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SOUTH AFRICAN
PREDATOR ASSOCIATION

RESPONSIBLE CUSTODIANS | BREEDING | HUNTING

**NORMS AND STANDARDS
FOR THE
MANAGEMENT
(WELFARE, BREEDING AND KEEPING)
OF
CAPTIVE LIONS
IN
SOUTH AFRICA**

Ranch & Working lions

October 2017
FINAL



TABLE OF CONTENTS

| | |
|---|----|
| TABLE OF CONTENTS | 2 |
| DEFINITIONS | 5 |
| LIST OF ACRONYMS | 7 |
| 1 Introduction | 8 |
| 1.1 Objectives of this document | 8 |
| 1.2 The Need for Standards and Regulations | 8 |
| 1.3 Current Legislation and the Captive Lion Industry | 9 |
| 2 Captive Lions in Conservation, Rehabilitation, and Research | 9 |
| 2.1 Conservation | 9 |
| 2.2 Research | 9 |
| 2.3 Conservation Fund | 10 |
| 3 Categories of Captive Lions in South Africa | 10 |
| SECTION A: RANCH LIONS | 11 |
| 1 Ranch Lions | 11 |
| 2 Legal Acquisition | 11 |
| 3 Management Plan | 11 |
| SPECIES MANAGEMENT | 11 |
| 4 Breeding | 11 |
| 4.1 Techniques used to control breeding | 11 |
| 4.2 Timing of breeding | 12 |
| 4.3 Age at first breeding | 12 |
| 4.4 Age at Weaning | 12 |
| 4.5 Age of Removal from Parents | 12 |
| 4.6 Growth and Development | 12 |
| 4.7 Hybridisation and In-breeding | 12 |
| 4.8 Handling of cubs | 12 |
| 4.9 Artificial Breeding | 12 |
| 4.10 DNA | 12 |
| 5 Feeding Requirements | 13 |
| 5.1 Diet | 13 |
| 5.2 Water | 13 |
| 5.3 Food Hygiene | 13 |
| 6 Animal Health | 13 |
| 6.1 Health Checks | 13 |
| 6.2 Disease and Treatments | 15 |
| 7 Euthanasia | 15 |
| 8 Ethology | 15 |
| 8.1 Activity | 15 |
| 8.2 Social Behaviour | 15 |
| 8.3 Reproduction | 16 |
| 8.4 Grooming | 16 |
| 8.5 Signs of Stress/ Behavioural Problems | 16 |
| 8.6 Behaviour Enrichment | 16 |
| 8.7 Introductions and Removals | 17 |
| 8.8 Suitability to Captivity | 17 |
| 8.9 Suitability for Release | 17 |
| 9 Identification of Animals | 17 |
| 9.1 Methods of Identification | 17 |
| 10 Handling and Transport | 17 |
| FACILITIES MANAGEMENT | 18 |
| 11 Hygiene | 18 |
| 11.1 Hygiene and Cleaning | 18 |
| 11.2 Waste Management | 18 |
| 12 Safety and Security | 18 |

| | | |
|--|---|-----------|
| 12.1 | Safety | 18 |
| 12.2 | Insurance..... | 19 |
| 12.3 | Signage | 19 |
| 12.4 | Fence Maintenance | 19 |
| 13 | Enclosure Requirements..... | 19 |
| 13.1 | Position and Design of Enclosures..... | 19 |
| 13.2 | Fencing | 20 |
| 13.3 | Construction Material..... | 20 |
| 13.4 | Facilities for Ranch Lion - Breeding Animals: | 20 |
| 13.5 | Facilities for Ranch Lions- Sub adult: 3 to 12 Months..... | 21 |
| 13.6 | Facilities for Ranch Lions - Sub adult or Adult - 12 Months and Older | 21 |
| 13.7 | Treatment and Handling Facilities (Rehabilitation Facilities) | 21 |
| SUSTAINABILITY MANAGEMENT | | 22 |
| 14 | Hunting of Lions..... | 22 |
| 15 | Trade in Live Lions..... | 22 |
| 16 | Trade in Lion Products..... | 22 |
| 17 | Animal Traders | 23 |
| 18 | Release / Reintroduction..... | 23 |
| ADMINISTRATIVE MANAGEMENT | | 23 |
| 19 | Permits | 23 |
| 20 | Animal Identification..... | 23 |
| 21 | Lion Registry..... | 23 |
| 21.1 | Owners records | 24 |
| 21.2 | Registry Records | 24 |
| 21.3 | Recording and Registration..... | 24 |
| 21.4 | Transfer | 24 |
| 21.5 | Cancellation..... | 25 |
| 22 | Staff | 25 |
| 22.1 | Training of Staff and Managers..... | 25 |
| SECTION B: WORKING LIONS | | 25 |
| 23 | Working Lions..... | 25 |
| 24 | Working Lions in Conservation, Rehabilitation, Education and Research | 25 |
| 24.1 | Conservation | 25 |
| 24.2 | Rehabilitation..... | 26 |
| 24.3 | Education and Interaction | 26 |
| 24.4 | Research..... | 26 |
| 25 | Conservation Fund | 27 |
| 26 | Legal Acquisition..... | 27 |
| 27 | Enclosure Requirements..... | 27 |
| 27.1 | Position and Specifications of Enclosures | 27 |
| 27.2 | Fencing | 27 |
| 27.3 | Construction Material..... | 27 |
| 27.4 | Breeding Facilities | 27 |
| 27.5 | Environment Enrichment..... | 28 |
| 28 | Safety and Security..... | 28 |
| 28.1 | Safety..... | 28 |
| 28.2 | Insurance..... | 29 |
| 28.3 | Signage | 29 |
| 29 | Identification | 29 |
| 29.1 | Methods of Identification | 29 |
| 30 | Feeding Requirements..... | 30 |
| 30.1 | Diet..... | 30 |
| 30.2 | Water..... | 30 |
| 30.3 | Food Hygiene | 30 |
| 31 | Handling and Transport | 30 |
| 32 | Animal Health and Hygiene..... | 30 |

| | | |
|-------|--|----|
| 32.1 | Health Checks | 30 |
| 32.2 | Disease and Treatments | 32 |
| 32.3 | Euthanasia | 32 |
| 32.4 | Hygiene and Cleaning..... | 32 |
| 32.5 | Waste Management..... | 33 |
| 32.6 | Biosecurity | 33 |
| 33 | Behaviour | 34 |
| 33.1 | Activity | 34 |
| 33.2 | Social Behaviour..... | 34 |
| 33.3 | Reproduction | 35 |
| 33.4 | Grooming..... | 35 |
| 33.5 | Signs of Stress/ Behavioural Problems | 35 |
| 33.6 | Behaviour Enrichment..... | 35 |
| 33.7 | Introductions and Removals..... | 35 |
| 33.8 | Suitability to Captivity | 36 |
| 33.9 | Suitability for Release | 36 |
| 34 | Breeding..... | 36 |
| 34.1 | Techniques used to control breeding..... | 36 |
| 34.2 | Timing of breeding | 36 |
| 34.3 | Age at first breeding and last breeding..... | 36 |
| 34.4 | Age of Removal from Parents | 37 |
| 34.5 | Growth and Development | 37 |
| 34.6 | Hybridisation and In-breeding | 37 |
| 34.7 | Handling of cubs | 37 |
| 34.8 | Artificial Breeding..... | 37 |
| 34.9 | Hand Rearing | 37 |
| 35 | Administrative Management..... | 37 |
| 35.1 | Permits | 37 |
| 35.2 | Lion Registry..... | 37 |
| 35.3 | Information to be recorded..... | 38 |
| 35.4 | Management Plan..... | 38 |
| 35.5 | Transfer and Cancellation | 38 |
| 35.6 | Staff..... | 39 |
| 35.7 | Education, Training, Certification and Registration of Handlers and Managers | 39 |
| 35.8 | Minimum Standards with Contact Lion | 39 |
| 35.9 | Lions Used for Human–Animal Interaction | 40 |
| 35.10 | Captive Lions Used in the Advertising and Film Trade..... | 40 |
| 35.11 | Animal Traders..... | 40 |
| 35.12 | Lions Kept as Pets | 40 |
| 35.13 | Breeding of Lions | 41 |
| 35.14 | Hunting of Lions | 41 |
| 35.15 | Trade in Live Lions | 41 |
| 35.16 | Trade in Lion Products | 41 |
| 35.17 | Release / Reintroduction | 41 |
| | CONCLUSION | 42 |
| 36 | Appendix 1a - Construction Material | 43 |
| 37 | Appendix 2 - OIE Guiding Principles for the Welfare of Animals | 44 |
| 38 | Appendix 3 - Standards for Microchips..... | 46 |

DEFINITIONS

“accreditation” means a the official certification from the accreditation committee of a facility compliant with the Norms and Standards.

“accreditation committee” means a group of persons or a person with the capacity to evaluate captive lion operations for quality assessment, recording and registration purposes.

“animal welfare” means how an animal is coping with the conditions in which it lives. An animal is in a good state of welfare if it is healthy, comfortable, well nourished, safe, able to express innate behaviour, and if it is not suffering from unpleasant states such as pain, fear, and distress. Good animal welfare requires disease prevention and veterinary treatment, appropriate shelter, management, nutrition, humane handling and humane slaughter/killing. Animal welfare refers to the state of the animal; the treatment that an animal receives is covered by other terms such as animal care, animal husbandry, and humane treatment.

“animal welfare legislation” means the laws and regulations relevant to the care and protection of animals and includes the Animals Protection Act, 1962 (Act 71 of 1962) and the Performing Animals Protection Act, 1935 (Act 24 of 1935).

“approved” means the official certification of facilities and includes enclosures, housing and handling facilities by the acknowledged organization (SAPA / SAPRED /SAPA CDF)

“as prescribed” refers to any regulations, norms and standards dealing with specific issues such as housing, handling, registration of facilities, handlers.

“Biodiversity Act” means the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004);

“breeder” is a member of a registered breeders’ organisation and who is the owner of:

- (a) the female at the date of birth of an animal to be registered or recorded;
- (b) an animal at date of application for registration in the Lion Registry;
- (c) the recipient female at the date of birth of the animal to be registered as a result of an embryo transfer.

“bred in captivity” or “captive bred”, in relation to a specimen of a listed threatened or protected animal species, means that the specimen was bred in a managed environment;

“captivity” - state wherein animals are kept by human beings, whereby the animals’ needs, welfare and wellbeing are subject to human intervention and care.

“captive breeding operation” means a facility where specimens of a listed threatened or protected animal species are bred in a managed environment for:–

- (a) commercial purposes ; or
- (b) conservation purposes

“captive lion” means any lion that is either totally or partially dependent on human intervention for its upkeep. Categories include captive breeding operations, lion interaction experiences and the hunting of captive bred lions.

“categories” means the classification of captive lion into specific activities to ensure that the minimum standards include interventions that address any specific differences between these operations.

“commercial exhibition facility” means a facility, including zoological gardens, aquariums ,travelling exhibitions, that keep listed threatened or protected species for display purposes.

“commercial purposes”, in relation to a restricted activity involving a specimen of a listed threatened or protected species, means that the primary purpose of the restricted activity is to obtain economic benefit, including profit in cash or in kind, and is directed towards trade, exchange or another form of economic use or benefit.

“Competent organisation” means an appointed representative person or group of suitably qualified subject matter specialist(s) with the capacity to empirically evaluate captive lion operations and animals for recording and registration purposes.

“competent person” means a suitably educated or qualified individual and includes lion handlers.

