09:00 – 12:10	THIRD PLENARY SESSION ON CHALLENGES AND SOLUTIONS PER REGION CHAired BY LAURENCE FRANK	
9:00 - 9:10	Ecological and socio-political fragility of 68 lion populations in Africa	Amy Dickman
09:10 - 09 20	Challenges and solutions in West and Central Africa	Pricelia Tumenta
09:20 - 09:30	Challenges and solutions in East Africa	Laly Lichtenfeld
09:30 - 9:40	Challenges and solutions in Southern Africa	Paul Funston
09:40 – 10:00	Tea/coffee break	

10:00 – 12:10	Discussion	
12:10 - 12:25	Presentation on lion conservation guidelines	Urs Breitmoser/Hans Bauer
12:25 – 12:35	Discussion	
12:35- 12:45	Presentation ALWG website	Caitlin Curry
12:45 - 12:55	Questions	
12.55-13.00	Closure by Day Chair and announcements	Kelly Marnewick
13:00- 14:00	Lunch	
<i>Afternoon session</i>		
14.00-14.05	Short introduction morning sessions by Day Chair and announcements by Day Chair Kelly Marnewick	
14:05 – 16:15	FOURTH PLENARY SMALL SESSION ON CO EXISTENCE IN LION CONSERVATION CHAired BY HANS BAUER	
14:05 - 14:15	Options and challenges for translocations of problem lions	Monica Chege and Luka Narisha
14:15 - 14:25	Options for boma improvement in Laikipia	Steven Ekwanga
14:25 - 14:35	The role of conservation education in Cameroon	Elise Bakker and Iris Kirsten
14:35 - 14:45	Co-management in practice; Human Lion conflicts in Kenya	Francis Lesilau
14:45-15.15	Tea/coffee break	
15:15 – 16:15	Discussion	
16:15 - 18:30	FIFTH PLENARY SESSION ON LION BONE TRADE AND TRADITIONAL CHINESE MEDICINS CHAired BY VIVIENNE WILLIAMS	
16:15 - 16:25	Latest developments in the trade in SA African lion bones	Vivienne Williams
16:25 - 16:35	Latest developments in the use of lion bones in Chinese Traditional Medicines	Peter Coals
16.35 – 16:45	The poaching of lions for bones and body parts in West and Central Africa	Pricelia Tumenta and Gueye Malle

16:45 - 16:55	Captive lions in South Africa; status, welfare issues, mortal accidents and poaching	Kelly Anne Marnewick
16:55 - 17:55	Discussion	
17:55 - 19:00	Summary of discussions and closing of ALWG meeting by chair ALWG and Prof. David Macdonald	prof. David Macdonald and Kelly Marnewick
<i>Evening</i>		
19:00 - 20:30	Dinner	
20:30 - 22:00	Social gathering with drinks	

MONDAY 4 AND TUESDAY 5 NOVEMBER: EXCURSION TO LAIKIPIA ORGANISED BY LAURENCE FRANK

More information is available on the ALWG website:

<http://www.africanliongroup.org/meetings.html>

The excursions will consist of visits to Laikipia ranches and conservancies to learn how they raise livestock commercially in rangelands that also support robust populations of all the African large carnivores and their wild prey. We will see the locally developed mobile lion-proof bomas, local herding practices, the use of GPS collars to aid in lion and livestock management, and the new Lion Rangers programme. Steven Ekwanga will demonstrate the setting of foot snares, a technique that is more efficient and humane than cage traps for capturing wary lions that cannot be approached for free darting. We will not actually trap any carnivores.