



ZAMBIA'S CONSERVATION STRATEGY AND ACTION PLAN FOR THE AFRICAN LION



Zambia Wildlife Authority

Ministry of Tourism, Environment and Natural Resources



JUNE 2009

CITATION

Zambia's Conservation Strategy and Action Plan for the African Lion

Zambia Wildlife Authority
P/B 1
Chilanga
Tel. +260 01 278524
E-mail: info@zawa.org.zm
www.zambiwildlife.org.zm

Policy Technical Team

Mr. Wilbroad C. Chansa
Mr. Chuma C. Simukonda
Mrs. Priscilla Sichone Mukanga
Mrs. Francesca Chisangano Zyambo

Internal Reviewers

Dr. Lewis Saiwana
Dr. Victor M. Siamudaala

External Reviewers

Dr. Henry, K. Mwima, Jastis Consulting Firm
Dr. Harry, N. Chabwela University of Zambia
Dr. Paula White, Lion Conservation
Dr. M. Becker, Large Carnivore Research
Mrs. Dora Kamweneshe WWF
Mr. Steve McBride
Mr. Acme, N. Mwenya

February 2009

APPROVAL PAGE

The Chairperson of the ZAWA Board of Directors approved on behalf of the Government of the Republic of Zambia, the Zambia’s Conservation Strategy and Action Plan for the African Lion

.....

Date.....

Dr. Mwenda
CHAIRPESON – ZAWA BOARD OF DIRECTORS

ACKNOWLEDGEMENTS

The Government of the Republic of Zambia through its wildlife agency, the Zambia Wildlife Authority (ZAWA), wishes to applaud the team of experts that coordinated the formulation of this conservation strategy. Undoubtedly, the assignment was taxing and demanded for sacrifice of staff time and other resources. ZAWA is therefore, grateful to its staff for their dedication and enthusiasm during the course of the assignment. Special tribute is paid to Chansa, W., Simukonda, C., Mukanga, P. S. and Chisangano, F.C. for the literature review, write up and providing existing challenges related to the conservation and management of the African lion in Zambia. ZAWA is indebted to the following experts for their insightful and technical review and criticism of the policy which resulted in the finalization of a widely accepted policy. These comprised Dr. Lewis Saiwana and Dr. Victor, M. Siamudaala as internal reviewers and; Dr. H.K. Mwima, Dr. H.N. Chabwela, Dr. Paula White and Dr. M. Becker as external reviewers. Others are Mrs. D. Kamweneshe, Messrs Steve McBride and A.N. Mwenya.

In addition, ZAWA wishes to thank Mrs. Florence Nyambe and Mwape Sampa Nyasah for the secretarial services and management of logistics during the period of the assignment. Chaka Kaumba displayed his outstanding Geographical Information Systems (GIS) skills in preparing the map, for which he is applauded.

The Zambian Government appreciates the financial and material support provided by both the Safari Club International Foundation (SCIF) and the individual safari hunting outfitters in the country towards the completion of the assignment.

LIST OF ACRONYMS

CBD	Convention on Biological Diversity
COP	Conference of the Parties
CITES	Convention on International Trade in Endangered species of Wild Fauna and Flora
CMS	Convention on Migratory Species
CRB	Community Resource Board
DNA	Deoxyribonucleic Acid
GMA	Game Management Area
GIS	Geographical Information System
GPS	Global Positioning System
IUCN	The World Conservation Union
KNP	Kafue National Park
MEA	Multilateral Environmental Agreement
NGO	Non Governmental Organization
NP	National Park
NPWS	National Parks and Wildlife Service
PA	Protected Area
PAC	Problem Animal Control
PHAZ	Professional Hunters Association of Zambia
SADC	Southern African Development Community
SHOAZ	Safari Hunters Operators Association of Zambia
TFCA	Transfrontier Conservation Area
ZAWA	Zambia Wildlife Authority

TABLE OF CONTENTS

CITATION	ii
APPROVAL PAGE	iii
ACKNOWLEDGEMENTS	iv
LIST OF ACRONYMS	v
TABLE OF CONTENTS	vi
FOREWORD	vii
EXECUTIVE SUMMARY	viii
1.0 INTRODUCTION	1
2.0 DISTRIBUTION AND POPULATION STATUS OF LION IN ZAMBIA	1
2.1 Factors Determining Present Distribution Patterns.....	4
2.1.1 Encroachment and Destruction of Habitat.....	4
2.1.2 Prey density.....	4
3.0 MAJOR PROBLEMS AND ISSUES RELATING TO LION	4
CONSERVATION IN ZAMBIA	4
3.1 Human – lion conflicts.....	4
3.1.1 Conflict with Livestock.....	4
3.1.2 Snaring	4
3.2 Human Encroachment and Destruction of Wildlife Habitat.....	5
3.3 Inter- and Intra-specific Competition.....	5
3.4 Population isolation	5
3.5 Lack of protocols for problem lion control.....	5
3.6 Negative Value Placed on the African Lion	5
3.7 Inadequate Scientific Data on the African Lion	6
3.8 Inadequate Data from Hunting Statistics	6
3.9 Unknown Impact of Trophy Hunting on Lion Population Structure.....	6
4.0 MANAGEMENT STRATEGY FOR THE CONSERVATION OF THE	7
AFRICAN LION	7
4.1 Vision Statement.....	7
4.2 Mission Statement.....	7
4.3 Goal.....	7
5.0 OBJECTIVES	7
5.1 Research and Management	7
5.2 Mitigation of Human – Lion Conflicts	9
5.3 Local Community Benefits from Lion Utilisation.....	10
5.4 Land Use Planning and Zoning.....	11
5.5 Managing Conservation Politics at Local, National and International Levels	11
5.6 Trade in the African Lion	12
6.0 IMPLEMENTATION OF THE LION CONSERVATION STRATEGY	13
7.0 REVIEW OF LION CONSERVATION STRATEGY	13
BIBLIOGRAPHY	Error! Bookmark not defined.
APPENDIX I	15

