Where *have all* *the* lions gone?

By Laurence Frank

"Laurence, this is too dangerous." Translated into his native Turkana, Stephen was saying, "Laurence, you are the dumbest white man in all Christendom."

"We'll never get data on cub survival if we don't count cubs. And this is the only way to do it."

"But she charged us the last time we tried this."

"Yeah, but they are very close this time – I know we can get a count."

"But we are in the middle of two hundred buffalo."

"Yeah, but they don't seem to mind us, and I really want to count those cubs."

Just then Female 11 burst out of a bush 30 yards in front of us, with the distinctive roar of a mama lion defending her brood. Simultaneously, her big uncollared companion (known to us as 11's Friend) charged us from the right. At fifteen yards, scientific detachment gave way to gibbering terror and I fired a shot in front of 11, spraying gravel in her face. Both females evaporated in a gratifying instant, and we picked our way through the buffaloes back to the car, grinning at each other the way fools do when they have once again survived their own stupidity. We each had counted three small cubs.

Besides having glorious good fun and annoying blameless animals, was there some point to this idiocy? We were doing our modest bit to prevent the disappearance of wild lions in Africa. Six years ago, I abandoned my beloved spotted hyenas and came to the thornbush of Kenya's Laikipia District to initiate one of the first conservation studies of lions and other predators in the cruel, hard world of man.

Around the world, predators have disappeared because they kill man's livestock. It took Western Europeans thousands of years to wipe out bears and wolves. In eastern North America, it took a few hundred years. Better guns, traps and poison cleared wolves and grizzlies from the American West in a few decades. Now it is Africa's turn.

For years, conservationists have been rightly concerned about dwindling populations of elephants, rhinos and apes. But while no one was watching, the great predators have been disappearing even faster. Go to any national park in Africa and you will see lions and hear hyenas. But outside parks, the situation is drastically different. Until recently, conservationists estimated 100 000-200 000 wild lions in Africa. A survey last year by the African Lion Working Group concluded that there is probably less than 23 000 left. There are perhaps 15 000 cheetahs, and possibly 5 000 wild dogs. We know nothing about hyena numbers, but they are dwindling, too. Only the adaptable and elusive leopard is holding its own.

Today, the majority of predators survive in national parks, most of which are too small to ensure long- term survival of viable populations, and too widely separated to prevent the genetic problems that arise when isolation causes close relatives to interbreed. Political instability can wipe out a protected area in weeks, as we have seen in the tragedy of today's Zimbabwe.

Even within protected areas, most carnivores die at the hand of man: in parks, 50% of the lions are killed by humans. (In and around Yellowstone, the world's first national park, an astounding 89% of grizzlies are killed by humans.) This occurs partly through poaching – many African carnivores die in snares set for edible game – but mostly because these animals

have huge home ranges, and are likely to cross park boundaries into lands inhabited by humans and their livestock.

Although biologists have studied African predators in parks since the 1960s, we know next to nothing about their behaviour and ecology where they must cope with high levels of human persecution.

Lions are highly social creatures, dependent upon their fellows to help hunt, and then defend their kills. What happens to their social system when 20-30% is shot each year? Nor do we know much about preventing their depredations on livestock. Are there ways of tending cattle and goats that would reduce the number taken by predators, yet still be affordable and acceptable to impoverished, conservative African herding tribes?

Laikipia is an ideal laboratory for this study. Lying astride the equator at the base of Mount Kenya, it is a microcosm of rural Africa. Near the mountain, subsistence farmers and market gardeners get enough rain to eke out a living.

Further north, commercial cattle ranches owned by descendants of the original British settlers, surround the lands of the Laikipiak Masai who subsist on their herds of goats and cattle. Both ranchers and tribesmen still use the ancient herding systems that evolved here in response to the twin threats of predators and human raiders, still constant concerns today.

During the day, livestock are closely tended by herders who bring the animals back to spend the night in thornbush bomas ('kraals' in southern Africa.) Wildlife, from dik-diks to elephants, is abundant on the ranches, where low stocking rates maintain healthy rangeland. Most importantly, ranchers in Laikipia have become ardent conservationists, committed to preserving the habitat and wildlife.

In all of Kenya, only on Laikipia ranches is wildlife increasing. Most of the communal areas, however, are badly overgrazed and wildlife is less common.

With enthusiastic help from Laikipia ranchers, we have captured over ninety lions; they are released wearing radio collars and short an ounce of blood, taken for disease studies. By tracking them from the air, we have learned that the average lion moves over five or six ranches, but almost never crosses onto the communal areas, where there is too little natural prey and too many people ready to poison stock raiders.

The use of cheap and readily available poison is on the increase in the tribal areas; a single poisoned carcass can kill a pride of lions, a clan of hyenas, and scores of jackals and vultures.

While aerial tracking gives us invaluable information on movements, it cannot tell us much about ecology. How many lions are associated with the collared individual? How often do females give birth, and how well do cubs survive? What happens to a pride when some are shot after killing one too many cattle? Does the death of a pride male mean that all his cubs will die in the jaws of the new male who replaces him?

With tame lions in a national park, we could just drive up and watch them. But after a century of experience with guns, non-park lions are extremely wary, staying deep in Laikipia's thick bush by day, and moving only at night. In order to answer these questions, we track them on foot, hoping to catch enough glimpses through the bush to gradually build the biological information we need to intelligently manage this population.

Glimpses are all we usually get, as the cover is so thick that often only a few yards separate lions from scientists when we become aware of each other, and they slip off into the bush.

The collars also help us learn what sort of lion is likely to become a serial killer. When we get a call from a ranch that cattle have been attacked, we check for collared animals in the vicinity, building up dossiers on bad characters.

It does appear that there are well-behaved lions and naughty ones: of those we originally captured on a livestock kill, 40% have been shot for subsequent misbehaviour. Of those captured under other circumstances only 14% have been shot for killing cattle. Thus far, females seem to be the main culprits, especially old loners with no one to help them catch wild prey.

Should we remove such animals preventively as soon as they become a problem? Can we set objective criteria, removing an animal after it has killed say, three cattle in a month? Or five, in six months? How should criteria differ in the communal areas, where the loss of a cow is much more serious than on a ranch?

If a lion is to be condemned, should both ranchers and Masai first have to demonstrate that they are using the best livestock management methods to avoid attacks in the first place? Today, there is no policy, nor even a competent authority to make decisions.

All the biology in the world won't save lions if people continue to kill them at the current rate. And they will be killed as long as we do not protect livestock.

Elaborate and expensive measures are not realistic for Africa, so it is fortunate that, properly applied, ancient African livestock management methods are very effective.

Our research has shown that if bomas are properly constructed and well maintained, cattle cannot burst out in panic when lions prowl at night. If there are dogs and a night watchman at the boma, they can rouse the sleeping herdsmen and chase off the lions before the cattle panic. If herds were tended by young men, instead of by children, most predators can be frightened off before they kill.

Yet bullets and poison are always cheaper and easier than even the most modest improvements to husbandry. Unless lions and other wildlife have value to African people, they will soon disappear outside of parks.

Each year in Laikipia, 30-40 stock-raiding lions are shot and left to rot. How much would these be worth to sportsmen?

Although there is currently no sport hunting in Kenya, we are working on a system to enlist sport hunters to remove problem lions. Income thus generated would be used to compensate cattle owners, help the Masai improve their husbandry, and pay for wider lion conservation efforts.

And what of Female 11's cubs? Today, one of them is known as Female 30, and she has her first litter. We will have to count them soon.

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