

DEPARTMENT OF ENVIRONMENTAL AFFAIRS
NOTICE 75 OF 2017

NATIONAL ENVIRONMENTAL MANAGEMENT: BIODIVERSITY ACT, 2004
(ACT NO. 10 OF 2004)

**DRAFT NORMS AND STANDARDS FOR THE MANAGEMENT AND MONITORING OF THE
HUNTING OF LEOPARD IN SOUTH AFRICA FOR TROPHY HUNTING PURPOSES**

I, Bomo Edith Edna Molewa, Minister of Environmental Affairs, hereby, under section 9(1)(a), read with section 100 of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004), give notice of my intention to issue Norms and Standards for the management and monitoring of the hunting of leopard in South Africa for trophy hunting purposes, set out in the Schedule hereto.

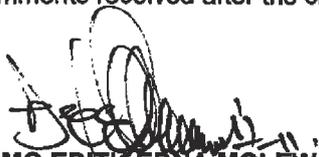
Members of the public are invited to submit to the Minister, within 30 days after the publication of this notice in the *Gazette*, written representations or objections to the following addresses:

By post to: The Director-General
 Department of Environmental Affairs
 Attention: Ms Makganthe Maleka
 Private Bag X447
 PRETORIA
 0001

By hand at: Environmental House, 473 Steve Biko Street, Arcadia, Pretoria, 0083.
By e-mail: mamaleka@environment.gov.za

Any enquiries in connection with the notice can be directed to Ms Makganthe Maleka at 012 399 8865.

Comments received after the closing date may not be considered.


BOMO EDITH EDNA MOLEWA
MINISTER OF ENVIRONMENTAL AFFAIRS

SCHEDULE

1. DEFINITIONS

In these norms and standards, a word or expression, or any derivative or other grammatical form of such word or expression, to which a meaning has been assigned in the Biodiversity Act, has the same meaning, unless the context indicates otherwise, and—

“applicable biodiversity legislation” means legislation in terms of which biodiversity matters are regulated, either at a provincial level in a province or at a national level;

“approved” means approved by the issuing authority;

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

“CITES” means the Convention on International Trade in Endangered Species of Wild Fauna and Flora;

“CITES Regulations” means the regulations pertaining to the Convention on International Trade in Endangered Species of Wild Fauna and Flora, as promulgated in terms of section 97 of the Biodiversity Act;

“genetic profiling” means the use of biotechnology to identify the unique characteristics of a leopard for forensic or diagnostic purposes;

“hunting client” means a person who is not a citizen of the Republic or a permanent resident of the Republic, and who pays or rewards any other person for, or in connection with, the hunting of a leopard;

“hunting outfitter” means a person who is authorized in terms of applicable biodiversity legislation to operate as a hunting outfitter, and assigns a similar meaning to a hunting contractor referred to in terms of applicable provincial legislation;

“hunting season” means the period 01 January to 31 December of any particular year;

“hunting trophy” means a skin, hair, tooth, or any readily recognisable part or derivative of a leopard, whether processed or not, and which is kept as a memento of the hunt;

“leopard hunting zone” means an area of suitable leopard habitat that can sustain the removal of one leopard without affecting population viability;

“local hunter” means a hunter who is a citizen of the Republic or a permanent resident of the Republic;

“professional hunter” means a person who is authorized in terms of applicable biodiversity legislation to operate as a professional hunter;

“Republic” means the Republic of South Africa;

“SANBI” means the South African National Biodiversity Institute;

“Scientific Authority” means the authority established in terms of section 60 of the Biodiversity Act;

“taxidermy” means a facility where a skin, hair, tooth or any other derivative of a leopard is treated, prepared or mounted, or where such skin, hair, tooth or other derivative is transformed or processed into a curio; and

“TOPS Regulations” mean the regulations pertaining to listed threatened or protected species and promulgated in terms of section 97 of the Biodiversity Act.