FOREWORD

The Government of the Republic of Zambia attaches great importance to the conservation and management of the African lion (*Panthera leo* Linnaeus, 1758) because of its immense ecological and socio-economic significance. Ecologically, it plays a critical role in the predator-prey relationship and consequently, in the maintenance of ecological stability. As one of the famous ‘big five’ it contributes significantly to the national and local economies through various tourism enterprises. In Zambia the African lion is one of the most sought after species by our tourists. Sightings of the lion during game viewing and successful hunt of the lion results generally in overall customer satisfaction and in some cases customer loyalty. Recent publications (Whitman, 2002) indicate that Zambia is among the top four lion-trophy producing countries in the world making it (the lion) an important source of revenue for the country. Currently Zambia’s lion strong holds are the protected areas especially National Parks and Game Management Areas (GMAs). And it is expected that this situation will remain like this for sometime given other socio-economic activities outside protected areas such as large-scale commercial farming and mining.

The African lion occupies a central position in Zambia’s culture as reflected in many traditional beliefs and cultural art works. Over the years, the lion has emerged as a brand icon among business institutions in the country. Despite its socio-economic significance, the lion has often than not come into conflict with human interests through predation on humans and livestock resulting in loss of human life or permanent injury. In areas where there is no wildlife-based tourism the lion is considered a vermin that needs to be exterminated.

This conservation strategy and action plan for the African lion in Zambia will assist the country in ensuring that the long-term survival of the species is guaranteed based on stakeholder partnerships and harmonization of the needs of lion conservation and various facets of socio-economic development (including tourism). It is hoped that ZAWA will in the foreseeable future provide holistic population estimates and maintain viable populations in all the key lion range areas.

ZAWA is now delighted to launch this Conservation Strategy and Action Plan.

Dr. Lewis Saiwana
DIRECTOR GENERAL – ZAMBIA WILDLIFE AUTHORITY

EXECUTIVE SUMMARY

The African lion, *Panthera leo*, has recently emerged as a species of global conservation concern (McCarthy, 2004) given the precipitous decline of its population from ca. 20,000 – 40,000 (Bauer and van der Merwe, 2002; Chardonnet, 2002) from population about 100,000 lions less than ten years ago (Nowell and Jackson, 1996) over much of its former range (Chardonnet, 2002, Packer et al. 2003). The conservation of the African lion has continued in an environment of inadequate reliable data regarding the current status of the species throughout its range. The continued inadequate and reliable quantifiable information has created difficulties to range states and international organizations such as the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) whether to continue or suspend the consumptive utilization of the lion as the case was in October 2004 at CITES 13th Conference of the Parties (COP 13) in Bangkok Thailand.

Zambia's centralized geographic location, vast tracts of high-quality habitat, and relatively low rural human population density makes it a potential stronghold for remaining lion populations in southern Africa. Like in many other African countries additional data is required to comprehensively understand the current status of lions in Zambia. There are conflicting statements on the national population estimates with Bauer and van de Merwe estimating the lion population in Zambia at $1,500 \pm 500$ individuals whilst Chardonnet (2002) estimated the population at 3,575. These conflicting estimates clearly demonstrate the urgent need of investment in scientific studies to determine the country's (and the region's) lion population¹, its socio-economic significance and identify existing and potential threats to the population and prescribe practical solutions to the challenges.

It is the conviction of the Zambian government that healthy lion populations can support sustainable trophy hunting and subsequently contribute to socio-economic development² of rural populations as an incentive for rural communities to tolerate and help conserve the African lion. The government is also mindful that, unsustainable levels of trophy hunting especially the untimely removal of breeding males can trigger lion population decline through social disruption and infanticide. It is against this background that Government through ZAWA wishes to establish a science-based Conservation Strategy and Action Plan for the African Lion. The key areas of focus will include *inter alia* promotion of age-based harvesting of lions and setting of hunting quotas based on empirical biological data in addition to the on-going collection of trophy measurements. Specific issues addressed in this overall framework are:

- i. Standardization of lion survey methods and conducting baseline survey of lion numbers;
- ii. Setting of sustainable lion off take quotas;

¹ Spatial and temporal occurrence, distribution, and abundance

² Employment creation, Community-based conservation enterprises and sharing of revenue between ZAWA and Communities

- iii. Monitoring and Evaluation of the Lion Population in the context of existing Conservation and Tourism programmes;
- iv. Management of human – lion conflicts based on a Problem Lion Control Protocol;
- v. Preparation and implementation of field age determination techniques;
- vi. Establishment of DNA mapping database;and
- vii. Development of area-specific lion management strategies especially for GMAs.