“contact animals” means any intervention where human interaction and contact is made with a lion. Contact lion has a corresponding meaning.

“euthanasia” means bringing about of a humane death without unnecessary pain or suffering.

“human imprinting” means the long-term continuous exposure of animals to direct human contact and human habits enforced on them.

“lion enclosures” means any approved facility needed for effective management purposes and includes camps and housing.

“lion handler” means a person that has been appropriately educated in the handling of lions.

“lion management” means the organization and coordination of the activities of a system in accordance with certain policies, regulations, norms and standards with the objective of creating an optimum environment for the welfare of lions and their expression of natural behaviour.

“lion minder” means a trainee lion handler.

“manager” means the person responsible for all activities relating to captive lion and staff on the property.

“owner” means the permitted owner or a person having possession, charge, custody or control of a lion and is not necessarily the owner of the property.

“ranch lion” is a lion that is bred for consumptive sustainable utilisation purposes.

“release” means to intentionally:

- cease exercising physical control over;
- cease having in possession; or
- free from its managed environment.

“rehabilitation facility” is defined as a registered facility equipped for the temporary keeping of live specimens of a listed threatened or protected species for:

- (a) treatment and recovery purposes, in the case of sick or injured specimens;
- (b) rearing purposes, in the case of young orphaned specimens;
- (c) quarantine purposes; or
- (d) relocation, with the overall intent to release the species.

“sanctuary” means a registered facility in which a permanent captive home is provided in a managed environment for specimens of a listed threatened or protected species that would be unable to sustain themselves if released.

“South African bred lion” means a lion (*Panthera leo*) bred by a registered breeder in terms of the relevant organisations registration and the relevant legislation, or whilst in transit to, South Africa, provided that a lion born from an imported ovum or embryo shall be regarded as an imported lion.

“suitably educated” means an individual who has been given the necessary education and or training for a specific activity, including handling and caring for lions.

“suitably qualified” means an individual with the prescribed requirements for a specific activity including registration in terms of the relevant organisations registration and or relevant legislation where applicable.

“transport” means the procedures associated with the transferring and or carrying of animals from one location to another.

“vehicle” means any container, truck, ship or receptacle that carries an animal.

“veterinarian” means a person registered in terms of the Veterinary and Para-Veterinary Professions Act, 1982 (Act 19 of 1982), to practise a veterinary profession as defined in that Act.

“working/tourism lion” means a lion that has on-going human interaction beyond the age of 3 months, whether for display, contact or other types of interaction, and may never be hunted.

LIST OF ACRONYMS

| Term/Acronym | Definition |
|--------------|---|
| APA | Animal Protection Act, 1962 (Act 71 of 1962) |
| BMP | Biodiversity Management Plan for the Lion (<i>Panthera leo</i>) in South Africa |
| DAFF | Department of Agriculture Forestry and Fisheries |
| DEA | Department of Environmental Affairs |
| DNA | Deoxyribonucleic Acid |
| EMP | Environmental Management Plan |
| FGASA | Field Guides Association of Southern Africa |
| ICAR | International Committee for Animal Recording |
| ISO | International Organization for Standardization |
| IUCN | International Union for Conservation of Nature |
| LR | Lion Registry |
| NEMA | South African National Environmental Management Act, 1991 |
| NEMBA | South African National Environmental Management: Biodiversity Act, 2004 |
| OIE | World Organisation for Animal Health |
| PAAZA | Pan African Association of Zoos and Aquaria |
| PAPA | Performing Animals Protection Act, 1935 (Act 24 of 1935) |
| RFID | Radio Frequency Identification |
| SAPA | South African Predator Association |
| SAPA CDF | SAPA Conservation and Development Fund |
| SAPRED | South African Predators Company |
| TOPS | Threatened or Protected Species |

1 Introduction

1.1 Objectives of this document

The captive lion industry has been the subject of much negative publicity in recent years. The rapid growth of the industry has resulted in fragmented provincial legislation regarding the standards required within the industry. The current situation has necessitated a document that establishes appropriate, internationally recognised guidelines, principles, and procedures that need to be followed by the industry.

This document specifies provisions for the management and operation of all captive lion facilities in South Africa. This includes provisions for management, husbandry and welfare of animals, conservation and research practices, education and recreation. This document has been drawn up as a means of defining the manner in which the South African lion industry should operate in the fulfilment of the vision to be recognized as maintaining the highest possible standards of animal husbandry and welfare in *in-situ* and *ex-situ* sustainable utilisation, conservation, education, research and entertainment practices.

This document aims to address all aspects of the captive lion industry with regard to the following:

- to create uniformity amidst large differences between provincial standards, requirements and legislation;
- to define the best practice for the holding, breeding and keeping of lions; and
- to create a basis for alignment with international standards.

1.2 The Need for Standards and Regulations

The captive lion industry has been the subject of much negative publicity in recent years and this often overshadows the advantages of the sector – from a tourism, job creation and conservation point of view.

One of the main challenges is to have a uniform, legally binding set of norms and standards in place to give credibility to this sector and to provide assurances on the welfare of the affected animals and the integrity of operators. This can be done by establishing detailed norms and standards applicable to the industry that are enforceable in terms of relevant legislation.

Central to these norms and standards is the recent definition of animal welfare published by the International Organisation for Animal Health, the OIE. This definition supports a scientific approach and includes basic inputs that ensure that an animal is in a good state of physical and mental health.

The OIE definition of animal welfare reads as follows:

Animal welfare refers to the state of the animal - how an animal is coping with the conditions in which it lives. An animal is in a good state of welfare if it is healthy, comfortable, well nourished, safe, able to express innate behaviour, and if it is not suffering from unpleasant states such as pain, fear, and distress. This should be read with the OIE guiding principles for the welfare of animals as set out in Appendix 2 of this document.

For proper welfare within the lion industry the following must be ensured:

- No animal suffers from undue hunger, thirst or malnutrition
- No animal suffers from undue fear and distress
- No animal suffers from undue physical or thermal discomfort
- No animal suffers from undue pain, injury or disease
- Animals are able to express normal patterns of behaviour.

Good animal welfare requires disease prevention and veterinary treatment, appropriate shelter, management, nutrition, humane handling and humane death/killing.

1.3 Current Legislation and the Captive Lion Industry

The captive lion industry requires guidelines that facilitate a proactive approach to ensure that sound husbandry practices are adhered to at all times. Animal health and welfare legislation in South Africa is administered by the Department of Agriculture Forestry and Fisheries (DAFF). Captive lions are also subject to certain provisions of the National Environmental Management Biodiversity Act, 2004 (Act No. 10 of 2004) and any relevant regulations such as those dealing with Threatened or Protected Species (TOPS). This legislation is administered by the Department of Environmental Affairs (DEA) and its delegated Provincial authorities.

In addition, all captive lion operations are subject to the relevant Provincial ordinances under which they fall, and these differ considerably as far as certain aspects such as identification and minimum enclosure sizes are concerned. This can be problematic when animals are translocate and relocated to another Province.

With these facts in mind, this document takes cognizance of all the relevant facts - to obviate inconsistencies within existing legislation and focus on the welfare of all categories of captive lions. A uniform national standard would ensure consistencies at least as far as aspects addressed in this Norms and Standards are concerned.

2 Captive Lions in Conservation, Rehabilitation, and Research

The captive lion industry is a diverse and complex industry. As with all industries it needs to be financially viable, but relative new international requirements necessitates a conservation value contribution. The main objectives for lion facilities should, therefore, include demonstrable conservation and or, rehabilitation and or, education and or research pursuits.

2.1 Conservation

- Lion facilities have an important and influential conservation capacity.
- All lion facilities should participate in a demonstrable manner in at least one of the following conservation-related practices:
 - *ex-situ* or *in-situ* contribution to research from which conservation benefits accrue to species;
 - staff education in relevant conservation and husbandry skills;
 - exchange of information relating to species conservation; and
 - coordinated and managed breeding and or, repopulation and or reintroduction of species into previous habitats or into new habitats.
- Contribution and or involvement in such activities should be measurable, recognized and endorsed by relevant organisations ..

2.2 Research

- It is encouraged that Lion facilities voluntarily demonstrate that research in its broadest definition is supported.
- Lion facilities should ensure that relevant data of the animals is kept on their database. This information should be available for use in a scientific manner so as to benefit the animals and the species concerned.
- In any research, care shall be taken to comply with all relevant legislation and the research shall be subject to ethical review.
- Lion facilities not involved in their own research projects are encouraged to collaborate with scientists involved in other research projects within the industry. This may be achieved by

assisting with manpower, funding or access to facility resources and or contribution to the organisation's approved Conservation Fund.

2.3 Conservation Fund

A certain percentage of the income generated from lions that are bred, kept, traded, transferred, hunted, donated, exported or imported, and their derivatives, must be contributed to an organisation's registered and acknowledged Conservation Fund. These funds should be managed in such a way to achieve conservation, education and research objectives.

3 Categories of Captive Lions in South Africa

The term "Captive lions" generally includes released, free-roaming lions, lion breeding operations (bred under managed conditions), the hunting of captive-bred lions, tourism facilities that are recognised as commercial exhibition facilities that include lion interaction experiences, lion research facilities, zoos and lion parks, and the entertainment industry (circuses, animals trained for the film industry etc.).

Captive bred lions are divided into two distinct categories:

1. Ranch Lions - are lions that are bred for consumptive sustainable utilisation purposes.
2. Working Lions - are lions that have on-going human interaction before and beyond the age of 3 months, whether for display, contact or other types of interaction, and may never be hunted.

Within these two categories distinct differentiation is made in permissible management and/or operational practices.

All these categories need to apply certain uniform standards that include identification, registration, certification, and licensing, as well as DNA profiling of all animals, and the relevant record-keeping.

The norms and standards set out below are aimed at addressing the above in such a way that the lion industry is brought in line with best practices recognised nationally and internationally.

SECTION A: RANCH LIONS

1 Ranch Lions

Ranch Lions are lions that are bred for consumptive sustainable utilisation purposes. Ranch lion operations include:

- Release facilities for captive bred lions that are for consumptive purposes.
- Captive breeding and or keeping operations that have no (or very limited) human interaction and where there is no public interaction and no display.
- Captive breeding and or keeping operations that have no (or very limited) human interaction and where there is no public interaction but there is limited display.

2 Legal Acquisition

Key to the credibility of the lion industry is to ensure that compliance to all legislation is adhered to.

- Only lions with valid permits shall be allowed in captive facilities.
- No wild lion may be brought into captivity, unless it has the necessary permits.
- All applicable legislation and norms and standards must be adhered to at all times.

3 Management Plan

All lion facilities must have a management plan in terms of the relevant legislation which specifies the operational procedures for the facility. This management plan should be recommended by the competent organisation.

SPECIES MANAGEMENT

4 Breeding

The average gestation period for lions is around 110 days, the female giving birth to a litter of one to four cubs in a secluded area.

SAPA recommends the following norms and standards for the breeding of lions in captivity:

- An average gestation period of 110 days (90-130 days)
- Cubs are weaned at 3 to 7 months (but not less than 3 months) from the mothers.
- Each lioness may have one litter per year but no more than three litters in two years.
- Lionesses may not be mated before 24 months of age.
- All animals in breeding programmes must be DNA profiled.
- Animals with visible heritable genetic defects may not be used for breeding.
- All available genetic information should be used to select least related breeding pairs or groups.
- A lioness that has failed to rear two consecutive litters must be removed from the breeding programme.

4.1 Techniques used to control breeding

Breeding should be done with good planning and with minimal human intervention.

