

# PROTECTING LIVESTOCK FROM PREDATORS

## What is this Action Sheet about?

All over the world, people have to protect their livestock from attack by predatory animals. In Africa, lions, leopards, cheetah and hyenas take goats, sheep and cattle. Smaller predators attack chickens. Livestock owners often resort to shooting or poisoning predators. This Action Sheet looks at non-lethal solutions to livestock predation, and communicates the results of recent research into what works best for livestock protection.

## Why do predators kill livestock?

Predators are wild animals that hunt, or prey on, other animals for their own food. They are carnivores –which means, it's natural for them to kill to eat meat. Because goats and cattle are looked after by people, and haven't evolved to run as fast as wild prey species like springbok and gazelle, they are easier to catch. Predators learn hunting techniques from their group when they are young. Once one has found a way to hunt livestock, it will teach others.

In general, however, predators prefer wild prey. Studies in Kenya showed that predators take more livestock during the dry season. At this time of year, the predator is weak and has less energy to hunt. In many parts of Africa, hunting and conversion of land to agriculture has reduced the amount of wild prey. Scientists studying predatory animals are trying to find out whether this is another reason why people's goats and cattle are being eaten. If it is true, then finding ways to protect all wildlife – so that it can exist in its own balance – could also help protect livestock.



(Image: Sarah Watson, PACE)

## Now that we have the means to kill them, why should we still share the earth with big predators?

**Human life would not necessarily be easier without predators:** Some of the species that are eaten by predators are pests. For example, leopards catch baboons, which often raid crops.

**The world would be a very different place:** We are all part of a web of interactions – “who eats who eats what” is what makes the natural world work as it does. At the top of the chain, predators play a critical role. By preying on herbivores – plant-eating animal – like wildebeest and antelope – they control the numbers of these animals. If man killed off the predators, plant eaters would grow in number, grazing and browsing until the vegetation was totally altered. Trees would no longer be able to grow where they grow now. Predators also control the evolution of other species. Because they naturally go for the easiest target, they usually choose the weak, old, and sick animals in a population. The next generation of prey is born from those that survived – this “survival of the fittest” is central to the process of evolution. In these ways, predators are often the ‘keystone’ species in an ecosystem. If you remove the keystone, a building falls down. If you remove predators, the ecosystem will collapse.

**Protecting predators protects the environment:** If the predator population is doing well, then we know that all the links in the food chain are healthy. There is enough space for all the plants at the bottom of the food chain to grow and support prey animals for the big predators to eat. Healthy populations of big predators tell us that all is well in the ecosystem. By protecting them and the land that they need, we know that we are protecting many more animal and plant species.

**Predators hold meaning for humans:** How many sports teams are named after predators? The Indomitable Lions of Cameroon, the Panthers of Gabon, the Super Eagles of Nigeria – to name a few. They symbolize power for us, and inhabit our myths and stories whether we live in the countryside or the city. Many people believe that cultural and spiritual significance is another reason to protect wild animals from extinction.

**Predators are a big attraction for tourists:** Two of the “big five” – lions, leopards, elephants, buffalo, and rhinoceros – are predators. 70% of people travelling to Kenya for a holiday are visiting to see wildlife. In 1981, it was estimated that an individual lion in Amboseli National Park earned Kenya \$515,000 in foreign exchange income. If more of this money ends up improving the well-being of people who suffer from livestock predation, then it could offset the costs or allow them to afford improved protection.



*Ethiopian crown trimmed with lion fur: Horniman Museum, London (Image: Nancy Gladstone, PACE)*

**Killing predators may not be an effective deterrent:**

Predators are territorial animals. This means that if one is killed, it opens up “empty” territory for another to claim. The new individual or group move in, and the cycle of death continues. Using poisoned bait not only kills predators, but also indiscriminately poisons other scavenger animals like eagles and vultures.