Zambia's Conservation Strategy and Action Plan for the African Lion was formulated based on stakeholder consultation. The stakeholders involved in the formulation of the document include Government line Ministries, Conservation based Non Governmental Organizations (NGOs), individuals with relevant expertise, and the Private Sector. The proceedings from the National Stakeholders Consultative Workshop provided a framework for the preparation of this document as provided for under the East and Southern African regional lion strategy framework. The strategy identifies major problems and challenges and provides guidelines on how to address them. It is hoped that implementation of this document will help in achieving a viable lion population in Zambia.

1.0 INTRODUCTION

In 2004 at the CITES 13th CoP in Bangkok, Thailand Zambia together with other Southern African Development Community (SADC) countries contested the proposal from Kenya to transfer the African Lion from Appendix II to Appendix I of CITES. Countries in the SADC region committed themselves to assess the current data on the status and distribution of lion in their respective countries and prepare regional and country-specific lion conservation strategies. Zambia has attended all the regional workshops and commissioned a study to assess the status of lion in the country in addition to the formulation of this Conservation Strategy and Action Plan for the African Lion.

The conservation strategy and action plan will improve the management of the species at both national and protected area levels and harmonize the conservation and tourism needs of the lion. It is therefore, in the interest of Zambia as a country to ensure that the lion is protected and viable populations are maintained to enhance biodiversity conservation and support the growing tourism industry and to support local community livelihoods.

In view of the above, ZAWA initiated the process of formulating a National Conservation Strategy and Action Plan as a way of bringing on board other stakeholders and tap into their professional expertise and experience, as well as their capacity to mobilize funds to leverage the long-term conservation of the species. This Conservation Strategy and Action Plan provides a Vision, Mission, Goal and a set of objectives, intended to address management challenges, mitigation of human-lion conflicts, economics and socio-politics and other cross-cutting issues such as international trade.

Additionally the Strategy has a provision for an Action Plan that will guide lion conservation in Zambia for the next ten years or more and will be accompanied by an action plan, which will be reviewed, on a regular basis taking into account contemporary changes in conservation such as regional wildlife protocols, resolutions and decisions from Multilateral Environmental Agreements (MEAs) and the need to comply with such changes that may arise from time to time.

2.0 DISTRIBUTION AND POPULATION STATUS OF LION IN ZAMBIA

Historically, lion occurred throughout Zambia. Prior to 1962 the species was considered a vermin in the country. Consequently, hunters were rewarded for controlling lions that came into conflict with humans. Only lion populations in protected areas especially National Parks were secure from extermination under the Problem Animal Control (PAC) Programme. The protected areas have continued to be the major lion conservation areas in the country. Currently, major lion populations occur in the Luangwa Valley, Kafue and Lower Zambezi Ecosystems - Figure 1 below. Outlier populations are distributed in Liuwa Plains, Sioma Ngwezi and associated GMAs, West Lunga and surrounding GMAs, Nsumbu Mweru wa Ntipa, - Lusenga ecosystem and other adjoining areas.

