

**Best Practices for Managing Predation in South Africa**  
**Predation Management Forum**  
**September 2014**

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## **1. INTRODUCTION**

Livestock farmers have a constitutional right and responsibility to take care of their animals and to protect it from all potential threats such as extreme weather conditions (cold, heat, droughts, fires etc.) as well as theft and predators, of course. This framework focuses on the best ways to manage predation. Livestock farmers will find this helpful in their attempt to protect their animals against predators.

1.1. For the best results, everything possible should be done to manage unwanted predators in a

- 1.1.1. socially acceptable;
- 1.1.2. economically viable;
- 1.1.3. ecologically reconcilable; and
- 1.1.4. legitimate manner

1.2 Preventive and remedial management measures must be integrated.

## **2. STANDARDS FOR MANAGEMENT MEASURES**

### **2.1. Preventative**

#### **2.1.1. Jackal-proof mesh fence**

2.1.1.1. It is strongly recommended that small stock farmers should fence lambing camp perimeters with mesh fence. The following measures should be taken to make this mesh fence effective:

- 2.1.1.1.1. Use SABS approved mesh fence with a maximum of 75 mm mesh.
- 2.1.1.1.2. Erect up the netting at least one metre high.
- 2.1.1.1.3. Make use of stones to secure the netting on the ground.
- 2.1.1.1.4. Close all possible entrances at gates securely with netting
  - 2.1.1.1.4.1. In areas where tortoises and riverine rabbits occur, create a few small openings for these animals to crawl through. Put chains in these openings to prevent jackal from crawling through.
- 2.1.1.1.5. Place rods underneath the gates to prevent predators from crawling through.
- 2.1.1.1.6. Regular fence patrols should be done to secure any breaches.

#### **2.1.2. Electrical fencing**

2.1.2.1 Electrical fencing can be very useful but it poses a danger to animals such as tortoises, pangolins and Cape monitors (likkewaan). The electric conductors

should be installed in such a way that it would not trap or eventually electrocute these animals.

- 2.1.2.1.1. Install the earth conductor 10 cm above the ground to keep the mentioned animals away from the electrified fence. Install the first live conductor at a height of 20 cm above the ground.
- 2.1.2.1.2. Install the upper electric wire 15 cm above the ordinary fence.
- 2.1.2.1.3. Fences must be equipped with alarms that will trigger if any animal becomes entangled. These entrapped animals should be freed immediately. If they are injured, these injuries should be treated by a veterinarian and released afterwards.
- 2.1.2.1.4. Charges on the fences should be on a setting that will not apply a lethal shock.

### 2.1.3. Live stock enclosures.

A kraal can be made of wire fencing, stones or rough branches. Take into consideration that:

- 2.1.3.1. Wire fencing should be at least 1.4 m high.
- 2.1.3.2. A kraal made from stones should be at least 1.6 m high and should have barbed wire or electric wire on top of it.
- 2.1.3.3. Hedges made from branches should be at least 1.6 m high and must be impenetrable.
- 2.1.3.4. These hedges should be trimmed on the inside to protect against injuries.
- 2.1.3.5. The kraals should be cleaned and all the dung removed on a regular basis to prevent breeding of flies and other parasites.
- 2.1.3.6. Sufficient clean drinking water should be available at all times.
- 2.1.3.7. The kraal should provide ample shade if animals are kept inside during the day.
- 2.1.3.8. Be aware of communicable diseases; small livestock kept in enclosures are at risk.

### 2.1.4. Deterrents

#### 2.1.4.1. Sound deterrents

- 2.1.4.1.1. The **sound of human voices, music or farm noises** are effective ways to keep predators away from livestock. The following steps might improve the efficiency:
  - 2.1.4.1.1.1. Use the sounds only at night in enclosures where predation takes place.
  - 2.1.4.1.1.2. Make use of radios to create different sounds on different places in the enclosure.
  - 2.1.4.1.1.3. Change the radio sounds every night.
  - 2.1.4.1.1.4. Move the radio to a different place in the enclosure every night.
  - 2.1.4.1.1.5. Discontinue the use of sound after six weeks and start again after one month.