2. PURPOSE AND APPLICATION OF THESE NORMS AND STANDARDS

- (1) The purpose of these norms and standards is to manage the hunting of leopard in order to reduce the impact of hunting on the stability of the leopard population and to ensure that such hunting is carried out in an ecologically sustainable manner.
- (2) For the purpose of these norms and standards, a leopard hunting quota refers to an off-take quota and does not refer to the export quota applicable in terms of CITES for the export of a hunting client’s leopard hunting trophy.
- (3) The provisions of these norms and standards must be applied alongside the provisions of the TOPS Regulations and CITES Regulations.
- (4) The provisions of these norms and standards apply to the hunting of African leopard (*Panthera pardus pardus*), regardless of whether—
 - (a) the hunt takes place on privately-owned land or state land; or
 - (b) the hunter is a local hunter or a hunting client.

3. QUOTA AND PERMIT ALLOCATION FOR THE HUNTING OF LEOPARD

- (1) To ensure that a leopard hunting trophy can be traced to the land where the hunt took place, the hunting of a leopard must be strictly regulated by means of an individual hunting permit, issued by the relevant issuing authority in terms of applicable biodiversity legislation, in the name of the local hunter or the hunting client.
- (2) If a local hunter or a hunting client intends to hunt a leopard, such local hunter, or the professional hunter who will be accompanying such hunting client on the leopard hunt, must first undertake and pass a once-off leopard hunting examination in the presence of an official of an issuing authority in order to confirm to the relevant issuing authority that such local hunter, or professional hunter, as the case may be, is competent to assess the age of a male leopard and is familiar with applicable biodiversity legislation.
- (3) The requirement of a once-off leopard hunting examination contemplated in subparagraph (2) does not apply to a professional hunter who provides proof to the relevant issuing authority that he or she has undergone approved training in respect of the determination of the age of a male leopard.
- (4) A local hunter, or a hunting outfitter on behalf of his or her hunting client, must submit an application to the relevant issuing authority before 1 September of each year, in order to be eligible for the allocation of a leopard hunting quota during the hunting season of the next year.

- (5) A local hunter, or a hunting outfitter on behalf of his or her hunting client, may apply for more than one leopard hunting quota for a particular hunting season, provided that such applications do not relate to the same leopard hunting zones (LHZ) contemplated in subparagraph (8).
- (6) Multiple adjoining land properties that are suitable for the hunting of leopard may be included in a single leopard hunting application, but no individual land property may be included in more than one leopard hunting application.
- (7) The minimum size of undivided land with suitable leopard habitat on which leopard may be hunted, may be specified, either by the provincial issuing authority or in terms of applicable provincial conservation legislation, as the case may be.
- (8) Based on the assessment of the leopard hunting information contemplated in Paragraph 5(1), in addition to any scientific information available on leopard population status, SANBI must, in consultation with provincial conservation authorities, establish LHZs, of which the boundaries are determined on the basis of ensuring leopard population viability and even distribution of hunting effort across leopard range.
- (9) The issuing authority may allocate only one leopard hunting quota in respect of each designated LHZ.
- (10) A local hunter who has been awarded a leopard hunting quota must apply to the issuing authority for a leopard hunting permit. The local hunter must, together with the application for the leopard hunting permit, also submit the written approval from the owner(s) or manager(s) of the land upon which the hunt will take place.
- (11) A hunting outfitter, who has been awarded a leopard hunting quota on behalf of his or her hunting client, or who has received the hunting rights in respect of a leopard hunt from a land owner who has been awarded a leopard hunting quota, as the case may be, must apply on behalf of his or her hunting client to the issuing authority for a leopard hunting permit. In addition to the application for the leopard hunting permit, the hunting outfitter must provide the following supporting information—
 - (a) a certified copy of his or her client's passport; and
 - (b) written approval from the owner(s) or manager(s) of the land upon which the hunt will take place.
- (12) The local hunter or hunting client must sign the leopard hunting permit prior to the commencement of the hunt in order to acknowledge that he or she understands all of the terms and conditions applicable thereto.
- (13) In the case where a leopard has not been hunted successfully in a particular LHZ after the issuance of three leopard hunting permits within the same hunting season in respect of such LHZ, the issuing authority may decide to not issue any further leopard hunting permits for that particular LHZ, until the next hunting season.