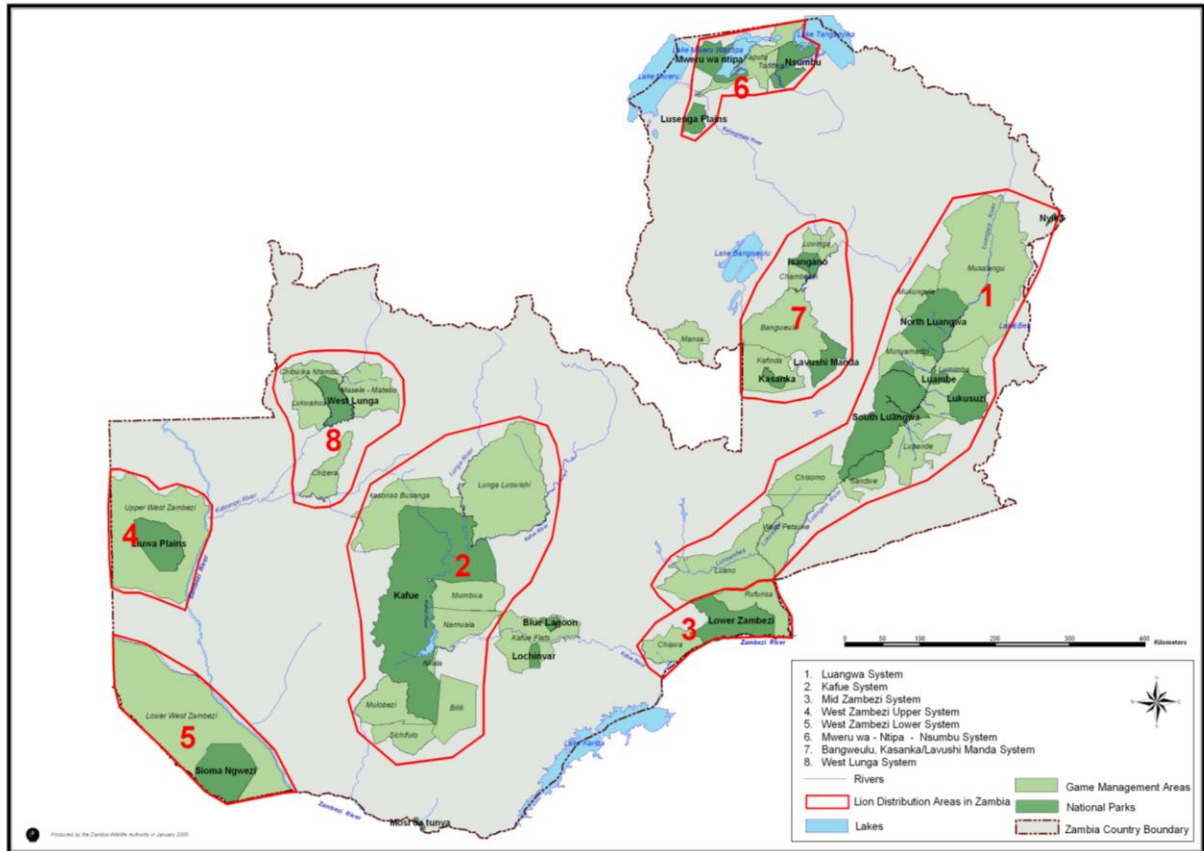


Figure 1 Lion conservation clusters/units in Zambia (Source: ZAWA, 2005)

Table 1: Lion population estimates for the main lion conservation areas

Area	Density (lion per 100 km ²)	Minimum	Estimate	Maximum
North and South Luangwa National Park and adjoining GMAs ^a	4.0	1,143	1,633	2,123
Chisomo, Luano & West Petauke GMAs	1.0	115	165	215
Subtotal	NA	1,259	1,798	2,237
Kafue National Park and surrounding GMAs ^b	1.5	718	1,026	1,334
Lower Zambezi National Park and surrounding GMAs ^c	2.0	128	183	238

(Source: Chardonnet, 2002)

NOTES

^aThis is the most important lion cluster in the country. The population is considered to be healthy and stable particularly along the Luangwa River system and its tributaries and open plains with high densities of prey species. Pride sizes of 15 - 18 animals have been observed in the Mwaleshi River System of North Luangwa National Park (White, personal. comm.).

^bThe Kafue ecosystem covers an area approximately 40,000km². Prides of up to 14 members with a mean of seven (7) animals per pride were recorded in 2004. Compared with other large ecosystems in sub-Saharan Africa, the Kafue complex is on the lower side probably due to low densities of the most preferred prey species.

^cThe Zambezi complex is linked to the Luangwa complex through Luano-West Petauke and Chisomo Game Management Areas. Estimates for the Zambezi system are low in comparison with the Luangwa and Kafue systems.

2.1 Factors Determining Present Distribution Patterns

2.1.1 Encroachment and Destruction of Habitat

The most important limiting factor in the distribution of the lion is encroachment on the habitat for both lion and its prey species by human populations, resulting in either loss of habitat and/or in direct conflict with lion. Conversion of natural habitat in GMAs for cropping and grazing of livestock has led to habitat destruction. Inherent with encroachment is increased incidence of poaching of buffalo and other antelopes, which form the food base for lion. Movement of cattle into GMAs which is often facilitated by tsetse fly eradication is likely to exacerbate the human – lion conflict as more live stock is introduced in GMAs.

2.1.2 Prey density

Available evidence indicates that poaching of most prey species and bush meat trade therein combined with continued reduction in wildlife habitat are the major factors affecting the growth of wildlife populations in the country. Proliferation of firearms during the liberation struggle exacerbated poaching whilst continued inadequate funding to ZAWA has continued to constrain its anti-poaching capacity. Limitation in prey species has a direct influence on predator (in this case the African lion) population³ through predator-prey interaction.

3.0 MAJOR PROBLEMS AND ISSUES RELATING TO LION CONSERVATION IN ZAMBIA

3.1 Human – lion conflicts

3.1.1 Conflict with Livestock

In pastoral areas, livestock-lion conflicts have resulted in increased negative attitude and low tolerance levels towards the lion resulting in some cases to its extermination as the case was on the Kafue Flats. Increased livestock populations in Game Management Areas will increase the incidence of both livestock-lion and human – lion conflicts. In most cases local communities have responded to these conflicts by poisoning the lion as part of their own PAC programme.

3.1.2 Snaring

Lion poaching is not common as most local communities poach for meat. However, lions often get caught up in wire snares set to catch antelope species. In most cases lions that have survived snaring become a menace to livestock and humans as they are no longer

³ In terms of both temporal and spatial composition and structure

able to hunt game. Consequently, ZAWA has opted to kill such lions under its PAC programme as such lions are of little value⁴ to the tourism industry.

3.2 Human Encroachment and Destruction of Wildlife Habitat

Unplanned human settlement in GMAs and encroachment on National Parks is one of the major long-term threats to lion survival as these result in the destruction and reduction in the size of available habitat for the lion and its prey species. Increased human populations have resulted in increased demand for more land for agriculture and loss of wildlife habitat in GMAs. Lack of General Management Plans (GMPs) in many GMAs has exacerbated the rate of human encroachment and loss of the wildlife habitat.

3.3 Inter- and Intra-specific Competition

Studies such as those by Purchase (2004) on lion feeding behaviour have shown a high degree of dietary overlap between lion and hyaena. Prides lacking males are particularly prone to kleptoparasitism from hyaena, and high numbers of hyaena can suppress lion population under such circumstances. Unsustainable harvesting of pride males may expose prides to high levels of kleptoparasitism. A quick turn over of males in a pride would also slow down the population growth rate as new males have the tendency of killing cubs sired by the previous males.

