

## MINISTRY OF TOURISM AND ARTS

### DEPARTMENT OF NATIONAL PARKS & WILDLIFE

## NON DETRIMENTAL FINDINGS REPORT FOR AFRICAN LEOPARD SPORT HUNTING IN ZAMBIA

MAY 2018



Photo Credit: Barry Bell-Cross. Various trail camera photos of leopards recorded in Lunga Luswishi GMA

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## 1.0 Introduction

Zambia's policy on conservation is based on sustainable utilization as a way to enhance the economic and ecological importance of biodiversity. Zambia realizes the threats that biodiversity is facing, and therefore the need for strategies, programmes and plans to conserve larger carnivore species. In this vein, the Zambian government through Department of National Parks and Wildlife (DNPW) is developing several guidelines to regulate and administer the management of wildlife both inside and outside its protected areas. Among these are guidelines to regulate hunting in general, and of the large carnivores. In this regard, the DNPW is in the process of formulating regulations for the hunting of leopard (*Panthera pardus*) and lion (*Panthera leo*). The Zambian government suspended leopard trophy hunting from 2013 to 2015. The suspension was lifted in 2016 when rural communities requested that the suspension be lifted due the detrimental impact on their livelihoods of increased human-livestock-carnivore conflict without offsets from hunting revenues. In view of this, a limited offtake was established that was sustainable and within the CITES approved quotas.

In 2015, major legal reforms occurred in the wildlife sector with the review of the Zambia Wildlife Act No. 12 of 1998 culminating the proclamation of the new Zambia Wildlife Act, 2015. In parallel with this process was the review of the Wildlife Policy that is now guiding the restructuring of the DNPW and giving new impetus to the structure of wildlife conservation in the country. To strengthen the leopard management programme, DNPW needs additional resources to reinvest into leopard research, protection and conservation. Leopards play an important ecological and economic role not only as an apex terrestrial carnivore in the Zambian ecosystem, but also by providing economic benefits to Zambia and those living in rural communities. Sustainable utilization, in the form of highly selective and well-monitored sport hunting, can provide the needed revenues to achieve these goals. The proceeds from leopard sport hunting are re-invested in conservation and sustainable development in local communities. In this way, sustainable and ethical hunting of leopards provides direct benefits to both conservation of Zambia's wildlife populations and the people living with large carnivores in their areas.

By funding the initiative "*SUPPORT TO SUSTAINABLE LARGE CARNIVORE TROPHY HUNTING IN ZAMBIA*" the European Union (EU) is playing an active role in assisting Zambia to develop and apply best practices in the international trade in hunting trophies of species such as lion and leopard. This has come about because the EU is a key player in the Convention on International Trade in Endangered Species (CITES) where it submitted a proposal (CoP17 Com. I. 3) to the 17th meeting of the CITES Conference of the Parties in Johannesburg in October 2016 to reinforce the standards applying to international trade in hunting trophies of species such as lions and leopards. This proposal was accepted after amendments (Resolution Conf.17.9) by the Parties within CITES to ensure that hunting trophies of wild species listed on Appendix I and II come from sustainable and legal sources<sup>1</sup>. The resolution now requires that a Scientific Authority of the State of export takes into account the concepts and non-binding guiding principles contained in Resolution Conf. 16.7 (Rev. CoP17)<sup>2</sup> on Non-detriment findings in determining whether the export of the hunting trophy would be detrimental to the survival of the species, and recommends that Parties exporting hunting trophies of CITES-listed species ensure that trophy hunting is sustainably managed, does not undermine the conservation of target species and, as appropriate, provides benefits to local communities.

## 2.0 Background to Zambia CITES Leopard Quotas

It is important to put into context the events leading up to the current CITES approved leopard quota for Zambia. The general guidance to include species on Appendix I is provided in Resolution Conf. 9.21(Rev. CoP13) - *Interpretation and application of quotas for species included in Appendix I* where it was agreed by the CoP that:

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<sup>1</sup> See <https://cites.org/eng/res/index.php> for all Resolutions of the Conference of the Parties in effect after the 17th meeting.

<sup>2</sup> See <https://cites.org/sites/default/files/document/E-Res-16-07-R17.pdf>

a) a Party wishing the Conference of the Parties to establish a quota for a species included in Appendix I, or to amend an existing quota, should submit its proposal to the Secretariat, with supporting information including details of the scientific basis for the proposed quota, at least 150 days before a meeting of the Conference of the Parties; and

b) whenever the Conference of the Parties has set an export quota for a particular species included in Appendix I, this action by the Parties satisfies the requirements of Article III regarding the findings by the appropriate Scientific Authorities that the export will not be detrimental to the survival of the species and that the purposes of the import will not be detrimental to the survival of the species, provided that:

i) the quota is not exceeded; and

ii) no new scientific or management data have emerged to indicate that the population of the species in the range State concerned can no longer sustain the agreed quota.

The leopard was included in Appendix I at the plenipotentiary conference of CITES in 1973. This classification was not based on scientific data and preceded the establishment of any scientific criteria for the listing of species. Subsequently, a series of Resolutions starting with the fourth meeting of the Conference of Parties (Gaborone 1983) with Resolution Conf. 4.13 that introduced a quota system for the controlled export of leopard hunting trophies and skins for personal use for the range states (a thorough account of the rationale is found in the Tanzania proposal to CoP12 (<https://www.cites.org/sites/default/files/eng/cop/12/doc/E12-23-1-2.pdf>). It was revised several times at subsequent CoP meetings by the following Resolutions: Conf. 5.13 (Argentina, 1985), Conf. 6.9 (Canada, 1987), Conf. 7.7 (Switzerland, 1989), Conf. 8.10 (Japan, 1991), Conf. 8.10 (Rev.) (USA, 1994), Conf. 10.14 (Zimbabwe, 1997), Conf. 10.14 (Rev. CoP12) (Chile, 2002), Conf. 10.14 (Rev. CoP13) (Bangkok, 2004), Conf. 10.14 (Rev. CoP14) (Netherlands, 2007), and lastly by Resolution Conf. 10.14 (Rev. CoP16) (Bangkok, 2013) currently in force<sup>3</sup>.

The Resolution sets a maximum annual export quota for each country requesting trade including sport-hunted leopard trophies, and detailed provisions on marking of skins. Quotas are requested through specific amendment proposals and following the provisions of Resolution Conf. 9.21 (Rev.CoP13) that recommended that the system adopted in this Resolution be continued, with any increase in a quota or any new quota (i.e. for a State not previously having one) requiring the consent of the Conference of the Parties, in accordance with the resolution adopted by the CoP at its ninth meeting and amended at the its 13th meeting in Bangkok in 2004.

After the initial quotas were established in 1983, various countries (including Zambia) have submitted proposals to amend these at different times. The history of these decisions is summarised in Table 1. In each case the fundamental justifications for increasing the quotas is based on several factors including:

- The wide variety of habitats available for leopards;
- The extensive protected area networks
- Conservative densities of leopards ranging from 1 – 10/100km<sup>2</sup>.

Cognisance is also taken of the threats to the leopard population including habitat loss, illegal hunting/killing and conflict with humans. Of these, habitat loss is considered to be the greatest by far as land is converted from natural or semi-natural habitat for agriculture and leopard prey species decline or disappear (Ripple et al 2014).

**Table 1:** The history of leopard quota amendments (adapted from M. Pani, pers. comm)

State	COP 4	COP 5	COP 6	COP 7	COP 8	COP 9	COP 10	COP 11	COP 12	COP 13	COP 14	COP 16
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<sup>3</sup> All these resolutions are available on the CITES website <http://www.cites.org>

<b>Botswana</b>	<b>80</b>			<b>100</b>		<b>130</b>						<b>130</b>
<b>Kenya</b>	<b>80</b>											<b>80</b>
<b>Malawi</b>	<b>20</b>					<b>50</b>						<b>50</b>
<b>Mozambique</b>	<b>60</b>										<b>120</b>	<b>120</b>
<b>United Republic of Tanzania</b>	<b>60</b>	<b>250</b>							<b>500</b>			<b>500</b>
<b>Uganda</b>											<b>28</b>	<b>28</b>
<b>Zambia</b>	<b>80</b>	<b>300</b>										<b>300</b>
<b>Zimbabwe</b>	<b>80</b>	<b>350</b>	<b>500</b>									<b>500</b>
<b>Central African Republic</b>			<b>40</b>									<b>40</b>
<b>Ethiopia</b>			<b>500</b>									<b>500</b>
<b>South Africa</b>				<b>50</b>	<b>75</b>					<b>150</b>		<b>150</b>
<b>Namibia</b>					<b>100</b>					<b>250</b>		<b>250</b>

This review of the Zambia CITES leopard quota is in response to the decision taken at the Seventeenth meeting of the Conference of the Parties Johannesburg (South Africa)<sup>4</sup> that requested the range States, which have quotas established under Resolution Conf. 10.14 (Rev. CoP16) to review these quotas, and consider whether these quotas are still set at levels which are non-detrimental to the survival of the species in the wild, and to share the outcomes of the review and the basis for the determination that the quota is not detrimental, with the Animals Committee at its 30th meeting.

In the sections below, Zambia presents its findings of this review process and also justifying why sport hunting should with a an export quota of 150 leopards which is set at a level that is not non-detrimental to the survival of the species in the wild.

## 2.0 Biological status

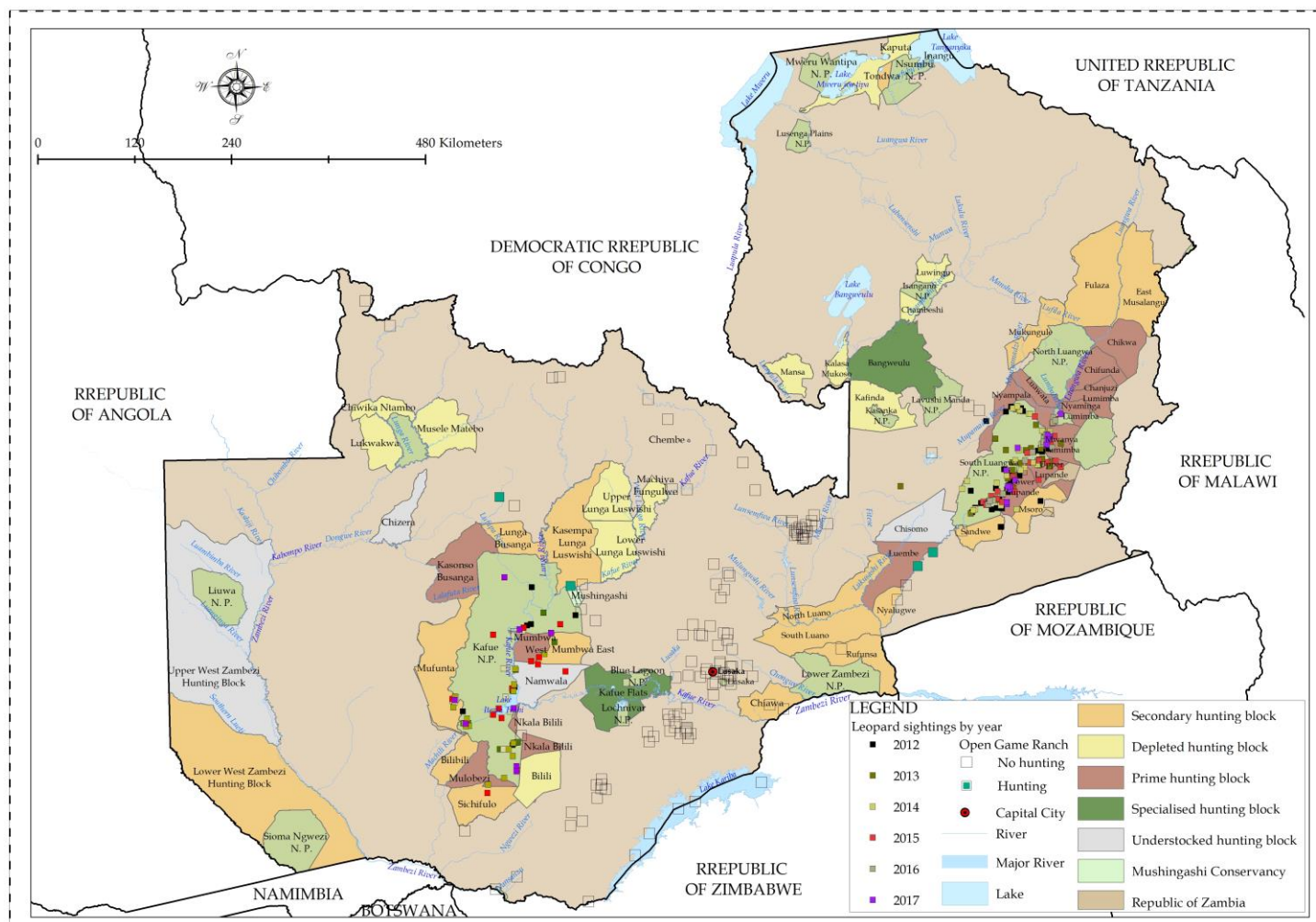
### 2.1 Distribution

There are two main leopard populations in Zambia are centred on the Kafue and Luangwa Ecosystems that are comprised of several national parks (NP) and game management (GMA) areas (Fig.1). Five smaller satellite populations occur in in the northwest in the Lunga NP area, Liuwa NP in the west and in the Sioma-Ngwezi NP area in the southwest, and in the NPs and GMAs in the Bangweulu area and Lake Mweru-Wantipa area in the north of the country (Fig. 1). Leopards also occur in some of the game farms in intervening areas (Fig. 1). Their current distribution in the open areas of the country is yet to be fully investigated.

The current total leopard range in Zambia is at least 220,000 km<sup>2</sup> and is larger than is represented in the IUCN Red List account (Stein et al 2016), or in the recent review of global leopard distribution by Jacobsen et al (2016).

<sup>4</sup> see [https://cites.org/sites/default/files/eng/cop/17/Com\\_I/E-CoP17-Com-I-03.pdf](https://cites.org/sites/default/files/eng/cop/17/Com_I/E-CoP17-Com-I-03.pdf)





**Figure 1.** Location of primary and secondary hunting blocks in the GMAs. The location of the 26 open game ranches is provided together with those that have been allocated leopard on quota. The distribution of leopard sighting recorded by patrols between 2012 – 2017 in South Luangwa and Kafue National Park and neighbouring GMAs are also indicated (Source: DNPW, Chilanga).



## 2.2 Population status

The low density of leopards, their broad distribution, mostly solitary behaviour, and nocturnal activity pattern, makes it difficult to estimate leopard population numbers over large areas. No countrywide estimate of the leopard population in Zambia has been made. However, given the extent of leopard range in the country and assuming a conservatively low overall density of between one and two leopards per 100 km<sup>2</sup> the overall country population is likely to exceed between 2,000 and 4,000 leopards.

Table 2: Examples of leopard densities in selected southern African protected areas (see also Jacobson, 2016, Supplemental table 7. Published leopard population density estimates for data collected after 2000 from across the globe).

AREA (Country)	Type	Leopard Density/100 km <sup>2</sup>	Reference
Luambe (Zambia)	NP	3.4	Ray (2011)
Luambe (Zambia)	GMA	4.8	Ray (2011)
Luangwa South (Zambia)	NP	8.2	Rosenblatt et al (2016)
Lupande (Zambia)	GMA	5.1	Rosenblatt et al (2016)
Kafue NP (Zambia)	NP	2.85	Panthera (2017)
Sioma Ngwezi (Zambia)	NP	1.88	Panthera (2017)
Malilangwe (Zimbabwe)	Conservancy	4.5	Tarugara, A. and Clegg, B.W. (2015)
Bubye Valley (Zimbabwe)	Conservancy	4.5 - 9.5	Du Preez et al, (2014)
Waterberg Plateau, (Namibia)	NP	1 – 3.6	Stein et al. (2011)
Phinda (SA)	NP	7.5 - 11	Balme et al (2009)
Waterberg region, Limpopo, (South Africa)	Game Ranch	2.1	Swanepoel, (2008)
Soutpansberg (South Africa)	Mountain area	20.0	Chase-Grey et al, (2013)
Niassa (Mozambique)	Game Reserve	2.7 – 12.7	Jorge (2012)

Ray's (2011) research in the Luambe NP and adjacent GMA found densities of 4.6-leopard/100 km<sup>2</sup> in the GMA and 3.7 leopard/100km<sup>2</sup> in the NP. Rosenblatt et al (2016) reported leopard densities of 8.2 per 100 km<sup>2</sup> in the southern sector of Luangwa South NP and of 5.1 per 100 km<sup>2</sup> in the adjacent Lupande GMA where snaring of prey species (but not leopards) was prevalent.

The Zambia Cheetah Program (Panthera 2017) completed 20 transects in each of July and October 2016. These transects fell into 19 grid cells providing a coverage of approximately 20% of the Kafue National Park. In total 4953 detections of fresh spoor from individuals of 5 large carnivore, 7 small carnivore and 20 herbivore species during the cool dry and hot dry seasons combined were recorded. For both seasons combined, lion and spotted hyaena were present in over 70% of grid cells sampled, leopard in 67% and cheetah and wild dog in only 10 and 24% respectively

Given these recently recorded densities in the Luangwa ecosystem the leopard population in this ecosystem could be of the order of 4,000 leopards if one assumes an overall crude density of 5/100km<sup>2</sup>. Similarly, the leopard population in Kafue National Park would be approximately 675 assuming a crude density of 3/100km<sup>2</sup>. Elsewhere in the region reported leopard densities range between 2.5 and 20 per 100km<sup>2</sup> (Table 1).

## 2.3 Genetic Variability

African leopards are considered to belong to a single subspecies, namely, *Panthera pardus pardus* (Jacobson 2016). No systematic work has been done on the genetic variability of leopards in Zambia.

However, Zambia has collected genetic material from across the country. These samples will be analysed by the veterinary Faculty of the University of Zambia in collaboration with DNPW.

### **3.0 Conservation and Management**

#### **3.1 Legislation**

In 2015, the Zambia Wildlife Act No. 12 of 1998 was repealed and replaced with the Zambia Act No. 14 of 2015. The Wildlife Act of 2015 provided for the transformation of the Zambia Wildlife Authority into a government department - the Department of National Parks and Wildlife (DNPW). The act is the principal legislation guiding the management of wildlife in Zambia, and the department is the only government department responsible for the management of wildlife (leopards inclusive) in Zambia. The Act also provides for the promotion of opportunities for the equitable and sustainable use of public wildlife estates; provides for the establishment, control and co-management of Community Partnership Parks for the conservation and restoration of ecological structures for non-consumptive forms of recreation and environmental education; provides for the sustainable use of wildlife and the effective management of the wildlife habitat in Game Management Areas; enhances the benefits of Game Management Areas to local communities and wildlife; involves local communities in the management of Game Management Areas; and provides for the development and implementation of management plans. Crucially to ensure the sustainability of the wildlife sector, the Act provides for the setting up of a Wildlife Fund, where funds from licensing and donors will be deposited.