4. MANAGEMENT OF LEOPARD HUNTS

- (1) Only an adult male leopard that is seven years or older may be hunted.

- (2) In the event that a female leopard or an under-aged (less than seven years) male leopard has been hunted, the issuing authority may not allocate a leopard hunting quota in respect of the affected LHZ in the hunting season following the hunting of such female leopard or under-aged male leopard, in order to allow the leopard population in such affected LHZ time to recover.
- (3) The use of trail or scouting cameras should be used to assist professional hunters to identify suitably-aged male leopards.
- (4) The local hunter, or professional hunter on behalf of his or her hunting client, as the case may be, must inform the environmental management inspector contemplated in subparagraph (5) of a successful leopard hunt, within 12 hours of completion of the hunt.
- (5) The hunting trophy must be inspected by an environmental management inspector of the relevant issuing authority within 24 hours of the hunt taking place. The contact details of such environmental management inspector must be provided to the hunting outfitter by the issuing authority before the commencement of the hunt.
- (6) The environmental management inspector contemplated in subparagraph (5) must collect a small skin sample (2-3 mm) for genetic profiling purposes and, if satisfied that the leopard is a male over the age of seven years, issue a pre-approval tag in respect of the inspected hunting trophy, at which point the hunting trophy may be released to a taxidermy or similar facility.
- (7) The skin sample contemplated in subparagraph (6) must be collected using a DNA sampling kit approved by the Forensic Services Division of the South African Police Service.
- (8) The skin sample contemplated in subparagraph (6) must be sent to a facility registered as a scientific institution in terms of the TOPS Regulations and approved by the Director-General, as soon as possible after it has been collected.
- (9) The facility contemplated in subparagraph (8) must record the genetic profiling information and make such information available to the Department.
- (10) The cost incurred in the genetic profiling contemplated in subparagraph (5) shall be for the local hunter or the hunting client.

5. MONITORING OF LEOPARD HUNTS

- (1) Upon completion of a leopard hunt the local hunter, or the professional hunter on behalf of his or her hunting client, as the case may be, must report the measurements of the hunting trophy to the relevant issuing authority prior to the inspection contemplated in Paragraph 4(5), on the reporting form provided by the Department for this purpose.
- (2) The hunting report contemplated in subparagraph (1) must include seven high-resolution photographs of the hunting trophy taken before the leopard is skinned, and four photographs taken after the skull has been cleaned, of the following—
 - (a) prior to the skinning of the hunting trophy—
 - (i) the side view showing the entire body with the hunter positioned directly behind the hunting trophy, for scale;

- (ii) the side view of the head, neck and shoulders showing the dewlap development (the head must be lifted);
 - (iii) the frontal view of the face showing the condition and position of the ears, and facial scarring;
 - (iv) close up of the nose clearly showing the pigmentation;
 - (v) frontal view of the teeth showing colouration and wear on the canines and incisors;
 - (vi) hindquarters showing the scrotum; and
 - (vii) close-up of the underside of both front paws with claws extended; and
- (b) from the cleaned skull—
- (i) the lower jaw showing all the teeth and chipping of the enamel ridge on the back of the canines;
 - (ii) the upper jaw showing all the teeth and chipping of the enamel ridge on the back of the canines;
 - (iii) a side view of the lower jaw showing the canine and wear on the tips of molars and premolars; and
 - (iv) a wide shot of all the teeth showing wear and broken teeth.
- (3) If a leopard hunt was unsuccessful, the local hunter, or the professional hunter on behalf of his or her hunting client, as the case may be, must report such unsuccessful hunt on the same form contemplated in subparagraph (1), and submit such report to the relevant issuing authority, within 14 days after completion of the hunt.
- (4) The issuing authority must report the information received in terms of subparagraph (1) and (3) in respect of the previous hunting season, to the Department before 30 September, in order to receive the leopard hunting quotas from the Department for the following hunting season.
- (5) The Department must use the information contemplated in subparagraph (4), or any advice it receives from SANBI or the Scientific Authority, to manage leopard hunting quotas in an adaptive manner.
- (6) The Department may not allocate leopard hunting quotas to issuing authorities if—
- (a) all the hunting reports contemplated in subparagraphs (1) and (3) have not been received by the relevant issuing authorities and the collated information contemplated in subparagraph (4) submitted to the Department; or
 - (b) SANBI or the Scientific Authority advise that such hunting quotas will impact negatively on leopard population viability.
- (7) If the hunting of a leopard is done in a manner that could contribute to a disruption in the stability of the population, it could result in the following disincentives being imposed by the relevant issuing authority—