3.4 Population isolation

Destruction of wildlife corridors has resulted in most protected areas becoming ecological. Isolated populations in the long term experience loss of genetic variability⁵.

3.5 Lack of protocols for problem lion control

Zambia has no protocol or guidelines on the management of problem animals including the lion. Consequently, ZAWA often opts to kill problem animals which is generally destructive and incompatible with overall conservation goals when compared to translocation and treatment of problem and injured lions respectively.

3.6 Negative Value Placed on the African Lion

Continued loss of livestock and human life has compelled local communities to consider the African lion as a vermin that needs to be exterminated despite its tourism value and community income from lion trophy hunting, which benefits communities in areas with CBNRM, programmes. Livestock as a private resource is considered more valuable both at individual and society levels compared to the lion, a public resource. Consequently, more value is placed on livestock compared to the lion.

⁴ Due to loss of limbs or other body injuries

⁵ Loss of heterozygosity, low allele richness and population bottlenecks

3.7 Inadequate Scientific Data on the African Lion

There is inadequate scientific data on the African lion in terms of population size and structure both at spatial and temporal scale in the country. Existing data is based on limited studies done in isolated protected areas, indices obtained from trophy hunting and limited reports from the field staff and tour operators. In the absence of empirical data setting of off-take quotas for the lion has continued to be controversial with Safari Hunting Operators always demanding a higher quota while the non-consumptive tour operators contest that hunting would reduce lion populations and negatively affect the non-consumptive tourism and have always tried to lobby for a moratorium on lion hunting.

Since 2004, Zambia has made notable progress in assessing its lion populations as requested by IUCN. Efforts include collection of empirical data through various field research studies⁶ in protected areas, and the analysis of the trophy hunting industry. Furthermore, Government through ZAWA is working at addressing the issue of problem animal control and habitat conversion including human encroachment in GMAs. ZAWA and the hunting industry continue to work closely with independent researchers under the Zambia Lion Project (ZLP) to ensure that the studies are designed to address both the biological and contemporary issues related to the conservation and management of the lion in the country. The studies will contribute to future improvement of the national lion management plan aimed at enhancing science-based conservation of the species in order to secure the long-term survival of the African lion populations in Zambia.

3.8 Inadequate Data from Hunting Statistics

There is inconsistency in the collection of data at temporal scale and in terms of measurable variables making it difficult to assess trophy quality trends in the country.

3.9 Unknown Impact of Trophy Hunting on Lion Population Structure

In the absence of empirical data it is difficult to ascertain the actual impact of trophy hunting on the lion population structure. It is however, generally accepted that unregulated trophy hunting would on a long-term have negative impact on the species population through removal of pride males resulting in increased rate of infanticide within the pride as each new coalition of males frequently kill available cubs. In areas with significantly higher hyena populations removal of pride males could result, as shown by studies elsewhere, into strong inter-specific competition between the lion and hyena for food. Lionesses are easily dominated by groups of hyena and it is generally the pride males, which defend the prides from the hyaena.

⁶ Surveys of lion distribution and abundance throughout Zambia; Identification of potential corridors between lion populations in Zambia and those in neighboring countries; Profiling of genetic diversity of Zambia's lions and Development of age-based trophy selection program

4.0 MANAGEMENT STRATEGY FOR THE CONSERVATION OF THE AFRICAN LION

The Lion Conservation Strategy was formulated and adopted during the multi stakeholder workshop held in December 2008.

4.1 Vision Statement

To have a secure, viable and well managed wild population of the African lion that will support sustainable tourism⁷ and conservation of biodiversity including genetic diversity in harmony with human development.

4.2 Mission Statement

To galvanize stakeholder co-operation⁸ in the conservation and management of the African lion populations in its natural habitats in the country thereby contributing to biodiversity conservation, socio-economic development and spiritual well being of the local communities, the general public and the country as a whole.

4.3 Goal

To secure, restore and maintain viability and genetic diversity of lion populations.

5.0 OBJECTIVES

The objectives of the conservation strategy are grouped into seven (7) major thematic subjects namely Research and Management; Mitigation of Human – Lion conflicts; Local community benefits from Lion Utilisation; Land Use Planning and Zoning, Management of the Conservation Politics at national and international levels and Trade in the African Lion.

5.1 Research and Management

The specific objectives and set targets are discussed below.

Objective 5.1.1: To Ensure Effective Protection and Management of the Lion Populations and their Habitat

⁷ Consumptive and non-consumptive tourism

⁸ Government, Local Communities, Private Sector (including land owners) and Cooperating Partners

Target (1): Effective Research and Monitoring Programmes Established in all Lion Conservation Clusters/Units within the next Five Years

Activities:

- i. Identify key lion research areas and parameters for research and monitoring.
- ii. Create technical (research) and financing partnerships with individuals and organizations
 - a) Undertake resource mobilization through submission of project proposals for funding.
- iii. Build requisite capacity for Lion Conservation including research and monitoring
 - a) Procure necessary research equipment and facilities;
 - b) Establish research out posts;
 - c) Formulate field data forms; and
 - d) Establish and maintain database.
- iv. Undertake research and monitoring including lion population surveys.
- v. Review extent /size, viability and prioritize lion conservation clusters/units.
- vi. Publish results/Disseminate information.