- Early weaning of cubs to stimulate oestrus is prohibited.
- Each lioness may have one litter per year but no more than three litters in two years.
- This may be managed by the introduction and removal of males.

Various management options are available to mimic social and population dynamics for females (Ferreira & Hofmeyr 2014 - Lion BMP). These include:

- Increasing the age at first reproduction of sub-adult females;
- Establishing longer intervals between births from adult females (Munson 2006, Bertschinger *et al.* 2008);

- Mimicking female dispersal by removing as well as introducing females of variable ages;
- Mimicking higher death rates of old females by removing the oldest females in the pride.

The following management options are available for males (Lion BMP, 2015):

- Mimic male dispersal through removal and introductions of males;
- Mimic pride take-overs – tenure is on average three years (Funston *et al.* 2003);
- Mimic higher death rates of old males by removing the oldest males.

4.2 Timing of breeding

Lions do not mate at any specific time of year. Breeding may occur throughout the year.

4.3 Age at first breeding

In a managed environment no animal may be bred at less than twenty four months of age.

4.4 Age at Weaning

Cubs may not be weaned and or removed from their mothers at less than 3 months of age.

4.5 Age of Removal from Parents

- Cubs may not be removed from their mother before weaning at 3-7 months except for valid veterinary or survival reasons.
- Cubs may be removed at weaning if and when necessary. However, it is recommended that cubs stay with the female for as long as possible.

4.6 Growth and Development

Retaining and breeding with lions with heritable genetic defects is prohibited.

4.7 Hybridisation and In-breeding

To prevent inbreeding it is important that new genetics are introduced by bringing in good quality breeding stock from other recognised lion breeders. This process can be assisted through the use of breeding guidelines from the Lion Registry and DNA parentage analysis.

4.8 Handling of cubs

- Lions bred in accredited Ranch Lion facilities must have no (or very limited) human interaction.
- Lion cubs should not be handled unless this is necessary for veterinary treatment.
- In the case where a lioness is unable to rear her cubs and they have to be bottle fed, all human contact must terminate at three months of age.
- No cubs that are hand-reared beyond the age of three months may be hunted.

4.9 Artificial Breeding

Semen and embryo collection should not to be a standard procedure and should only be carried out with the approval of SAPA. All donor animals must be approved and registered in terms of the relevant legislation. Genetic material may only be collected from registered donor animals.

Semen collection, artificial insemination, embryo collection and embryo transfer may only be performed by persons registered to do so in terms of the relevant legislation.

4.10 DNA

- All ranch lions need to be DNA sampled and marked with a unique identification.

- DNA collection procedure should be according to the relevant Biodiversity Management Authority's and or the DNA analysis laboratory specifications.

5 Feeding Requirements

5.1 Diet

- Food of the appropriate nutritional value, quantity, quality and variety, appropriate to the animal's condition, age and size, and physiological, reproductive and health status must be provided.
- Food provided must be adjusted according to energy use and seasonal requirements.
- Social, family and group hierarchical structures must be taken into consideration.
- Food should be presented in such a way that complete food requirements are met: i.e., carcasses, feathers, furs, skins, bones and sinews should be included in the diet.
- Accurate feeding records must be kept for all animals.
- Supplements must be provided if needed.
- No carcasses from an animal that has died while under treatment with a harmful drug may be feed to any predator.

5.2 Water

- Sufficient fresh clean drinking water in suitable receptacles must be available at all times.
- Watering facilities must be cleaned on a weekly basis.
- Automated water systems must be inspected daily to ensure that they are working effectively.
- Water supply and equipment must be regularly checked for contamination.

5.3 Food Hygiene

- Food supplies should be stored and prepared as hygienically and similar to natural food supply as possible. This would include suitable facilities (refrigeration/freezing) to protect against decomposition and contamination.
- Staff should observe strict standards of personal hygiene and conform to animal food preparation standards.
- It is recommended that staff working with food should be tested annually for tuberculosis. No staff member who has tested positive for tuberculosis should work with the food or feed the animals.
- Feeding methods should be safe for both animals and staff.
- Old or uneaten food, bones and skins should be removed.

6 Animal Health

Well fed, comfortable and stress free animals are less prone to diseases and conditions that could be life threatening. A ~~detailed~~ health record of every individual animal, linked to its unique identification number, must be kept on the facility database as well as on the lion registry.

6.1 Health Checks

It is recommended that a ~~detailed~~ health record of every individual animal or group of animals must be kept on the facility database.

Observations would include:

- The physical condition of animals / condition scoring;
- Stereotypical behaviour, aggression, signs of discomfort, pain and stress
- Growth development and reproduction
- Regular health monitoring should include, if and when possible:
 - a) physical condition of an animal;

- b) incidence of disease, trauma, pain and psychological responses (stress);
- c) levels of development, growth, reproduction and life expectancy;
- d) an animal's active interaction with the environment;
- e) an animal's expression of appropriate and expected behavioural repertoires, including relaxation and play behaviour; and
- f) an animal's reaction to unexpected stimuli.

Curative and preventive veterinary medicine should be provided if and when necessary.

Animals should be handled and cared for by personnel who have adequate training and experience in the handling of the individual species of animal. Personnel should be competent in recognizing and assessing common indicators of good welfare.

A veterinarian may, on a regular basis, be responsible for, or be actively involved in the tasks listed below:

- a) routine inspections of all the animals in the facility;
- b) required treatment and preventive medication protocols of the facility;
- c) health monitoring of animals, including submission of blood and other samples for laboratory examination as required;
- d) safe and proper collection, preparation and dispatch of diagnostic samples;
- e) education of facility personnel in health and hygiene;
- f) ensuring that post-mortem examinations of dead animals are carried out if and whenever possible;
- g) supervision of quarantine premises and other such tasks required by law or as part of good facility veterinary practice;
- h) nutrition and the compilation of diets; and
- i) the establishment of written procedures to be followed in the event of the accidental use of dangerous drugs.

Where some of these tasks can and are to be carried out by someone other than a veterinarian, a suitably qualified or appropriately trained member of staff should be nominated.

Comprehensive veterinary records should be kept covering the following:

- a) preventive medicine;
- b) clinical medicine and surgery;
- c) pathological results from diagnostic testing; and
- d) results of post-mortem examinations.

If and when required, appropriate nursery facilities should be available for hand-rearing and nursing of animals.

Lion facilities should confirm that the facility, and a local hospital or their veterinarian, have readily available antidotes to potentially toxic drugs and veterinary products used at the facility. A competent member of personnel should be readily available at all times to take decisions regarding the emergency euthanasia of sick animals. There should be provision for an effective humane method of euthanasia and standard written protocols should be established.

Dedicated quarantine accommodation should be available for the isolation and examination of unduly distressed, sick or injured animals. Particular attention should be paid to hygiene in the quarters where isolated or quarantined animals are kept. Animals imported from outside the borders of the country should be kept isolated or in quarantine for as long as is necessary or in accordance with the veterinary and other import permits issued by the relevant authority, to ensure proper examination, acclimatization and quarantine of new arrivals before being introduced to other animals in the facility.

Clinical waste and refuse should be regularly removed and disposed of in a manner approved by the municipal authority. For animals that are in quarantine, this is usually supervised and controlled by the State Veterinarian of the area or district.

6.2 Disease and Treatments

Lions in confined areas are especially susceptible to diseases that can cause mortality or at least cause serious loss of life quality if affected. Preventative vaccinations must be provided where possible.

Various species of ticks commonly infest the ears, neck and groin regions of most lions. Several species of the tapeworm genus *Taenia* have been identified in captive lions. Preventative and curative treatment must be provided as required.

7 Euthanasia

Every facility must have a policy and standard operating procedure for the euthanasia of animals. Such policies and procedures should demonstrate the following:

- a) information and guidelines relating to euthanasia, including emergency methods received from a veterinarian;
- b) facilities and equipment to perform euthanasia upon animals, including casualties under emergency conditions; and
- c) competent personnel with access to the necessary facilities and equipment are available and contactable at all times.

The owner of a lion facility should ensure that all personnel are fully aware of acceptable euthanasia methods and are trained and experienced in those methods. Persons performing euthanasia should only do so in accordance with legislation and acceptable practices. Euthanasia of animals should be recognized as an acceptable procedure and management tool, and may be justifiable under certain conditions, including the following:

- a) when recommended by a veterinarian;
- b) when irresolvable stress or conflict prevails and where changes in social structure result in distress, and where there is no option of release;
- c) when a facility operator is unable to ensure acceptable facilities and conditions for animals and where there is no option of release;
- d) when an animal poses a danger and unavoidable threat to human safety;
- e) where no other suitable accommodation can be found for the animal;
- f) in cases of old age, non-breeding or severe injury; and
- g) where no other suitable option exists.

The euthanasia of animals destined to be fed to other animals should be carried out ethically and in accordance with recognized welfare standards.

8 Ethology

This is the combination of animal behaviour represented in natural conditions and mirrored under managed conditions.

8.1 Activity

Lions sleep and rest up to 20 hours a day. The times of most activity are late afternoon, early to late at night and early hours of daylight.

8.2 Social Behaviour

Lions are pride animals, meaning they live in social family groups. They are gregarious, territorial, and communal. In mimicking the social behaviour of lions, pride situations should be created, if

possible, with a minimum of a male and at least two females for breeding animals or male / female coalitions in keeping facilities.

As lionesses typically breed synchronously, a crèche of cubs is formed that is looked after and nursed by the lionesses. On weaning, this crèche of cubs may be managed and raised in a closed group. Before reaching sexual maturity, which can be up to 24 months, female and male cubs / sub-adult animals may be separated and managed in their familiar closed groups.

The tolerance of male lions towards cubs varies. As part of their natural social behaviour, infanticide by both males and female animals does occur as a population control mechanism. Growing cubs should be removed from the breeding facilities not later than the age of seven months.

8.3 Reproduction

Lions do not mate or breed at any specific time of year, resulting in breeding occur throughout the year.

Weaning occurs after three to seven months. Male lions reach maturity at about 3 years of age, and at 4 to 5 years of age are capable of challenging and displacing dominant males. The prime years of male lions for breeding purposes are between 5 and 9 years of age. They begin to age and weaken between 10 and 15 years of age.

One of the first acts of a male, after taking over a territory, is to kill the existing cubs under the age of one year or those that are born in the months after the takeover. Lions are social animals. However infanticide is a vital part of the male reproductive strategy. When a lioness loses her litter it causes her to re-enter oestrus and mate within a few days or weeks.

Females in captive situations will not form part of any breeding programme before the age of 24 months. Preferably they should be 30 months at age of first mating.

Similar to nature, females hide their cubs when they are born and only introduce them to the pride when they are 6 weeks old. Cubs have the best chance of survival when females give birth at the same time and are able to suckle on any lactating female in a communal setting. In addition to greater protection, the synchronization of births has an advantage in that the cubs end up being roughly the same size, and thus have an equal chance of survival.

Females that are pregnant may be moved to an adjacent maternity / natal area for littering and cub nurturing.

8.4 Grooming

Lions bath by grooming. Grooming is mainly between females of the pride and mothers and cubs. The rough texture of the tongue works as a comb to clean fur, wipe off blood after eating, and remove ticks, fleas and parasites. This also assists in the social bond of the pride.

8.5 Signs of Stress/ Behavioural Problems

Behavioural patterns should be monitored and focus should be on:

- Uncharacteristic appetite - refusal of food or overeating
- Pacing
- Abnormal aggressiveness
- Displaying abnormal behaviour such as becoming destructive.