The act provides for stiffer penalties related to poaching and enforcing all wildlife related violations in Zambia. Hunting of all wild animals without a permit is illegal. Further, it is a criminal offence to hunt, kill, capture or be in possession of a leopard specimen without a license. Leopard is considered a protected species under the Zambia Wildlife Act and therefore attracts stiffer penalties without option of a fine. Other legislation includes the regulations (Private Wildlife Estates) and Statutory Instruments already in force implementing the 1998 Act (These are CITES, Hunting, Elephant Hunting).

Other statutory instruments are in preparation for the implementation of the 2015 Wildlife Act including a specific statutory instrument on leopard and lion hunting.

This revision simplifies the system while continuing to generate much-needed revenue for DNPW.

#### **3.2 The Zambia Wildlife Act No. 14 of 2015 with particular reference to administration of Hunting, Licenses, and the Wildlife Fund.**

##### **3.2.1 Classes of licences**

The Zambia Wildlife Act no.14 of 2015 provides for the following types of licences (a) hunting licence; (b) bird licence; and (c) professional hunter's licence. Under the new Act some of the old licences have been re-classified as permits. Section 39 makes provision for the issuance of the following permits (a) fishing permit; (b) capture permit; (c) professional guide's permit; (d) photographic tour operator's permit; and (e) commercial photographic permit. The new Act has also done away with Resident and Non-Resident licences. However, these activities will be undertaken under a hunting license issued to national and *bona fide* residents of hunting areas.

Under the Zambia Wildlife Act No. 14 of 2015, section 7 establishes the Wildlife Management Licensing Committee which is responsible for; considering applications for licenses, permits and certificates and grant, renewing or refusing to grant or renew licenses, permits and certificates; and terminating, suspending or revoking licenses, permits and certificates. The application for the licenses recognised under the Act is in a prescribed form requires payment of a prescribed fee under a specific Regulation. The creation of a Licensing Committee ensures transparency and accountability in the award of licenses by ensuring the discretion to award licenses exists in more than one individual.

##### **3.2.2 The Wildlife Fund**

The Zambia Wildlife Act No 14 of 2015 in, section 109 establishes the Wildlife Development Fund for purposes of development of research, conservation and management. Whereas in the repealed Act the Authority was responsible for the disbursement of funds, under the provisions of the current Act, the Minister responsible for wildlife manages and administers the Fund through the Fund Committee. The DNPW is in

the process of preparing a Statutory Instrument on the Wildlife Development Fund. The Department is liaising with the Ministry of Finance on the mechanism for sharing revenue with local communities. Currently there are regulations namely Statutory Instrument No. 89 of 2004, which provides that the Department pays 50% of the total revenue earned from Animals fees and 20% of concession fees from that particular GMA into a fund established by a Community Resource Board.

### **3.3 Supporting Statutory Instruments (SIs)**

Several statutory instruments are undergoing review pending gazettelement to compliment the operation of the new Act. Some of the pertinent ones include;

**a) The Zambia Wildlife (Granting of Hunting Concessions) Regulations, 2016**

This SI provides for the Department a clear procedure for the advertisement, evaluation, negotiation and award of Hunting Concession Agreements to bidders, which ensures transparency in the award of these agreements.

**b) The Zambia Wildlife (Private Wildlife Estate) Regulations 2016**

This SI will regulate the Management of big cats in in Captivity, and for export and import of live big cats.

**c) The Zambia Wildlife (Conducting of Ecological Assessments or Research on Wildlife) Regulations, 2016**

This SI regulates ecological research on wildlife, outlines the procedure for obtaining permission to conduct such research, and sets the fees to be charged for research activities.

**d) The Zambia Wildlife (Licenses and Fees) Regulations, 2016**

This particular SI is under consideration. The Department is still using the 2007 edition for purposes of pricing and issuance of licenses for safari hunting. The new permit under the new Act have not yet been captured under this SI.

**e) The Zambia Wildlife (Lion and Leopard) (Sport Hunting) Regulations, 2017**

This SI places certain conditions for hunting of Lions and Leopards in Game Management Areas, including but not limited to: age-based regulations, banning the hunting of females, and sets minimum number of days to hunt lion and leopards.

**f) The Zambia Wildlife (Off-Take Quota Management) Regulations, 2017**

This regulation regulates how quotas are set, approved and utilised. It is based on the precautionary principle demands latest information to be used on setting quotas.

### **3.4 Zambia's Conservation Strategy and Action Plan for lion**

In 2009, Zambia developed a ten-year Conservation Strategy and Action Plan for lion (ZAWA, 2009). Zambia's vision as stated in this Strategy is to have secure, viable and well managed wild populations of lions that will support conservation of biodiversity that is in harmony with human development. The Strategy's mission is to galvanize stakeholder cooperation in the conservation and management of the large carnivores in their natural habitats in the country thereby contributing to biodiversity conservation, socio-economic development and spiritual well-being of local communities, the general public and the country as a whole, with the ultimate goal of securing, restoring and maintaining viability and genetic diversity. These principles apply equally to the leopard, cheetah and wild dog populations of Zambia.

Since the approval of the strategy several actions have been carried out by the Zambian government and its cooperating partners to implement the relevant objectives and targets of the strategy. Research has been initiated, management actions taken to address research and monitoring, local community benefits, human lion conflict, land use planning and zoning and trade. Most of this research has focused on the monitoring of lion and to a lesser extent cheetah and wild dog (ZCP reference, Panthera 2017). This research has also provided opportunistic data related to leopard densities and occurrence in some areas (Kafue NP, Luangwa, Liuwa and Sioma NP). The DNPW is now initiating specific leopard research programmes in conjunction with Panthera and ZCP in the national parks. It is also piloting a citizen science carnivore monitoring programme in the GMAs involving the professional hunting community.

A voluntary program to assess and age lions taken as trophies established by ZAWA (now DNPW) in partnership with the Zambia Lion Project (ZLP) 2005 has progress and been formulated through the acceptance of the lion and leopard hunting guidelines. This process is now extended to include all leopards taken as trophies. DNA samples have been collected for lion since 2005 and a similar protocol has been initiated for leopards with the full cooperation of Zambia's hunting fraternity. These studies will form a strong base from which future sampling of trophy leopard will be conducted and will provide a baseline for comparing future performance. Further, new studies are continually improving the accuracy of estimating the age of wild lions and leopards, which will provide additional tools to assist authorities in trophy age enforcement for these species.

The conservation strategy noted that monitoring of hunting and illegal offtake was problematic, and information was dispersed in various units of the Zambia Wildlife Authority. To address this, ZAWA (now DNPW) in 2013 set up a Conservation Unit whose main responsibility is monitoring hunting, human wildlife conflict, private wildlife estates and the effectiveness of law enforcement. Through this unit data are flowing regularly on hunting and other activities. The Conservation Unit serves as a centralized repository for these data providing for long-term monitoring of progress and trends.

The strategy requested for proper monitoring of lion and leopard diseases and health. This has been accomplished through the veterinary unit of the DNPW, which is regularly sampling lion and leopard specimens for diseases and assisting law enforcement officers in the treatment of injured animals due to illegal activities, such as snaring. In addition, the DNPW authorized, three NGOs (ZCP, South Luangwa Conservation Society (SLCS), and Game Rangers International, GRI) working in the Luangwa and Kafue ecosystems to employ veterinarians that are field based and help in monitoring wildlife health and removal of wire snares.

Of the twelve ecologists that were employed by DNPW since 2010, three are devoting 70 per cent of their work time to large carnivore related issues.

As described above, the protocol for sampling and age estimation of trophy lions is already well-established and is being extended to leopards. Significant improvements have been made for estimating lion age (among others see White and Belant 2016, White et al. 2016).

### **3.5 Wildlife Conservation and Management**

DNPW is empowered by the Zambia Wildlife Act and supporting legislation to deal with issues of poaching or illegal harvesting of wildlife. Within DPNW law enforcement is under the section of Wildlife Conservation and Management.

This Section is responsible for the general enforcement of wildlife laws. It is responsible for the conservation and management of wildlife and development of infrastructure in protected areas. The section's functions are outlined below:

- Detect and investigate wildlife crimes;
- Manage and mitigate human wildlife conflicts;
- Regulate operations of private wildlife estates (nature conservancies/game ranches);

- Facilitate infrastructure development in protected areas;
- Sensitise the general public on wildlife conservation;
- Manage eco systems and landscapes and conserve specific species;
- Formulate and implement park regulations;
- Promote regional and international cooperation in the area of wildlife management, conservation and law enforcement; and
- Facilitate the training of Wildlife Police Officers

The section is headed by an Assistant Director who is assisted by the following: Principal Warden-Operations, Principal Warden-Conservation, Principal Engineer, and Principal Natural Resources Management officer. The section is organised in four units as follows:

### **Wildlife Law Enforcement Unit**

The Unit is responsible for enforcing wildlife laws, detection and investigation of wildlife crimes. Currently the Unit has a staff compliment of 1, 250 Wildlife Police Officers covering an estimated 236, 376 km<sup>2</sup> of wildlife estates. This translates into an average of 189 km<sup>2</sup> for each Wildlife Police Officer, which is less than the recommended international standards. The government of Zambia has committed itself to employ an extra 1,450 Wildlife Police officers by 2019. A considerable amount of its funding to support this Unit comes from safari hunting permit and concession fees (see section 8).

### **Wildlife Conservation Unit**

The Wildlife Conservation Unit is responsible for regulation of operations of private wildlife estates, management of ecosystems, landscapes and conservation of specific species as well as formulating and implementing park regulations. The Unit also manages and mitigates human wildlife conflicts and is responsible for facilitating the training of Wildlife Police Officers.

### **Infrastructure Development Unit**

The Unit is responsible for construction and maintenance of infrastructure in protected areas, as well as maintenance of equipment plant and machinery.

### **Community Based Natural Resources Management Unit**

The Community Based Natural Resources Management Unit is responsible for co-managing Game Management Areas with local communities and facilitating their economic and social well-being. The functions of the Unit include the following:

- Provide technical support to Community Resource Boards on the management of human and natural resources in Game Management Areas and open areas;
- Train village scouts and Community Resources Board members (see section 7);
- Facilitate the election of Village Action Groups and Community Resources Board members; and
- Monitor projects and the utilisation of funds disbursed to Community Resources Boards (CRBs).

Furthermore, an Investigations Unit is responsible for carrying out investigations and intelligence services related to wildlife crimes. The Unit falls directly under the office of the Director National Parks.

### **3.5.1 Law Enforcement Operations**

The following tables show the effort (Table 3) and results (Table 4) from anti-poaching operations carried out by the Zambia Wildlife Authority in 2015.



**Table 3:** Zambia Law Enforcement Effort 2017

Activities	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total
<b>No. of Patrols</b>	3,440	3,541	1,210	3,280	11,471
<b>Patrol Man-days</b>	63,916	68,042	21,202	55,366	208,526

Source: Conservation and Management DNPW

**Table 4:** Results from Law Enforcement Operations carried out by the Wildlife Law Enforcement Unit 2012 – 2017

s/n	Category	2012	2013	2014	2015	2016	2017	Total
1	Poachers Arrested	1,437	1,625	1671	1,920	1,920	1,645	10,218
2	Axes	129	196	70	218	235	179	1,027
3	Bicycle	269	320	144	358	271	222	1,584
4	Boats	37	9	18	11	44	29	148
5	Bush Meat Recovered (Kgs)	8,327.60	13,542.70	22831.4	29,427	20,703.70	11,756.40	106,589
6	Elephant Poached	110	135	136	168	155	131	835
7	Home Made Guns (MLG)	188	258	252	295	229	186	1,408
8	Home Made Shot Guns	162	75	142	283	252	148	1,062
9	Hunting Spears	25	80	119	118	123	102	567
10	Military Rifles	18	21	21	33	26	21	140
11	Motor Bike	5	4	12	13	10	2	46
12	Motor Vehicles	20	17	16	29	49	47	178
14	Shot Guns	156	163	134	331	223	159	1,166
15	Snares	5,370	8,406	9885	7,666	9015	6177	46,519
16	Sport Rifles	74	22	32	105	59	33	325

Source: Conservation and Management DNPW

**Table 5:** Confiscated leopard skins recorded at Provincial Headquarters

Year	Chilanga	Chongwe	Mfuwe	Mumbwa	Livingstone	Mansa	Solwezi	Chinsali	Mongu	Total
2013	1	-	-	-	4	-	-	2	-	7
2014	1	-	2	2	-	-	-	2	-	7
2015	5	-	3	2	-	-	1	3	-	14
2016	9	15	3	-	-	-	-	10	-	39
2017	11	4	8	1	3	-	3	11	1	43
<b>Total</b>	<b>27</b>	<b>19</b>	<b>16</b>	<b>5</b>	<b>7</b>	<b>0</b>	<b>4</b>	<b>28</b>	<b>1</b>	<b>110</b>

Source: DNPW, Chilanga

Table 5 summaries the number of illegal leopard skins confiscated and held at the Provincial DNPW headquarters. Between 2013 and 2017 the DNPW has intercepted 110 skins (approximately 20/year). The data suggests that there has been an increase in the number of skins after 2015, however this may be a result its improved law enforcement effort. The DNPW works very closely with the International Game Rangers, who are implementing the Wildlife Crime Prevention Project (WCP, <https://www.wildlifecrimeprevention.com/>). This project supports the DNPW through:

- DNPW's Intelligence and Investigations Units (IIUs) nationally
- WCP aided the establishment of a DNPW Wildlife Crime Detection Dog Unit, based at DNPW headquarters in Lusaka
- Supports DNPW and the National Prosecutions Authority (NPA) in wildlife crime prosecutions primarily by following and assisting with high profile wildlife criminal cases where necessary (see <http://www.zambiatourism.com/zambia-strikes-back-against-poachers>). See example below.
- The Awareness Programme was formally established with the goal of taking the message of wildlife crime prevention to the people in Zambia through awareness campaigns (see <https://twitter.com/NotAGameZm>).
- The Illegal Wildlife Trade initiative is receiving support from a wide range of donors. USAID is the lead agency who are assisting WWF Zambia as well as the DNPW. However, I do not have any specific details regarding the type of support that is been provided.

Examples of reports circulating on social media include

New Crime Fighting Equipment for the Department of National Parks and Wildlife Crime Prevention 5th January 2018, Chilanga, Lusaka:

*The Department of National Parks & Wildlife (DNPW) hosted a ceremony at their headquarters for the official handover of motor vehicles and other equipment to help address the illegal wildlife trade in Zambia from Wildlife Crime Prevention (WCP). At the event the Director of the DNPW, Mr. Paul Zyambo was presented with ten vehicles, laptops, smart phones, cameras and other equipment by WCP, with funding from the United States Bureau of International Narcotics and Law Enforcement Affairs (INL). In attendance were the Permanent Secretary of the Ministry of Tourism and Arts, Dr. Liya Mutale as well as representatives from the United States Embassy and the African Parks Network. The U.S. Department of State: Bureau of Intl Narcotics & Law Enforcement (INL) leads the United States' anti-crime and counter-narcotics efforts and assists its partner nations in increasing their law enforcement capacities. As part of a joint grant "ZAPIT – Zambian Prevention of International Trade in Wildlife" WCP along with Frankfurt Zoological Society (FZS) and African Parks have been awarded 2 years of funding to support DNPW in combatting wildlife trafficking in the North Luangwa/Bangweulu Wetlands region. Since 1986, FZS has been working with DNPW in the North Luangwa region and has been involved in the management of North Luangwa National Park and its surrounding areas. The Bangweulu Wetlands are managed through the Bangweulu Wetlands Management Board, a public-private partnership between African Parks, DNPW and the six Bangweulu communities. This northern region of Zambia is home to important elephant, rhino and lion populations, in need of protection from increasing wildlife crime. This project will pursue a cross border approach to strengthening law enforcement and criminal justice institutions tackling the wildlife trafficking hotspots across this northern region of Zambia. Operational funding will be provided for 12 Intelligence and Investigations Units in the area which borders both Tanzania and Malawi and is under increasing threat from organised transnational wildlife crime syndicates. In 2017, WCP's support to the DNPW Intelligence and Investigations Units throughout Zambia aided in the arrest of 1,263 suspects, the seizure of 3,062kgs of ivory, 34 heavy calibre rifles, 356 rifles (shotguns and muzzleloaders), 5,591kgs of bushmeat and 70 pangolins. This has been possible due to funding from our partners who include The Wildcat Foundation, Vulcan Inc. and The Elephant Crisis Fund. Wildlife Crime Prevention continues to support the Department of National Parks and Wildlife under the Ministry of Tourism and Arts in working tirelessly to ensure wildlife criminals are brought to justice in Zambia.*

Illegal Possession of Leopard Skin Will Get You At least 5 Years in Prison

<https://www.wildlifecrimeprevention.com/index.php/component/content/article/13-blog/latest/113-illegal-possession-of-leopard-skin-will-get-you-at-least-5-years-in-prison?Itemid=101>

*On 11th September 2017, Honourable Walusiku of Lusaka subordinate court convicted Derrick Chibuye of the Unlawful Possession of Prescribed Trophy (leopard skin) contrary to sections 87(4) and 130(2) of the Zambia Wildlife Act 2015 read together with Statutory Instrument No. 61 of 1993 and sentenced him to 5 years imprisonment with hard labour.*

*Mr Chibuye's arrest was made as a result of an operation by the Department of National Parks & Wildlife during which he was found attempting to sell the leopard skin illegally. Leopards are at risk of extinction across Africa and Asia. In sub-Saharan Africa they have experienced a population decline in of more than 30 percent in the past 25 years. The illegal trade of Leopard skins is driven by a demand on the international black market. Leopard skins are often sold as finished skins for home decoration or use in the creation of luxury carpets. Locally, leopard skins are a central element of many cultural ceremonies often worn used as regalia. The conservation of Leopards is of great economic and ecological importance to Zambia. Leopard sightings a rare an exciting event for tourists and significant carnivore populations are a vital part of a healthy ecosystem. This arrest was made as a result of an intelligence-led operation by the Department of National Parks and Wildlife, supported by Wildlife Crime Prevention. The Department of National Parks and Wildlife under the Ministry of Tourism and Arts is dedicated to protecting Zambia's wildlife and ensuring that wildlife criminals are put to justice.*

### **3.5.2 Wildlife Research**

The Wildlife Research Unit is responsible for the establishment or strengthening of research and development programmes at national, sub regional, regional and international levels to ensure the sustainability, conservation and preservation in the natural state of eco-systems and biological diversity in the National Parks, Community Partnership Parks, bird and wildlife sanctuaries and Game Management Areas. To do some the Research Unit undertakes the following:

- Conducts wildlife population surveys in all the protected areas.
- Conducts vegetation assessments and monitoring in all the protected areas.
- Conducts animal quota setting for Zambia's hunting blocks and areas.
- Formulates and implements 'policy and master plan' recommendations on elephants, rhino, fire, crocodiles, ranching operations, lion, Leopard, tortoise, research policy, etc.
- Facilitates and reviews ecological assessments of proposed ranching operational estates.
- Implements recommendations of important conventions such as, Convention on Biological Diversity (CBD), Wetlands, African-Eurasian Migratory Water birds Agreement (AEWA) and the scientific component of Convention on International Trade of Endangered Species of Flora and Fauna (CITES).
- Conducts collaborative research and monitoring programmes with other Government Departments and Non-Governmental Organizations.
- Collects and analyses data on law enforcement, human wildlife conflicts, land use assessment, tourism statistics, hunting, crop damage and animal control.
- Provides input to biodiversity survey programmes in protected areas.
- Develops wildlife management-oriented research proposals.
- Identifies, monitors and manages invasive alien species.

