LIVING WITH LIONS

Conflict between lions and pastoralists has seen the king of beasts come off second best. **Geordie Torr** travels to Kenya to see how traditional methods are enabling these bitter enemies to coexist

The kill was fresh – a small buffalo calf. The vehicle ahead, tracking the female lion that was almost certainly responsible for reducing the calf to little more than a haunch, continued to drive away, so we decided it was safe to get out and inspect the remains.

As we cut off a large hunk of meat for baiting the lion trap, however, the vehicle circled back and stopped. Researcher Steven Ekwanga pointed… there, about 50 metres away from us, was the lion, probably watching us intently as we helped ourselves to the leftovers from her earlier meal.

Given the horror stories I'd read in the British press towards the end of 2003, I saw this close encounter with a large carnivore as quite fortuitous. Not because I escaped it unscathed, but because I had it at all.

Those stories – predicting the imminent extinction of the king of beasts – were sparked by a *New Scientist* article in which Dr Laurence Frank, a wildlife biologist at the University of California at Berkeley, quoted figures pointing to the decline of Africa's lion population. Frank has been studying predators here on the Laikipia plateau in northern Kenya for the past seven years. "Until very recently, no-one noticed that lions were disappearing," he says. "I wasn't the first to notice, but it was clear that something had to be done."

The figures that Frank quoted, compiled by the African Lion Working Group, were certainly startling – a fall of almost 90 per cent in the past 20 years to a total population of around 23,000 animals. Habitat loss, trophy hunting, inbreeding and disease have all taken their toll, but according to Frank, the biggest threat to the lions – as well as other large carnivores such as hyenas and leopards – is from pastoralists.

"The problem with these large predators is that they eat livestock, so people kill them," Frank says. "That's almost the whole story right there." Hence he's attacking the problem by working with ranchers and indigenous farmers to try to find ways to reduce the conflict between lions and humans. "What we're trying to do is figure out how to help people protect their livestock at minimal cost," he explains. "Pastoralists all over the world are very conservative – they don't readily change what they do. So finding that the ancient methods that have been in use for thousands of years work just fine, as long as they're applied diligently, is really important."

The ancient methods to which Frank is referring are traditional enclosures known as bomas. Also known as corrals or *kraals*, bomas are used to protect livestock at night. Their walls can be made from a variety of materials including stone, wire or piled up brush. Some incorporate internal 'rooms' that split the herd up into smaller groups, thereby lessening the likelihood of a mass breakout.

Malcolm Schuyl/FLPA

I'd joined Frank on Loisaba, a 25,000-hectare beef ranch run by Tom Silvester. "We run a substantial number of cattle: about 2,000 head," Silvester tells me. In the past five years or so, however, he has increasingly turned to tourism to supplement the ranch's income. "Myself and some others leased the property and started pumping up the tourism and using that to try to pay the conservation bill. Looking after a property this size, the beef herd just can't manage it."