8.6 Behaviour Enrichment

To prevent stress and stimulate natural activity and behaviours it is important to expose lions to behavioural and environmental enrichment strategies and to become unpredictable in activities, such as feeding at different times and in different ways.

8.7 Introductions and Removals

Any introductions are purely dependant on the individual animal. Managers need to bear in mind the oestrus cycle of females, temperament of the individual, and the sex of the individual in accordance to the number of animals already in the enclosure. Gradual introduction into the group needs to be done. Animals will be more easily accepted if exposed to the group in stages. If placed directly into the enclosure with the current pride, it could potentially be fatal.

As lions are pride animals it is recommended that when removing an individual from a group to simply remove it. Gradual disposition could cause stress to the animal not being able to have contact with the pride.

If an animal is being unduly stressed by the aggression or presence of another animal in the enclosure, then it, or the other animal, must be removed from the enclosure.

8.8 Suitability to Captivity

Lions generally do very well in captivity. This is especially important as they are listed as Vulnerable on the IUCN Red List. Being housed in captivity could assist in behavioural research, breeding programmes and education in order to maintain and prevent the species from becoming endangered (Hillermann, 2009).

8.9 Suitability for Release

- Only lions that have had minimal human contact may be used for release, reintroduction or relocation in larger areas.
- Only genetically suitable animals should be released, relocated or reintroduced.
- Only ranch lions may be released for hunting purposes.

9 Identification of Animals

9.1 Methods of Identification

Effective monitoring requires effective and positive identification.

- It is recommended that all lions may be tattooed with an owner identification / breeder designation mark.
- This tattoo shall include a specific character to denote that it is a ranch lion.
- All lions must be fitted with an OIE/ICAR accredited microchip.
- Implant of the microchip should be in the root of the tail or in the nuchal ligament on the neck.
- If not already micro chipped, this should be done during the capture operation before the introduction of the animal to a managed facility.
- All lions must be DNA profiled.
- It is recommended that cubs born in a facility may be, micro chipped and registered as soon as possible after birth or before they are seven months of age.
- Recorded on the competent organisation Lion Registry.

10 Handling and Transport

Transporting animals can be extremely stressful if not managed correctly and if the cages and vehicles are not up to standard.

- All relevant legislation, norms, standards and guidelines should be adhered to during transportation – including the relevant SABS standards.
- Capture and loading facilities must be designed to avoid excessive chemical immobilization.
- Alternate, recognised capture techniques may only be used if not harmful to the animal.
- Chemical immobilization may only be carried out by a person with the necessary qualification and permissions.

FACILITIES MANAGEMENT

All facilities where ranch lions are kept or bred, should take such measures to ensure that human involvement are kept to the utmost minimum.

11 Hygiene

11.1 Hygiene and Cleaning

- All drinking water facilities must be cleaned weekly, but more regularly if water becomes contaminated.
- Enclosures must be cleaned at least once a week.
- All faeces and old or uneaten food, bones and skins must be removed when cleaning the enclosures.

11.2 Waste Management

An effective waste management protocol/system is essential. This should include regular cleaning of enclosures and the management of waste such as urine and faeces. Probiotic treatment of waste and the use of a bio digester could also be considered for larger facilities.

12 Safety and Security

12.1 Safety

- Construction of facilities and management systems are to comply with all relevant provincial and national legislation and standards.
- All maintenance, cleaning, disease prevention, internal and external parasite prevention must be conducted in such manner as to ensure the safety of the animals and the person/s doing the relevant work.
- A detailed safety plan must be in place to address the following eventualities:
 - Attacks on humans
 - Fights between animals in an enclosure
 - Fire
 - Noise
 - Intruders
 - Escapes from the facilities
 - Disease outbreaks
 - Power failures - backup
 - Floods (if applicable)
 - Dangerous misconduct of staff
 - Keys and security
 - Alarm / warning system management
- Trees and climbing structures within animal enclosures should be regularly inspected and pruned as necessary to prevent the animals escaping.
- No unauthorised person is allowed to enter the facility.
- No unauthorised person is allowed to come into contact with the animals.

12.2 Insurance

Lion facilities may, have such insurance, including public liability, that covers the facility, every person under contract of service or acting on its behalf, and visitors, against liability for any damage or injury which might be caused by any of the animals, whether inside or outside the facility, including during transportation to other premises.

12.3 Signage

12.3.1 Keeping and Breeding facilities

All signage must comply with the relevant provincial legislation. SAPA recommends the following minimum standards:

Clearly recognisable warning signs should be erected on all sides of the enclosures. These warning signs should:

- Be a minimum size of 1 000mm x 1 000mm.
- Be in at least three local languages.
- May include a picture or design indicating the species involved.
- Be in red writing on a white background.
- Be clearly visible, identifiable and readable.

There should be a separate warning sign at the entrance to the facility indicating:

- Right of admission reserved.
- You are entering the predator facility at your own risk.
- You may not feed, tease or provoke the lions.
- You may not put any body part or object through the fences of the lion enclosures.
- You must keep a minimum distance of 1m from the fence.

12.3.2 Hunting facilities

There should be a clearly recognisable sign at the entrance to each hunting area stating:

- Right of admission reserved.
- You are entering an area where free-roaming predators occur.
- Do not exit from your vehicle unless specifically authorised to do so.
- You are entering the facility at your own risk.
- You may not feed, tease or provoke the lions.

12.4 Fence Maintenance

- Enclosures should be checked on a daily basis to find and fix any damage to fences and any problems with electrification.
- Enclosures should be maintained ensuring compliance with the required standards.

13 Enclosure Requirements

All requirements prescribed by the relevant provincial legislation must be adhered to. However, SAPA recommends the following:

13.1 Position and Design of Enclosures

All facilities should ensure the welfare of the lions under their care and afford protection to them in compliance with the relevant Acts and Regulations. Suitable environments must be provided to the animals, taking into consideration the lion's ability to perform functions and behaviours important to itself and the nature and complexity of the environment they require. A balance must be achieved in the provision of enclosures that fulfil the needs of the lions and:

- Allow the lions to express normal behaviour;
- Provide environmental protection and comfort;

- Provide appropriate stimulation;
- Provide protection from distress, injury and fear;
- Accommodate management of hygiene, veterinary and health care;
- Each enclosure must be supplied with an efficient water system;
- A backup electricity supply must be provided;
- Positioning and design of enclosures for ranch/release lions must ensure minimum human imprinting;
- Newly established lion breeding and keeping facilities should not be located within one kilometre of any rural settlement or urban area;
- To limit human habituation, facilities should not be located near to housing for personnel on the property or adjoining properties;
- Local conditions including prevailing winds should be taken into consideration in the positioning of the enclosures;
- All enclosures and holding areas must include elevated positions, scratching posts, climbing structures and logs to serve as places for lions to hide, climb, and escape aggressive behaviour;
- Enclosures should be designed to allow for the lion's normal defence reactions and appropriate flight or escape distances.

13.2 Fencing

Minimum fencing requirements as prescribed by the relevant provincial legislation.

SAPA recommends the following minimum requirements:

- Minimum height of the fence must be 2,4m.
- Minimum 15 strands of steel wire with 1200mm high netting wire or mesh or jackal proof fencing on the bottom portion of the fence **OR**
- Square Mesh with a 100mm X 100mm spacing of 2.4m in height.
- Electricity specification on fencing according to SANS standards.
- Minimum of 5 additional electrified strands of wire with the bottom strand being no higher than 300mm off the ground.
- The foot of the fence must be attached at ground level to a concrete foundation at least 300mm deep and 150mm wide, a gabion backfill with the same specifications or conveyor belting of 750mm buried vertically. Alternatively a tripwire placed a minimum of 50-100mm from the ground and 500mm from the fence.
- Gates are seen as part of the fence and thus should comply with the same standards.
- There must be a secure locking system with proper safety mechanisms.
- A 500mm overhang of between 45° and 90°, angled into the enclosure, must be on the boundary fence of the enclosures.
- A second 2,4m game fence may surround the complex, at a distance that is no further than 10m from the boundary of the enclosures.

13.3 Construction Material

Construction material for all enclosures must comply with the minimum standards as prescribed by the relevant provincial legislation or as set out in Appendix 1a.

13.4 Facilities for Ranch Lion - Breeding Animals:

The following standards with regard to breeding facilities of ranch lions must be adhered to.

Size

Minimum size per enclosure is as prescribed by the relevant provincial legislation. SAPA recommends the following:

- Minimum size of 400m² per animal should be available.

13.4.1 Maternity Enclosures

Size

- Minimum size per enclosure as prescribed by the relevant provincial legislation.
- For management purposes minimum size – 400m²
- Maximum of 1 adult animal per unit and suckling cubs.

Fencing and Construction Material

As described under Fencing and Construction Material above. However, the following **exceptions** apply:

- To protect the cubs, there may not be a trip wire in the maternity enclosure.
- The maternity facility must have a low impenetrable barrier (at least 300mm high) to prevent the cubs from putting their paws through the fence.
- Designated whelping quarters must be provided.

13.5 Facilities for Ranch Lions- Sub adult: 3 to 12 Months

The following standards with regard to keeping facilities for cubs from weaning to 12 months of age must be adhered to:

Size

Minimum size per enclosure is as prescribed by the relevant provincial legislation. SAPA recommends the following:

- Minimum size per enclosure: 1 600 m².
- Maximum of 10 animals per unit.
- Minimum size of 150m² per additional animal.

Fencing and Construction Material

As described under Fencing and Construction Material above. However, the following **exceptions** apply:

- Electricity – reduce to a minimum of 3 additional electrified strands of wire on 225mm single offsets with the bottom strand being not lower than 1000mm off the ground.
- Maximum current strength of **3000** Volts.
- The foot of the fence must be secured at ground level.

13.6 Facilities for Ranch Lions - Sub adult or Adult - 12 Months and Older

The following standards with regard to keeping facilities for ranch lions 12 months and older must be adhered to:

Size

Minimum size per enclosure is as prescribed by the relevant provincial legislation. SAPA recommends the following:

- Minimum size of 400m² per animal.

Fencing and Construction Material

As described under Fencing and Construction Material above. However, the following **exceptions** apply:

- For enclosures larger than 20 000m²:
 - The foot of the fence must be secured at ground level – no foundation is required.
 - No overhang is required.

13.7 Treatment and Handling Facilities (Rehabilitation Facilities)

Treatment is an important aspect of lion keeping and breeding. Any lion that requires treatment / medical attention should be kept in a separate enclosure until such time as it can be returned to its enclosure.

Size

Minimum size per enclosure is as prescribed by the relevant provincial legislation. SAPA recommends the following:

- Minimum size of enclosures 400m².
- Treatment area of 12m².

Fencing and Construction Material

As described under Fencing and Construction Material above. However, the following **exceptions** apply:

- The foot of the fence must be secured at ground level.
- No overhang is required.

SUSTAINABILITY MANAGEMENT

14 Hunting of Lions

- Only ranch lions from registered and/or accredited ranch lion facilities may be hunted.
- The release of such lions must be strictly managed.
- The release of lions prior to hunting must comply with all relevant provincial legislation and SAPA requirements.
- SAPA requires a minimum release period of 7 days prior to hunting.
- Hunting may only take place at an officially registered hunting destination.
- Official identification of the specific animal and proof of ownership must be provided by the seller.
- Notification of the death of the relevant animal by hunting must be done within 30 days of the hunt.
- Accurate records must be kept of all hunts with the relevant documentation.
- The SAPA norms and standards for hunting captive bred lions must be used as a guideline document.
- Only accredited and registered hunting outfitters and professional hunters may hunt ranch lions.