### **3.5.3 Leopard Surveys and Methods**

There are only two studies that have specifically investigated leopards in Zambia and both are from South Luangwa (Ray (2011) and Rosenblatt et al (2016). However, data related to leopards have been indirectly captured by large carnivore projects undertaken by PANTHERA (The Cheetah Project in Kafue National Park for example) and the ZCP lion project in South Luangwa and elsewhere in the country. In addition, some open game ranches have initiated broad survey monitoring programmes that include camera trapping to monitor large carnivores in their areas.

At the departmental level, routine patrols by wildlife police officers record details of wildlife sightings (date, time, GPS location etc.) that are later captured at the station and regional headquarters level. In addition to this, many of the safari outfitters operating in the GMAs use camera traps to record carnivores visiting baits and record information on specific sighting forms (see Figure 6). Cumulatively these data are consulted at the field level to inform management decisions.

However, given the elusive nature of leopard, the vast areas where they occur in Zambia and its wide-ranging biology, it is almost impossible to obtain reliable estimates that can be used with confidence for management purposes. Moreover, the cost of undertaking long-term intensive surveys across the many habitats where leopard occur is beyond the financial capacity of the DNPW. For these reasons, the DNPW is adopting an adaptive management framework approach to determine reliable estimates of population trends to assess how leopard populations are changing over time, and at a scale relevant to management.

Going forward, the DNPW will adopt “best practices” that use a combination of intensive monitoring i.e. systematic camera trap surveys at 20 strategic sites across the country, extensive monitoring that captures relative abundance indices, and information captured from leopards that are harvested by the hunting industry. It is acknowledged that these relative abundance indices are generally less accurate and precise, but they can be collected rapidly at a landscape scale and within the capacity of the DNPW and its stakeholders. Nonetheless, it is recognised that more reliable and robust monitoring techniques are required to better assess and measure population trend. The DNPW is therefore committed to working with its NGO and hunting fraternity to develop long-term rigorous monitoring programmes that can be used to monitor the status of leopard populations across its range in Zambia.

### **3.6 Stakeholder Involvement in leopard Conservation**

#### **3.6.1 Hunting Outfitters**

Hunting companies and professional hunters provide significant support to conservation activities throughout the hunting areas of Zambia. Section 4 provides detailed information on their involvement in anti-poaching, habitat conservation, and community development. In particular hunting operators are at the forefront in the fight against poaching in Game Management Areas through their financial and logistical support to Community Resources Boards (CRBs).

#### **3.6.2 Communities**

Community Resources Boards are responsible for wildlife management in Game Management Areas including the employment of Community Scouts who are responsible for anti-poaching operations in these areas. In section 7 we provide a detailed description of Community Based Natural Resources Management in Zambia. Communities are considered as key partners in wildlife management in Zambia.

#### **3.6.3 Non-Governmental Organizations**

There are several NGOs in Zambia supporting the government in conservation activities through support to anti-poaching units. In the key leopard clusters of the Kafue and Luangwa ecosystems, the following have been active: (i) Frankfurt Zoological Society (FZS) that has been active in the North Luangwa National Park for over 20 years, (ii) Conservation South Luangwa (CLS) (Formerly South Luangwa Conservation Society) in South Luangwa National Park and surrounding GMAs, (iii) Game Rangers International has been active in the Kafue ecosystem since 2010, (iv) Conservation Lower Zambezi (CLZ) is active in the Lower Zambezi National Park and surrounding GMAs, Zambia Carnivore Project (ZCP) that is active in South Luangwa, Kafue and Lewa Plains and Panthera that is active in Kafue. Other NGOs providing active support to DNPW in these areas include the Nature Conservancy (TNC) and WWF – Zambia that are active in providing support to Community Natural Resource organisations in GMAs.

Annex 2 provides the contact details for hunting associations and selected NGOs active in Zambia.

## **4.0 Utilization**

### **4.1 Safari hunting in Zambia**

Safari hunting in Zambia is consistent with the country's general tourism and wildlife policy. The mission of the Zambian wildlife policy is to conserve Zambia's wildlife for biodiversity and socio-economic enhancement. Sustainable utilization is the best management model to achieve the objectives of this mission outside National Parks, especially in areas where it is desirable that wilderness be maintained, and without attracting the high-human density and infrastructure typical of photographic tourism. Safari hunting is the most efficient land use in areas without species density and infrastructure because it offers high value with low impact on habitats. Large wilderness areas ensure high appreciation by clients because of the natural beauty and large variety of trophy animal species, some of them endemic to Zambia e.g., Cookson's wildebeest, black lechwe, and Kafue lechwe.

### **4.2 Leopard hunting Areas**

Leopard hunting in Zambia is carried out in hunting blocks located in Game Management Areas surrounding National Parks in the Luangwa, Kafue and Lower Zambezi ecosystem and in Open Game Ranches/Conservancies (Table 6). For the period 2005 to 2012 leopard hunting was carried out in 21 Game Management Areas and 5 Open Game Ranches.

#### **4.2.1 GMAs**

Game Management Areas (GMA) are a category of protected areas in Zambia designed to form buffer zones between National Parks and Open Areas. The main land use forms in GMAs has been Safari and Resident hunting. However, a few GMAs have included photographic tourism. Settlement is allowed in designated areas defined by the GMA's General Management Plan. CBNRM in Zambia is implemented in GMAs through Community Resource Boards (CRBs) provided for by the Wildlife Act of 2015 (see section 6). There are 36 Game Management Areas covering 177,404 km<sup>2</sup>.

#### **4.2.2 Open Game Ranches**

Open Game Ranches are unfenced private wildlife estates outside public protected areas that are reserved by a person or local community for wildlife conservation and management. Game ranching in Zambia has evolved in the last ten years as one of the best conservation success stories. Started in areas that were severely depleted in terms of wildlife species and with widespread illegal activities such as poaching, illegal logging and mining, thanks to partnerships between private investors and local communities most of these areas have been rehabilitated and recolonized by wildlife including lion, leopard, wild dog and cheetah.

The concept of Open Game Ranches is unique in that the private sector and the community agree to protect wildlife on privately owned or communal lands. Unlike closed Game Ranches, Open Game Ranches are not surrounded with a game fence and the animals are free to move back and forth beyond the ranch boundary into the surrounding Game Management Areas. This avoids fragmenting habitats and blocking wildlife movement corridors. The wildlife is still considered as belonging to the state. In exchange for protecting the wildlife the Department of National Parks and Wildlife issues the Open Game Ranches annual non-resident hunting quotas. The anti-poaching efforts in these lands contribute directly to assisting the Department in protecting national parks and GMAs. In many instances the owners of the ranches have invested in these areas by restocking the areas with more game species thus improving the diversity.

Most of these Open Game Ranches, even though private sector driven, have co-management agreements with local communities. All Open Game Ranches increase the land available for wildlife conservation (leopards included) and buffering the loss of wildlife habitats in the country. Example of these includes the Open Game Ranches located on the eastern banks of the Luangwa River southward of the South Luangwa NP such as Nyakolwe, Nyamvu and Munyamadzi Game Ranches (<https://www.theluangwavalley.com/>). Zambia currently has 17 registered open Game Ranches extending, according to official DNPW data, for over 2,500 km<sup>2</sup> of which eight have a quota for leopards (Table 6).



**Table 6.** List of Open Game Ranches in Zambia and those that have been allocated leopard quotas

<b>S/ n</b>	<b>Name</b>	<b>Location</b>	<b>Leopard Trophy Quota</b>	<b>Area (Sq.km)</b>
1	Illinda Game Ranch	Kasempa		550
2	Mushingashi Game Ranch	Mumbwa	YES	366
3	Nyakolwe Game Ranch	Sinda	YES	248
4	Sitatunga Game Ranch	Kasempa	YES	220
5	Mpyamanzi Conservancy	Nyimba		200
6	Munyamadzi Open Game Ranch	Nyimba	YES	175
7	Kaindu Natural Resources Trust	Mumbwa	YES	155
8	Musonweji Game Ranch	Mufumbwe		150
9	Chinamanama	Mpika		150
10	Nyamvu Game Ranch	Nyimba	YES	120
11	Chipepo Royal Game Ranch	Gwembe		107
12	Nkalamu Game Ranch	Nyimba	YES	60
13	Kanzutu Game ranch	Sandwe		31
14	Kazumba Game Ranch	Nyimba	YES	8
15	Bangweulu Island	Samfya		5
16	Mulilanama Open Game ranch	Nyimba		4
17	Kalwelwa	Mwinilunga		4
			<b>TOTAL</b>	<b>2,556</b>

#### 4.3 Hunting Quotas

#### 4.3.1 Quota allocation process

Zambia has a participatory quota setting process. The main scientific information used in the quota setting process for most species is derived from aerial surveys, which are regularly done in the country and include many ungulate species. Other information is taken from ground counts, patrol sightings, local and expert opinion and hunting monitoring. Quota setting is done for each hunting block in GMAs for all types of hunting after the close of the hunting season and prior to the next hunting season.

The quota for leopards is set using information from field observations from professional hunters, operators and field officers and from hunting records. This allows CRBs and DNPW to review the previous hunting season's offtake.

DNPW follows a bottom-up approach where CRBs submit a proposal of a quota to DNPW head office for adoption and approval.

In approving the quota, management developed the sustainable maximum harvest rates which it uses to allocate and approve the leopard quota as follows:-

- Prime hunting blocks =3 leopard per 1,000 square kilometres
- Secondary hunting blocks and open game ranches=1 leopard per 1,000 square kilometres
- Under stocked hunting blocks =0 leopard per 1,000 square kilometres

Using these rates, the total number of leopards that can possibly be issued in the entire country in any hunting season is 162.

The following table illustrates the quota setting process.

**Table 7:** Institutions involved in Zambia's quota allocation process

<b>Institution</b>	<b>Information provided by Institution for quota setting</b>	<b>Benefits for participating in quota setting</b>
Community Resource Boards	Provides Info on: <ul style="list-style-type: none"> <li>- Observed trends of illegal offtake of wildlife</li> <li>- Human settlement patterns</li> <li>- Status, availability and distribution of wildlife in the area</li> <li>- Resource use in the area</li> </ul>	<ul style="list-style-type: none"> <li>- In depth understanding of how quotas are set</li> <li>- Improved knowledge of the relationships between safari hunting and other wildlife management activities in the same area</li> <li>- Improved sense of ownership of the quota</li> </ul>
Department of National Parks and Wildlife	<ul style="list-style-type: none"> <li>- Provides info on:</li> <li>- Wildlife populations</li> <li>- Trends of illegal offtake</li> <li>- Previous year's quota utilization</li> <li>- Law enforcement info in relation to illegal offtake</li> <li>- Monitors hunting activity</li> <li>- Facilitates quota setting workshops</li> </ul>	<ul style="list-style-type: none"> <li>- Enabling democratic and participatory environment for reaching consensus on quotas and allocations;</li> <li>- All key stakeholders to participate in setting quotas, thereby improving the sense of ownership;</li> <li>- Provides a platform for information exchange that can be used to arrive at quotas</li> <li>- Final approval of quotas for GMAs</li> </ul>
Lease holders Operators/Professional Hunters	<ul style="list-style-type: none"> <li>- Provides information on:</li> <li>- Wildlife population trends;</li> <li>- Safari sector performance</li> <li>- Competitiveness of the area</li> <li>- Resource use</li> <li>- Wildlife and other conflicts in the area</li> <li>- First-hand input in quota setting</li> </ul>	<ul style="list-style-type: none"> <li>- Opportunity to come up with a sustainable and economical quota for safari</li> <li>- Opportunity to participate in the process</li> <li>- Opportunity to have a long-term view of the sustainability of hunting in the area</li> </ul>
Other organizations including some NGOs	<ul style="list-style-type: none"> <li>- Provide financial support to CRBs and DNPW,</li> <li>- Provide technical support for wildlife population estimates</li> </ul>	<ul style="list-style-type: none"> <li>- Represents the interests of the communities including quota setting</li> <li>- Training on quota setting, facilitate workshops and provide technical assistance on wildlife management.</li> </ul>

The Research Unit in DNPW compiles the quotas after feedback from the field staff, safari hunting outfitters and CRBs. Management approves the quotas before the Licensing Unit distributes them to operators. The Wildlife Conservation and Management Unit verify quotas. To enhance transparency and accountability, the DNPW is now required to share the approved quotas with other government agencies, which include among others the Auditors General's office and Anti-Corruption Commission. This ensures that the quotas produced cannot be altered by any person and provides the sustainability and benefits of the system.

#### 4.3.2 Leopard Quotas and utilisation

Zambia issued a total of 397 leopards on quota for the period 2011 to 2017 in 26 Game Management Areas and 8 Open Game Ranches (Table 7 and Table 8). For this period the highest number of leopards issued on quota was 126 in 2011 and the lowest was 37 in 2015 with an average quota of 79 per year. The average excluding the low year of 2015 was 90 leopards per year. The quotas were generally based on the levels of utilisation of the previous year's quotas and in some instances the quota was fixed in the concession agreements. The quota for 2018 was set at 102 with the individual quotas in GMAs varying between 0.6 and 4.7 per 1000km<sup>2</sup> and on open game ranches at 7.5 per 1000km<sup>2</sup> (Table 9).

**Table 8:** Zambia Leopard Allocated Quotas for the period 2011 to 2017 (Note: Hunting of leopards was banned between 2013 and 2014).

	Hunting Area	Area (km <sup>2</sup> )	2011	2012	2015	2016	2017
1	Lupande GMA	4,840	10	8	6	8	8
2	Lumimba GMA	4,500	16	9	6	12	8
3	Munyamadzi GMA	3,300	9	4	6	8	5
4	Mukungule GMA	2,402	4		1	1	2
5	Chisomo GMA	3,390	1	1			
6	Musalangu GMA	17,350	16	10	6	12	4
7	Sandwe GMA	1,530	2	3			2
8	West Petauke GMA	4,140	8	6	2	4	2
9	Luano GMA	8,930	2	3			1
10	Chiawa GMA	2,334	2	2	2		1
11	Rufunsa GMA	3,179	4	3	1	2	2
12	Mumbwa GMA	3,370	8	5		3	4
13	Nkala/Bilili GMA	3,274	3	3		3	3
14	Mulobezi GMA	3,430	8	3	1	4	6
15	Namwala GMA	3,600	3	4			3
16	Kasonso Busanga GMA	7,780	3	3		3	4
17	Lunga Luswishi GMA	13,340	8	6		4	4
18	Sichifulo GMA	5,175	3	1		2	3
19	West Zambezi GMA	38,070	2				
20	Mufunta GMA	5,104	3		1	2	3
21	Tondwa GMA	540		3			
22	Mushingashi Game Ranch	365	2	3	1	1	1
23	Nyakolwe Game Ranch	248	3		1	2	2
24	Munyamadzi Game Ranch	180	3	3	1	2	2
25	Nyamvu Game Ranch	120	3	3	1	2	1
26	Kaingu Natural Resource Trust	106			1	1	1
	Total	140,597	126	86	37	76	72

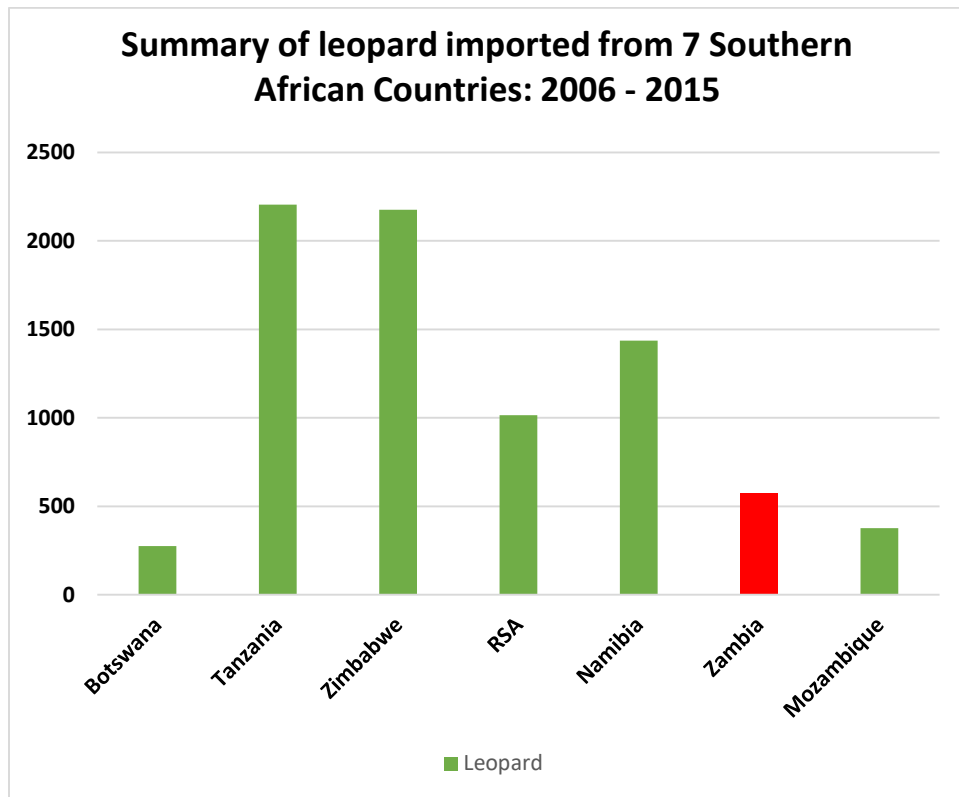
**Table 9.** Leopard Hunting Quota for 2018

s/n	Hunting block	Area (sq.km)	Quota	Leopard/ 1000 sq.km
1	Chifunda	1,676	4	2.38
2	Chanjuzi Lumimba	1,735	4	2.30
3	Chikwa/Fulaza	3,120	4	1.28
4	Kasonso Busanga	4,694	4	0.85
5	Luawata Munyamadzi	1,086	5	4.60
6	Lupande Lower	1,511	4	2.64
7	Lupande Upper	1,226	4	3.26
8	Mumbwa West	1,441	4	2.78
9	Mulobezi	1,880	4	2,12
10	Mwanya Lumimba	1,603	4	2.49
11	Nkala	1,111	3	2.70
12	Nyaminga Lumimba	847	4	4.72
13	Nyampala	2,185	4	1.83
14	Luembe	3,227	5	1.54
15	Lundu Musalangu	6,184	4	0.64
16	Lunga Luswishi Kasempa	6,981	2	0.28
17	Mufunta	6,376	3	0.47
18	Mukungule	2,402	3	1.24
19	Mulobezi Bbilibili	1,703	3	1.76
20	Namwala	3,166	2	0.62
21	Rufunsa	3,225	2	0.62
22	Sandwe	1,830	3	1.64
23	Sichifulo	3,029	3	0.99
24	Open Game Ranches	1352	18	7.50
<b>TOTAL</b>		<b>63,590</b>	<b>102</b>	<b>2.30</b>