## How can people improve protection for livestock at night?

Many people put the animals they look after into a boma or corral at night. As long as the boma is secure, this is effective protection against smaller predators like hyena. However, it can be difficult to prevent large predators from attacking livestock inside the boma, because they are so strong and can leap over or break down the barriers. Mordecai Ogada and Steven Ekwanga, researchers at the Laikipia Predator Project at the Mpala Research Centre in Kenya have been working with ranchers to monitor livestock predation and test out different boma designs and husbandry methods. His research led to the following recommendations:



*Thorny fenced boma in Laikipia, Kenya (Image Sarah Watson, PACE)*

**Make thornier bomas:** Bomas are often made of thorny acacia trunks and branches, piled up in a circle. Ogada and Ekwanga found that these traditional bomas were better than stone or wire bomas, but that adding more thorny branches to the outside of the boma, and making sure that the thorns pointed out, really deterred predators. No animal wants to damage its eyes and snout, so they will not push through or climb on a really thorny boma wall. Surrounding a thorny boma with wire mesh makes the boma even stronger as the wire prevents hyenas from digging underneath. Some people grow living bomas using thorny plants (See Action Sheet 40).

### **Make thicker bomas:**

Lions stampede cattle in bomas, causing them to break out so they can run them down. Bomas built with thick acacia thorn walls, wire mesh or stone protect cows well, as the cows cannot break out and they are too heavy for lions to lift out. Sheep and goats may need other protection, because lions and leopards can leap in, snatch them up, leap out and away. One potential solution is to put cantilevered barbed wire above the walls of the boma. The door to the boma also needs to be as strong as possible. In Laikipia they are using a flattened metal drum for the door, which is strong enough to resist being broken down by predators and blocks the predator's view of the livestock.

**Make more rooms:** Bomas with several internal 'rooms' are better than those with a single enclosure.

**Keep it covered:** Sheep need to be moved to a clean spot every few days, so some ranchers in Kenya use metal "weld" mesh to make a portable boma. A rancher in the study area discovered that covering a wire boma fence with burlap reduced predation. It seems that carnivores didn't jump in if they couldn't see the target.

**Have people close by:** Lions, leopards and hyenas took fewer sheep, goats and cattle from bomas where more houses were present. If it is not possible to have people living near the boma, it may be worth experimenting with having a radio playing to make it seem like there are. As ever, any experiment needs to be monitored to find out if it works and if it keeps working.

The study also found that bomas with an armed night guard were well-protected against lions – perhaps the guards were able to scare lions away or perhaps the lions learnt to avoid bomas where they were shot at.

**Keep dogs:** Dogs help to scare away predators, but it is important to keep them healthy by vaccinating against rabies and canine distemper. This will protect people, livestock and wildlife against disease. In the PACE book, you can read more about a special type of dog – the Anatolian Shepherd Dog – being used by the Cheetah Conservation Fund in Namibia to protect livestock against cheetahs.

### **So traditional thorny bomas were best! Are there any other lessons from the past?**

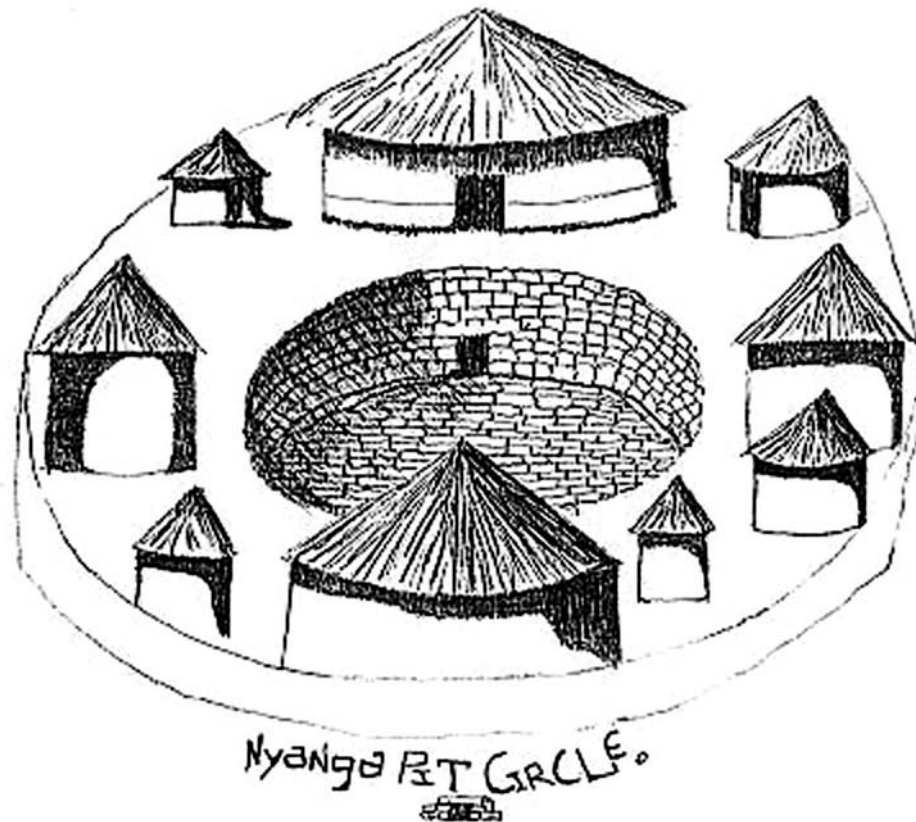
More than 600 years ago, the Tonga people living under the Nyanga district of what is now Eastern Zimbabwe used pit circles to keep their livestock safe at night. The stone-lined pits, dug into the slope with a wall enclosing the lower side, were about 4 metres deep. The depth protected animals from being lifted or stampeded out of the pit. Livestock entered the pits through a low tunnel, walled and roofed with flat stones. The tunnels were usually curved, so that a predator looking in would not be able to see where it led. People slept in houses built above the tunnel, from which they controlled poles to keep the tunnel open or closed. Any movement of the poles, or noise, would alert them to livestock thieves or predators.