15 Trade in Live Lions

- Registered owners, breeders, outfitters and traders may legally trade in live lions.
- Official identification of the specific animal and proof of ownership must be provided by the seller.
- Transfer of ownership of the relevant animal should be indicated in the competent organisation Lion Registry within 60 days of the transaction.
- Accurate records must be kept of all transactions.
- Trade between accredited and registered owners, breeders, outfitters and traders is preferred.

16 Trade in Lion Products

- Registered keepers/breeders/outfitters may legally trade in lion products and derivatives.
- All statutory requirements must be strictly adhered to.
- Transparency and high ethical standards must be employed in the harvesting of material.
- Accurate records must be kept of all transactions.

- Products from hunts and from animals euthanized for valid reasons may be processed, sold locally or exported – provided this is done under strict supervision and with the necessary permits, health certification and documentation.
- Official identification and proof of ownership of the specific animal from which the relevant products and/or derivatives have come must be provided by the seller.

17 Animal Traders

Traders - those that buy and sell lions - including importers and exporters, auction / sale agents:

- Must be registered with SAPA / SAPRED;
- Must belong to an organisation where activities are monitored;
- Must operate under a strict code of conduct and comply with all legislation, norms and standards;
- Must be educated in all relevant legislation, norms and standards;
- Must have all relevant permits.

18 Release / Reintroduction

- The release / reintroduction of lions into the wild shall be based on scientifically sound principles.
- Suitable captive lions may be used to re-establish prides in locations anywhere in Africa where lions have become extinct or in-bred.
- Suitable captive lions may be used to address in-breeding in wild or managed-wild lion populations
- Captive bred lions may be released into suitable release areas after submission of the management plan to the relevant conservation authorities in order to establish free-roaming lion populations.

ADMINISTRATIVE MANAGEMENT

19 Permits

All activities related to lions are permitted activities. These should be issued by the relevant competent Authority.

20 Animal Identification

Effective monitoring requires effective and positive identification.

- All lions must be fitted with an OIE/ICAR accredited microchip.
- Implant of the microchip should be in the root of the tail or in the nuchal ligament on the neck.
- If not already micro chipped, this should be done during the capture operation before the introduction of the animal to a managed facility.
- All lions must be DNA profiled.
- Cubs born in a lion facility must be, micro chipped and registered as soon as possible after birth or before they are four months of age.
- Recorded on the competent organisation Lion Registry.

21 Lion Registry

All lions must be fitted with an OIE/ICAR accredited microchip (refer Appendix 3), which is registered on the Lion Registry. This system provides an integrated animal identification and management system and has the capacity to provide integrated recording and evaluation services to the captive lion industry.

Information can be used to:

- Implement a genetic information system to minimise the impact of inbreeding as well as undesirable heritable traits in captive bred lions.
- Enable the relevant authorities to monitor the ownership of captive lion as prescribed and shall also assist during any dispute that may arise concerning the ownership of the lions or in identifying lions which escape from a facility.

21.1 Owners records

Owners of captive lions must establish and maintain a database with information about each individual lion.

The following information must be recorded for each animal:

- Owner/breeder identification mark with an additional character to denote ranch lion.
- Individual identification number – microchip recorded by a competent organisation registry that is linked to an integrated registration and genetic information system
- DNA profile and parentage verification (where possibly)
- Physical markings that vary from one animal to the next
- Breeding information
- Regular health records - regular visual assessments
- Veterinary treatments
- Disease or injury
- Behavioural problems
- Reproductive stage, condition and behaviour
- Changes in diet

21.2 Registry Records

The Lion Registry is a database for captive bred lions.

The following information must be recorded on the Lion Registry for each animal:

- Owner identification / breeder designation number
- Category of lion - ranch lion
- Microchip number
- DNA profile and parentage verification (where possible)
- Breeding information

21.3 Recording and Registration

- All adult lions must be **recorded** on the Lion Registry within 3 months of the owner/breeder/keeper becoming a member of a recognised predator organisation.
- The birth of all cubs (whether born alive or dead) must be recorded within 60 days.
- DNA profiling is a requirement for the registration of all lions.
- Micro-chipping is a requirement for registration of all lions.
- DNA parentage verification is a requirement for recording and subsequent registration of all cubs.
- Each cub must be micro-chipped, DNA profiled and, where possible, parentage verified by seven months of age.

Registration of all lions shall be subject to the provisions of the constitution of the recognised organisation and or the competent organisation.

21.4 Transfer

Any transfer of ownership of a lion must be submitted to the registry administrator within 30 days after the transfer is completed.

21.5 Cancellation

The cancellation of the recording/registration of an animal must be effected within 60 days after its death, culling or other circumstances requiring cancellation.

22 Staff

Consideration must be given by individual facilities to the possible keeping of a labour register where all employees involved with the specific captive lion facility are recorded as employees, with a suitable description of their particular duties and a copy of their identity document, and where possible, health status.

All breeders and keepers of lions must ensure adequate training of all levels of staff involved with the management of the facilities and related procedures.

22.1 Training of Staff and Managers

It is recommended that all staff and managers directly involved with captive lions should be suitably educated or qualified for the position they are employed in.

The education of and/or training of staff may include the following:

- a) Basic lion anatomy and physiology;
- b) Basic lion nutrition;
- c) Basic lion behaviour;
- d) Basic legislation relevant to ranch lions;
- e) Basic veterinary care of lions; and
- f) Basic theory and practice of handling lions when necessary.

SECTION B: WORKING LIONS

23 Working Lions

Working Lion operations include:

1. Captive breeding operations where there is human interaction, whether for display, contact or other types of interaction (walking with lions; lion cubs, etc.) and for whatever purpose - tourism, education or research.
2. Captive lion operations where there is long-term human imprinting. This may include:
 - a. Zoos, lion parks and sanctuaries.
 - b. Performing lions such as those used in circuses, exhibitions and lions trained for the film industry.
 - c. Private pets.

24 Working Lions in Conservation, Rehabilitation, Education and Research

The captive lion industry is a diverse and complex industry. As with all industries it needs to be financially viable. The main objectives for lion facilities should include demonstrable conservation, rehabilitation, and education or research pursuits.

24.1 Conservation

- Lion facilities have an important and influential conservation capacity.
- All lion facilities should participate in a demonstrable manner in at least one of the following conservation-related practices:
 - *ex-situ* or *in-situ* research from which conservation benefits accrue to species;
 - staff education and/or training in relevant conservation and husbandry skills; and

- exchange of information relating to species conservation.
- Involvement in such activities should be measurable, recognized and endorsed by relevant organisations.
- All lion facilities should promote public education and awareness in relation to the conservation of biodiversity, by at least providing information about the species exhibited and their natural habitats.
- All working lion facilities should be active and contributing participants in captive species management programmes recognized and endorsed by relevant organisations.
- All working lion facilities should strive to develop an integrated approach to conservation that encompasses all elements of the facility's operation including collection planning, exhibit theming, sustainable operation, *in-situ* support, research, education and marketing.

24.2 Rehabilitation

All rehabilitation facilities must be registered in terms of the relevant legislation and all requirements of this legislation must be adhered to. Rehabilitation is an important aspect of lion keeping and breeding especially for educational purposes.

Any lion that is unable to sustain itself if released shall be permanently kept in a registered facility. Measures must be taken to prevent breeding where such animals are kept in registered sanctuaries but animals with breeding potential can be used for this purpose provided all the necessary genetic information is available and provided such animals are never hunted.

24.3 Education and Interaction

All human-animal interaction activities may only be undertaken with working lions. Well devised conservation education programmes that involve human-animal contact are widely recognised to be beneficial and have a significant conservation education value. However, facilities must remain mindful of the fact that working lions are innately wild animals and predators that are unpredictable in their behaviour towards humans and each other at any given time.

Public education and interaction include the following responsibilities:

- a. Public exposure to lions should ensure a greater awareness of lion conservation in Africa.
- b. The educational message must have a strong conservation foundation.
- c. Each working lion facility has a responsibility to contribute to the education of the local youth through interactions and/or education programs (where public interaction occurs).
- d. Education programmes should be carried out with respect to the well-being of the animals involved.
- e. Each operation must clearly define their code of good practice and their responsibilities to both the operation and audience in these circumstances.
- f. Each operation must acknowledge the legal ramifications and responsibilities associated with the use of contact lions.
- g. Each operation must ensure that the participating public is appropriately advised of the relevant indemnities associated with contact lions.

24.3.1 Contact and Working animals

Contact animals or working animals, refers to instances where human continuous interaction and contact is made with an animal and includes the following responsibilities:

- a. The welfare of the animals.
- b. The safety of the animals.
- c. The safety of the handlers and public.

24.4 Research

- Lion facilities should be able to demonstrate that research in its broadest definition is encouraged.

- Lion facilities should ensure that relevant data of the animals is kept on their database. This information must be used in a scientific manner so as to benefit the animals concerned.
- In any research, care shall be taken to comply with all relevant legislation and the research shall be subject to ethical review.
- Lion facilities not involved in their own research projects are encouraged to collaborate with scientists involved in other research projects within the industry. This may be achieved by assisting with manpower, funding or access to facility resources.

25 Conservation Fund

A certain percentage of the income generated from lions that are bred, kept, traded, transferred, donated, exported or imported, and their derivatives, must be contributed to a registered and acknowledged Conservation Fund.

26 Legal Acquisition

Key to the credibility of the lion industry is to ensure that compliance to all legislation is adhered to.

- Only lions with valid permits shall be allowed in captive facilities.
- No wild lions, without the necessary permits, may be brought into captivity.
- All applicable legislation, norms and standards must be adhered to at all times.

27 Enclosure Requirements

All requirements prescribed by the relevant provincial legislation must be adhered to. However, SAPA recommends the following:

27.1 Position and Specifications of Enclosures

All facilities should ensure the welfare of the lions under their care and afford protection to them in compliance with the relevant Acts and Regulations. Suitable environments must be provided to the animals, taking into consideration the lion's ability to perform functions and behaviours important to itself and the nature and complexity of the environment they require. A balance must be achieved in the provision of enclosures that fulfil the needs of the lions.

- Working lion facilities should preferably not be located within one kilometre of concentrated human habitation, excluding the housing for personnel on the property.
- Protection against climatic extremes - local conditions including prevailing winds should be taken into consideration and provision should be made for protection against rain, extreme heat and cold.
- Positioning, design and specifications of enclosures for working lions differ according to the function of the particular facility.
- For all Working lion facilities a buffer fence or barrier of a minimum 1m high must be constructed no less than 1m from the outside of the main enclosure fence.

27.2 Fencing

Minimum fencing requirements as prescribed by the relevant provincial or other relevant legislation, taking into consideration the type of facility.

27.3 Construction Material

Construction material for all enclosures must comply with the minimum standards as prescribed by the relevant provincial legislation for the specific facility or, if relevant, as set out in Appendix 1a.

27.4 Breeding Facilities

The following standards with regard to breeding facilities of working lions must be adhered to:

- Minimum size per enclosure is as prescribed by the relevant provincial legislation. SAPA recommends the following:
 - Maximum of 4 animals per unit, excluding suckling cubs.
 - Minimum size of 400m² per additional animal.

27.4.1 Maternity Enclosures

- Minimum size as prescribed by the relevant legislation.
- For management purposes maximum size – 300m²
- Fences must comply with the prescribed specifications of the relevant legislation.
- To protect the cubs, there may not be a trip wire in the maternity enclosure.
- The maternity facility must have a low impenetrable barrier (at least 300mm high) to prevent the cubs from putting their paws through the fence.
- Designated whelping quarters must be provided.
- Maximum of 1 adult animal per unit and suckling cubs.

