

Lever C. 1997. The AfriCat Foundation. *Oryx* 31(1):10-3.

Keywords: 1NA/Acinonyx jubatus/AfriCat Foundation/cheetah/conservation/leopard/lion/Panthera leo/Panthera pardus

Abstract: The AfriCat Foundation was formed in November 1992 by Wayne and Lise Hanssen on their 6000-ha farm, Okonjima, to conserve the big cats of Namibia. Of the world population of 9000-12000 cheetahs, Namibia supports some 2500. Only 5 per cent of these are found within Namibia's national parks, the rest occurring on the 6000 or so privately owned farms. A short-term goal of the Foundation is the release of non-problem predators caught in traps back into the wild to maintain a healthy free-ranging population. A medium-term goal is to inform farmers of tried-and-tested antipredator husbandry methods. Finally, long-term goals are to develop measures for farmers that suffer repeated losses of livestock, to establish an education centre at Okonjima and conservancies, and to provide opportunities for scientific research on predators.

West African carvers in a number of countries either for the tourist market or, under the direction of Asian entrepreneurs, for the name-seal market in the Far East.

Senegal's Environment Minister, who opened the meeting, spoke eloquently about the significance of elephants for Africa and called for a spirit of compromise to guide the discussions. The outcome more than met his challenge. It remains to be seen whether the same spirit will prevail in Harare. In any event Dakar was an important milestone in asserting African responsibility for the largest and most fascinating of land animals.

Robin Sharp, FFI Trustee

Thailand's expanding green peafowl population

The green peafowl *Pavo muticus* population in the Huai Kha Khaeng Wildlife Sanctuary of west Thailand is recolonizing former territories in the Thap Salao Valley near the sanctuary's headquarters some 30 km east of the sanctuary's main river valley, the Huai Kha Khaeng itself. With around 300 birds, this sanctuary supports one of the largest and least threatened green peafowl populations in Asia.

The Thap Salao Valley was once home to green peafowl, but forest settlers eliminated them and their cohabitants. Then, 5 years ago, after the much lamented suicide of sanctuary chief Seub Nakhasathien, the boundary was extended eastwards, villagers were given new land outside the valley and it reverted to a natural, undisturbed state. Now it has been recolonized by gibbons, green peafowl, otters, deer and jackals.

The pioneering peafowl, around 10 in total – appear to be subadult males and females. Although no one knows what route they took, they can only have come from the valley of the Huai Kha Khaeng and must have followed a series of streams before flying across the dividing watershed ridge. But that any birds came at all and that those that came are

subadults suggests that the main population may have reached its carrying capacity. A survey in 1993 (10 years after the first, 5 years after the second) indicated a population increase of around 20 per cent.

The two most notable changes in Huai Kha Khaeng over the last 5 years have been a dramatic reduction in poaching and forest fires, which would have helped the peafowl population prosper. In 1993 it was already apparent that the peafowl had extended its range within the valley to areas that were not inhabited before and are, apparently, marginal habitat. But only now are young birds looking for territories outside the valley of their birth.

Seub Nakhasathien's successor, Chatchawan Pisdankham, can be given most of the credit for this dramatic improvement in the sanctuary's conservation status. When he took over the tricky job of chief, he introduced a tough but visionary programme of policing, staff training and welfare, and public relations (largely funded by the Seub Nakhasathien Foundation), which slowly transformed Huai Kha Khaeng from a sanctuary where morale was low and offences high to one that qualifies as a model conservation area. Proof of this is plentiful but none is more conspicuous than the peacock calls that chime the working day around the sanctuary headquarters after a silence of almost three decades.

Belinda Stewart-Cox

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The AfriCat Foundation

The AfriCat Foundation was formed in November 1992 by Wayne and Lise Hanssen on their 6000-ha farm, Okonjima, at Otjiwarongo in the Omboroko Mountains of the Waterberg Plateau, 200 km north of Windhoek, to conserve the big cats of Namibia.

For the previous 15 years Wayne Hanssen had been studying leopards *Panthera pardus* at Okonjima and had been attempting to devise

effective methods to prevent leopard predation on domestic stock. Since early 1991 Lise Hanssen has been conducting a parallel study of leopards and cheetahs *Acinonyx jubatus* on other farms in Namibia and has been successfully breeding cheetahs at Okonjima. Initially their work was funded by tourists visiting the farm, but when the project grew too large to be supported in this way, the Hanssens formed the AfriCat Foundation to raise funds elsewhere.