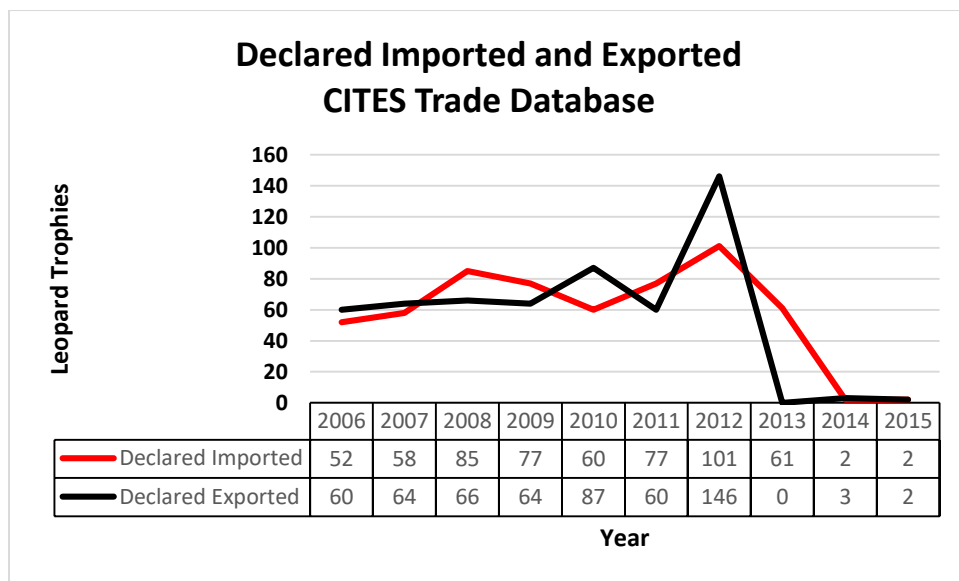
The number of imported leopard trophies from 7 southern African range states declared in the CITES Trade Database ([https://trade.cites.org/en/cites\\_trade/#](https://trade.cites.org/en/cites_trade/#)) using the search parameters Purpose = Hunting and Personal and Source = Wild is summarised in Figure 2 below. Altogether 8,059 leopard trophies were imported by various countries of which 575 (7%) were from Zambia.

Figure 2 illustrates the annual import and export trend as declared by Zambia in the CITES Trade Database which indicates that prior to the ban on leopard hunting in 2013, an average of 71 leopard trophies were exported annually (or 23% of the CITES quota).

Figure 3 illustrates the total leopard quota and levels of utilisation recorded by the DNPW. Since 2005, the DNPW placed 1,177 leopard on quota and utilised 687 (58%). This equates to an average quota of 120 from 2005 – 2012 of which 64 (or 53%) were utilised. Since the ban has been lifted, the quotas have increased from 37/year to 105/year in 2018. Utilisation has averaged 80%.

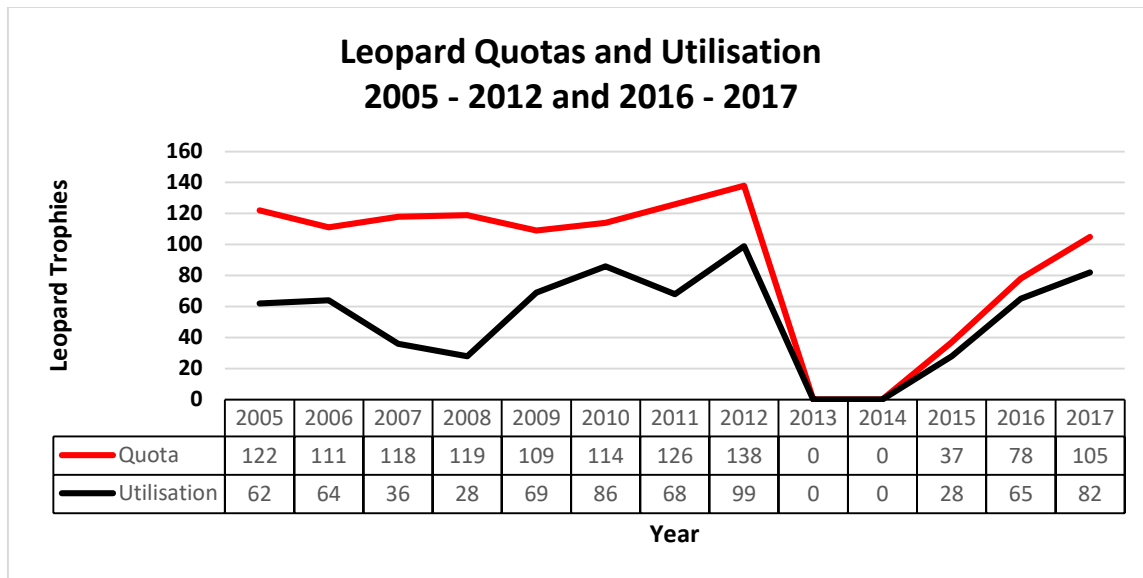


**Figure 2:** The number of leopard trophies imported from seven Southern African Range States between 2006 and 2015. Leopard Trophies from Zambia made up 7% of the 8059 leopard trophies during this period.



**Figure 3:** The number of leopard trophies declared as imported and exported by Zambia from 2006 – 2016. Few trophies were exported during 2013 -2015 when leopard hunting was banned.





**Figure 4:** Leopard quotas and utilisation recorded by the DNPW (2005 – 2012 and 2016 – 2017)

#### 4.3.3 Guidelines for Hunting Leopards

In reopening leopard hunting in 2016 following a three-year moratorium, DNPW consulted with independent leopard experts to get advice and held a workshop with stakeholders in April 2016. This resulted in the formulation of guidelines on lion and leopard hunting in Zambia. The guidelines have since been re-drafted for gazetting as a Statutory Instrument and are considered as part of an adaptive process to manage leopard hunting in the country. They will be further reviewed at the end of the 2018 hunting season taking into account the experiences from the first two years of implementation. The guidelines include:

1. Utilisation must be based on scientific principles: use area size and leopard density, population status trends and prey availability;
2. Hunted leopards must be an adult.
3. Use adaptive approaches in managing leopards. This may include varying quotas according to population status in a hunting area. It is important therefore, to establish a monitoring mechanism that provides information on:
  - A) Indicators that show the leopard trends in an area
    1. Hunting effort - time spent to find the desirable trophy;
    2. Hunting Success – was the hunted leopard of desired and acceptable trophy size
    3. Trophy size - Size of skull, tooth measurements, body length, shoulder height etc.
    4. Age – the average age of lawful trophies
  - B) The status of habitat and prey in an area
    1. Satellite images of the area
    2. Encroachment levels
    3. Quantitative and Qualitative indication of prey
  - C) Regular collection of data on the hunted leopard with prompt checking on the accuracy of information provided
    1. Skull, teeth, and hide to be examined, sampled and permanently tagged
    2. Provide certificates for proof of sampling and rating of trophy.

The guidelines also recommend:

1. No hunting of female leopard

2. No hunting of any leopard born or held in captivity;
3. No use of pre-recorded sounds in leopard hunting;
4. No leopard hunting on fenced game ranches;
5. Leopard will only be hunted in Prime and Secondary areas and Open Game Ranches known to be rich in leopard and prey.
6. Establish a central place for trophy measurements and ageing of hunted leopards for exports.

During the workshop held in August 2017 DNPW staff underwent training in aging lions and leopards. This will be a continuous process as and when the ageing methodologies improve.

The long-term implementation and monitoring of the effectiveness of these guidelines and indicators allow for adaptive adjustment of leopard quotas.

The new management approach to leopard hunting in Zambia is based on three pillars:

- I. A conservative, precautionary quota, well below one of the recommended thresholds for sustainability
- II. An age-based harvest limit and strong monitoring of leopard offtakes, and
- III. Significant and direct community benefits. This will ensure that leopard hunting in Zambia is sustainable and does not negatively affect the population. In addition, in the hunting concession agreements signed in 2015 no hunting outfitter has been guaranteed a leopard on quota. It is made clear that the quota for any species shall be based on scientific methods including the latest available survey and aging techniques.

#### **4.4 Allocation of hunting concessions**

According to section 7 of the Zambia Wildlife Act No. 14 of 2015 the DNPW in consultation with the local community is mandated to grant hunting concessions to a business enterprise for the purpose of hunting in a specified hunting block. For a business enterprise to be granted a hunting concession it needs to:

- be registered in Zambia;
- have a tourism enterprise license;
- have a valid Tax Clearance Certificate;
- provide proof that the company is not bankrupt; and
- any other conditions set out by the Evaluation Committee.

The allocation of hunting concession is done in accordance with the Zambia Public Procurement Act No 12 of 2008. The procedure for granting hunting concessions is by open tender in the following manner:

**(a) Call for bids;**

The Department invites bids from Local and Citizen Companies by advertisement in the media for companies to submit bids for granting of safari hunting concessions.

**(b) Submission of bids by the applicants;**

Bids must be submitted in accordance with the Instructions to Bidders contained in this solicitation documents. Bids must be submitted using the **“TWO ENVELOPE SYSTEM”**. The Technical Proposal and the Financial Proposal must be placed in separate envelopes clearly marked **“Technical Proposal”** and **“Financial Proposal”** and each bearing the name of the bidder and the name of the hunting block.

**(c) Opening and evaluation of bids;**

Bids shall be opened in the presence of the bidders or their representatives who choose to attend, on the date, time and place specified in the solicitation documents. The evaluation shall be carried

out by an Evaluation Committee, which shall base their evaluation on numerically weighted criteria set forth in the Wildlife Act. During the evaluation, the Committee shall examine the bidder's submissions for responsiveness to the technical and substantive requirements of this Tender offer. The Financial bid shall not be opened until the qualitative technical evaluation of each bid has been completed and scored. Only the financial bids of those bidders that are technically responsive and scoring above 80 shall be opened and the award shall be made to the bidder whose financial bid is found to be the highest amongst the technically responsive bids for each hunting block subject to it only being equal or above the Reserve Price.

(d) **Negotiation and Award of contract;**

The Department in conjunction with the Local Community after negotiations with the successful bidders negotiate on the critical areas such as community obligations law and enforcement contributions, awards the Hunting concession agreement to the Bidder whose bid has been determined to be substantially and technically responsive and scoring the highest evaluated price and has been determined to be the highest evaluated bid. Thereafter due diligence is conducted before signing the Hunting Concession Agreement.

(e) **Length of Leases**

The lease period for the hunting blocks is variable and is dependent on the classification of the hunting block. Lease periods range from 7 to 15 years. Hunting of leopard is permitted only in Prime and Secondary hunting blocks. Classification of blocks depends on the species richness and relative abundance of species. Prime hunting areas generally have short lease periods compared to understocked hunting areas. Generally under-stocked areas have no leopard on quota because of the low wildlife numbers in these areas but are given a longer lease period. This is to allow the concessionaire to invest more resources for the rehabilitation of the area and allow wildlife numbers to recover before they could embark on hunting.

#### **4.4.1 Obligations of the concessionaire in the hunting concession agreement**

The awarded contracts to the concessionaires of a hunting area include 4 obligations, namely

**Law Enforcement:** - the concessionaire is obliged to support resource protection through the employment of Community Scouts, provision of logistical support such as vehicles, fuel, patrol rations, and equipment. This obligation is performed thoroughly by the concessionaires and their professional hunters with removal of snares, assistance in the arrest of poachers, illegal loggers, encroachers, and illegal miners.

**Social and Community Development:** - the concessionaire is obliged to support Community development through support to community social needs such as health and education. In this regard some concessionaires have agreed to support the employment of teachers and nurses, purchase of ambulances and building classrooms, clinics and houses for teachers and health personnel so that they are resident within the communities.

In addition to Community development obligations, concessionaires are obliged to provide 50 % of the meat from hunted animals to the local community. White and Belant (2015), estimated that sport hunting provides approximately 129.8 tonnes of meat annually to rural communities, which coincides with times of food scarcity in most of these rural communities. (See Section 5.1.3).

**Infrastructure Development:** - the concessionaire is obliged to support the Community in infrastructure development as agreed during the negotiations. Common infrastructure projects include boreholes, class rooms, community clinics and roads, and road maintenance and wildlife scout outposts.

**Resource Monitoring and Fire Management:** - the concessionaire is obliged to support resource monitoring. This is basically monitoring the status of the wildlife in their concession. This includes support to fire management, vegetation and habitat monitoring, game counts, quota setting and general support to the Community Resources Boards.

The above obligations are one of the components of the partnership in conservation of natural resources between the Communities, Safari Operators/professional hunters and the DNPW. Therefore, no hunting concession agreement is valid without the signature of the Chief/s or CRB.

The following table illustrates the annual financial obligations of operators in the allocated blocks for the duration of their respective concession agreements.

**Table 10:** Current Annual financial obligations of hunting concessionaires to Communities in selected Game Management Areas (In Zambia Kwacha)

<b>GMA</b>	<b>Status</b>	<b>Community Obligation</b>	<b>Law Enforcement</b>	<b>Infrastructure Development</b>	<b>Resource Monitoring</b>
Chiawa	Secondary	130,000	50,000	100,000	50,000
Kasonso Busanga	Prime	300,000	50,000	50,000	10,000
Lumimba	Prime	310,000	187,750	140,625	36,500
Lunga Luswishi	Secondary	300,000	165,000	100,000	55,000
Lupande	Prime	580,000	127,000	100,000	30,000
Mulobezi	Secondary	120,000	110,000	125,000	25,000
Mumbwa	Prime	345,000	90,000	50,000	50,000
Mukungule	Secondary	100,000	50,000	20,000	20,000
Munyamadzi	Prime	425,000	165,000	117,000	110,000
Musalangu	Prime	335,035	150,000	100,000	34,500
Nkala	Prime	200,000	75,000	25,000	25,000
Sichifulo	Secondary	120,000	118,000	60,000	30,000
West Petauke	Prime	150,000	90,000	100,000	27,000
<b>Total</b>		<b>3,415,035</b>	<b>1,427,750</b>	<b>1,087,625</b>	<b>503,000</b>

Source: DNPW

On top of these financial obligations the concessionaire and professional hunters provide important voluntary contributions to increase the level of protection and social development in the hunting areas. These include additional contributions to law enforcement, community development, infrastructure and resource monitoring. Examples of three companies' voluntary contributions in their blocks to communities located in the Luangwa Ecosystem are listed in Table 11.

**Table 11:** Contributions of Safari Companies to Wildlife Conservation, an example from the Luangwa System (2008 - 2015)

Year	Other Contributions	Permanent Employees	Casual Employees	Snares Removed	Comments
2008	64,595,000.00	42	135	2,779	<ul style="list-style-type: none"> <li>• Support to Traditional Ceremony,</li> <li>• Support to Community Youth Group,</li> <li>• Donation to Secondary School,</li> <li>• Donated 2 Hammer mills,</li> <li>• Donated Land rover,</li> <li>• Funded awareness meeting against snaring</li> </ul>
2009	41,500,000.00	42	137	1,894	<ul style="list-style-type: none"> <li>• Support to traditional Ceremony,</li> <li>• 1 Hammer mill</li> <li>• Cement and Iron sheets for community shelter,</li> <li>• Transport and lodging for CRB members to attend meetings</li> </ul>
2010	60,500,000.00	42	139	1,664	<ul style="list-style-type: none"> <li>• Support to Traditional Ceremonies</li> <li>• Sponsoring Community Members to International meeting</li> <li>• Settling Statutory Fees Arrears for CRB</li> <li>• Outboard Engine</li> <li>• Contribution towards Village scout training</li> </ul>
2011	33,000,000.00	42	144	1,686	<ul style="list-style-type: none"> <li>• Motor bike spares</li> <li>• Transport</li> <li>• Second land hand cruiser</li> <li>• Fertilizer and seed</li> </ul>
2012	35,706,000.00	42	148	1,521	
2013	20,004,000.00	24	75	715	<ul style="list-style-type: none"> <li>• Hunting Operations could not sustain contributions,</li> <li>• Service parts for vehicle</li> </ul>
2014	20,000,000.00	24	75	544	<ul style="list-style-type: none"> <li>• Spares for truck</li> <li>• Hunting operations could not sustain contributions</li> </ul>

Year	Other Contributions	Permanent Employees	Casual Employees	Snares Removed	Comments
2015	5,000.00	12	30	401	<ul style="list-style-type: none"> <li>Supported law enforcement operations,</li> <li>No hunting but met concession agreement obligations</li> </ul>

\*Data from three companies in three hunting blocks

#### 4.4.2 Compliance to obligations of the concession agreement

The Hunting Concession Agreement has provisions specifying the mechanism of monitoring the implementation of the agreement. Mechanisms include annual evaluations at the end of the hunting season, and before the beginning of the next hunting season that involve the Department, CRBs and representatives of the concessionaire. A concession holder who does not comply with the obligations can have their concession terminated before the end of the agreement's term.