27.4.2 Veterinary Treatment and Handling Facilities

Treatment is an important aspect of lion keeping and breeding. Any lion that requires treatment / medical attention should be kept in a separate enclosure until such time as it can be returned to its enclosure.

- Minimum size per enclosure is as prescribed by the relevant legislation. SAPA recommends the following:
 - Minimum size of enclosures 300m².
 - Treatment area of 12m².
- Fences must comply with the prescribed specifications of the relevant legislation.
- Provision must be made for a management/handling facility.

27.5 Environment Enrichment

Depending on the nature of the facility:

- All enclosures and holding areas must include elevated positions, scratching posts, climbing structures and logs to serve as places for animals to hide, climb, and escape aggressive behaviour.
- Enclosures should be designed to allow for animals' normal defence reactions and appropriate flight or escape distances.

28 Safety and Security

28.1 Safety

- Construction of facilities and management systems are to comply with all relevant legislation and national standards.
- All maintenance, cleaning, disease prevention, internal and external parasite prevention must be conducted in such manner as to ensure the safety of the animals and the person/s doing the relevant work.
- A detailed safety plan must be in place to address the following eventualities:
 - Attacks on humans
 - Fights between animals in an enclosure
 - Fire
 - Noise
 - Intruders
 - Escapes from the facilities
 - Disease outbreaks
 - Power failures - Backup
 - Floods (If applicable)
 - Dangerous misconduct of staff

- Keys and Security
- Alarm / Warning system management
- ☐ Trees and climbing structures within animal enclosures should be regularly inspected and pruned as necessary to prevent the escape of any animals.
- ☐ No unauthorised person is allowed to enter the facility.
- ☐ No unauthorised person is allowed to touch the animals.

28.2 Insurance

Lion facilities should have such insurance, including public liability, that covers the facility, every person under contract of service or acting on its behalf, and visitors, against liability for any damage or injury which might be caused by any of the animals, whether inside or outside the facility, including during transportation to other premises. Any upper limit on the sum insured should be set at an adequate but realistic level.

28.3 Signage

28.3.1 Working lion facilities

All signage must comply with the relevant legislation. SAPA recommends the following minimum standards:

Warning signs should be erected on all sides of the enclosures. These warning signs should:

- Be a minimum size of 1 000mm x 1 000mm.
- Be in at least three local languages.
- Include a picture or design indicating the species involved.
- Be in red writing on a white background.
- Be clearly visible, identifiable and readable.

There should be a separate warning sign at the entrance to the facility indicating:

- Right of admission reserved.
- You are entering the predator facility at your own risk.
- You may not feed, tease or provoke the predators.
- You may not put any body part or object through the fences of the predator enclosure.
- You must keep a minimum distance of 1m from the fence line.
- All contact with animals must be under strict supervision of trained facility staff.

29 Identification

29.1 Methods of Identification

Effective monitoring requires effective and positive identification.

- ☐ All lions must be tattooed, in one ear, with an owner identification / breeder designation mark.
- ☐ This tattoo shall include a specific character to denote it is a **working lion**.
- ☐ All lions must be fitted with an OIE/ICAR accredited microchip.
- ☐ All working lions must be fitted with a 2D bar code tag.
- ☐ Implant of the microchip should be in the root of the tail or in the nuchal ligament on the neck.
- ☐ If not already micro chipped, this should be done during the capture operation before the introduction of the animal to a managed facility.
- ☐ All lion must be DNA profiled.
- ☐ Cubs born in a working lion facility must be tattooed, tagged, micro chipped and registered as soon as possible after birth or before they are four months of age.
- ☐ Recorded on the SAPA Lion Registry.

30 Feeding Requirements

30.1 Diet

- Food of the appropriate nutritional value, quantity, quality and variety, appropriate to the animal's condition, age and size, and physiological, reproductive and health status must be provided.
- Food provided must be adjusted according to energy use and seasonal requirements.
- Social, family and group hierarchical structures must be taken into consideration.
- No live prey may be fed to animals in captivity.
- Food should be presented in such a way that complete food requirements are met: i.e., carcasses, feathers, furs, skins, bones and sinews should be included in the diet.
- Accurate feeding records must be kept for all animals.
- Supplements must be provided if needed.
- No carcasses from an animal that has died while under treatment with a harmful drug may be fed to any predator.

30.2 Water

- Sufficient fresh clean drinking water in suitable receptacles must be available at all times.
- Watering facilities must be cleaned on a daily basis.
- Automated water systems must be inspected daily to ensure that they are working effectively.
- Water supply and equipment must be regularly checked for contamination.

30.3 Food Hygiene

- Food supplies should be stored and prepared as hygienically as possible. This would include suitable facilities (refrigeration/freezing) to protect against decomposition and contamination.
- Staff should observe strict standards of personal hygiene and conform to food preparation standards.
- All staff working with food should be tested annually for tuberculosis. No staff member who has tested positive for tuberculosis should work with the food or feed the animals.
- Feeding methods should be safe for both animals and staff.
- Old or uneaten food, bones and skins should be removed.

31 Handling and Transport

Transporting animals can be extremely stressful if not managed correctly and if the cages and vehicles are not up to standard.

- All relevant legislation, norms, standards and guidelines should be adhered to during transportation – including the relevant SABS standards.
- Capture and loading facilities must be designed to avoid excessive chemical immobilization.
- Alternate, recognised capture techniques may only be used if not harmful to the animal.
- Chemical immobilization may only be carried out by a person with the necessary qualification and licence.

32 Animal Health and Hygiene

Well fed, comfortable and stress free animals are less prone to diseases and conditions that could be life threatening. A detailed health record of every individual animal, linked to its unique identification number, must be kept on the facility database as well as on the lion registry.

32.1 Health Checks

A detailed health record of every individual animal, linked to its unique identification number, must be kept on the facility database.

Observations would include:

- The physical condition of animals / condition scoring;
- Stereotypical behaviour, aggression, signs of discomfort, pain and stress
- Growth development and reproduction
- Regular health monitoring should include:
 - g) physical condition of an animal;
 - h) incidence of disease, trauma, pain and psychological responses (stress);
 - i) the performance and development of normal and expected behaviours;
 - j) levels of development, growth, reproduction and life expectancy;
 - k) an animal's active interaction with the environment;
 - l) an animal's expression of appropriate and expected behavioural repertoires, including relaxation and play behaviour; and
 - m) an animal's reaction to unexpected stimuli.

If any problems are observed veterinary treatment must be arranged.

Curative and preventive veterinary medicine should be provided if and when necessary.

Animals should be handled and cared for by personnel who have adequate training and experience in the handling of the individual species of animal. Personnel should be competent in recognizing and assessing common indicators of good welfare. All personnel that work with animals should be tested annually for tuberculosis.

A veterinarian should, on a regular basis, be responsible for, or be actively involved in the tasks listed below:

- j) routine inspections of all the animals in the facility;
- k) required treatment and preventive medication protocols of the facility;
- l) health monitoring of animals, including submission of blood and other samples for laboratory examination as required;
- m) safe and proper collection, preparation and dispatch of diagnostic and other samples;
- n) training of facility personnel in health and hygiene;
- o) ensuring that post-mortem examinations of dead animals are carried out whenever possible;
- p) supervision of quarantine premises and other such tasks required by law or as part of good facility veterinary practice;
- q) nutrition and the compilation of diets; and
- r) the establishment of written procedures to be followed in the event of the accidental use of dangerous drugs.

Where some of these tasks can and are to be carried out by someone other than a veterinarian, a suitably educated, qualified or appropriately trained member of staff should be nominated.

Comprehensive veterinary records should be kept covering the following:

- e) preventive medicine;
- f) clinical medicine and surgery;
- g) pathological results from diagnostic testing; and
- h) results of post-mortem examinations.

Nursery facilities should be available for hand-rearing and nursing of animals if and when required.

Lion facilities should confirm that the facility, and a local hospital or their veterinarian, have readily available antidotes to potentially toxic drugs and veterinary products used at the facility. A competent member of personnel should be readily available at all times to take decisions regarding

the euthanasia of sick animals. There should be provision for an effective humane method of euthanasia and standard written protocols should be established.

Dedicated quarantine accommodation should be available for the isolation and examination of unduly distressed, sick or injured animals. Particular attention should be paid to hygiene in the quarters where isolated or quarantined animals are kept. Animals imported from outside the borders of the country should be kept isolated or in quarantine for as long as is necessary or in accordance with the veterinary import permit issued by the relevant authority, to ensure proper examination, acclimatization and quarantine of new arrivals before being introduced to other animals in the facility.

Clinical waste and refuse should be regularly removed and disposed of in a manner approved by the municipal authority. For animals that are in quarantine, this is usually supervised and controlled by the State Veterinarian of the area or district.

32.2 Disease and Treatments

Lions in confined areas are especially susceptible to diseases that can cause mortality or at least cause serious loss of life quality if affected. Preventative vaccinations must be provided where possible.

Various species of ticks commonly infest the ears, neck and groin regions of most lions. Several species of the tapeworm genus *Taenia* have been identified in captive lions. Preventative and curative treatment must be provided as required.

32.3 Euthanasia

Every facility must have a policy and standard operating procedure for the euthanasia of animals. Such policies and procedures should demonstrate the following:

- a) information and guidelines relating to euthanasia, including emergency methods received from a veterinarian;
- b) facilities and equipment to perform euthanasia upon animals, including casualties under emergency conditions; and
- c) competent trained personnel with access to the necessary facilities and equipment are available and contactable at all times.

The owner of a lion facility should ensure that all personnel are fully aware of acceptable euthanasia methods and are trained and experienced in those methods. Persons performing euthanasia should only do so in accordance with legislation and acceptable practices. Euthanasia of animals should be recognized as an acceptable procedure and management tool, and may be justifiable under certain conditions, including the following:

- a) when recommended by a veterinarian;
- b) when irresolvable stress or conflict prevails and where changes in social structure result in distress;
- c) when a facility operator is unable to ensure acceptable facilities and conditions for animals;
- d) when an animal poses a danger and unavoidable threat to human safety;
- e) where no other suitable accommodation can be found for the animal;
- f) in cases of old age, non-breeding or severe injury; and
- g) where no other suitable option exists.

The euthanasia of animals destined to be fed to other animals should be carried out ethically and in accordance with recognized welfare standards.

32.4 Hygiene and Cleaning

- All drinking water receptacles must be cleaned weekly, but more regularly if water becomes contaminated.
- Enclosures must be cleaned at least once a week; more frequently in the case of working lions in public display facilities.
- All faeces and old or uneaten food, bones and skins must be removed when cleaning the enclosures.

32.5 Waste Management

An effective waste management protocol/system is essential. This should include regular cleaning of enclosures and the management of waste such as urine and faeces. Probiotic treatment of waste and the use of a bio digester could also be considered for larger facilities.

32.6 Biosecurity

Biosecurity is the security or protection of animal and plant resources from biological invasion, contamination and threats. Biosecurity is, therefore, the implementation of preventative measures to reduce the risk of outbreaks, spread, and frequency of disease.

Diseases can cause extensive damage if outbreaks occur, particularly in captive breeding and keeping operations and with valuable wildlife that are managed in controlled environments. The threat of contagious diseases is high and preventative measures need to be put in place to prevent contamination or the spreading of these diseases. The presence of infectious diseases are mostly noticed only when symptoms are indicative. Thus managers need to take biosecurity very seriously and implement preventative biosecurity procedures or measures designed to protect the animals against harmful biological impacts.