- (a) the hunter not being issued another leopard hunting permit in the same hunting season;
- (b) restriction being placed on the hunting outfitter in respect of the marketing of a leopard hunt for the next hunting season;
- (c) restriction being placed on the permit of a professional hunter in respect of the accompanying of a hunting client on a leopard hunt for the period determined by the issuing authority;
- (d) refusal by the issuing authority to issue a permit for the export of the hunting trophy;
- (e) seizure of the hunting trophy; or
- (f) the institution of criminal charges.

APPENDIX 1: KEY PRINCIPLES INFORMING THE LEOPARD HUNTING NORMS AND STANDARDS

a) Ensure an even distribution of hunting effort across leopard range in each province in South Africa.

Trophy hunting permits are typically allocated unevenly across leopard range in South Africa. For example, in KwaZulu-Natal, almost 80% of hunting permits were awarded to the adjoining Nyalazi and uMkhuze districts between 2000 and 2005 (Balme et al. 2010), even though these districts only comprise roughly 15% of suitable leopard habitat in the province (Swanepoel et al. 2013). During this same period, Nyalazi had more than double the number of leopards hunted than any other district (Balme et al. 2010). Such inequitable distribution of hunting effort can create population sinks which ultimately threaten the viability of metapopulations by drawing animals from neighbouring regions (Loveridge et al. 2007, Robinson et al. 2008, Cooley et al. 2011). To distribute leopard hunting effort more evenly, and ensure that quotas do not exceed sustainable limits, South Africa applies a zonation approach to the allocation of leopard hunting permits (Pitman et al. 2015).

Each province is divided into a number of Leopard Hunting Zones (LHZs) based on the extent of suitable leopard habitat (derived from a maximum entropy-based habitat model; Swanepoel et al. 2013) and leopard population dynamics found within quaternary catchments in that province (Fig. 1A). Quaternary catchments are used because they provide a more ecologically meaningful management unit than municipalities or districts. A finer-scaled management unit also enables conservation authorities to more effectively pinpoint areas of concern. Suitable leopard habitat is grouped into four classes following Swanepoel et al. (2013), and each habitat class assigned a population density according to Swanepoel et al. (2014) and more recent province-wide camera-trapping efforts (SANBI unpub. data). Since catchments often comprise more than one habitat class, leopard densities are multiplied by the area of each habitat class in each catchment to obtain an estimated leopard population size per catchment (Fig. 1B). The annual sustainable offtake for each catchment is calculated based on a maximum sustainable harvest rate of 3.6% of the estimated population (derived using a stage-based dual-sex Leslie matrix model; Caro et al. 2009; Fig. 1C). A LHZ comprises one or more adjoining catchments, the collective sustainable offtake of which equals at least 1.00 (Fig. 1D). Accordingly, each LHZ qualifies for a single hunting permit per year (Fig. 1E). A hunting permit allocated to one LHZ cannot be used in another LHZ, regardless of the demand for, or the success of hunts.

Table 1. Proposed annual leopard hunting quotas for each province. Figures in parentheses indicate quotas for provinces which have traditionally not permitted trophy hunting of leopards.