### 4.5 Mechanism for monitoring trophy hunting in Zambia

#### 4.5.1 Quota monitoring

As explained in section 4.3.1 quotas are allocated to the hunting companies in a participatory process. The final quotas are issued by the licensing unit. The authorised quotas are then circulated to the CRBs, Hunting companies and DNPW field stations. During the hunting season wildlife officers accompany hunters on all hunts. The officer records activities related to the hunt on specified forms i.e., Safari Hunting monitoring forms, trophy measurement forms, and a client questionnaire (see example in Fig 5). The officer endorses used licenses ensuring that they cannot be used again. The law requires that all harvested trophies are to be registered.

The DNPW is in the process of developing an on-line hunting administration and management database that will capture all the information related to a hunting safari. This will include trophy details, areas, locations, dates, origin of clients, monetary values, hunt duration, permit and licence details, contributions due to CRBs etc.



**Zambia Wildlife Authority**  
ZAWA/HUNT/SUM/FORM 01

**SAFARI HUNTING SUMMARY FORM** N<sup>o</sup> 4407

Hunting Block: [Redacted] Recorder: Boston Chulu S.M.P.O.  
Professional Hunter: [Redacted] Client Surname: [Redacted]

Type of Safari: ☒ Professional ☐ Recreational  
Classified: ☒ Minor ☐ Major (Tick one)  
Circled: [Redacted] Receipt No.: 8751300  
Receipt No.: 012-7436503  
Date Client Started Hunting: 01-09-16 Date ended Hunting: 14-09-16

\*\*\* Species preferred by client should be filled in before the hunt. Only species hunted in the block should be recorded in the order of client's preference.

ENTER INFORMATION BEFORE HUNT		ENTER INFORMATION AFTER ANIMALS ARE HUNTED				
Species preferred by client ***	Actual species harvested	Actual Date Harvested	License Number/Confer to endorsed by client	Trophy Measurement	Grid Location	GPS point hunted
	HIPPO	one	6-9-16	18490	S13565843	
	PUKU	one	5-9-16	18354	E30531716	
	ZEBRA	one	5-9-16	17850	S13521965	
	LEOPARD	one	8-09-16	18423	E020565482	
	ROAN	one	10-09-16	18424	S13590136	
	BUFFALO	one	11-09-16	17842	E30579212	
	CROCODILE	one	12-09-16	18563	S13558168	
	BUSH BUCK	one	12-09-16	17845	E30538963	
					S13584217	
					E30550958	
					S13574542	
					E30570868	
					S13515711	
					E30586832	
					S13535266	
					E30551714	

Note: The clients hunting in the hunting block should have this data form filled  
If a monitoring scout is not present to complete the form, the professional hunter must complete the form before his next client.

Certified correct by above Client: [Signature] (Signature) Date: 14/09/16

**Figure 5:** An example of a completed Safari Hunting Summary Form indicating the data collected by the Wildlife Police Officer. The blanked-out sections protect the confidentiality of the hunting operator and client.

#### 4.5.2 Leopard Hunting Monitoring

Apart from the procedures described in section 4.5.1 above, the DNPW is introducing a monitoring system specific for leopards and lions. This monitoring system as explained in section 3.1 will be based on a statutory instrument which is in preparation, which will introduce a mandatory sampling system that requires trophy leopards meet or exceed a minimum size (or possibly age) as one measure for harvesting trophy leopards. The monitoring system will be based on specific forms (Figures 6 and 7) that will help ensure proper compliance with the provisions of the law, including confirmation of legal licenses and collection of data associated with the hunt including but not limited to location, date, participants, and photos, as requested by DNPW. An on-line database is being prepared to capture the information described in the forms, and all safari outfitters and professional hunters will be required to register with this database. The monitoring system will be complemented by regular surveys for leopards throughout the GMAs using camera trap and other indirect monitoring techniques.

In addition to capturing data on hunted trophies, the DNPW together with the Professional Hunters Association of Zambia (PHAZ) and the Safari Hunting Outfitters Association of Zambia (SHOAZ), are

piloting a simple Smart Phone Application that is designed to take advantage of the wealth of data accumulated by professional hunters who cover huge distances daily in hunting areas. The application collects data on the age, sex, number and location of large carnivores encountered in the area. These data can be verified by providing a photograph of the carnivore (spoor, visual, kill etc.) that is then submitted to a central coordinator. The data is then consolidated and exported via an Excel 'cvs' file that can then be used to plot the information, thus building a dataset of carnivore sightings and distribution in the hunting areas.

## LEOPARD SIGHTING FORM

Game Management/Open Area/Game Ranch: .....

Hunting Block: .....

Name of recorder: .....

Sighting #	Date (dd/mm/yy)	Time	Size and Structure						GPS Location (in decimal degrees)		Activity	Photos (Y/N)
			# Cubs	# AM	# AF	# SAM	# SAF	Total #	Latitude	Longitude		

Clear pictures of leopard indicating facial scaring

AM = Male; AF = Female; SAM = Sub Adult Male; SAF = Sub Adult Female

### Notes

*Age estimate in the field:* Mane characteristics, nose pigmentation, skin coloration, leg markings, whiskers, colour and wear of teeth (later in the lab).

*Activities:* These may include; resting, feeding, walking, chasing/hunting etc.

*Identity:* Identity code can be any name given to an animal.

*Mortalities:* Record of all natural and man-made mortalities (infanticide, territorial disputes, disease, human – leopard conflict, snaring, poisoning etc.)

**Figure 6.** Example of leopard sighting form to be used by Professional Hunters

## TROPHY SIZE RECORD FORM

Name of Professional Hunter:	Hunting Outfitter:
------------------------------	--------------------

### DETAILS OF CLIENT

Name of client:	Nationality:
Country of Residence	
Postal Address	
GMA permit No:	Non-Resident Hunting Licence No:

### DETAILS OF HUNT

Name of GMA				Hunting period from to				
Name of Hunting Block								
Date Killed or wounded	Species	Sex	Killed or Wounded	Give Your Estimate of leopard Age	GPS Location		Trophy for export	
					South	East	Yes	No

### DETAILS OF TROPHY MEASUREMENTS

Species	Body length (tip of nose to end of tail)	Shoulder height (Shoulder to base of paw)	Skull length	Skull width	Left canine length	Right canine length

**Figure 7.** Leopard Trophy record form

#### **4.6 International Trade**

A Statutory Instrument is under preparation, which seeks to regulate the importation and captive uses of lion, leopard and cheetah in Zambia. This includes banning the holding of, breeding, commercial-use (walking and petting) in captivity of all large cats other than for temporary veterinary purposes. In addition, animals currently being held in captivity in Zambia will be required to be castrated or spayed to eliminate further breeding, and all commercial uses of captive-held cats will be phased out, as there is little or no value to conservation attached to these activities (Hunter et al., 2013). Particular care will be taken to avoid the “dumping” of captive-held cats into wild areas for any reason, especially for hunting or ‘release’ as means for the owners to avoid the penalties or costs associated with authorized disposition of their animals

The DNPW is establishing an investigation into current levels of illegal trade and use of leopard skins. Identifying levels and source routes will be a first step in controlling this potential threat to Zambia’s wild leopard populations.

## **5.0 Involvement of the hunting sector in leopard Conservation**

### **5.1 Benefits of leopard hunting in Zambia**

Sustainable utilization has demonstrated ecological, economic and social benefits and is a critical component of DNPW's overall leopard management strategy. It is for these reasons that DNPW is committed to improving leopard management strategies throughout Zambia thereby achieving maximum benefits for leopards and people

#### **5.1.1 Ecological Benefits**

Leopard hunting is an essential component of the tourism industry that maintains wildlife areas as suitable habitats for wildlife. In Zambia, GMAs and Open Game Ranches (there are also Open Areas and Fenced Game Ranches) where safari hunting is conducted represent nearly 180,000 km<sup>2</sup> as compared to about 64,000 km<sup>2</sup> in national parks that are strictly protected. Without the incentives provided by hunting, this habitat could be lost and converted to other, less optimal land uses that do not include wildlife.

Trophy hunting, by definition, targets post-breeding males. By ensuring that offtake is sustainable (including the targeting of non-breeding males of certain minimum age, without dependent young), hunting provides maximum benefits while ensuring minimal negative effects on the remainder of the leopard population.

#### **5.1.2. Economic Benefits**

Zambia took the decision to ban the hunting of lion and leopard in 2013. This followed extensive pressure from various stakeholders in the NGO community that highlighted alarming declines in the major carnivore populations in South Luangwa and Kafue. The data presented at that time strongly suggested that a ban was necessary to allow the carnivore populations to recover. However, it was acknowledged that while a recovery period was warranted, there were serious side-effects, especially since the ban resulted in the loss of wildlife-based tourism throughout the GMAs. With the decline in wildlife-based revenues, many of these areas, which are not suitable for photo-tourism, experienced significant human impacts from land conversion and bushmeat poaching. Moreover, the removal of wildlife-based economies in the GMAs severely impacted the wildlife populations and habitat (see ZCP 2016 Annual report).

The Zambian hunting industry is relatively small when compared to its neighbours in terms of the number of outfitters and active professional hunters. The DNPW is still in the process of developing its capacity to implement "best practice" initiatives to monitor the industry while hunting organisations (SHOAZ and PHAZ) have been recently re-constituted following the hunting ban imposed in 2013. SHOAZ now has 25 members while the ZPHAZ has continued to operate with 70+ members. These organisations work closely with the DNPW and the various CRBs in the hunting blocks. Some of the hunting companies have been in business for more than 20 years, with their continuous tenure in hunting blocks only interrupted by the 2013 ban. However, after the ban, several new players have entered the market.

The importance of the contribution of leopard quotas and the hunting of leopard to the financial viability of the industry is difficult to assess given that several other species play a role. The average concession fee (or right to hunt fee) paid for the various blocks ranges from US\$100,000 – US\$180,000/year with approximately 40% of this fee paid to the community resource boards. In addition to these fees, each company is required to pay for 60% of the value of the approved quota. Most companies operate from June to September (some into October). During this period, the outfitters employ local staff and contribute to the local economies via a variety of local expenses and taxes. All outfitters are engaged in various ways with the monitoring and management of carnivores in their blocks. Most outfitters used camera traps to record the occurrence of carnivores (mostly at baits).

Leopard hunting is therefore one of the mainstays of safari hunting in Zambia. This trophy attracts tourist hunters and thus brings in income to the communities and the nation. In return, the industry:

- Creates employment

- Provides financial support to law enforcement
- Facilitates provision of Health care and Education
- Promotes infrastructure development (mostly through bush road construction and maintenance)
- Assists with fire management
- Provision of meat (see below)

The remaining part of revenues is used by DNPW for wildlife conservation including leopard itself through, inter alia, support to law enforcement including anti-poaching and prosecutions and resource monitoring.

For further details, refer to this section and sections 7 and 8.

### **5.1.3. Social Benefits**

Leopard – human conflicts occur on the interface between communities and leopard range, often resulting in “problem animals” being removed through lethal means. Fortunately, the number of incidents of leopard – human conflict is low however with increasing human populations, this may become an issue as human settlements expand. For this reason, it is essential that the benefits of hunting and the role that leopards play are devolved to communities through increased revenues that demonstrate the value of these predators and mitigates the impact of living in the presence of these predators.

For further details, refer to this section and sections 6, 7 and 8.

The economic and social benefits of sport hunting to rural communities through the provisioning of game meat have been illustrated in a recently published study (White and Belant, 2015). Provisioning of game meat to rural communities by the sport hunting sector in Zambia for three game management areas (GMAs) was on average > 6,000 kg per GMA of fresh game meat annually from hunting operators. In most of the GMAs, provisioning of meat exceeded what was required in the lease agreements. Provisioning of game meat peaked during the end of the dry season (September–October) coincident with when rural Zambians are most likely to encounter food shortages. Extrapolating the results across all GMAs estimated 129,771 kg of fresh game meat provisioned annually by the sport hunting sector to rural communities in Zambia at an approximate value for the meat alone of >US\$600,000 exclusive of distribution costs. During the hunting moratorium (2013–2014), this supply of meat was halted, adversely affecting rural communities previously reliant on this food source. The paper recommended that proposed alternatives to sport hunting should consider protein provisioning in addition to other benefits (e.g., employment, community pledges, and anti-poaching funds) that rural Zambian communities receive from the sport hunting sector.

The hunting sector's support is crucial to the government's actions in conserving wildlife and habitats. It cannot be stressed enough the crucial role that safari hunting plays in wildlife conservation in Zambia. During the 2013 to 2016 moratorium on lion hunting (leopard hunting was stopped only in 2013 and 2014) the government was forced to subsidize the operations of ZAWA, Community Resource Boards and wildlife management (see section 9 below).

## **5.2 Transparency**

The Wildlife Act of 2015 established a Wildlife Management Licensing Committee whose task is to supervise and grant, renew and revoke licenses, permits and certificates related to hunting. The committee is composed of several members appointed by the Minister of Tourism and Arts selected from different institutions including representatives from Ministries responsible for environment, lands, fisheries, forests, finance, tourism, chiefs, and mines. Other officials will come from the Attorney General's office, Anti-Corruption Commission, and Tourism Council of Zambia. This committee will enhance transparency on the administrative processes related to licensing.

## **6.0 Threats and Mitigation**

Threats to the persistence of leopard populations in Zambia include habitat encroachment and fragmentation, bush meat poaching/snaring, human leopard conflict and prey depletion.

### **6.1 Habitat Encroachment and Fragmentation**

With 20 National Parks and 36 Game Management Areas Zambia has close to 35% of its land mass set aside for wildlife conservation. Including National and local forests and National heritage sites this land mass is well over 40 % of the country's total land area (Lindsey et al., 2014). However, habitat encroachment and fragmentation are increasingly threatening to reduce the ecological functionality and connectivity of these protected areas. Watson et al., 2013 reported rates of encroachment from roads in some areas of 2km per year and 18 ha per day light hour in a 160,000 km<sup>2</sup> study area covering the Luangwa and Kafue ecosystems. Large carnivores, leopards inclusive, are sensitive to encroachment and fragmentation even in areas outside protected areas through edge effects (Woodroffe and Ginsberg, 1998). The eradication of tsetse flies in most protected areas render these areas suitable for domestic livestock. The recent aerial survey in the country estimated cattle at well over 45,000 in the Kafue ecosystem (DNPW, 2016). Watson et al., (2013 and 2014) recommend carefully planned human settlements, and agricultural development zones in GMAs to counter the effects of encroachment and fragmentation. To deal with the challenges posed by habitat encroachment and fragmentation, the Zambian government through DNPW has employed several strategies outlined in the three subsections below.

#### **6.1.1 General Management Plans**

The majority of the GMAs in which leopard hunting occurs have a General Management Plan (GMP) in place. Only Munyamadzi, Sandwe and West Petauke in the Luangwa ecosystem, and Rufunsa GMA in Lower Zambezi do not have General Management Plans at present. A General Management Plan (GMP) outlines the basic management and development guidelines for a GMA or Open Area after the systematic assessment of land and water potential, alternatives for land use, economic and social conditions in order to provide the best land use options for addressing land use conflicts / problems and achieving identified land use management objectives over a 10-year period. It is prepared through a highly consultative, interactive and participatory Strategic Planning Process (SPP) involving all key stakeholders. The GMP emphasises the commitment of all concerned, affected and interested stakeholders to balance between the preservation and utilization of the protected area's biodiversity to ensure the long-term survival of the natural resources including wildlife resources in a way that benefits the local communities. As such the final document is ratified by a Community Resources Boards, their patrons (who are usually the chiefs in these areas) and the DNPW. Table 12 below gives the status of GMPs for critical areas in the leopard range ecosystems.



**Table 12:** Status of General Management Plans in Zambia's leopard hunting Areas

s/n	GMA	Ecosystem	Status	Date Ratified
1	Musalangu GMA	Luangwa	Ratified	2014
2	Lupande GMA	Luangwa	Ratified	2014
3	Lumimba GMA	Luangwa	Ratified	2016
4	Munyamadzi GMA	Luangwa	Draft	-
5	West Petauke GMA	Luangwa	In preparation	-
6	Sandwe GMA	Luangwa	In preparation	-
7	Kasonso Busanga	Kafue	Ratified	2014
8	Mulobezi GMA	Kafue	Ratified	2014
9	Nkala GMA	Kafue	Ratified	2014
10	Mumbwa GMA	Kafue	Ratified	2014
11	Sichifulo GMA	Kafue	Ratified	2014
12	Lunga Luswishi GMA	Kafue	Ratified	2014
13	Mufunta GMA	Kafue	Ratified	2014
14	Rufunsa GMA	Lower Zambezi	In preparation	-

Source: Planning Unit DNPW

### 6.1.3 Open Game Ranches and Trans-frontiers Conservation Areas

As detailed in section 4.2.2 Open Game Ranches are privately owned lands bordering GMAs or National Parks that stock wildlife. These areas, regulated in the Wildlife Act 2015, further buffer the National Parks and GMAs from encroachment and ensure movement corridors are protected. These are new models of wildlife conservation in the country that the Zambian government is supporting to ensure sustainable use of wildlife resources and protection of habitats.

In the most recent conservation developments, establishment of the Kavango-Zambezi Transboundary Park (KAZA) by Peace Parks seeks to protect a contiguous habitat of over 280,000km<sup>2</sup> that includes the whole of Kafue NP ecosystem and the Sioma Ngwezi NP region as part of an international effort to maintain connectivity of viable habitats for all species. Other proposed Trans – frontier Parks include the Liuwa - Musuma between Zambia and Angola and the Mana Pools - Lower Zambezi between Zambia and Zimbabwe.

Due to the increase in donor funding and increased number of economic opportunities availed through tourists' lodges, protected areas are attracting large numbers of immigrants on their boundary areas (Wittermyer et al., 2008). Zambia has not been spared from the phenomenon. Mfuwe, the gateway town to the South Luangwa National Park, has seen increased population growth and increased infrastructure development unlike other areas in the ecosystem devoid of photographic tourist's lodge (Twakundine Simpamba Senior Ecologist SLNP pers. comm.). This has caused habitat loss. Because hunting concessions usually have one operator responsible for a large area and are located in areas that are not easily accessible, safari hunting helps in buffering protected areas from the effects of immigration, while at the same time providing economic support to rural communities and maintaining habitat. The Safari hunting sector is extremely supportive of initiatives aimed at maintaining wild areas. Their presence acts as a deterrent to would be squatters. They also act as monitors and are able to immediately inform the CRBs or the Department of illegal settlements in GMAs.