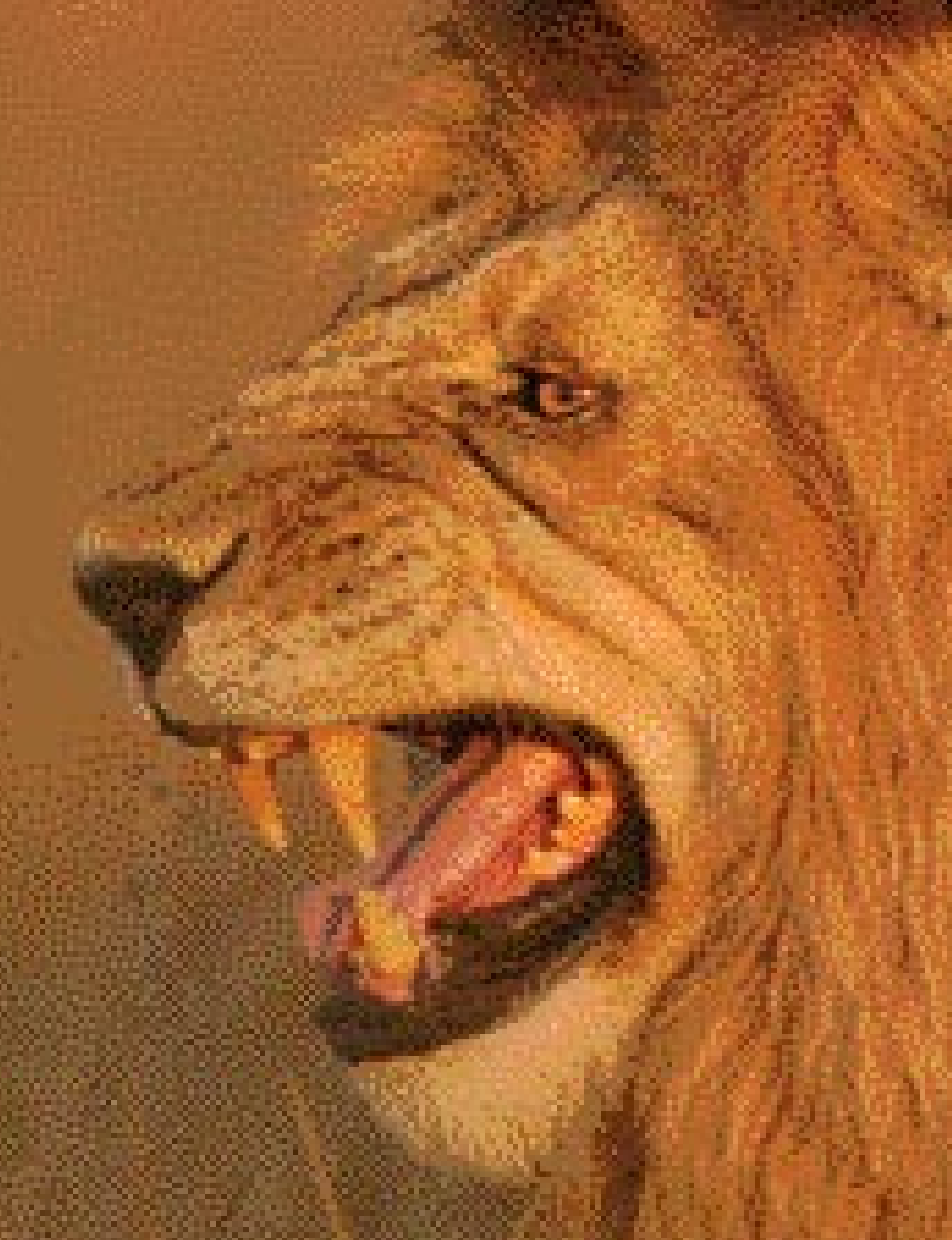
The property is unfenced, and the abundance of its game is the result of low stocking rates and careful management. As well as the usual suspects – elephants, zebras, antelope – Loisaba is home to about 20–30 lions: one dominant pride and a few offshoots. And the lions are a big drawcard for the tourist operation. "That's what people want to see," Silvester says. "It's a big boost. And they're wild lions. Although they're fairly habituated, there's always a sense that something can happen."

In order to create a balance between the cattle and the wildlife tourism operation, Silvester has been concentrating very hard on minimising losses to predators. "I've taken traditional boma systems and just boosted them up," he says.

Silvester takes me out to show me one of his active bomas. It's late afternoon and the cattle have been brought in for the night. "There are mobs of about 100 cows in a herd, which are looked after during the day by two herdsmen," he explains. The herdsmen employ a rigorous system of counting in and out in the mornings and evenings. "It's important that they don't leave any cattle out after dark – that's a death sentence."

The boma's high walls are made from piled up thorn bush, and around the outside is a series of small huts in which the workers live. "If a lion comes around, it's hit by the smell of the humans and their activity first – the smoke and so forth – so you get a double layer of protection," Silvester says. "And if the guys do hear a lion, or the cattle getting restless, they can get out very quickly to make sure the cattle stay in."

There's also a watchman who's on night duty and a number of security guards, one of whom is armed. "It's quite a big human presence, which is critical," Silvester says. "It might not be as economical as having just a couple of guys, but you only have to save one cow and you've paid the salaries of several men." The workers are also offered incentives.



"If there's any kind of lion presence around and there aren't any losses, the guys get a bonus."

Silvester's methods have clearly been effective. "Predator losses have been minimal," he says. "It really isn't a problem as far as I'm concerned. I've had a few instances of cattle being attacked during the day, but they're pretty isolated and haven't resulted in mortality – normally the herdsmen have managed to chase the lion away. And in the 12 years I've been here, we've only shot two lions."

It was Silvester's success that led to Frank becoming involved with Loisaba. "I was particularly interested because when I started my work here, I talked to everybody in the district and it turned out that Tom had very, very few losses to lions or hyenas," he tells me. "Tom said he'd never shot any lions, whereas another ranch that shares lions with Loisaba had tremendous losses, even though they had shot a lot of lions. I was really interested in the difference between the two places."