- 2.1.4.1.2. Ultrasonic sounds affect predators' hearing and apparently are so severe that it will keep predators away from this area.
  - 2.1.4.1.2.1. Use devices that emit ultrasonic pulses for a short period only.
  - 2.1.4.1.2.2. These **ultrasonic sounds** should be used only for a short period of four or five weeks and can then be alternated with other sounds.
  - 2.1.4.1.2.3. Avoid the use of ultrasonic sounds near owls and bats.

The effect of ultrasonic sound on the behaviour, production and reproduction of livestock is not known yet. Farmers should monitor livestock's behaviour, mating and reproduction habits whenever an ultrasonic deterrent is used.

**2.1.4.2Light Deterrents:** ordinary or flashing lights are useful to keep predators away from enclosures.

- 2.1.4.2.1 Use a combination of yellow, orange and white lights.
- 2.1.4.2.2 Place these lights at strategically places in the enclosure.
- 2.1.4.2.3 Move these lights every evening and change the colours.
- 2.1.4.2.4 Lights should be used in combination with sound deterrents.
- 2.1.4.2.5 Use lights for six weeks and then stop using it for a month before being re-applied.

**2.1.4.3Scent deterrents:** Devices sending out smells that discourage predators from attacking can also be used to keep them out of enclosures.

- 2.1.4.3.1 Place devices down-wind outside the enclosure.
- 2.1.4.3.2 Scent deterrent devices should not be used for periods longer than six weeks.
- 2.1.4.3.3 Alternate scent deterrent devices with sound and light deterrent devices.

**2.1.4.4Livestock protection collars:** These collars protect animals against attacks from predators or deter predators from attacking livestock.

2.1.4.4.1 Protecting collars.

- 2.1.4.4.1.1 Protection collars should be made from firm UV-protected plastic.
- 2.1.4.4.1.2 All the sheep in the enclosure should be fitted with collars.
- 2.1.4.4.1.3 Collars should not be used for longer than six weeks in one enclosure.
- 2.1.4.4.1.4 Whenever the predator starts attacking an animal on any other place than its neck, the collars should be removed immediately.
- 2.1.4.4.1.5 Alternate protection collars with scented collars, fluorescent collars and sound collars.
- 2.1.4.4.1.6 Collars should be well fitted and should not choke the animal at all.

2.1.4.4.2 Deterrent collars: Deterrent collars include collars that produce a sound, are made of bright colours or discharge a certain odour:

- 2.1.4.4.2.1 **Bell collars:** Bell collars should be fitted to about a quarter of the herd. It should not be used for more than six weeks and should be alternated with other types of collars.
- 2.1.4.4.2.2 **Colour collars:** Colour collars are fitted with fluorescent material that radiates light in the night. It should not be used for more than six weeks and should be alternated with other types of collars.
- 2.1.4.4.2.3 **Scent collars:** These collars are made of cotton and various scents are placed on the collar to add a strange scent to the herd. These collars should not be used for longer than six weeks and should be varied with other types of collars.

## 2.1.5 Shepherds

Shepherds can only be used effectively if the herd is kept in a small enclosure.

- 2.1.5.1 Shepherds cannot be expected to overnight with the herd in the veld.

## 2.1.6 Protective animals.

Various types of animals can be used to counterpart predators such as black-backed jackal, caracal, spotted and brown hyenas, leopards and cheetahs in the livestock industry and even the game industry. These animals, just like farm animals, should be managed with the necessary care and attention. They should have free access to food, water and shelter at all times.