Target (2): Research on Lion Ecology, Population Dynamics Implemented in all Lion Clusters within Ten (10) Years

Activities:

- i. Prepare cost estimates and project proposals for funding.
- ii. Prepare field manual identifying key ecological parameters and other related research needs.
- iii. Standardize methodology for research and monitoring in all lion clusters and the sub region particularly in cases where collaborative research is required.
- iv. Conduct research on the identified parameters.
- v. Facilitate new and ongoing lion studies.
- vi. Publish results/Disseminate information.

Target (3): Facilitate Capacity Building Programs for Lion Conservation Within the Framework of Lion Research and Monitoring

Activities:

- i. Identify institutional and national needs.
- ii. Prepare cost estimates and project proposal for funding.
- iii. Lobby with Local Universities to assign postgraduate students to undertake conservation related research studies.
- iv. Identify other regional training centers where staff can acquire relevant skills.
- v. Implement capacity building programmes.

Target (4): Establish Science-based Lion Off-take Quota Setting System, and Monitoring of Trophy Quality and Impact of Trophy Hunting on Lion Populations within Three (3) Years

Activities:

- i. Review lion quota setting and trophy hunting practices used in the eastern and southern African sub regions.
- ii. Based on the review above, formulate and implement a comprehensive quota setting system and trophy hunting practices.
- iii. Prohibit canned lion hunting.
- iv. Prohibit use of prerecorded sounds in lion hunting as bait.
- v. Review lion licensing procedures.
- vi. Develop and implement standardized lion data forms.
- vii. Conduct regular training workshops for Wildlife Police Officers, escort staff, and Professional Hunters as primary sources of lion data.
- viii. Formulate and implement punitive measures against Professional Hunters harvesting under age lions.

Target (5): Lion Action Plans Developed for all Lion Conservation Clusters/Units within Three (3) Years

Activities:

- i. Based on the National Lion Conservation Strategy framework, develop cluster specific lion action plans within three years.
- ii. Advocate for support from line Ministries, Public and Private Institutions, Non Governmental Organisations (NGOS), cooperating partners and the general public regarding funding for the implementation of lion action plans.
- iii. Develop as part of the action plans cluster specific law enforcement strategies to reduce poaching of prey species for the lion with a focus on the most important species of the African buffalo, zebra and antelope species.

5.2 Mitigation of Human – Lion Conflicts

There is an urgent need to develop and implement a comprehensive package of adaptive and mitigation measures against lion-human conflicts in order to secure the goodwill of the public on whom the long-term survival of the lion depends.

Objective 5.2.1 To minimize and where Possible Eliminate Human – Lion Conflicts

Target (1): Comprehensive Database on all Human – Lion Conflicts Established within Three (3) Years

Activities:

- i. Compile all the available literature on human – lion conflicts.
- ii. Identify and map all human – lion conflict hot spots.
- iii. Develop and maintain database.
- iv. Prepare field manual on how to mitigate lion attacks and distribute to identified hot spots.

Target (2): Incidents of Human – Lion Conflicts Reduced by 25% and Retaliatory Killing of Lion Reduced by 50% within Five (5) Years

Activities:

- i. Develop broad based national education and awareness campaign on lion conservation.
- ii. Conduct education and awareness campaigns in tandem with other mitigation measures.
- iii. Develop and implement a comprehensive package of mitigation measures;
- iv. In collaboration with the livestock sector, develop mechanisms to reduce livestock predation by lions.
- v. In collaboration with CRBs, develop incentives for communities to use legal PAC methods.
- vi. Build capacity in all CRBs located in lion conservation clusters/units to deal with certain cases of human – lion conflicts.
- vii. Collaborate with partners such as civil society, NGO's and the media and artists in disseminating lion conservation information as part of a wider environmental education.

5.3 Local Community Benefits from Lion Utilisation

Under the current co-sharing of hunting revenues the local communities are not fully aware of the individual species contribution to the 50% revenue share allocated to them by ZAWA. Furthermore, local communities do not incur any hunting transaction costs including those related to PAC under the current CBNRM programme in GMA's. There is need to share both costs and benefits in order to sustain the PAC programmes.

Objective 5.3.1: To Equitably Distribute Costs and Benefits arising from the Conservation and Management of the Lion

Target (1): Strategy for Sharing Costs and Benefits with CRBS arising from Lion Conservation Developed and Implemented within Three (3) Years

Activities:

- i. Conduct an inventory of all CRBs in hot spots and other lion conservation clusters/units.
- ii. Analyze the contribution of lion hunts to the overall trophy fees per CRB.
- iii. Identify and analyze impacts of human – lion conflicts on each stakeholder group.
- iv. Analyze costs involved in each PAC technique.
- v. Devise methodology for sharing costs of implementing PAC.
- vi. Delegate some PAC issues to CRBs.

5.4 Land Use Planning and Zoning

Unplanned human settlement and other land use activities in GMAs is one the major threats to the long-term survival of the lion. Elimination of tsetse flies and subsequent increase in pastoralist activities in GMAs places the lion under renewed direct conflict with human interests. It is therefore, important that each GMA has a General Management Plan (GMP) developed through a participatory process prescribing appropriate land use zones. It is anticipated that the GMP's will enhance community responsibility towards wildlife conservation in general and that of the lion in particular.