Frank's approach has been low-key. He has collared about 35 lions on Loisaba and 20 or so surrounding ranches and now simply monitors their movements. He also records stock losses and the ways in which ranches look after their livestock, in the hope of figuring out why some lose more than others. "I made a point from the beginning of never coming on strong to these ranchers," he says. "We just said, 'Please continue what you're doing, we're going to put on collars and stand on the sidelines and try to learn something.'"

Right: **cattle confined for the night inside a boma made from piled up thorn bush; Far right: Dr Laurence Frank changes the radio-collar on a female lion**

Geordie Torr

The results from Frank's research have led him to change his ideas on lion management. "Originally, my mindset was that lion numbers were plummeting, so any lion killed for killing livestock was bad news," he says. "But it increasingly became apparent that here at Laikipia, I can't apply those sorts of criteria, because although there aren't as many lions here as there would be if there was no predator control, there are still plenty of lions. Although we hear of between 30 and 40 lion killings a year – and God knows how many there are that we don't hear about – the lion population certainly isn't declining. In fact, it might even be increasing."

Frank thinks that this is because the local predator control is keeping the population below its carrying capacity. In South Africa, he explains, researchers studying lions released into new fenced reserves have seen their populations explode. "They can reproduce at 20 per cent a year when there's prey and opportunity," Laurence says. "Here at Laikipia, we're losing roughly 20 per cent a year, and the population seems broadly stable. So while 20 per cent mortality sounds enormous, the population here seems to be coping. So I stopped getting hysterical every time a lion gets shot.

"There are two very different kinds of land use here," Frank explains. "You have these big commercial ranches where there's lots of wildlife, and then you have the communal areas, where there are huge numbers of people and huge numbers of livestock, very little wildlife, and predators aren't well tolerated at all." Because there is little in the way of natural prey on the communal lands, any lions that move into these areas have little choice but to kill stock, which usually ends with their being killed by herders.

What has Frank worried is an apparent increase in the use of poison in the communal lands. "In the past couple of years, there have been probably 20 lion poisonings that we know about on Laikipia," he says. "A month ago, we lost an entire pride when it wandered into the communal areas. It sounds as if the poison wasn't even out for the lions, it was left out for hyenas and killed everything else around."

Frank is now trying to get the message out. "We're putting up demonstration bomas on all the communal areas," he explains, "showing people different ways, at varying cost, to

Geordie Torr

Cruel to be kind?

As he's learnt more about lion behaviour, Laurence Frank has developed some slightly unorthodox views about the best way to deal with conflicts between lions and livestock and about lion conservation in general.

"We're beginning to see that some prides rarely, if ever, get into trouble – apparently over several generations – while other prides are constantly being whittled away because they get shot for killing livestock," he says. Frank believes that young lions are learning bad habits from older ones. "While you're picking off the older ones, the youngsters are keeping it up.

"It sounds severe and draconian, but if it turns out that this is the case, perhaps it would make more sense to take out a whole bad pride and let that territory be repopulated by the offspring from neighbouring prides that don't have the cattle-killing habit." However, Frank accepts that this approach would probably be unacceptable, even if it did prove to be most practical.

A similarly unpalatable option is the use of trophy hunting as a conservation tool. "Outside of national parks, nobody I know has ever found a way of making money out of wildlife except by eating it or hanging it on a wall," Frank says. "And while I don't understand the motivation for trophy hunting, it's enormously lucrative. It's a huge industry and it requires huge landscapes full of life in order to function.

"According to a recent model, it takes a population of something like 200 lions to produce three trophy males a year, so a small off-take of older animals that aren't critical to the population can make the entire ecosystem pay for itself. In areas that have no real agricultural value, which is true of an awful lot of Africa, you could have livestock destroying habitat, or you could make some money out of having rich fat old men shooting animals." According to Frank, more and more mainstream conservation organisations are seeing sport hunting as a useful conservation tool. "It isn't very politically correct, but if you want a lot of animals, you should let a few be shot for a lot of money.

"Tourism obviously has a huge role to play in conservation, but the market for tourism is limited. And tourism is incredibly fragile, whereas trophy hunting isn't. Take Zimbabwe for example. Tourism has pretty much died there, but trophy hunting is still going strong. Big tough guys with big rifles aren't worried about a little political instability."

Paul A Souders/Corbis

essentially predator-proof their bomas. It can be done for absolutely nothing or, if you want to spend half a goat's worth, you can do a pretty damn good job. For a couple of goats, nothing will get into that boma."