- 2.1.6.1. **Male ostriches.** Use male ostriches to keep jackal out of the lamb pens.
- 2.1.6.2. **Blesbok rams.** A Blesbuck ram in livestock pens deters black-backed jackal during the day or night successfully.
  - 2.1.6.2.1. There should not be any blesbok ewes in those pens.
- 2.1.6.3. **Donkey stallions** will deter black-backed jackal and caracal from the pens.
  - 2.1.6.3.1. Remove the donkeys out of the pens once the lambs start to arrive as the donkeys might injure the lambs at the water trough.
- 2.1.6.4. **Alpacas** can also be used with great success to keep predators away from the livestock.
- 2.1.6.5. **Dogs**
  - 2.1.6.5.1. Anatolian shepherds are very effective to protect cattle, sheep and game from nearly all kinds of predators, including lions.
    - 2.1.6.5.1.1. Buy these dogs from reputable breeders who will rear these dogs in a farming environment.
    - 2.1.6.5.1.2. Anatolian shepherds should be inoculated against all kinds of diseases and should be examined by a veterinarian regularly.
    - 2.1.6.5.1.3. These dogs need fresh drinking water and food on a daily base.
    - 2.1.6.5.1.4. Anatolian shepherds should be kept away from the other dogs on the farm.

- 2.1.6.5.2. Herding dogs. Other dogs, trained to herd cattle and sheep can be used. It is also necessary to take good care of other kinds of dogs used in protecting livestock from predators.

## **2.2. Remedial Management measures**

### **2.2.1 Shooting**

- 2.2.1.1 Immediate action. It is important to kill the culprit as soon as possible following the predation incident.
- 2.2.1.2 Specific area. Shooting should be focused on the area where the predation took place.
- 2.2.1.3 Precision. Make only use of experienced hunters that are trained to cull damage causing animals.
- 2.2.1.4 Identification of species. The hunter on the mission to kill a problem animal should identify the species before any action is taken.
- 2.2.1.5 Careful use of calling equipment. Only experienced hunters of problem animals should make use of calling equipment.
- 2.2.1.6 Using in red search lights at nighttime. Only red search lights should be used because white light scares animals away.
- 2.2.1.7 Shooting from helicopters or micro light aircrafts. This should only be done by trained individuals who can identify the predators from the air and kill them. Note the guidelines approved by the NWGA.
  - 2.2.1.7.1 Only professional hunters trained to kill problem animals are allowed to make use of helicopters.
  - 2.2.1.7.2 Landowners whose properties are in the fly-over zone must be informed and they must give written consent that predators may be hunted by helicopter on their land.

### **2.2.2 Traps with adjustable triggers.**

- 2.2.2.1 Only trained individuals may set legal traps.
- 2.2.2.2 Traps should have adjustable trigger plates.
- 2.2.2.3 The ideal trigger mass is 1.8 kilogram.
- 2.2.2.4 The jaws of the traps should have an opening of at least 5 mm to prevent fractures in the legs of trapped animals.
- 2.2.2.5 Traps should not be set in the normal animal footpaths but should be set out of sight and out of the footpath of other animals. It also should not be set in roads, next to perimeter fences where animals crawl through or next to watering holes.
- 2.2.2.6 Attach an anchor to the trap to prevent the captured animal from running away with it.
  - 2.2.2.6.1 Attach the anchor to the bottom of the trap with a chain.
  - 2.2.2.6.2 The chain should have two rotating discs to allow the trap to move freely.
- 2.2.2.7 Traps should be checked at least once a day to prevent any captured animal from being stuck for more than a few hours.

- 2.2.2.8 Appropriate bait such as urine or droppings of the target animals should be used. It is only allowed to obtain these samples from animals that are kept in a legitimate facility or from problem animals killed lawfully. It is against the law to keep predators only for the collection of urine or dung.