Objective 5.4.1: To develop and Implement General Management Plans in GMAs and Selected Open Areas with established CRBs

Target (1): General Management Plans for GMAs which are Lion Conservation Clusters/Units Developed within Five (5) Years

Activities:

- i. Prepare cost estimates and project proposal for funding.
- ii. Develop GMPs through a participatory approach.
- iii. Zone areas in GMAs and establish specific land use zones including lion conservation needs.
- iv. Monitor and evaluate implementation of such plans.
- v. Review such plans within the framework of adaptive management.
- vi. Where the lion cluster straddles into another country, synchronize with the relevant SADC wildlife protocols or adopt the basic principles in the concept of Transfrontier Conservation area (TFCA).

5.5 Managing Conservation Politics at Local, National and International Levels

Zambia like many other countries in the southern African sub region supports the concept of sustainable utilisation as way of generating income for conservation and support of local community integrated development programmes. It is therefore, important to ensure that such national interests are not in conflict with MEAs to which Zambia is a signatory.

Objective 5.5.1: To Ensure that the Local Policies, Regional and International Policy Frameworks are in Support of the Sustainable Utilization of the Lion

Target (1): Local Policies, Regional Policies and Protocols and Global MEAs are not Conflicting with the National Sustainable Use Concept

Activities:

- i. Identify all local policy frameworks that are relevant to lion conservation.
- ii. Collaborate with such institutions mandated to ensure harmony in implementing such policies.

- iii. Lobby for the establishment of a national MEA forum/committee for exchange of information and formulating national positions at COPs, which do not conflict with national interests.
- iv. Attend all CoPs for MEAs relevant to Zambia such as CITES, CBD, CMS and others and ensure that decisions are not in conflict with the principles of the national lion conservation strategy;
- v. Actively participate in all SADC wildlife fora.
- vi. Encourage establishment of TFCAs in lion conservation clusters near international borders to avert issues of lion population isolation.

5.6 Trade in the African Lion

Lion trophies are among the most valued trophies from sport hunting and contribute a significant proportion of game trophies exported from Zambia. Export of live specimens for zoos and captive breeding facilities are not common but given the current trends in science and the need to enrich populations experiencing loss of genes, export of live specimens cannot be ruled out. At national level, there are unknown volumes of trade in lion parts and derivatives, mainly for hunting charms, or magic and medicinal purposes. Further investigation is required to identify other uses.

Objective 5.6.1: To Prevent Illegal Trade in Lion and Lion Derivatives at Local and International Levels whilst Promoting and Safe Guarding Sustainable Legal Trade of the Lion and its Derivatives

Target (1): Existing Subsidiary Legislation Reviewed and Amended to Cover Issues Related to Ownership and Trade of the Lion (and its Derivatives) both at Local and International Levels

Activities:

- i. Collaborate with various traditional and cultural institutions and other organizations such as the Traditional Healers Association of Zambia (THAPAZ) to prevent illegal local trade in lion specimens.
- ii. Collaborate with the Chair of the House of Chiefs regarding lion trophies kept by traditional leaders.
- iii. Issue certificate of ownership to Traditional leaders with legally acquired lion trophies.
- iv. Train ZAWA officials and other Law Enforcing Officers⁹ in the identification of lion specimens.
- v. Work with the research and academic institutions in the genomic mapping/profiling of the lions in Zambia;
- vi. Support the domestication of CITES in the national legislation.
- vii. Prepare guidelines on the identification of lion specimens.

⁹ Customs Officials, Immigration officers, Zambia Police officers, and Other relevant law enforcement personnel

- viii. Collaborate with the CITES unit to provide awareness information at entry/exit ports.
- ix. Coordinate with other parties on non – detriment findings.
- x. Develop lion DNA mapping protocol in collaboration with stakeholders to identify lion products and derivatives to enhance forensic investigations.

6.0 IMPLEMENTATION OF THE LION CONSERVATION STRATEGY

The effective and successive implementation of the national lion conservation strategy is based on the following assumptions:

- i. That the Zambia Wildlife Authority Board of Directors will approve the strategy and drive the process of securing funds for its implementation.
- ii. That the cooperating partners will adopt and fund relevant components of the strategy.
- iii. That the Safari Hunters association of Zambia representing the consumption tourism sector and the non-consumptive tourism operators will provide the needed financial and moral support to implement the strategy.
- iv. That the traditional leaders cooperate in declaring lion trophies in their possession and obtain Gratis Certificate of Ownerships.
- v. That all lion management, research and monitoring programmes in Zambia will be guided by this strategy.
- vi. That ZAWA will succeed in attracting financial support to establish and maintain medium to long-term Carnivore Research and Monitoring.
- vii. That individuals, NGOs, and academic institutions will take interest in carrying out lion research in Zambia.
- viii. That the southern African sub region, and the lion specialist group of IUCN will officially adopt the document as being part of the Conservation strategy for the lion in Eastern and Southern Africa.

It is hoped that the national lion conservation strategy will form a basis for the development of cluster specific lion management plans. The conservation community is hereby urged to provide financial and moral support for the implementation of this strategy.