The difficulty lies in getting people to sell a goat or two and create a strong boma when, for a very small outlay, they can buy some poison and do away with the problem quickly and easily. "Their response is, 'Well, you like lions and hyenas so much, you build my boma.' Which is perfectly reasonable," Frank says. "And I imagine that if I really wanted to, I could get a donor agency involved and build everyone a boma. But that isn't a long-term solution."

Frank believes that the answer lies in tourism. "If you don't have the motivation of tourism," he says, "why would you put any effort into protecting your livestock if, for a couple of bucks worth of poison, you can kill every predator on the place? So our message to the local people is, you have to understand that yes, tourists like you, but they really aren't here to see your goats, and when you get down to it, they're really not here to see you either. They're here for wildlife and predators, particularly lions. So, yes, you can make money off tourism, but you have to have more wildlife."

One place where Frank's assertion that, given the right conditions, lions will thrive is borne out is the 16,000-hectare Lewa Wildlife Conservancy in northern Kenya. Originally set aside to conserve black rhinos, this private reserve is now home to a spectacular diversity and abundance of wildlife. However, that abundance appears to be causing problems.

During the past few years, Lewa's lion population has doubled from 12 to about 25. But rather than being a cause for celebration, this sudden surge has created a major headache for the reserve's managers.

The trouble is, Lewa is also home to a quarter of the world's remaining Grevy's zebras, and the growth of the lion population has seen a simultaneous decline in zebra numbers. "Three years ago, the total world population was at about 2,500," says Belinda Low, the research officer on Lewa, who is studying the movements of Grevy's zebras in the region. "Today we reckon that, at best, it's 2,100, at worst, about 1,700." At one point, Lewa's population was above 500, but it's now down to about 400 individuals.

In order to work out what to do, Lewa set up a project to monitor the lions. Young Kenyan biologist David Njonjo began studying the lions in October 2003. "Our main focus is trying to work out exactly how many Grevy's the lions are taking and comparing that to the plains zebras, because it appears that the lions are targeting the Grevy's," he says.

Njonjo has collared four male and four female lions and locates them each day. He is building up GIS maps of lion movements and home ranges and comparing them with the movements of the zebras. While he's doing this, he also collects lion scats in order to look at the lions' diet, comparing the hairs he find in the scats to a reference collection.

His findings thus far have confirmed early suspicions that the lions are having a heavy impact on the Grevy's zebras. "There has been a lot more Grevy hair than plains hair in the scats, which is an indication that they have been targeting Grevy's." Njonjo is wary of being quoted as the findings are still only preliminary, but his early results suggest that Grevy's zebra make up more than 50 per cent of the Lewa lions' diet.

Clearly, something has to be done. "At a recent workshop it was suggested that yes, we will have to control predators – to reduce them in protected areas – because we just can't afford the impact that they're having," Low says.

"We're looking at contraception using subcutaneous implants," says Njonjo. "Not many places have done it, but it has been done very successfully in South Africa."

However, even with contraception, the high lion density isn't viable, so the population will need to be reduced, which raises another dilemma. Obviously, culling the lions is an unsavoury option, but moving them elsewhere brings its own problems. "Translocation of lions is usually very unsuccessful," says Njonjo. "Wherever you want to translocate to, there will usually already be lions with established territories."

One option for translocation is Nairobi National Park, where disruption of migration routes has led to a decline in prey. "The lions there are starving, so they've been moving out into surrounding areas, where the locals have killed them."

Which brings us right back to the need to end the conflict between lions and humans. Otherwise, we face the sad possibility that the king of beasts' reign could soon come to an end. G

Right: the endangered Grevy's zebra; **Below right:** biologist David Njonjo and a tracker examine the remains of a lion kill

Photographs: Geordie Torr

Co-ordinates

KENYA

When to go

Kenya's climate is complex, unpredictable and locally variable. There are two wet seasons (April–May and October–December). The main tourist season runs from January to March. The drier months of July and August are generally considered to be the best for game viewing as animals congregate around water sources

Don't forget

Malaria is present throughout much of Kenya, so avoid bites and take the appropriate prophylaxis

Don't miss

The annual wildebeest migration from the Serengeti to the Masai Mara in June–September

■ *Visits to both Loisaba and Lewa Downs can be arranged through Aardvark Safaris (01980 849 160; www.aardvarksafaris.com). Prices for an itinerary that combines three nights at each of Lewa, Loisaba and Rekero Camp in the Masai Mara and includes all international and internal flights, safari activities, all meals and local drinks start from £2,875 per person*