The biosecurity process is accomplished by the exclusion, eradication and reduction of biological risk factors like disease pathogens, pests and spreading of other health risks. Measures need to provide ways for protection from introducing infectious pathogens, parasites and diseases to an operation and prevent undue stress factors on animals.

Biosecurity is not only about preventing the introduction of disease to a facility but also if disease is present, reducing or limiting the spread of the disease agent on and off the property.

The potential threat of disease being transferred from humans to domestic animals and wildlife and from wildlife to domestic animals and humans should also be considered.

Biosecurity management starts with the understanding of normal animal behaviour so that any unusual behaviour or clinical symptoms can be quickly identified. Biosecurity should include routinely practiced preventive medicine protocols as well as the prevention of diseases from outside being brought into captive breeding facilities.

Health and veterinary research on lions in captive facilities can contribute significantly to *in situ* and *ex situ* conservation of lions in the wild through advanced health management of lions in captivity. Species behaviour monitoring and effective biosecurity measures on infectious disease management are aspects where lions in captivity contribute to the conservation of the species in more extensive situations. (Fukai, 2016).

To apply and maintain successful biosecurity requires the correct infrastructure and strict monitoring of people, animals and feed entering the facility. The following measures are recommended:

- Effective fencing to prevent any unauthorised person or animal from entering the enclosures.

- A footbath and sprinklers located at the entrance to the facility so that every vehicle and the shoes of every person entering the facility are disinfected with a mixture of dip, an antiviral agent and a bacterial agent.
- Properly disinfected capture and transport equipment.
- Transportation of feed done in hygienic and preferably properly disinfected vehicles.
- People directly working with lions must be tested at least every two years for tuberculosis.
- A quarantine enclosure should be available to isolate animals if required.
- Limit nonessential traffic on the farm.
- Keep a record of all deliveries and visitors.
- Implement measures to limited transfer possibilities of infectious diseases.
- Buy new animals from registered and reputable breeders only and get a veterinary certificate for all new animals entering the facility. It is recommended that new animals be isolate for a period of time for observation before joining other animals in the facility.
- Use separate equipment for healthy and sick animals and prevent contact between healthy animals and those suffering from illness or disease.
- Be careful where you buy feed and equipment. Buy feed from reputable sources only. Clean and disinfect all animal handling facilities and equipment.
- Keep domestic animals away from the breeding/keeping facility at all times.
- Establish and maintain an effective pest control programme.
- Establish an effective waste disposal system for faeces and bones that prevents the possible spread of disease from the facility to animals or people outside of the facility.
- Call your veterinarian immediately if you observe unusual disease symptoms in animals (WSDA, 2017).

In the event with an outbreak of disease in a facility the following control measures should be taken:

- Spray enclosures several times in the first week using high-pressure delivery systems for Parvoclean (Kyron), F10 products (Health and Hygiene [Pty] Ltd) or swimming pool chlorine (2.67 g/L water).
- Biosecurity measures including controlling staff movement from clean to infected enclosures for feeding and inspections.
- New and frequently changed cleaning clothes as well as overalls and boots for all staff; hand gels and body sprays of F10 products used when moving between enclosures (Lane *et al*, 2016).

33 Behaviour

33.1 Activity

Lions sleep and rest up to 20hours a day. The times of most activity are late afternoon, early to late at night and early hours of daylight.

33.2 Social Behaviour

Lions are pride animals, meaning they live in social family groups. They are gregarious, territorial, and communal. Social behaviour of lions should be taken into account and pride situations should be created if possible, with a minimum of 1 male and two females or male coalitions. As lionesses typically breed synchronously, a crèche of cubs is formed that is looked after and nursed by the lionesses.

Male cubs are excluded from their maternal pride when they reach maturity, and typically leave their natal pride by the age of 4 years, most of which then form a coalition with other males (Pusey & Packer 1987; Packer & Pusey 1993).

Male coalitions challenge one another for pride residency. Incoming males kill or evict dependent offspring sired by the previous coalition, so as to accelerate the lioness' return to sexual receptivity (Packer *et al.* 2001).

33.3 Reproduction

Lions do not mate at any specific time of year. Breeding may occur throughout the year.

Weaning occurs after three to seven months. Male lions reach maturity at about 3 years of age, and at 4 to 5 years of age are capable of challenging and displacing dominant males. Male lions' prime years are between 5 and 9 years of age. They begin to age and weaken between 10 and 15 years of age.

The tolerance of male lions towards cubs varies. One of the first acts of a male, after taking over a territory, is to kill the existing cubs under the age of one year or those that are born in the months after the takeover. Lions are social animals. However infanticide is a vital part of the male reproductive strategy. When a lioness loses her litter it causes her to re-enter oestrus and mate within a few days or weeks.

Females hide their cubs when they are born and only introduce them to the pride when they are 6 weeks old. Cubs have the best chance of survival when females give birth at the same time and are able to suckle on any lactating female in a communal setting. In addition to greater protection, the synchronization of births has an advantage in that the cubs end up being roughly the same size, and thus have an equal chance of survival.

THIS LIONS SHOULD NOT BE ALLOWED TO BREED.

33.4 Grooming

Lions bath by grooming. Grooming is mainly between females of the pride and mothers and cubs. The rough texture of the tongue works as a comb to clean fur, wipe off blood after eating, and remove ticks, fleas and parasites. This also assists in the social bond of the pride.

33.5 Signs of Stress/ Behavioural Problems

Behavioural patterns should be monitored and focus should be on:

- Uncharacteristic appetite - refusal of food or overeating
- Pacing
- Abnormal aggressiveness
- Displaying abnormal behaviour such as becoming destructive.

33.6 Behaviour Enrichment

To prevent stress and stimulate natural activity and behaviours it is important to expose lions to behavioural and environmental enrichment strategies and to become unpredictable in activities, such as feeding at different times and ways.

33.7 Introductions and Removals

Any introductions are purely dependant on the individual. Managers need to bear in mind the oestrus cycle of females, temperament of the individual, and the sex of the individual in accordance to the number of males already in the enclosure. Gradual transition into the group needs to be done. Animals will be more easily accepted if exposed to the group in stages and if placed directly into the enclosure with the current pride, it could potentially be fatal.

As lions are pride animals it is recommended that when removing an individual from a group to simply remove it. Gradual disposition could cause stress to the animal not being able to have contact with the pride. If an animal is being unduly stressed by the aggression or presence of another animal in the enclosure, then it, or the other animal, must be removed from the enclosure.

33.8 Suitability to Captivity

Lions generally do very well in captivity. This is especially important as they are listed as Vulnerable on the IUCN Red List. Being housed in captivity could assist in behavioural research, breeding programmes and education in order to maintain and prevent the species from becoming endangered (Hillermann, 2009).

33.9 Suitability for Release

No Working lions may be released for hunting or reintroduction purposes.

34 Breeding

The average gestation period is around 110 days, the female giving birth to a litter of one to four cubs in a secluded area.

SAPA recommends the following norms and standards for the breeding of lions in captivity:

- An average gestation period of 110 days (90-130 days)
- Cubs are weaned at 3 to 7 months (but not less than 3 months)
- Each lioness may have one litter per year but no more than three litters in two years.
- Lionesses may not be mated before 24 months of age.
- All animals in breeding programmes must be DNA profiled.
- Animals with visible heritable genetic defects may not be used for breeding.
- All available genetic information should be used to select least related breeding pairs or groups.

34.1 Techniques used to control breeding

Breeding should be done with good planning and with minimal human intervention.

- Early weaning of cubs to stimulate oestrus is prohibited.
- Each lioness may have a maximum of three litters in two years. This may be managed by the introduction and removal of males.

Various management options are available to mimic social and population dynamics for females (Ferreira & Hofmeyr 2014 - Lion BMP). These include:

- Increasing the age at first reproduction of sub-adult females;
- Establishing longer intervals between births of adult females (Munson 2006, Bertschinger *et al.* 2008);
- Mimicking female dispersal by removing as well as introducing sub-adult females;
- Mimicking higher death rates of old females by removing the oldest females in the pride.

The following management options are available for males (Lion BMP, 2015):

- Mimic male dispersal through removal and introductions of sub-adults;
- Mimic pride take-overs – tenure is on average three years (Funston *et al.* 2003);
- Mimic higher death rates of old males by removing the oldest males.

34.2 Timing of breeding

Lions do not mate at any specific time of year. Breeding may occur throughout the year.

34.3 Age at first breeding and last breeding

In a managed environment no animal may be bred at less than twenty four months of age.

34.4 Age of Removal from Parents

It is recommended that cubs stay with the female for as long as possible. Cubs used in human interaction may only be removed from the mother after the colostrum phase.

34.5 Growth and Development

Retaining and breeding with lions with heritable genetic defects is prohibited.

34.6 Hybridisation and In-breeding

To prevent inbreeding it is important that new genetics are introduced by bringing in good quality breeding stock from other recognised predator facilities. This process can be assisted through the use of breeding guidelines from the Lion Registry.

34.7 Handling of cubs

Working Lions:

- Lions bred in registered Working Lion facilities may have limited human interaction.
- Lion cubs may only be handled under the supervision of properly trained staff.
- No working lion cubs may ever be hunted.

34.8 Artificial Breeding

Semen and embryo collection should not to be a standard procedure and should only be carried out with the approval of SAPA. All donor animals must be approved and registered in terms of the relevant legislation. Genetic material may only be collected from registered donor animals.

Semen collection, artificial insemination, embryo collection and embryo transfer may only be performed by persons registered to do so in terms of the relevant legislation.

34.9 Hand Rearing

- Suitable nursery facilities must be available for hand-rearing and nursing of animals.
- A suitable diet and feeding routine must be determined by an experienced veterinarian.
- Cubs in hand-rearing facilities must be microchipped by 3 months of age.
- All dietary, health and behavioural records must be kept for each cub.
- Strict hygiene conditions must be maintained in the nursery facilities.
- Lion cubs under the age of three months may only be handled under supervision by properly trained staff.

35 Administrative Management

35.1 Permits

All activities related to lions are permitted activities. These should be issued by the relevant competent Authority. Where applicable, a PAPA (Performing Animal Protection Act (Act No 24 of 1935)) Licence to train / exhibit animals must be obtained.

35.2 Lion Registry

All lions must be fitted with an OIE/ICAR accredited microchip (refer Appendix 3), which is registered on the Lion Registry. This system provides an integrated animal identification and management system and has the capacity to provide integrated recording and evaluation services to the captive lion industry.

Information can be used to:

- Implement a genetic information system to minimise the impact of inbreeding as well as undesirable heritable traits in captive bred lions.
- Enable the relevant authorities to monitor the ownership of captive lion as prescribed and shall also assist during any dispute that may arise concerning the ownership of the lions or in identifying lions which escape from a facility.
- Determine a welfare index that can be used when evaluating captive lion operations for PAPA licences.
- Ensure that no working lion is ever hunted.

35.3 Information to be recorded

35.3.1 Owners records

Owners of captive lions must establish and maintain a database with information about each individual lion.

The following information must be recorded for each animal:

- Owner/breeder identification mark (herd designation mark) with an additional character to denote working lion.
- Individual identification number – microchip and 2D bar code issued by a central registry (SAPA) that is linked to an integrated registration and genetic information system
- DNA profile and parentage verification (where possible)
- Physical markings that vary from one animal to the next
- Breeding information
- Regular Health Records - regular visual assessments
- Veterinary Treatments
- Disease or Injury
- Behavioural Problems
- Reproductive stage, condition and behaviour
- Changes in Diet

35.3.2 Registry Records

The Lion Registry is a database for captive bred lions.