### 2.2.3 Cage traps

- 2.2.3.1 Cage traps should be made out of solid material without any sharp edges that may injure animals.
- 2.2.3.2 Cage traps should be set in a way that the trap will be in the shade during the hottest part of the day.
- 2.2.3.3 Cage traps should be checked at least once a day.
- 2.2.3.4 There are different specifications for different species:

#### **2.2.3.4.1 Caracal**

- 2.2.3.4.1.1 The trap should be set up next to the footpath of the caracal and only the sides must be covered with branches.
- 2.2.3.4.1.2 A small aluminium foil ball should be placed in the centre of the catch area of the trap.
- 2.2.3.4.1.3 Mutton or goat's meat are the best bait to lure caracal.
- 2.2.3.4.1.4 It is also very useful to collect a caracal's urine and to sprinkle the urine in the trap as additional bait.
- 2.2.3.4.1.5 When a caracal has been caught, kill it as humanely as possible if you do not intend to release it. A single shot to the head with a medium calibre gun is the fastest and most effective way to kill the animal.

#### **2.2.3.4.2 Leopards**

- 2.2.3.4.2.1 The trap should be very strong and steady and preferably should be set close to the scratch tree of the leopard. It should not be covered with anything.
- 2.2.3.4.2.2 Pieces of rotten bait should be placed directly into the trap and tied up with wire.
- 2.2.3.4.2.3 The bait should be used to create blood trails in various directions in a radius of about 100 metres from the trap.
- 2.2.3.4.2.4 The trap should preferably be anchored to the ground with poles.
- 2.2.3.4.2.5 Whenever a leopard is caught, cover the animal with a thick canvas to keep it calm.
- 2.2.3.4.2.6 A vet should drug the animal before it is transported to prevent any injuries in the trap during transportation.
- 2.2.3.4.2.7 If a female is caught that obviously lactates, all care should be taken to find her young ones and then they should be taken to a registered rehabilitation centre where they can be raised and eventually set free.

- 2.2.3.4.2.8 Whenever a leopard is released, all individuals should be within the safety of vehicles to avoid being attacked by an irate leopard.

#### **2.2.3.4.3 Cheetahs**

- 2.2.3.4.3.1 It is easy to catch a cheetah by making use of a kraal made out of branches. The cage trap should be the only entrance to the kraal with a diameter of approximately 20 meters.
- 2.2.3.4.3.2 These kraals should be positioned close to the place where the animals are active, such as the trees where they play in.
- 2.2.3.4.3.3 The trapping cage should be open at the back and the top covered with thick thorn branches.
- 2.2.3.4.3.4 The best bait is a live young boerbok or even a mature boerbok.
- 2.2.3.4.3.5 When the cheetah is trapped, cover the cage when transporting the animal.
- 2.2.3.4.3.6 If a lactating female is caught, all care should be taken to find her cubs. They should be taken to a registered rehabilitation centre where they can be raised and eventually set free.
- 2.2.3.4.3.7 Cheetahs may not be killed and must be relocated and set free elsewhere.

#### **2.2.3.4.4 Brown Hyenas**

- 2.2.3.4.4.1 A walk-in trapping cage is the best to use for capturing a brown hyena, because they are very strong and would easily break a cage that is not sufficiently robust.
- 2.2.3.4.4.2 The traps can be positioned near to the area where the predation took place. Cover up the trap.
- 2.2.3.4.4.3 The best bait is lamb carcasses or even dead chickens.
- 2.2.3.4.4.4 A scent trail can also be used to lure the hyena to the trap.
- 2.2.3.4.4.5 Brown hyenas caught in a cage trap should be relocated and may not be killed.
- 2.2.3.4.4.6 If a lactating female is caught, all care should be taken to find her young ones. They must be taken to a registered rehabilitation centre where they can be raised and eventually set free.
- 2.2.3.4.4.7 There is no need to cover the cages with plants in advance, but once an animal is trapped, it should be covered to keep the animal calm.
- 2.2.3.4.4.8 It is advisable to get a vet to drug the animal before it is transported.

#### **2.2.3.5 Otters.**

- 2.2.3.5.1 The same cage traps that are used for caracal are suitable to trap otters.
- 2.2.3.5.2 Use the remains of ducks, geese or small lambs as bait.

2.2.3.5.3 Traps should be placed next to fishponds and should be anchored to stop the trap from ending up in the water when the trapped animal moves inside.