*Boma Door, Laikipia, Kenya  
(Image: Sarah Watson, PACE)*



*Living boma near houses, Chyulu, Kenya  
(Image: Sarah Watson, PACE)*



*Nyanga Pit Circle (Image: [www.garethpatterson.com](http://www.garethpatterson.com))*

The lion conservationist Gareth Patterson believes that modern day livestock owners could adapt this ancient technique and, with careful monitoring and research, revive the wisdom of the ancestors.

### **What about keeping livestock safe during the day?**

**Herding:** Careful herding is vital for grazing livestock. Ekwanga and Ogada found that the having smaller herds, or more herdsman, were the best ways to protect livestock during the day. If you herd your own livestock, you will of course be careful to look after them night and day. If others look after them for you, it is worth setting up a system that motivates herders and rewards good herding.

**Livestock disease:** Studies that have monitored livestock lost to predation have also monitored losses of livestock to disease. It is often much higher, and causes much more suffering, not only because livestock is lost, but also because some livestock diseases can spread to humans and wild animals. Low cost vaccination and animal health care programs need to be developed to address this problem. Having healthy protected livestock will help people to prosper, so they do not need to rely on hunting wildlife for meat. This will leave more wild prey for wild predators, and give people the resources they need to protect their livestock more effectively, perhaps using some of the ideas described above.

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REDUCING LIVESTOCK LOSSES AND CONSERVING PREDATORS, a leaflet by Rosie Woodroffe, Laurence Frank, based on research led by Mordecai Ogada and supported by grants from the Wildlife Conservation Society, the African Wildlife Foundation, East African Wildlife Society, National Geographic, Sea World, Inc., the Potrero Nuevo Fund and other conservation foundations. ([http://www.laikipia.org/news\\_lions.htm](http://www.laikipia.org/news_lions.htm))

Policy Dimensions in Human-wildlife Conflicts in Kenya: Evidence from Laikipia and Nyandarua Districts Institute of Policy Analysis and Research *Policy Brief Volume 11, Issue 3, 2005*

The economics of a lion, Article by Philip Thresher published in Tropical Forest Resources, An International journal of the forestry and food industries, Vol 33, 1981

Looking AHEAD While Looking Back: Proceedings of the Southern and East African Experts Panel on Designing Successful Conservation and Development Interventions at the Wildlife/Livestock Interface: Implications for Wildlife, Livestock and Human Health, AHEAD (Animal Health for the Environment And Development) Forum, IUCN Vth World Parks Congress, Durban, South Africa, 14th and 15th September, 2003 IUCN Occasional Paper No. 30. ([http://www.wcs-ahead.org/wpc\\_launch.html](http://www.wcs-ahead.org/wpc_launch.html))

Reducing Human/Predator Conflicts in Africa and Elsewhere: Could We Learn From the Past? By Gareth Patterson (<http://www.garethpatterson.com/Circles/circles.htm>)

## **FOR MORE INFORMATION**

### **CONTACTS**

Laikipia Predator Project, Mpala Research Centre [www.mpala.org/](http://www.mpala.org/)  
Africat – [www.africat.org](http://www.africat.org)