The following information must be recorded on the Lion Registry for each animal:

- Owner identification / breeder designation number
- Category of lion - Working lion
- 2D bar code number for all working lions
- Microchip number
- DNA profile and parentage verification (where possible)
- Breeding information

35.4 Management Plan

All lion facilities must have a management plan in terms of the relevant legislation which specifies the operational procedures for the facility.

35.5 Transfer and Cancellation

35.5.1 Transfer

Any transfer of ownership of a lion must be submitted to the registry administrator within 30 days after the transfer is completed.

35.5.2 Cancellation

The cancellation of the recording/registration of an animal must be effected within 60 days after its death, culling or other circumstances requiring cancellation.

35.6 Staff

All breeders and keepers of lions must ensure adequate training of all levels of staff involved with the management of the facilities and related procedures.

35.7 Education, Training, Certification and Registration of Handlers and Managers

All handlers, minders and managers of captive lions should be suitably educated or qualified and recorded in a register kept by a competent authority.

Consideration must be given to the possible registration of handlers as a para-veterinary profession.

- Lion handlers must be registered – preferably in terms of some relevant legislation
- Registration must be renewed annually in addition to the PAPA, Trainers and Exhibiter licenses.
- Lion minders should be recorded as trainee handlers in the same register.
- Lion operations should only use registered handlers and minders.

The education of and/or training and registration course for lion handlers must include the following:

- g) Lion anatomy and physiology
- h) Lion nutrition
- i) Lion behaviour
- j) Legislation relevant to the care and protection of captive lion
- k) Basic veterinary care of lion
- l) The theory and practice of handling lions
- m) In addition to the basic training, registration shall be subject to documentary proof (prescribed log) of at least 24 months practical experience at a registered captive lion operation and a practical evaluation by a competent authority.

All handlers should be evaluated by a competent registered organisation and registered in terms of local legislation. Where possible, preference should be given to local staff to be educated, trained and empowered.

For operations within a dangerous game area, guides conducting the safari need to be FGASA accredited.

35.8 Minimum Standards with Contact Lion

35.8.1 Handlers & safety

Lion Handlers must be fully conversant with the rules of engagement with the public before any interaction begins. (By implication, a registered animal handler should understand and adopt the principles of working with animals.)

Each operation must define and describe the nature of the interaction and ensure that:

- The correct handler/lion ratio is in place specific to that activity.
- That each handler has the required experience to oversee that particular type of contact or interaction.
- That any learner lion handler is always assisted by a handler with the required experience and is never operating outside of his level of experience.
- Each handler is fully versed with all emergency procedures.
- Each handler has basic First Aid experience.
- Each operation has a staff member on duty with an advanced First Aid qualification.

35.8.2 Lion manager/operator

- Every operator must ensure that only suitable lions are used for contact.....

- That lions are closely monitored to ensure that no sick or injured lion is used in contact.
- That the exposure to this contact is stimulating for the lion as well.
- That the exposure to contact in no way increases the risk of injury to the lion.
- Visitors must be made aware of the risk of injury through the exposure or contact with the animals and an Indemnity form must be signed.
- All contact with animals must be under strict supervision of trained facility staff.

35.9 Lions Used for Human–Animal Interaction

The following minimum standards should apply where cubs are used for interaction and educational purposes and where sub-adult lions are used for interactions such as walking with lions:

- No cubs older than 18 months may be used.
- As soon as aggressive behaviour is observed the animal must be removed from all human interaction activities.
- Only cubs with suitable temperament may be used.
- Cubs should be allowed to exhibit natural and social behaviour patterns (including sleep).
- A registered lion minder/handler must be present.
- No cubs may be bottle fed by the public unless under supervision of trained staff.
- No cubs may be picked up by the public unless under supervision of trained staff.
- No chemical restraint (tranquilisers) may be used.
- Cubs must have a safe avoidance facility should they not wish to interact with the public.
- Walking lions must be accompanied by a registered handler.
- Contact with the lion should be discouraged.

Only people that meet minimum age and size restrictions may participate in human-animal interaction activities.

35.10 Captive Lions Used in the Advertising and Film Trade

The following minimum standards apply to the use of captive lion in film or advertising (refer the Performing Animal Protection Act (Act No 24 of 1935)):

- A registered Lion handler should be present at all times.
- A suitably qualified and experienced animal welfare officer should be present on set during scenes involving lion.
- All contracts must be concluded before the commencement of filming.
- The Lion handler has ultimate authority over animals used in any performing situation to ensure the safety and welfare of the animals and people.
- It is the responsibility of the Lion handler and the animal welfare officer to ensure that no abuse of the lion takes place during filming.

35.11 Animal Traders

Traders - those that buy and sell lions - including importers and exporters; auction / sale agents:

- Must be registered
- Must belong to an organisation where activities are monitored
- Must operate under a strict code of conduct and comply with all legislation, norms and standards
- Must be trained in all relevant legislation, norms and standards

35.12 Lions Kept as Pets

While this should be discouraged, all existing owners of pet lions should be licensed to keep the animals and such licenses should be renewed annually – subject to an inspection by a veterinarian and an animal welfare inspector.

35.13 Breeding of Lions

Lions may only be bred in registered lion breeding facilities.

35.14 Hunting of Lions

No working lions (lions that originate from any facility where there has been regular interaction with humans (cub petting, walking with lions) may be hunted.

35.15 Trade in Live Lions

- Registered owners, breeders, outfitters and traders may legally trade in live lions.
- Official identification of the specific animal and proof of ownership must be provided by the seller.
- Transfer of ownership of the relevant animal must be done within 60 days of the transaction.
- Accurate records must be kept of all transactions.

35.16 Trade in Lion Products

- Registered Keepers/breeders of working lions may legally trade in lion products and derivatives.
- All statutory requirements must be strictly adhered to.
- Transparency and high ethical standards must be employed in the harvesting of material.
- Accurate records must be kept of all transactions.
- Products from animals euthanized for valid reasons may be processed, sold locally or exported – provided this is done under strict supervision and with the necessary permits, health certification and documentation.
- Official identification and proof of ownership of the specific animal from which the relevant products and/or derivatives have come must be provided by the seller.

35.17 Release / Reintroduction

The release / reintroduction of working lions into the wild are strictly prohibited.

CONCLUSION

The need for standard Norms and Standards throughout South Africa are addressed in this document. This document specifies provisions for the management and operation of all captive lion facilities in South Africa. This includes provisions for management, husbandry and welfare of animals, conservation and research practices, education and recreation. This document has been drawn up as a means of defining the manner in which the South African lion industry should operate in the fulfilment of the vision to be recognized as maintaining the highest possible standards of animal husbandry and welfare in *in-situ* and *ex-situ* sustainable utilisation, conservation, education and research practices.

36 Appendix 1a - Construction Material

The following minimum standards apply in terms of the construction material used for all types of lion enclosures:

- All breeding and keeping enclosures must have access to a management compartment, for feeding and management purposes, which should follow the fencing specifications, except the overhang, and have entrances, constructed of a steel framework with functional sliding mechanism.
- Netting wire, diamond mesh or welded mesh a minimum of 1.6mm diameter and maximum mesh size of 100mm by 100mm.
- Netting wire should be supported with three steel wire strands, first at ground level, 600mm and 1200mm, other 12 strands should be 100mm apart.
- Steel straining wire a minimum of 2mm diameter.
- Wooden straining, gate and corner post poles a minimum of 150mm diameter.
- Iron straining, gate and corner post poles a minimum of 90mm diameter with a thickness of 3mm.
- Wooden line poles a minimum of 125mm diameter.
- Iron line poles a minimum of 50mm diameter.
- Wooden droppers a minimum of 75mm diameter.
- Iron droppers a minimum of 10mm diameter.
- Maximum spacing of straining posts at the corner of each enclosure, but no longer than 100m per stretch.
- Maximum spacing of line poles / Y standard is 10m.
- Maximum spacing between droppers is 2m.
- Minimum height of all gates is 2,4m.
- Gates must be constructed of a steel framework.

37 Appendix 2 - OIE Guiding Principles for the Welfare of Animals

Guiding principles for animal welfare

- That there is a critical relationship between animal health and animal welfare.
- That the internationally recognized 'five freedoms' (freedom from hunger, thirst and malnutrition; freedom from fear and distress; freedom from physical and thermal discomfort; freedom from pain, injury and disease; and freedom to express normal patterns of behaviour) provide valuable guidance in animal welfare.
- That the internationally recognized 'three Rs' (reduction in numbers of animals, refinement of experimental methods and replacement of animals with non-animal techniques) provide valuable guidance for the use of animals in science.
- That the scientific assessment of animal welfare involves diverse elements which need to be considered together, and that selecting and weighing these elements often involves value-based assumptions which should be made as explicit as possible.
- That the use of animals in agriculture and science, and for companionship, recreation and entertainment, makes a major contribution to the wellbeing of people.
- That the use of animals carries with it a duty to ensure the welfare of such animals to the greatest extent practicable.
- That improvements in farm animal welfare can often improve productivity and hence lead to economic benefits.
- That equivalent outcomes (performance criteria), rather than identical systems (design criteria), be the basis for comparison of animal welfare standards and guidelines.

Scientific basis for guidelines

- Welfare is a broad term that describes how well individuals are coping with their environment, and includes their health, their feelings, and other good and bad effects on brain and body mechanisms for dealing with problems.
- Welfare can be scientifically evaluated and can be shown to range from very good to very poor. The study of how to assess animal welfare has progressed rapidly in recent years and evidence from such studies has been used in the formulation of these guidelines.
- Some studies of animal welfare involve assessing the extent of stress, which occurs when individuals are not able to cope with the consequences of treatment by humans or other impacts on the animal's environment. Other indicators of poor welfare reveal how much the individual has to do in order to cope with problems.
- Other areas of animal welfare research provide further information about the needs of animals by measuring the strengths of their positive and negative preferences. Once the needs of animals are known, conditions and treatment methods which fulfil their needs can be devised and used.

- Some measures of poor welfare involve assessing the extent of pain or impaired functioning associated with injury or disease. Many of the problems can be revealed by an inspection of the animals.
- Many measurements of animal welfare can be used as performance indicators in the evaluation of general methods for the keeping and treatment of animals and the actions of individuals who have an impact on those animals. Using such evidence, the acceptability of systems and of human performance can be decided.

Ethical basis for guidelines

- Those who use animals have obligations concerning the welfare of those animals. Poor welfare should be minimized and good welfare maximized by the use of adequate housing and ethically accepted methods of treatment, inspection, education and management.

38 Appendix 3 - Standards for Microchips

- **Must be ICAR approved – HDX or FDX-B**
- **HDX** (Size will be specified depending on species) **Large animals min:** Diameter 2.14 mm , length 12.0 mm , weight 0.11 g, transparent
- **FDX-B** (Size will be specified depending on species) e.g. Larger animals Transparent, min 2.10 mm in diameter, 12.0 mm in length and 0.09 g weight and smaller animals (companion) Diameter 1.42 mm , length 8.43 mm , weight 0.03 g, transparent.
- **134,2khz** standard frequencies used to internationally in livestock and game
- **Must comply to ISO standards 11784/5** to ensure all departments/user can read all the microchips with one reader
- **Microchips must be sterile (each microchip must be packed individually with its own needle in sterile packaging.)** *The use of “no sterile chips with micro chipping guns” using the same needle is not recommended and can spread disease.*