## **6.2 Human-Leopard Conflict**

Human-Leopard conflicts (HLC) are not common in Zambia, and retaliatory killings by livestock owners are not as prevalent as in East Africa. Direct poaching of the large carnivores is not believed to be significant. The DNPW apply an adaptive system that includes a procedure whereby reported cases of leopard damage are investigated by field officers and complete reports are reviewed by the most senior officer for immediate feedback. Interventions include; scaring leopard through blasting, or killing the animals suspected to be responsible for the attack on livestock and humans. This approach is considered incompatible with sustainable conservation of wildlife and may contribute to the decline in the leopard populations. DNPW is committed to implement the best practises on HLC including for example the HLC toolkit developed by the Niassa Carnivore Project. This will be done through the development of a specific policy on Human Wildlife Conflict that the department, pending the availability of funding, would like to devise as soon as possible.

## **6.3 Bush meat poaching and prey depletion**

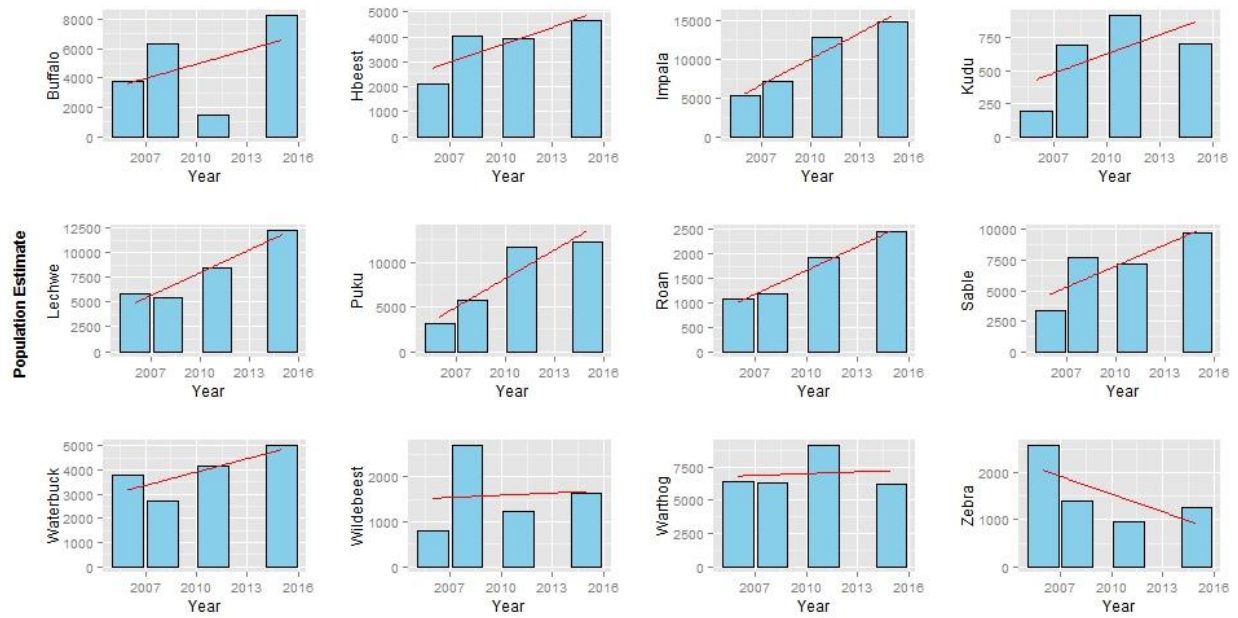
Wire snare poaching is widespread in Zambia and impacts on non-target species such as elephant, lion and African wild dog. Becker et al. (2013) conducted an analysis of data from 1038 anti-poaching patrols in Luangwa valley from December 2005 to November 2010, to evaluate snaring dynamics and the effect of season, patrol size and length on snare detection. Their conclusion is that snaring mortality affected the adult and subadult lion population and high records of snared wild dogs were recorded, but there is no mention of leopards being similarly affected.

Rosenblatt et. al. (2016) investigate the impact of human activities on the periphery of protected areas on carnivore populations. They measured how density and survival rates of a leopard population varied across a gradient of protection and evaluated which anthropogenic activities accounted for observed patterns. Using camera traps deployed in adjacent, similarly sized, and ecologically similar study areas inside and the South Luangwa National Park (SLNP) from 2012 to 2014, they were able to estimate population size and sex-specific survival rates for the two areas. Leopard density within SLNP was 67% greater than in the adjacent area, but annual survival rates and sex ratios did not detectably differ between the sites. Prior research indicated that wire-snare occurrence was 5.2 times greater in the areas adjacent to the park. Their conclusion is that the low density of leopards on the periphery of SLNP is better explained by prey depletion, rather than by direct anthropogenic mortality. Instead leopard density and survival across a protection gradient was more likely to be limited by bushmeat poaching.

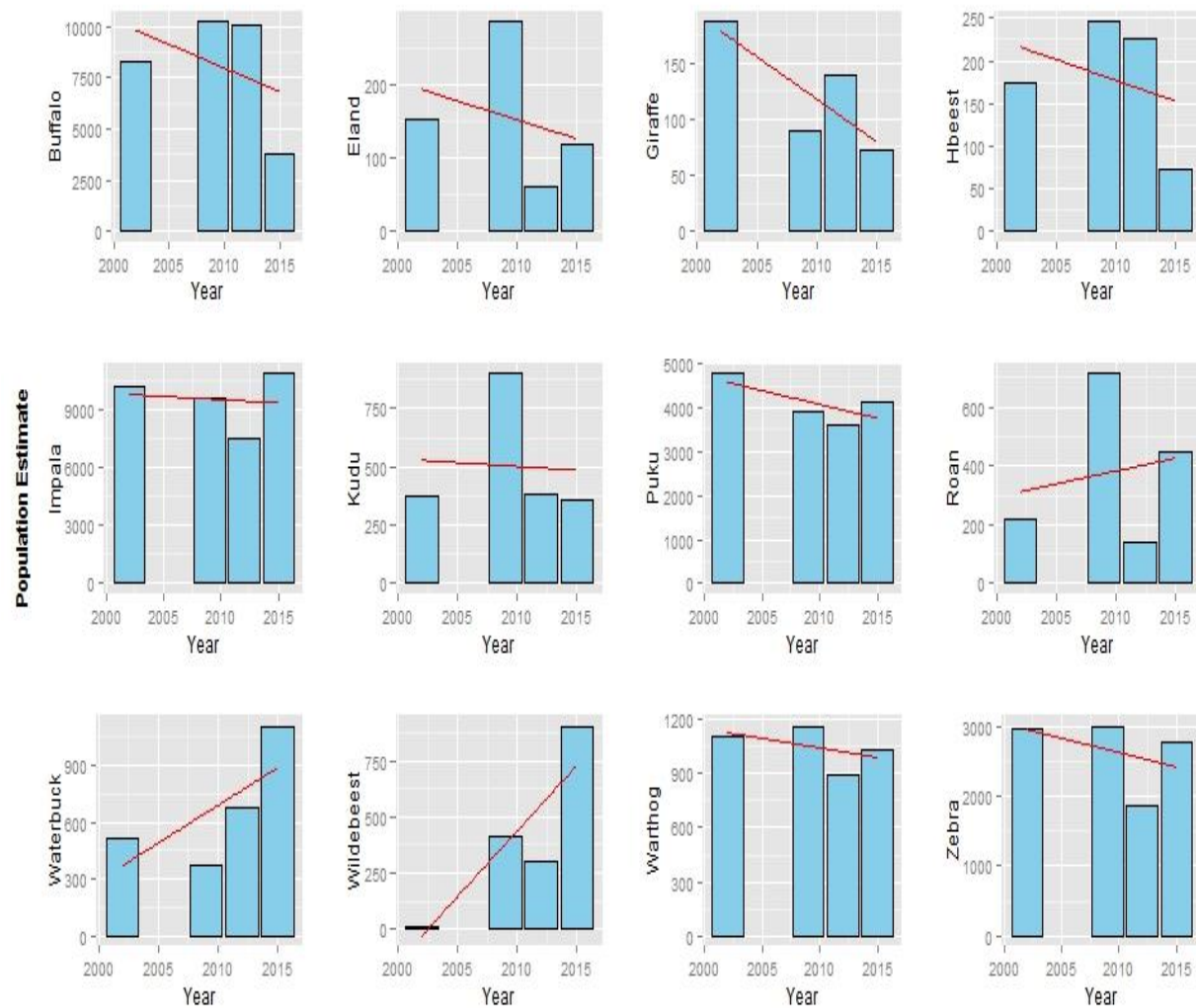
Poverty and the necessity for rural people to obtain some income are the main drivers of bush meat poaching in Zambia.

### **6.3.1 Prey Availability and abundance**

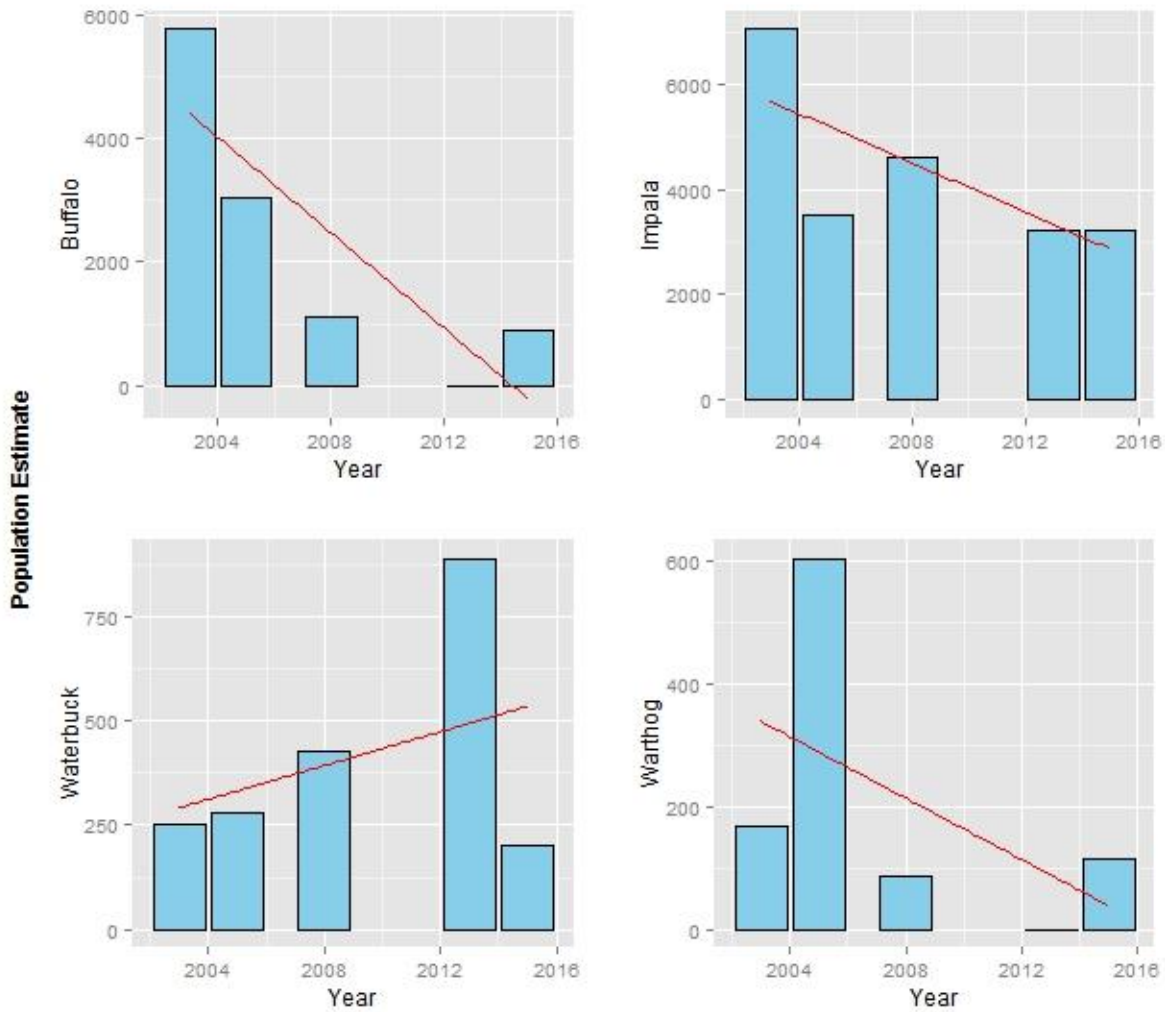
The abundance of top carnivores is closely related to the abundance of their prey (Hatton 2015, Hayward, 2007, Periquet et al 2014) Protected areas with healthy prey population support healthy populations of large lions. Therefore, prey abundance is a good indicator of the status of lion populations. The recent aerial survey of large mammals in Zambia indicate that for key wildlife species in the Kafue ecosystem, their numbers have been increasing over the period 2006 to 2015. The trends for the Luangwa system have been stable to increasing. The only exception being the Lower Zambezi ecosystem where there has been a significant decrease in one of the main lion prey, the buffalo. The causes of this decline are being investigated. Figures 5, 6 & 7 below show the population trends of the key wildlife species in the South Luangwa, Kafue, and Lower Zambezi National Parks, the core areas for wildlife in the three main lion clusters in Zambia. The Kafue ecosystem can potentially hold more prey species than it currently has, and the observed increasing trend is encouraging as it is likely to result in the increase of lion in this huge ecosystem.



**Figure 8.** Population trends for selected species in the Kafue National Park 2006 – 2015

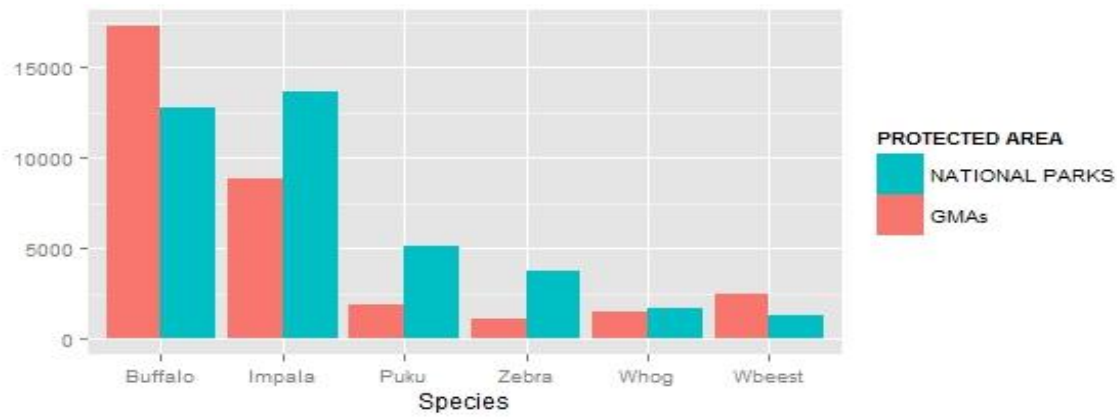


**Figure 9.** Ungulate population trends in South Luangwa National Park



**Figure 10.** Population trends for buffalo, impala, waterbuck and warthog in the Lower Zambezi National Park

Figure 10 below is a comparison of ungulate abundance in the Luangwa ecosystem between GMAs and the 4 National Parks (South Luangwa, North Luangwa, Lukusuzi and Luambe National Parks). Buffalo and wildebeest were more abundant in the GMAs than in the National Parks. These findings underscore the importance of GMAs as habitat for populations of some species, in particular, buffalo and wildebeest and the need to maintain the habitats intact.



**Figure 11.** Species abundance in the Luangwa ecosystem National Parks vs GMAs

## **7.0 Community Based Natural Resources Management (CBNRM)**

### **7.1 CBNRM in Zambia**

The origin of CBNRM in Zambia owes much to a program that came to be known as the Administrative Management Design Program for Game Management Areas (ADMADE), which commenced in 1987. Funded by the United States Aid for International Development (USAID), ADMADE established the principle that communities had the right to participate in wildlife management and that it was the most effective way to achieve conservation. The program could be considered as one of the first CBNRM programs in Southern Africa. The theory behind the program, was to encourage rural participation in wildlife conservation. Rather than all taxes on safari hunting going to the state treasury, government to return a portion of some revenue streams to a local GMA committee for its use in development and for investments in wildlife management.

In 1999, the Department of National Parks and Wildlife Service (NPWS) was transformed into the Zambia Wildlife Authority (ZAWA) - a statutory body established by the Zambia Wildlife Act number 12 of 1998. The Act gave birth to Community Resources Boards (CRBs), based on the ADMADE model and they were legally mandated to co- manage wildlife resources in Zambia.

Following the 1998 Zambia Wildlife Policy, local communities residing in chiefdoms and geographic areas which are contiguous to any wildlife estate or any open area are encouraged and assisted to apply and register as Community Resources Boards (CRBs) with ZAWA. Management of all CRBs established to enhancing management and sustainable use of wildlife resources outside National Parks is done through a democratically elected representation of the local community themselves, but day-to-day operations of any CRB should be through a secretariat. The elections are done according to Village Action Groups and it is from those elected in these Action Groups that form members of the CRB. The chief of the area is regarded as the patron of such CRBs. DNPW cooperates with all registered CRB's and provides the technical input that assists them to develop management strategies. It is the responsibility of DNPW to work with CRBs and other stakeholders in the preparation of general management plans using a participatory planning process and format developed by the Department and adopted to meet local condition requirements.

All meetings of the CRBs are conducted in a democratic way, decision reached through consensus, and minutes of all their transactions and deliberations recorded. DNPW, District Council and non-governmental organisations (if present in the area) are called to the meeting to provide the appropriate technical input that will assist CRBs make informed decisions about the rational and sustainable utilization of natural resources in their area.

Since the entry into force of the Zambia Wildlife Act number 14 of 2015 (See section 3.1), the Wildlife Policy is at present under review by the Ministry of Tourism and Arts and it will strengthen several aspects of the Zambia CBNRM programme such as wildlife user rights, Human Wildlife Conflicts and it will improve stewardship in wildlife management by local communities.

### **7.2 Community Benefits**

The Zambia wildlife Act No. 12 of 1998 introduced rights to benefit from natural resources. This has continued with the introduction of the Zambia Wildlife Act No. 14 of 2015 which now allows greater participation of local communities, thus establishing their rights to use and manage natural resources in GMAs and Open Areas. This includes provisions for participation in developing management plans. As provided for by the 2015 Wildlife Act, a local community in a Chiefdom in a Game Management Area, or in an open area or a particular chiefdom with common interests in the wildlife and natural resources in that area, may apply to DNPW for registration as a Community Resources Board (CRB). According to the Zambia Wildlife Act No. 14 of 2015 the CRB have the following functions:

- i. negotiate, in conjunction with the Department, co-management agreements with hunting outfitters and photographic tour operators;
- ii. manage the wildlife under its jurisdiction within quotas specified by the Department;

- iii. appoint community scouts to exercise and perform the duties of a wildlife police officer under the supervision of a wildlife police officer in the area falling under the board's jurisdiction;
- iv. in consultation with the Director, develop and implement management plans which reconcile the various uses of land in areas falling under the board's jurisdiction; and
- v. Perform such other functions as the Minister or Director may direct or delegate to it.