2.2.3.5.4 Captured otters should be relocated and may not be killed.

#### **2.2.3.6 African Wild cats and Cape fox**

2.2.3.6.1 The same cage traps used for caracal can be used for both animals. The remains of lambs are excellent bait.

2.2.3.6.2 After they have been caught, it is advisable to keep them in small wire enclosures of 5m<sup>2</sup> until the lambs are big enough not to be in danger any longer. Take note that the landowner should obtain the necessary permits from the relevant provincial nature conservation authorities in advance before capturing these animals.

2.2.3.6.3 Shade (branches over a part of the cage), fresh water and daily food (spring hare or hare leftovers), should be provided to the trapped animals.

2.2.3.6.4 They should be released into the wild when the lambs are too big to be at risk of being caught.

#### **2.2.3.7. Additional safety measures for cage traps.**

2.2.3.7.1 Animals with long tails such as cheetahs and leopards are sometimes injured when their tails get in the way of trap doors. Therefore, it is advisable to cover the door with sponge or rubber to prevent these injuries.

2.2.3.7.2 Unused traps should not be left in the veld, but should be put away in a safe place to prevent them from falling in poachers' hands.

### 2.2.4 The use of poison

#### **2.2.4.1. Poison as bait**

2.2.4.1.1. No poisoned bait may be used in South Africa.

2.2.4.1.2. Notice Nr. R1716 of 26 July 1991 in terms of the Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act, (Act Nr. 36 of 1947) prohibits the use of any pesticides for purposes other than those indicated on labels.

2.2.4.1.2.1. There are no pesticides registered for killing predators and pesticides may not be used for that purpose.

#### **2.2.4.2. Toxic collars**

2.2.4.2.1. Toxic collars filled with Sodiummonofluoroacetate may be used selectively to get rid of predators causing a lot of damage. No other pesticide may be used in these toxic collars.

2.2.4.2.2. Toxic collars may only be filled and provided by individuals with the necessary permits in terms of the Hazardous Substances Act 15 of 1973.

2.2.4.2.3. In pens where predation is a risk, it is advisable to fit a few of the young lambs with a toxic collar and put them, together with adult sheep, in the enclosure.

2.2.4.2.4. Any predator killed with poison should be buried deep or be burnt to prevent secondary poisoning.

### 2.2.5. Hunting with dogs

2.2.5.1. Search, find and killing.

2.2.5.1.1. Only trained hunting dogs should be used.

2.2.5.1.2. Dogs should be kept on leashes until the target animal becomes visible.

2.2.5.1.3. Hunting dogs must be taken care of very well to prevent them from hunting on their own when they get hungry.

2.2.5.1.4. Hunting dogs must be vaccinated and checked by a vet regularly to ensure optimal health.

2.2.5.2 Search and find. Dogs can be used to track and catch predators. Predators are shot once caught. .

2.2.5.2.1 Dogs must be trained to track.

2.2.5.2.2 Dogs should not be allowed to kill the predator.

2.2.5.2.3 If the predator is detected, it should be shot on sight.

2.2.5.3 Search and kill on horseback. Riders follow the track of the predator and chase it into a shelter such as an aardvark hole where it is shot.

## **2.3 Proper training by qualified people and/or organisations**

This is essential to ensure clear identification of predators responsible for livestock losses, and knowledge of sensible predation management measures. Contact the Predation Management Forum for further information on training. It is not only the farmer that should be educated, but also all the farm staff involved in livestock management and production.

## **2.4 Conclusion.**

Information about comprehensive methods to manage predators provides stock and game farmers with enough options to manage the problem of predators effectively. It is important to look at the various options and to use more than one option simultaneously. Preventative measures are usually cheaper than remedial measures and protect the producer's livestock and wildlife against attacks from predators. Farmers in a community should join hands in predator management because predators move over a wide area and one single predator can cause a lot of damage on several farms. It is impossible to get rid of all the predators but it is possible to manage predation in an ecological, sensitive, and economical viable manner.