Province	Quota
Eastern Cape	(3)
Free State	0
Gauteng	0
KwaZulu-Natal	9
Limpopo	59
Mpumalanga	11
North West	2
Northern Cape	0
Western Cape	(4)
Total	81 (88)

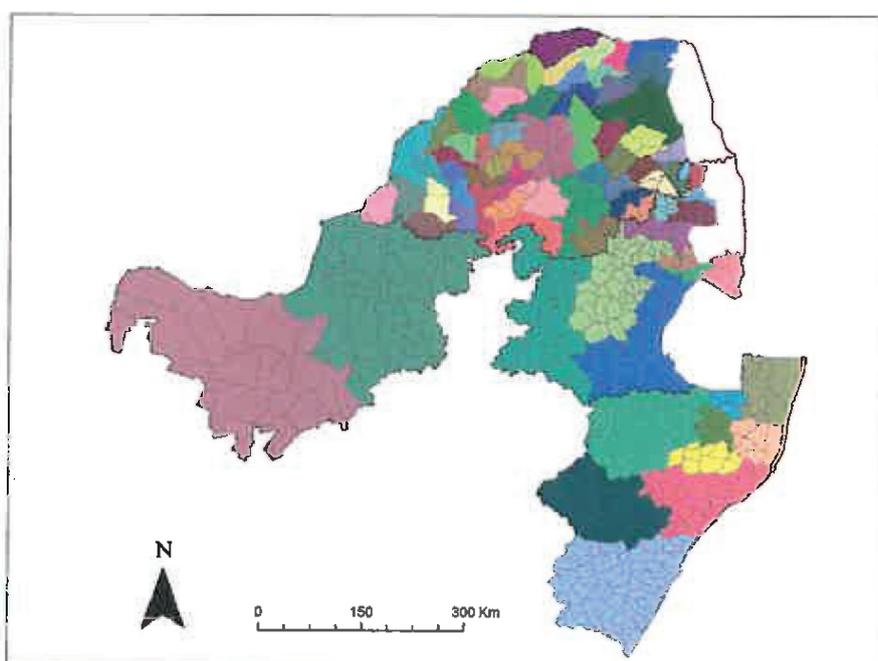


Fig. 2. Proposed Leopard Hunting Zones (LHZ) for 2015 for the four South African provinces (KwaZulu-Natal, Limpopo, Mpumalanga, North West) which have traditionally allowed trophy hunting of leopards. Each LHZ is awarded a single hunting permit, which cannot be used in another LHZ, regardless of the demand for or the success of hunts.

b) Restrict trophy hunting to male leopards ≥ 7 years only.

Large felids are especially susceptible to overhunting due to their complex social systems which depend on the stability of long-term relationships (Caro et al. 2009). An artificial increase in turnover and immigration rates can increase contact between unfamiliar individuals and promote intraspecific strife. Unnaturally high turnover among adult males may also increase infanticide, potentially to unsustainable levels (Whitman et al. 2007, Balme et al. 2009). Solitary species such as leopards

appear particularly sensitive to infanticide as females cannot rely on cooperative defence against incoming males (Balme & Hunter 2013).

Packer et al. (2009) showed that harvesting male leopards ≥ 7 years old had little impact on population persistence, regardless of the extent of offtake. By this age, males have held tenure for long enough to allow at least one litter to reach independence, which is sufficient to maintain population stability. Implementing a strict seven-year age minimum for trophy leopards would dramatically reduce the risk of overharvesting despite uncertainties in population sizes. It would also ease pressure from the inequitable distribution of hunting effort as local population recruitment will improve (Balme et al. 2009).

Such an age-based approach can only be considered if hunters are able to age leopards reliably in the field. Using a 35-year dataset of known-age individual leopards from the Sabi Sand Game Reserve, it was demonstrated that dewlap size is an accurate indicator of male leopards ≥ 7 years old (Balme et al. 2012). Discriminant models showed that there was a 90-100% likelihood of discerning males ≥ 7 years correctly based on dewlap size alone (Balme et al. 2012). Most leopards in South Africa are hunted over baits at a distance of 50-80 m. The dewlap is easily distinguished at this distance, and the increasing use of remotely-triggered cameras by hunters will further facilitate identification (Fig. 3). A comprehensive leopard aging guide will be provided to hunting outfitters with the leopard hunting permit. Hunting outfitters will also be required to complete of an online leopard trophy selection examination to be able to apply for a leopard hunt (www.saleopardhunting.com/exam-options).