From the revenues generated, members of local communities have been employed by CRBs as Community Scouts, funded also through obligations under the Concession Agreement (see section 4.4.1.), to assist DNPW with law enforcement and monitoring of wildlife resources. These scouts also help in assess crop damage and problem animal controls in their communities, where they also conduct environmental awareness among the local populace.

There are currently seventy-five (75) registered CRBs, which employ approximately 750 Community Scouts operating in various GMAs in Zambia with a total monthly wage bill of ZMW 359,779.50 (USD 38,853.13). An additional 79 support staff (these include Book Keepers and Administrative officers) are employed by CRBs across Zambia. In some GMAs revenues from hunting are used to pay teachers and medical staff as in the case for Nabwalya CRB while others offer student scholarships, which range from secondary school to tertiary education.

The revenue the local communities obtain allows them access to social amenities and various rural development projects. The projects span construction of boreholes, schools, clinics, and feeder roads, as well as crop damage counter-measures including solar and chili pepper fences. More residents benefit indirectly from participating in wildlife management and accessing the resource, depending on the ability of the wildlife sector to generate funds. It has to be noted that local communities have limited benefits from non-consumptive tourism.

Animal fees are shared:

- i. 5% of the funds go to the CRB patron (traditional leader or Chief);
- ii. 45% of the funds go to the CRB in the form of community funds; and
- iii. 50% of the funds go to ZAWA in the form of conservation funds.

Concession fees are shared:

- i. 5% of the funds go to the CRB patron (traditional leader or Chief);
- ii. 15% of the funds go to the CRB in the form of community funds; and
- iii. 80% of the funds go to ZAWA in the form of conservation funds.

According to the "Guideline on the use of Community funds accrued from wildlife management" the community funds are expected to be utilised as follows:

- i. 45% of the funds go to wildlife management, including resource protection and patrols;
- ii. 35% of the funds go to community projects such as construction of clinics, roads, schools, and wells; and
- iii. 20% of the funds go to administration of the CRBs.



## **8.0 Revenues and Expenditures from Trophy Hunting**

The fee revenues discussed in this section relate to revenues of DNPW, a part of which are shared with communities. But a foreign client contributes far more to Zambia's economy than permit and concession fees. A foreign client pays to the operator a daily fee and hunting a leopard forms part of a packaged hunt together with other species such as buffalo, hippo, and impala. Therefore, the foreign client pays for more than just a leopard but also for the time spent hunting.

In addition to the daily fees, clients will often pay observers fees and taxes not imposed by DNPW, such as firearms taxes to the Treasury.

Safari hunting also generates "multiplier" impact due to the client's travel, tipping, eating in restaurants, purchase of souvenirs, and taxidermy requirements. The multiplier spending also generates tax revenue for the country's general Treasury. In short, the revenues generated by tourist safari hunting are many times greater than the fees directed to DNPW which are summarized here.

### **8.1 Animal and hunting fees**

Hunting license fees in Zambia are statutory. The current hunting animal fee for a leopard is US \$2,650.00 plus a conservation fee of \$750 to the outfitter. In addition to animal fees the hunting outfitter pays concession fees and outfitters fees annually. The department charges GMA Area fees per hunt and annual Professional Hunter fees. Other minor fees include certificate of valuation of trophies, certificate of ownership of trophies, permit to export, handling fees, and the CITES security stamp.

A foreign client pays a fee above this depending on what the outfitter charges. The department does not deal with the foreign client directly. It should be noted that a leopard hunt is sold as a package together with other species such as buffalo, hippo, and impala among others. Therefore, the foreign client pays for more than just the leopard.

### **8.2 Source of revenues to the DNPW**

Table 13 provides a breakdown of ZAWA/DNPW fee revenues for the period 2010 to 2017.

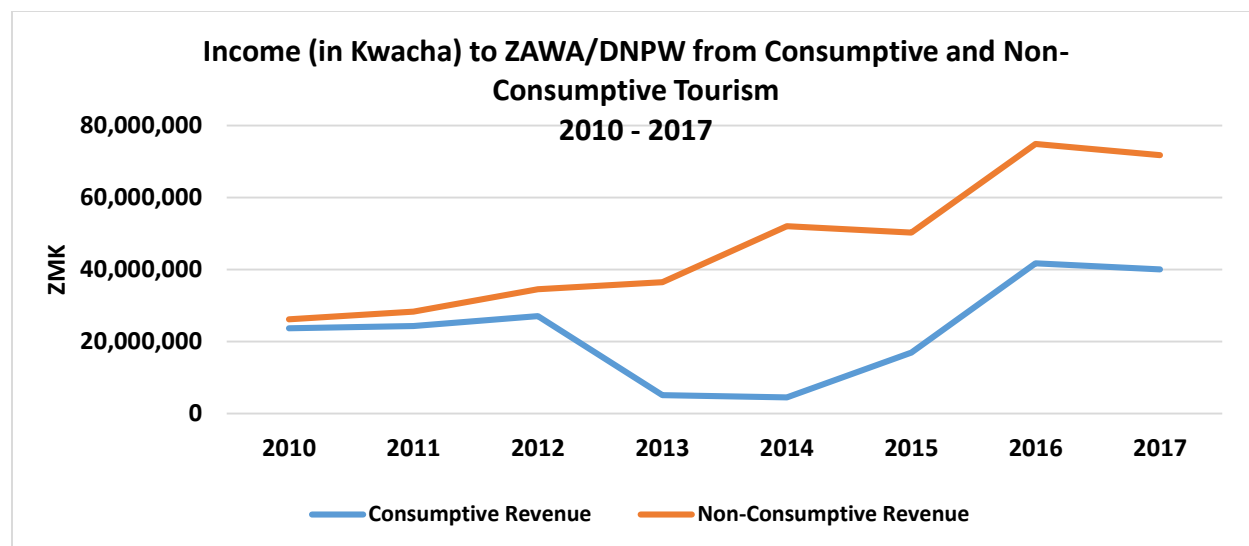
In 2013 and 2014, there was no hunting in 19 out of the 33 hunting blocks in the Country due to a moratorium imposed in 2013, which included lion and leopard although for the latter hunting was resumed in 2015. This led to reduced revenues from game permit fees and concession fees, thus the significant drop in revenue during the period 2013 - 2014 as illustrated in Figure 12 below.

**Table 13:** Total ZAWA Revenues (ZMW) 2010 - 2017

<b>Description</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
Consumptive Revenue	23,676,244	24,352,872	27,120,628	5,166,710	4,568,488	16,956,733	41,764,331	40,040,080
Non-Consumptive Revenue	26,183,244	28,311,567	34,596,145	36,501,500	52,029,138	50,297,933.	74,863,234	71,772,487
Grants	14,254,780	33,717,778	27,247,240	70,688,875	59,506,322	122,866,591		
Other Income	254,572	65,625	252,594	64,314	110,403	442,312		
Total Income	64,368,841	86,447,843	89,216,608	112,421,400	116,214,352	190,563,571	116,627,565	111,812,567

*Note: The figures for consumptive and non-consumptive amounts are based on the percentage trend and are not actual but the totals are actual. This is because the Government has only given us one revenue code*

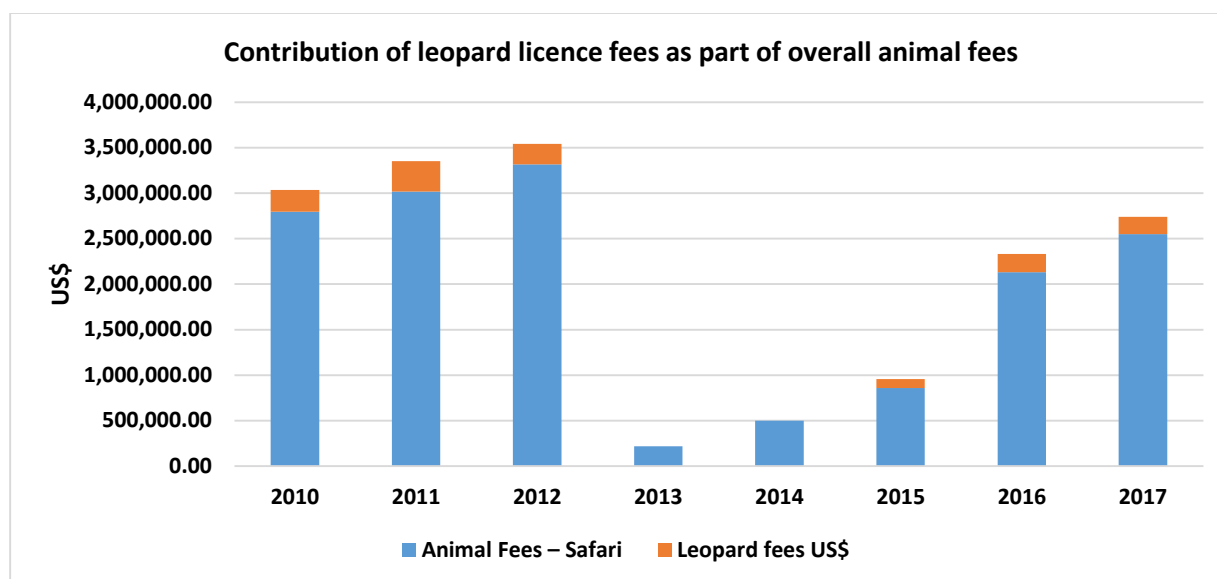
On average hunting revenues accounted for 32% of all the revenues that ZAWA received in the three years (2010 - 2012) before the moratorium on cats hunting. During the moratorium (2013 & 2014) this reduced to an average of 4%. The deficit in terms of revenue was offset by an increased allocation from grants, which saw the grants almost triple from 22% in 2010 to 64% of ZAWA's income by the end of 2015. The contribution of non-consumptive tourism averaged 36% during the seven-year period from 2010 – 2017. On average safari hunting revenues accounted for 88% of all the income from consumptive hunting during the pre-ban years reducing to 67% during 2013 and 2014. It increased to 74% in 2015 with the resumption of hunting in some hunting blocks.



**Figure 12:** Comparison of income from Consumptive and Non-Consumptive Revenues and the impact of the hunting ban in 2013 - 2014

### 8.2.1 Revenues from leopard hunting

Leopard together with lion, elephant (note however that elephants' trophies import restrictions apply in some countries) and buffalo are the main drivers of revenues generated from trophy hunting. For the pre-ban period (2010 – 2012) leopard revenues averaged 7 - 11% of all revenues from animal fees and 5 - 8% of the total income during the pre-ban (Table 14). In 2013-2015, zero revenue was raised from the sale of leopard licences. The overall impact of the ban on lion and leopard resulted in a noticeable decline in income to the DNPW. After lifting the ban, the hunting industry has slowly recovered but not to the pre-ban levels. This is partly a result of the industry re-establishing its market but also because the DNPW has adopted a conservative approach and reduced quotas in addition to implementing a strict age-based monitoring system. The lack of revenue, and specifically from lion and leopard hunting fees, reduced the capacity of the wildlife authority to management and protect the protected areas and GMAs where lion and leopard (as well as all other species) occurred.



**Figure 13.** Leopard animal fees as a proportion of total animal fees (in USD)

Among the issues under discussion is the feasibility of introducing a large carnivore conservation fee on top of the animal fee. This is to maximize revenues and to use the additional conservation fee for specific monitoring programs on leopard and lion hunting. In addition, the Zambia Wildlife (Licenses and Fees) Regulations, 2016, are under revision whereby the fees for the major carnivores will likely be increased to fall in in with those in the region.

### 8.3 Expenditures of revenues

Hunting revenues are utilized for general wildlife management activities and conservation activities. In this regard, hunting revenues pay for Scout/Wildlife Officers salaries, resource protection, prosecutions, animal surveys and staff training among other things. On average over the period 2010 to 2017 salaries accounted for 73% of all expenses. Of this amount close to 90% was salary related expenses for uniformed staff directly related to Conservation and management. Table 15 below is a summary of ZAWA's expenses for the period 2010 to 2017.

**Table 14:** Safari hunting revenues (ZMW) 2010 – 2017 (Source: DNPW Accounts Unit)

Source	2010	2011	2012	2013	2014	2015	2016	2017
Animal Fees – Safari	13,390,444	14,653,302	17,007,494	1,168,063	3,063,611	7,459,738	21,882,086	24,242,026
Concession fees	5,609,062	5,201,607	5,886,650	1,097,808	292,644	4,009,874	13,163,708	13,676,888
Hunting rights	-	358,394	170,484	17,846	-	84,859	48,754	57,063
Bird License – Safari	216,168	192,480	179,500	24,178	16,022	60,236	370,907	318,601
Professional Hunters License	319,251	352,524	330,213	54,814	60,823	150,365	241,581	284,972
Outfitters Safari License	464,074	560,022	606,776	232,320	271,137	733,722	1,062,3345	1,055,665
GMA Permit Fees	-	-	561,722	59,441	81,088	212,267	667,089	646,488
<b>Total Income</b>	<b>19,999,001</b>	<b>21,318,331</b>	<b>24,742,842</b>	<b>2,654,472</b>	<b>3,785,328</b>	<b>12,711,064</b>	<b>37,436,461</b>	<b>40,281,705</b>

**Table 15:** ZAWA/DNPW Expenditures (ZMW) 2010 - 2017 (Source: DNPW Accounts Unit)

Description	2010	2011	2012	2013	2014	2015	2016	2017
<b>Operational Expenses</b>	7,729,077.76	10,012,021	9,789,236	8,336,135	11,284,084	10,664,712	18, 202, 514	21, 744,667
<b>Salary Related Expenses</b>	52,087,642	56,396,245	79,251,728	59,809,879	66,526,576	119,473,738	87, 900, 775	105,337,112
<b>Administrative Expenses</b>	6,324,166	6,603,338	10,511,912	9,130,591	7,935,295	16,660,015	8, 835, 450	9, 203, 594
<b>Staff Training, Workshops and Transfers</b>	1,206,917	1,660,735	2,229,534	755,587	1,343,203	3,667,097	421, 392	438, 950
<b>Animal Surveys and Control</b>	93,358	472,550	12,166	1,135,281	9,505	49,494	513, 140	534, 521
<b>Repair and Maintenances</b>	2,518,924	2,728,577	2,740,956	2,277,535	3,389,423	4,189,049	1, 506, 962	1, 569, 753
<b>Consultancy and Legal Fess</b>	2,430,375	3,594,930	1,099,026	830,955	1,825,94	900,438	1, 448, 174	1, 508, 515
<b>Other Expenses</b>	571,983	1,393,469	592,732	728,672	894,165	941,403		
<b>Total Expenditure</b>	<b>72,962,447</b>	<b>82,861,869</b>	<b>106,227,293</b>	<b>83,004,639</b>	<b>93,208,201</b>	<b>156,545,949</b>	<b>118, 828, 409</b>	<b>140, 337, 112</b>

The hunting revenues shown in Table 15 cover an average of 25 per cent of ZAWA's expenditure during the pre-ban period, which was sufficient to cover ZAWA operational expenses.

In the past, DNPW has not used fees generated from the hunting of a specific species for the conservation and management of that specific species, but rather pooled funds for enforcement and management costs.

#### **8.4 Funds disbursed to Communities**

As explained in section 7, the Wildlife Act of Zambia provides for a revenue sharing system between the government and the communities. The following (Table 19) are the revenues disbursed to communities in the period 2010 to 2017.

**Table 16:** Funds disbursed to Communities (2010 - 2017) in ZMW

<b>Year</b>	<b>Amounts Paid (ZMW)</b>
<b>2010</b>	5,192,443.52
<b>2011</b>	10,660,206.34
<b>2012</b>	4,658,671.35
<b>2013</b>	5,246,776.84
<b>2014</b>	5,203,553.87
<b>2015</b>	3,368,390.76
<b>2016</b>	
<b>2017</b>	<b>7,275,716.95</b>
<b>Total</b>	<b>41,605,759.59</b>

As explained in section 7.2 above, guidelines governing the use of funds disbursed to the communities stipulate that the funds should be utilized in the following manner:

- 45% of the funds go to wildlife management, including resource protection and patrols;
- 35% of the funds go to community projects such as construction of clinics, roads, schools, and wells; and
- 20% of the funds go to administration of the CRBs.

Note that the increased disbursement in 2011 (ZMW10,660,206.34) shown in Table 16 was a result of additional support from government. Further, although revenues went up significantly in 2015, community disbursement went down because there was less revenue from hunting due to the moratorium. Moreover, many employees of the safari hunting outfitters were also out of work during that time.

## 9.0 Conclusions and Non-detriment findings

Sustainable development and the need to fight poverty is the first and foremost priority of the Zambian government to also achieve wildlife conservation. Zambia is investing heavily to reverse the depletion of wildlife by working closely with the private sector, communities and donors.

Achieving conservation goals is important if done in parallel with poverty reduction strategies, which includes consumptive and non-consumptive wildlife utilization. In this regard, trophy hunting is one of the components that the Zambian government is using in its wildlife conservation strategies because of the high level of benefits, tangible and intangible, that it can produce. Safari Operators need diverse and healthy wildlife population in order for the sector to be viable.

The new management approach to leopard hunting in Zambia is based on three pillars, i) a conservative, precautionary quota, well below the recommended thresholds for sustainability, ii) an age-based harvest limit and strong monitoring of leopard offtakes, and iii) significant and direct community benefits. This will ensure that leopard hunting in Zambia is sustainable and does not negatively affect the population.

Zambia has spent considerable resources to improve large carnivore hunting and is experiencing successful partnerships with all stakeholders to ensure sustainability of the offtakes and financial and social returns to conservation.

The CITES Scientific Authority of Zambia has considered the population of leopard in Zambia; the quota-setting system and current precautionary quota of only 102 leopards in 2018; the newly implemented age-based harvest policy; the limited offtake; the adaptive management of lion and leopard; and the substantial revenues generated for DNPW operations, anti-poaching, and community development. The Scientific Authority has considered the current threats to leopard, including loss of habitat and human-leopard conflicts, the levels of illegal trade and the potential of safari hunting to mitigate those threats.