7.0 REVIEW OF LION CONSERVATION STRATEGY

This lion conservation plan will be reviewed every five (5) years from the date of approval, but will remain in force until the reviewed plan is approved.

REFERENCES

Bauer, H. and van der Merwe, S. 2004. *Inventory of free ranging lions Panthera leo in Africa. Oryx* **38**, 26-31.

Bauer, H. and S. van der Merwe S. 2002. *The African Lion Database*. The African Lion Working Group, IUCN/SSC.

Chardonnet, P (ed.) 2002. *Conservation of the African lion: contribution to a Status Survey*. Int. Foundation for the Conservation of Wildlife, France & Conservation Force, USA. 169 pp.

McCarthy, T. 2004. *Nowhere to roam*. Time Magazine. 23 August 2004: 44-53pp.

Nowell, K. and P. Jackson. 1996. *Wild Cats. Status. Survey and Conservation Action Plan*. IUCN/SSC Cat Specialist Group. IUCN, Gland, Switzerland. 382pp.

Packer, C., R. Hilborn, A. Mosser, B. Kissui, M. Borner, G. Hopcraft, J. Wilmshurst, S. Mduma, A.R.E. Sinclair. 2005. Ecological change, group territoriality, and population dynamics of Serengeti lions. *Science* **307**,390-393.

Purchase, K.G. 2004. *Factors affecting the ratio of lions (Panthera leo) to spotted hyaenas (Crocuta crocuta) in protected areas of Africa: Competition and/or available prey*. Ph. D. Thesis University of Aberdeen.

Whitman, K.L. 2002. *Safari hunting of lions: a review of policies, practices, and industry concerns*. Pp. 111-124 In: Proceedings of the 2nd Meeting of the African Lion Working Group, H.O. De Waal, (ed.), 9-10 May 2002. Willem Pretorius Game Reserve, FS, RSA. African Lion Working Group, Brandhof, RSA.

APPENDIX I

National Workshop Participants

Date of Workshop: Friday 12th December 2008

Venue: Fair View Hotel, Lusaka

List of Participants

	Name	Title	Station	Contact No.
1	Pope, J.	Director	Luangwa Safaris	0955 919530
2	Bell-Cross, B.	Director	Prohunt Safaris	0979 523320
3	Pope, R.	Managing Director	Luangwa	0955 919530
4	Becker, M (Ph.D.)	Manager AWDC	Luangwa	
5	Paula, W. (Ph.D)	Lion Researcher	ZLP	0978 093693
6	Mkanda, F. (Ph.D)	Park Manager	ZAWA Ngoma	0977 771077
7	Nkole, A.	Area Warden	ZAWA KNP (North)	0955 991074
8	Sakala, G.	Chifunda CRB	Chifunda	
9	Mwanamwobeda, W.	Kasempa CRB	Kasempa	097782955332
10	Namukonde, N.	Ecologist	ZAWA KNP (North)	0978 695289
11	Mwenya, A .N.	Former Director	Makeni	0966 669411
12	Chardonnet, P. (Dr.)	IGF Foundation	France	
13	Milanzi, J.	Ag. Regional Manager	ZAWA Mumbwa	0977 106559
14	Stromach, N.	WWF ZCO	Ireland	+3558684128922
15	Mwima, H. (Ph.D.)	Chairman NRCF	Lusaka	0966 766718
16	Nkhoma, R.	Area Warden	ZAWA Chirundu	0977 438477
17	M'soka, J.	Ecologist	ZAWA Chirundu	0955 927367
18	Chansa, W.	Head of Research	ZAWA Chilanga	278365
19	Kayeyi, H.	Area Warden	ZAWA Mpika	0977 104123
20	Mcbride, C. (Ms)	Lion Researcher	KNP	0977 414871
21	Mcbride, C. (Mr.)	Lion Researcher/Tour Operator	KNP	0977 767416
22	Phiri, M.	Journalist (Post)	Lusaka	0978 263324
23	Randera, R.	Director	Lusaka	0955 1771998
24	Asherwood, K.	Chairman SHCAZ	Lusaka	224672
25	Sikazwe, J.	Head of Information	ZAWA Chilanga	0966 736066
26	Changwe, K.	Regional Manager	ZAWA Kasama	0977 445585
27	Sichone, P.	Ecologist	ZAWA Mfuwe	0977 786785
28	Phiri, J.	Country Coordinator	WWF Lusaka	0977 885825
29	Kahimbinga, B.	PR	Lusaka	0977 794265
30	Mooka, C.L.	Professional Hunter	Lusaka	0966/0977 809288
31	Haamunji, L.	Journalist	Zambia Daily Mail	0979 427262
32	Nyirenda V.R.	Executive Assistant	ZAWA Chilanga	0977 352035
33	Matokwani, E.	Director – Conservation & Management	ZAWA Chilanga	0977 214322
34	Saiwana, L. (Ph.D.)	Director General	ZAWA Chilanga	0979 590422
35	Muleya, Z.	Head of Planning	ZAWA Chilanga	0977 718282
36	Musonda, P.	Relief Management Secretary	ZAWA Chilanga	0955 0977 547932
37	Nyambe, F.	Administrative Assistant	ZAWA Chilanga	0977 743209

The Safari Club International provided financial support for the preparation and printing of this lion conservation strategy.

Cartographic and GIS: Zambia Wildlife Authority, Department of Information.