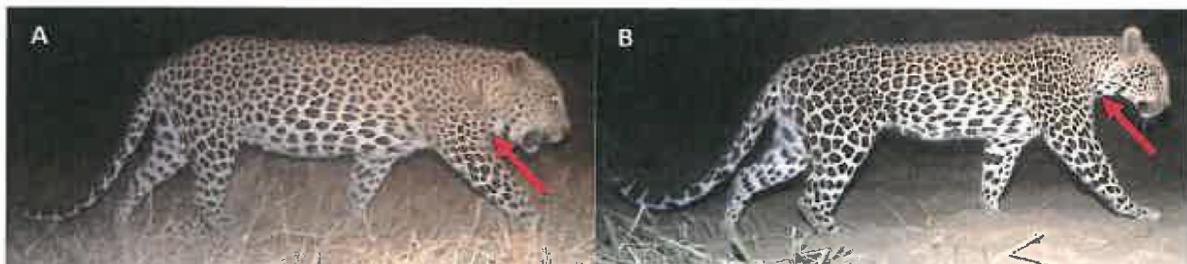


Fig. 3. Male leopards ≥ 7 years old can be recognised easily from camera-trap photographs by the presence (A) or (B) absence of a well-developed dewlap.

Age-based hunting regulations require strict enforcement by government authorities to be effective. No export permits will be awarded for unsuitable trophies (i.e. female leopards or males < 7 years old). The hunting permit will also be withheld from the affected LHZ for at least one year to allow the leopard population time to recover.

The implementation of age-based hunting regulations will not necessarily disadvantage leopard hunters. Provided age-limits are strictly adhered to, the number of animals available to hunt exceeds that proposed for sustainable population-based quotas (male leopards ≥ 7 years old comprised 10-16% of our study population in the Sabi Sand GR (Balme et al. 2013) compared to a maximum sustainable offtake of 3.6% recommended by Caro et al. 2009).

c) Ensure the mandatory submission of hunt return forms and trophy photographs from every hunt.

The age of every leopard trophy must be independently validated to ensure compliance of age-based regulations. The same criteria used by hunters to estimate leopard age can be used by authorities to evaluate trophies (with the addition of tooth wear; Stander 1997). Harvest composition can also be used to track leopard population trends. Research on cougars has shown that changes in the population structure of the annual harvest are monotonically related to changes in population

abundance (Anderson & Lindzey 2005). Because movement patterns vary predictably among cougar age and sex classes, some cohorts are more exposed to hunting than others. A similar relationship exists among leopards (Braczkowski et al. 2015). The success and effort expended on hunts is another index of population trend. In its simplest form, catch-per-unit-effort (CPUE) relies on the premise that a constant harvesting effort will remove a constant proportion of the population. An increase in the effort required to secure a trophy infers a proportional decrease in population size, and vice versa. CPUE is most commonly applied in fisheries management, but it has also been used in terrestrial hunting systems (Bunnefeld et al. 2014, Edwards et al. 2014).

Data on harvest composition and CPUE can be collected through the submission of trophy photographs and hunt return forms (HRFs) by outfitters upon the completion of a hunt. Eleven photographs are required for each harvested leopard – seven photographs taken before the animal is skinned, and four photographs of the cleaned skull (Appendix I). Based on these photographs, each trophy is assigned to a sex and age class by an independent panel of experts (the median age is used for each trophy; Balme et al. 2013). The principal sampling unit used in CPUE analyses is the number of days required to successfully hunt a leopard (Edwards et al 2014). However, the success of leopard hunts is also dependent on the number of baits deployed by hunters, the frequency that baits are replaced, and whether an area was pre-baited (Edwards et al. 2014).

Harvest composition and CPUE can only be used to reliably assess trophy age and leopard population trends if a fully completed HRF is submitted for every leopard hunt undertaken in South Africa (including unsuccessful hunts). As with the enforcement of a minimum trophy age, the issuance of a CITES export tag must be contingent on the submission of a completed HRF by the hunting outfitter.

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