Upon considering these factors and in accordance with Article IV of CITES and CITES Resolution Conf.16.7, the Zambian Scientific Authority concludes that the low level of off-take generated by safari hunting is not detrimental to the survival of the leopard in Zambia and the amount of revenues generated by this low level of off-take are of crucial importance for the conservation of the species. Moreover, the hunting of leopard plays an important role in providing benefits to rural communities. Safari hunting provides a net benefit to the species, it does not pose a threat to the species, and it is not a detriment to the survival of the species. In fact, the Scientific Authority of Zambia finds the regulated safari hunting of leopard in Zambia enhances the survival of the species. The newly developed leopard management systems, Statutory Instruments and hunting reforms employ an adaptive management approach thereby ensuring long-term sustainability, health and enjoyment of Zambia's wild leopard populations.

The CITES Scientific Authority of Zambia emphasises that it expects CITES Parties to implement CITES Resolution Conf. 2.11 with particular reference to paragraph b) that states: *"in order to achieve the envisaged complementary control of trade in Appendix-I species by the importing and exporting countries in the most effective and comprehensive manner, the Scientific Authority of the importing country accept the finding of the Scientific Authority of the exporting country that the exportation of the hunting trophy is not detrimental to the survival of the species, unless there are scientific or management data to indicate otherwise"*.

### Why a quota of 300?

This number was approved in 1985 after Zambia requested an increase from 80. It was very conservative then and this is still the position of Zambia today. As for any quota, it is an upper limit, not an objective that must be met in any circumstances. The track record has shown that Zambia has not reached this maximum level, although the actual number has fluctuated on a year-by-year basis. With the new quota setting regulations, and given the level of demand the country's harvest quota is not foreseen to be expected to exceed 162. However, it is important to provide for new Game ranches and personal effect. Zambia is also acutely aware that our hunting industry is still developing albeit that it is subject to external influences beyond our control. The quota therefore is reflecting the potential we feel appropriate in the foreseeable future.

As a management authority, the DNPW is responsible for allocating quotas at the national level on an annual basis. The DNPW therefore, can react quickly to any difficulties in specific areas, whenever necessary to adjust or even suspend quotas. Today, there is nothing to indicate that the decision to increase the quota from 80 to 300 was wrong. On the contrary, the Zambian authorities have demonstrated their capability to implement and enforce the national legislation applicable to the conservation and sustainable use of wildlife. The same legislation is valid for the conservation and management of the leopard. Moreover, Zambia, through the DNPW, is proactively taking steps to develop and implement best practices in large carnivore conservation and management. Therefore, we ask with confidence to the Animals Committee to continue to trust the Republic of Zambia to continue to manage its quota of 300 leopard hunting trophies and skins for personal use in the framework of Resolution Conf. 10.14.



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## Annex 1 - Assessment of the Zambia DNPW Enhancement and Non-Detriment Findings against the IUCN SSC “Guiding principles on trophy hunting as a tool for creating conservation incentives. Ver. 1.0. IUCN SSC (2012)”

DNPW produced an assessment of its Enhancement and Non-Detriment Finding on leopard in Zambia (2016) against the IUCN SSC GUIDING PRINCIPLES ON TROPHY HUNTING AS A TOOL FOR CREATING CONSERVATION INCENTIVES. VER. 1.0. IUCN SSC (2012), recognizing the importance of the implementation of these principles as best practices to manage trophy hunting as a legal, regulated activity which is a critical tool to secure a sound social, economic and ecological conservation scenario.

### **Biological Sustainability**

Trophy hunting\*\* can serve as a conservation tool when it: <sup>[1]</sup><sub>[SEP]</sub>

#	Principle	Remarks
1	Does not contribute to long-term population declines of the hunted species or of other species sharing its habitat, noting that a sustainably harvested population may be smaller than an unharvested one; <sup>[1]</sup> <sub>[SEP]</sub>	<i>Safari hunting is not a threat to the Zambian leopard population because it has not contributed to long-term population declines. Even though some studies in a limited area of the Luangwa valley showed a decline in leopards, the moratorium that Zambia imposed in January 2013 has allowed a better understanding of their population dynamics in certain areas and has driven a new very cautionary quota complemented by a mandatory aging system and monitoring of hunting.</i>
2	Does not substantially alter processes of natural selection and ecosystem function; that is, it maintains “wild populations of indigenous species with adaptive gene pools.” This generally requires that hunting offtake produces only minor alterations to naturally occurring demographic structure. It also requires avoidance of breeding or culling to deliberately enhance population-genetic characteristics of species subject to hunting that are inconsistent with natural selection;	<i>There is no evidence that hunting offtake has had an effect on the population of Zambian leopards.</i>  <i>Zambia has never embarked in breeding programmes for hunting leopards and has never done any culling of its leopard population. In this regard, Zambia is enacting legislation to prohibit breeding of lions and leopards in captivity and hunting of captive bred lions and leopards.</i>
3	Does not inadvertently facilitate poaching or illegal trade of wildlife;	<i>Hunting in Zambia is an activity legally regulated and contributes to enhancement of habitat conservation and community livelihoods. Zambia has not recorded any confiscations related to</i>

\*\* The term “trophy hunting” is used by IUCN to refer to hunting that is: Managed as part of a program administered by a government, community-based organization, NGO, or other legitimate body; Characterized by hunters paying a high fee to hunt an animal with specific “trophy” characteristics (recognizing that hunters each have individual motivations); Characterized by low off-take volume; Usually (but not necessarily) undertaken by hunters from outside the local area (often from countries other than where the hunt occurs).

		<i>leopards poached for trophy or export. Community partnership arrangements in GMAs and Open Game Ranches are reducing poaching by increasing community conservation incentives.</i>
4	Does not artificially and/or substantially manipulate ecosystems or their component elements in ways that are incompatible with the objective of supporting the full range of native biodiversity.	<i>Trophy hunting in Zambia does not manipulate ecosystems in ways that are incompatible with supporting biodiversity. To the contrary, hunting is done in the GMAs, which expand the natural habitat in the buffer zones around National Parks. Further, Open game ranches in Zambia further enlarges the habitat available for wildlife and support the conservation of biodiversity. In this way safari hunting creates financial incentives for wildlife conservation in an area extending nearly 180,000 sq.km (GMAs and Open Game Ranches) and thus providing habitat for a variety of species that conserve biodiversity and ecosystem services.</i>


### **Net Conservation Benefit**

Trophy hunting can serve as a conservation tool when it:

#	Principle	Remarks
1	Is linked to identifiable and specific parcels of land where habitat for wildlife is a priority (albeit not necessarily the sole priority or only legitimate use); and on which the “costs of management and conservation of biological diversity [are] internalized within the area of management and reflected in the distribution of the benefits from the use”;	<i>Hunting in Zambia is linked to clearly identifiable land areas where habitat for wildlife is a priority. These include 36 Game Management Areas covering an area of 177,404 sq.km and 17 Open Game Ranches covering an area of 2,556 sq.km. The cost of management and conservation area as much as possible internalized and a borne by the Safari Operators. These costs include but are not limited to Concession fees, concession financial obligations and camp expenses related to logistics, salaries, administration, anti-poaching, community assistance etc. Therefore, the private sector and the community as landholders bear the majority of the cost to maintain the area. Nevertheless, the government through revenues from hunting pays for anti-poaching, community development through the 50% generated from animal fees and other conservation activities.</i>

2	<p>Produces income, employment, and/or other benefits that generate incentives for reduction in pressures on populations of target species, and/or help justify retention, enhancement, or rehabilitation of habitats in which native biodiversity is prioritized. Benefits may create incentives for local residents to co-exist with such problematic species as large carnivores, herbivores competing for grazing, or animals considered to be dangerous or a threat to the welfare of humans and their personal property;</p>	<p><i>Hunting in Zambia has facilitated the creating of over 750 jobs for Community scouts, and benefits from hunting outfitters obligations such as distribution of over 50% of the meat from all carcasses hunted, and the contractual requirement of provision of social and community development initiatives. Moreover, over 1,000 people are employed in the hunting sector. Safari hunting in Zambia has generated more than USD 13 million in revenues for the Government and the communities from the period 2006 to 2012.</i></p> <p><i>In 2013 a moratorium on hunting of cats was enforced and also several concessions were suspended. The impact on revenues for the Government and communities has been substantial. Revenues from trophy hunting are contributing to the daily wildlife conservation work in Zambia. Revenues from safari hunting contribute to income for local communities and, inter alia, increase tolerance of communities towards problematic wildlife species including lions and leopards. The resumption of hunting of these large carnivores was a direct result of pressure brought on the government by local communities.</i></p>
3	<p>Is part of a legally recognized governance system that supports conservation adequately and of a system of implementation and enforcement capable of achieving these governance objectives</p>	<p><i>The Wildlife Act of 2015 is the principal legislation guiding the management of wildlife in Zambia, and provides a legally recognized governance system for the promotion of opportunities for the equitable and sustainable use of wildlife. This system is implemented and enforced by the DNPW with assistance from stakeholders such as the communities, the hunting sector and NGOs.</i></p> <p><i>Lion in Zambia are managed under a Conservation Strategy and Action Plan (that is equally applicable to leopard) and guided by several Statutory Instruments that, inter alia, establish an age-based harvest guideline and other “best practices” for lion/leopard hunting and conservation.</i></p>

## **Socio-Economic-Cultural Benefit**

Trophy hunting can serve as a conservation tool when it: 

#	Principle	Remarks
1	Respects local cultural values and practices (where “local” is defined as sharing living space with the focal wildlife species), and is accepted by (and preferably, co-managed and actively supported by) most members of the local community on whose land it occurs;	<p><i>Local communities residing in chiefdoms and geographic areas which are contiguous to any wildlife estate or any open area are registered as Community Resources Boards (CRBs) with the DNPW. Management of all CRBs is done through a democratically elected representation of the local community themselves. The elections are done according to Village Action Groups (VAGs) and it is from those elected in the VAGs that form members of the CRB. The chief of the area is regarded as the patron of such CRBs. All meetings of the CRBs are conducted in a democratic way and decisions are reached through consensus. Minutes of all CRBs transactions and deliberations are recorded.</i></p> <p><i>Co-Management models between private investors and local communities are established in some Open Game Ranches such as the 15,500 hectares Kaindu Community Game Ranch in the Kafue ecosystem, , which is an interesting and successful Public-Private Sector conservation model where the community through the Kaindu Community Resource Trust is managing the area together with private investors.</i></p>
2	Involves and benefits local residents in an equitable manner, and in ways that meet their priorities;	<i>The obligations under the hunting concession agreement provide involvement of and benefits to local communities. The concession's obligations are enshrined in the partnership in conservation of natural resources between the Communities, Safari Operators/professional hunters and the DNPW. No hunting concession agreement is valid without the signature of the Chief/s or CRB.</i>
3	Adopts business practices that promote long-term economic sustainability.	<i>The lease periods for the hunting blocks is variable and is dependent on the classification of the hunting block. Lease periods range from 7 to 15 years. Hunting Concession Agreements for GMAs are negotiated with DNPW and communities, which gives the communities their own voice and encourages the adoption of</i>

		<i>business practices that promote long-term sustainability. Long-term economic sustainability of community-based programmes involving trophy hunting depends also on the international framework on trade as international trade restrictions can jeopardise conservation programs.</i>
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### **Adaptive Management: Planning, Monitoring, and Reporting**

Trophy hunting can serve as a conservation tool when it:

#	Principle	Remarks
1	Is premised on appropriate resource assessments and/or monitoring of hunting <sup>[1]</sup> <sub>SEP</sub> indices, upon which specific quotas and hunting plans can be established through a collaborative process. Optimally, such a process should (where relevant) include local communities and draw on local/indigenous knowledge. Such resource assessments (examples might include counts or indices of population performance such as sighting frequencies, spoor counts) or hunting indices (examples might include trophy size, animal age, hunting success rates and catch per hunting effort) are objective, well documented, and use the best science and technology feasible and appropriate given the circumstances and available resources; <sup>[1]</sup> <sub>SEP</sub>	<i>Zambia has a participatory quota setting process. The main scientific information used in the quota setting process is derived from aerial surveys which are regularly done in the country and includes many ungulate species. Other information is taken from ground counts, patrol sightings, local and expert opinion. Quota setting is done for each hunting block in GMAs for all types of hunting after close of hunting season and prior to the next hunting season. The quota for lion and leopard is set using information from scientific studies, field observations from Professional hunters and field officers and from hunting records. This allows CRBs and DNPW to review the previous hunting season's offtake. DNPW follows a bottom-up approach where CRBs submit a proposal of a quota to DNPW head office for adoption and approval. The final quotas are issued by the licensing unit. The produced quotas are distributed to the CRBs, Hunting companies and DNPW field stations. During the hunting season Wildlife officers accompany hunters on all hunts. The officer records activities related to the hunt on specified forms i.e., Safari Hunting monitoring forms, trophy measurement forms, and a client questionnaire. The officer endorses used licenses ensuring that they cannot be used again. The law requires that all harvested trophies are registered.</i>
2	Involves adaptive management of hunting quotas and plans in line with results of resource assessments and/or monitoring of indices, ensuring quotas are adjusted in line with changes in the resource base (caused by	<i>Zambia has stopped hunting in areas where the lion and or leopard population was low e.g., Chiawa and Tondwa GMAs. Furthermore the 2016 quotas have been set at thresholds below the scientific recommendations. Management</i>

	ecological changes, weather patterns, or anthropogenic impacts, including hunting offtake); <sup>[17]</sup> <sub>SEP</sub>	<i>and monitoring schemes including an aging system are being implemented.</i>
3	Is based on laws, regulations, and quotas (preferably established with local input) that are transparent and clear, and are periodically reviewed and updated;	<i>Trophy hunting in Zambia is regulated through the Zambia Wildlife Act and several Statutory Instruments with one, in preparation, specifically targeting lions and leopards. Quotas are established in a transparent and participatory way.</i>
4	Monitors hunting activities to verify that quotas and sex/age restrictions of harvested animals are being met;	<p><i>DNPW has a long standing monitoring system for all trophy hunting. In 2015 it developed guidelines on lion and leopard hunting in Zambia.</i></p> <p><i>DNPW is also introducing a monitoring system specific for lions and leopards. This monitoring system will be based on a statutory instrument which is in preparation, which will introduce a mandatory sampling system that requires trophy lions and leopards meet or exceed a minimum age. The monitoring system will be based on specific data forms that will help ensure proper compliance with the provisions of the law, including confirmation of legal licenses and collection of data associated with the hunt including but not limited to location, date, participants, and photos, as requested by DNPW. The monitoring system will be complemented by regular surveys.</i></p> <p><i>Zambia is committed to initiate further scientific surveys of carnivores in order to assess the population status. Depending on the availability of funding, DNPW is planning surveys to be conducted in two areas: i) the corridor between South Luangwa National Park and Lower Zambezi National Park, comprising several GMAs and Open Game Ranches and ii) GMAs surrounding the eastern part of North Luangwa National Park. This will supplement the ongoing work of the Zambian Carnivore Programme in selected areas of South Luangwa and Kafue National Parks.</i></p>



5	Produces reliable and periodic documentation of its biological sustainability and conservation benefits (if this is not already produced by existing reporting mechanisms).	<p><i>Several reports are regularly published:</i></p> <ul style="list-style-type: none"> <li>- <i>Reports of aerial surveys</i></li> <li>- <i>Reports of other wildlife counts</i></li> <li>- <i>DNPW partners in research produces annual report</i></li> <li>- <i>Scientific publications</i></li> <li>- <i>Community outreach programmes</i></li> <li>- <i>DNPW Annual report</i></li> </ul>
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### **Accountable and Effective Governance**

A trophy hunting programme can serve as a conservation tool when it:

#	Principle	Remarks
1	Is subject to a governance structure that clearly allocates management responsibilities; <sup>[1]</sup> <sub>SEP</sub>	<i>The Zambian government structure for wildlife is described in the Wildlife Act No. 14 of 2015. The Act clearly defines the management responsibilities of the Government Department of National Parks and Wildlife. The Conservation Unit in DNPW monitors and oversees hunting in the country. The CBNRM Unit coordinates CBNRM activities in GMAs and builds capacity of CRBs in Resource monitoring including Safari hunting</i>
2	Accounts for revenues in a transparent manner and distributes net revenues to <sup>[1]</sup> <sub>SEP</sub> conservation and community beneficiaries according to properly agreed decisions;	<p><i>Revenues generated from trophy hunting are shared with local communities. From the revenues generated, members of local communities have been employed by CRBs as Community Scouts to assist DNPW with protection and monitoring of wildlife resources. These scouts also help assessing crop damage and problem animal controls in their communities, where they also conduct environmental awareness among the local populace.</i></p> <p><i>The revenues the local communities obtain allows them access to social amenities and various rural development projects. The projects span construction of boreholes, schools, clinics, and feeder roads, as well as crop damage counter-measures including solar and chili pepper fences. More residents benefit</i></p>

		<p><i>indirectly from participating in wildlife management and accessing the resource, depending on the ability of the wildlife sector to generate funds. It has to be noted that local communities have limited benefits from non-consumptive tourism.</i></p> <p><i>Budgets of DNPW and CRBs are audited by the Office of the Auditor General.</i></p>
3	Takes all necessary steps to eliminate corruption;	<p><i>The Anti-Corruption Commission (ACC) is the Agency that is mandated to spearhead the fight against Corruption in Zambia. It was established in 1980 under an Act of Parliament, the Corrupt Practices Act No. 14. Currently the Commission is operating under the Anti-Corruption Act No. 3 of 2012 which has domesticated a number of legal provisions from the international protocols and conventions on corruption.</i></p> <p><i>The worldwide Transparency International ratings (<a href="http://www.transparency.org/country/#idx99">http://www.transparency.org/country/#idx99</a>) of corruption perceptions for Zambia have over the years improved tremendously. This is largely due to various anti-corruption intervention that the Government through the Anti-Corruption Commission and other stakeholders has put in place and continue to execute. (source: <a href="http://www.acc.gov.zm/portfolio/transparency-international-corruption-perception-ratings/">http://www.acc.gov.zm/portfolio/transparency-international-corruption-perception-ratings/</a>)</i></p> <p><i>A representative of the Anti-Corruption Commission sits on the Wildlife Licensing Committee</i></p>
4	Ensures compliance with all relevant national and international requirements and regulations by relevant bodies such as administrators, regulators and hunters.	<p><i>The CITES Management Authority of Zambia, working in the DNPW, ensures compliance of the trophy hunting programme to CITES provisions.</i></p> <p><i>The Attorney General sits on Wildlife licensing committee to ensure compliance to national and international regulations.</i></p>

## **Annex 2: Contact details for selected Hunting Associations and NGO's in Zambia**

### **a) Hunting Associations**

Safari Hunting Outfitters Association of Zambia (SHOAZ)  
PO Box 30721, Lusaka, Zambia  
Email: [barry.bellcross@gmail.com](mailto:barry.bellcross@gmail.com)

Professional Hunters Association of Zambia (PHAZ)  
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