The staff comprises the Hanssens, Wayne's two sisters, Donna and Rosalea, plus a team of trained professionals and experienced fieldworkers. All understand the problems caused by predators to local farmers and can offer advice and help on this sensitive issue in a way that does not give offence.

Of the world population of 9000–12,000 cheetahs, Namibia supports some 2500 – the largest surviving free-ranging population. Only 5 per cent of these are found within Namibia's national parks, the rest occurring on the 6000 or so privately owned farms.

In Namibia, as elsewhere in Africa, inadequate methods of protecting livestock have resulted in severe losses; shepherds lose sheep and lambs to cheetahs and leopards, as well as to raptors and caracals *Felis caracal*; cattle ranchers lose calves to cheetahs and leopards, and cows to lions *Panthera leo* and spotted hyaenas *Crocuta crocuta*. Livestock farmers whose sole income is derived from their stock, can ill afford such losses and most regard predators as vermin, seeing their eradication as the only real solution to their problem. This is achieved by capture in box-traps or gin-traps, which are placed at cheetah's play-trees or on leopard kills. Once caught the animals are shot or sold to dealers.

The removal of a predator does not necessarily solve the farmer's problem, however, and may even make the situation worse. The vacant territory will usually be promptly filled by another animal and, while the animal that had been removed might not have been the one that was causing a problem, its replacement may be a killer of stock. Namibia's Department of Nature Conservation estimates that in just over a decade almost 7000 cheetahs

have been removed from the country's free-ranging population.

It has been shown that, rather than trying to eliminate predators, it is more profitable for stock farmers to take preventive measures to protect their animals. One of the most effective means of protection is to keep young calves in a predator-proof enclosure near the house, with the cows entering the enclosure to suckle their calves and returning to the veld to graze. This procedure has two other advantages: the calves become accustomed to human contact and are less skittish when adult; and farmers can monitor the condition of cows more easily.

It can be advantageous for farmers to establish a primary calving season between November and January and a secondary one in June. Synchronous calving in an enclosure is clearly preferable to asynchronous calving in the veld, and the birth of most calves in the wet season ensures better quality grazing after weaning. The wet season is also the time when wild antelopes give birth and the predators' natural prey – weak, sick or injured young antelopes – is abundant: the result – a strong and healthy antelope population and a reduction in the number of livestock killed.

Game farmers who have invested in expensive antelope species have found that electric fencing in conjunction with enclosures provides effective protection. Farmers who prefer to keep their stock in a kraal near the house at night have found that the inclusion of female donkeys, which are naturally aggressive and protective and which will readily kick and bite cheetahs, can offer effective defence. Some sheep farmers protect their animals by including chacma baboons *Papio papio ursinus* in the flocks; the baboons behave as if the sheep were members of the troop and defend them against predators. Guard dogs living with small domestic stock can prove effective deterrents against cheetah attacks and the inclusion of horned cattle in a calving herd can also keep predators at bay.

A short-term goal is the release of non-problem predators caught in traps back into the wild to maintain a healthy free-ranging population and to stabilize the territories of these predators on farmland. Farmers trapping a

predator telephone the Foundation and staff go immediately to the capture site. The animal is anaesthetized for data-collection and ear-tagging, photographed to enable subsequent recognition (the spot pattern is individually unique) and removed from the farm.

If the animal is in good condition and has not been killing stock, it is released almost immediately. Because leopards normally return to their kills, traps set near the carcasses of a domestic animal will usually catch stock killers but sometimes a farmer will set a trap near the carcass of a game animal, thinking it best to remove the leopard before it kills livestock. In the case of cheetahs caught in traps set near play-trees, it is more difficult to determine whether the captured animal is a stock killer. The farmer is asked when he last lost a domestic animal; if it was more than a week before, the captured cheetah is unlikely to be guilty because cheetahs seldom remain in one area for very long.

If the captured animal is in poor condition it is rehabilitated at Okonjima for subsequent relocation. If it cannot be rehabilitated it will be retired to one of the large enclosures at Okonjima. Problem predators are never released back on to farmland.

If a farmer is continually losing stock to predators, a study is made of his land to determine why this is happening. The farmer becomes part of the project and is free to seek the Foundation's help and advice at any time. The expenses of the operation, including transport, relocation, feeding and normal veterinary expenses are covered by the Foundation. If specialized attention is required – for example to deal with limbs and teeth broken in gin-traps or poisoning from treated carcasses – emergency air transport and veterinary care are provided at cost by the Otjiwarongo Veterinary Clinic and the Foundation's trustees.

In 1993 and 1994 the Foundation released nearly 40 and more than 60 predators, respectively, back into the wild, and by early 1996 had released over 100 cheetahs and 60 leopards. These were all non-problem animals, which would have been shot were it not for the Foundation's efforts. The number of farmers who have asked the Foundation for

assistance has increased, many of them contacting it several times. Some farmers have stopped trapping predators and are trying to improve their methods of stock protection.

Numbered ear tags bearing the Foundation's telephone number are used to mark released animals. If a predator is recaptured its movements can be established and its destruction prevented. If it is identified as a stock killer, it can be relocated to a stock-free area. Although ear-tagging allows animals to be identified if caught, it cannot be used to determine complete movement patterns since release. The Foundation hopes to address this problem eventually by the use of radio-telemetry.

Of the 119 predators released by May 1995, four had been shot but not because of killing stock, two were caught in gin-traps and shot, one was shot on sight and one was taken in a box-trap and shot. Thus 111 benign predators acquired territories and kept potential problem animals away from livestock areas.

A medium-term goal is to inform farmers of tried-and-tested antipredator husbandry methods. The Foundation has developed four kinds of electric fencing to deter predators. It has persuaded several sheep and cattle farmers as well as game ranchers to have electric fencing erected on their properties. The owners bear the cost and maintenance of the fencing erected by the Foundation if it proves effective, and the Foundation pays for its removal if it proves ineffective.

A long-term goal of the Foundation is to develop measures for farmers who suffer repeated losses of livestock. The Foundation is continuing to experiment with new forms of electric fencing and is testing a mobile, predator-proof enclosure made of collapsible, heavy-gauge diamond-mesh wire netting. In the case of problem predators that kill only livestock instead of their natural prey, the Foundation is working on a form of aversion therapy, designed to make predators associate livestock with unpleasant experiences.

Another long-term goal is education. The Foundation plans to establish an education centre at Okonjima; topics covered will range from overgrazing, bush encroachment and the stock-carrying capacity of land, to livestock

protection and predator conservation. The education of children – the farmers of the future – is vital for the future of the country's wildlife. Groups of farm children have visited Okonjima, where they have seen the effectiveness of electric fencing against predators, have been shown the importance of predators in the ecosystem and have been able to see leopards and cheetahs at close range. After visiting Okonjima children have persuaded their parents to release, unharmed, captured predators.

Two other long-term goals are to establish conservancies and provide opportunities for scientific research on predators. The Foundation plans to co-operate with landowners in the development of conservancies to improve land use, including the management of antelopes, predators and the veld. This would result in opening up larger expanses of land and the effective use of these areas would be determined by the landowners themselves. Predators would have their place in these areas and would help to maintain a healthy antelope population and provide an income-generating resource through tourism.

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Dog vaccination around the Serengeti

In the July 1996 issue of *Oryx* (30 [3], 169), the 'Briefly' item 'Dogs to be vaccinated around Serengeti' interested me.

The discussions about transmission of domestic dog diseases to wildlife – mainly wild canidae, but also to most wild carnivora – is of real concern. Recent issues of *Oryx* have already mentioned this problem, as well as periodicals such as *Nature* and *Science*. Rabies and canine distemper are two viral diseases that

can be prevented by vaccination but I shall mainly speak of distemper here.

The problem is that if an attenuated vaccine, rather than a dead vaccine, is used against distemper, the vaccinated animal is protected but may become a virus carrier. It must also be understood that distemper may have a regulating effect on the dog populations around national parks, which more and more resemble islands surrounded by farmlands. So, if the vaccination campaign is a success, the result may be more dogs, more virus and more threats to wildlife (for example wild dogs *Lycaon pictus* in Tanzania, and Simien fox *Canis simensis* in Ethiopia). Another problem is that vaccination is only effective for a few months or years. Is there a plan to vaccinate dogs every year? Who will pay for that? One or two vaccination campaigns may end with a situation worse than before. It could be, in the long term, more effective to look for a way of controlling the domestic dog population, or at least to use both approaches together, mainly around national parks. Unless this is done, I see no real hope for the survival of many wild carnivores.

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Sarah Cleaveland replies

Dr Moutou has three main concerns about the proposed domestic dog vaccination programme against distemper and rabies in the vicinity of the Serengeti National Park. First, he raises the possibility of virus excretion in vaccinated animals as a threat to wildlife populations. Second, he questions whether dog vaccination might lead to an increase in dog abundance and hence exacerbate disease risks. Third, he considers the issue of sustainability of dog vaccination programmes in the Serengeti.

Although excretion of attenuated vaccine virus has been recorded for some live distemper vaccines, there is no evidence that this