

We conclude that there is no direct threat - such as hunting to the cheetah. The limiting factor may be prey abundance, as we found many signs of poaching of ungulates in the area. We have recently been informed about a large poaching expedition of Arabian princes in the region.

The genetics of the North African cheetah will be extremely difficult to investigate. The collection of faeces was not very successful, and because of the special susceptibility to stress of the Saharan cheetahs that we observed in Termit, invasive sampling does not seem advisable.

There is an urgent need to protect the ungulate Prey of the Termit cheetahs from poachers and to let the ungulate populations recover.

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Conserving Cheetahs Outside Protected Areas: An Example from Namibian Farmlands

by Laurie Marker and Amy Dickman *

Namibia is home to the world's largest remaining population of free-ranging cheetahs (*Acinonyx jubatus*), estimated at approximately 2,500-3,000 adult animals (Morsbach 1987). The vast majority of these cheetahs exist not in the country's large protected areas, however, but reside instead on the commercial farmlands, where there is an abundant prey-base and a lack of large competitors, such as lions (*Panthera leo*) and spotted hyaenas (*Crocuta crocuta*). This distribution, however, places them in direct conflict with both livestock farmers and game farmers, and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) reported approximately 7,000 wild cheetah removals (either killed or placed into captivity) from Namibia during the 1980s alone (CITES 1992).

In response to this situation, the Cheetah Conservation Fund (CCF) was established in Namibia in 1990, to conduct research on the reasons for such removals, and to determine whether any action could be taken to reduce the level of removal from the wild population. Assessing the attitudes of local people is clearly a critical component of effective conservation outside protected areas, so CCF conducted a baseline survey of local farmers from 1991-1993, and then conducted follow-up surveys from 1993-1999, after providing farmers with regular information regarding predator ecology, conservation, and livestock and game management techniques.

The baseline survey revealed a very high level of removal, with an average of 29 cheetahs removed annually on farms where farmers considered that they had a cheetah problem, and 14 removals per year even on farms where cheetahs were not considered problematic. The high removal rate on farms that were not

suffering from cheetah depredation indicated that removals were often being performed as a preventative measure rather than in response to a specific problem. Additionally, cheetah removals were linked to the perception of problems caused by other predators, such as jackals and leopards, which suggested that farmers were removing predators opportunistically rather than targeting specific 'problem' animals responsible for predation.

Due to their habitual use of certain trees for scent-marking (known locally as 'playtrees'), cheetahs can be caught with relative ease at such sites, and entire social groups can be removed at one time (Marker-Kraus et al. 1996). The importance of such trees in terms of capturing cheetahs was highlighted by the fact that all the farmers that were aware of 'playtrees' on their land removed cheetahs, but none of the farmers without them did.

Farm type also had a significant influence in terms of cheetah removals, with a higher proportion of game farmers removing cheetahs compared to livestock farmers ($\chi^2 = 10.68, p = 0.001$). This may be influenced by the fact that a significantly greater proportion of game farmers than livestock farmers were aware of playtrees on their land ($t = -3.622, p < 0.001$), as well as the fact that cheetahs preferentially select game species as prey (Marker et al. Submitted-d), and as such many game farmers view them as a serious problem.

Farmers cited a potential threat to their livestock or game as the reason for capturing cheetahs in 91.2% of cases (Marker et al. Submitted-b). To address this problem, CCF initiated a Livestock Guarding Dog scheme, where Anatolian Shepherd Dogs were bred at CCF and placed with local farmers as livestock guardians, where they have proved very successful in reducing losses (Marker et al. Submitted-a). Other methods of livestock protection that were encouraged included the use of donkeys to protect cattle, bringing stock in at night, using calving camps and calving seasons, keeping some cattle homed within the herd, and using local breeds of cattle that tend to be more aggressive towards predators.

Research was conducted into the use of 'swing-gates' for warthogs in game fences to reduce access points dug under the fence that predators can easily use; an analysis of this project is currently underway. Additionally, both game and livestock farmers were encouraged to join conservancies, where wildlife is managed collectively so that the costs and benefits of maintaining predators as part of the ecosystem are shared across the entire conservancy. Due to their relative local abundance, many of the farmers were unaware of the cheetah's globally threatened status, and conducting predator education with local people was a key component of CCF's work.

Results from the follow-up survey indicated that such efforts had a positive effect in influencing people's attitudes and actions. Although cheetah removals still occurred, the level had dropped to 3.5 cheetahs per year on farms where they were considered problematic and 2.0 on farms where there was no cheetah problem. In the later survey, cheetah removals were also linked to livestock losses ($r = 0.344, p = 0.001$), which they had not been initially, suggesting that removals were less indiscriminate when they did occur. Farmer tolerance also appeared to increase, with significantly fewer cheetahs removed per head of livestock lost in the follow-up survey compared to the baseline survey ($t = 3.789, p = 0.003$).

Although there is still a lot of work to be done in terms of predator conservation on the Namibian farmlands, these results suggest that, through long-term programs based on the needs of local people, the attitudes of those people living alongside predators can be positively influenced. Such programs can have significant benefits in terms of conservation outside protected areas, both for cheetahs and for other carnivores.

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Will Asiatic Cheetahs Fall for Calvin Klein Perfume?

Iran's last surviving Asiatic cheetahs may have their genetic profile revealed with help from Calvin Klein's perfume, "Obsession for Men".

Already shown to lure ocelots, the perfume has now worked on a female cheetah at the Bronx Zoo in New York, which is owned by the Wildlife Conservation Society. WCS is currently involved in projects to save the last Asiatic cheetahs, which survive only in Iran.

The Bronx Zoo's Mammal Department has been studying the behaviour of its cheetahs in response to a variety of perfumes and spices to help WCS field scientists George Schaller and Peter Zahler, who were looking for ways to attract cheetahs to camera traps in Iran.

It was found that the zoo's female cheetah had an "obsession" for Calvin Klein's "Obsession for Men" and would spend seven minutes at a time rolling and rubbing against objects sprayed with the cologne.

During a visit to the Bronx Zoo, Laurie Marker, director of the Namibia-based Cheetah Conservation Fund, discussed the value of collecting hair samples from wild cheetahs because DNA analysis of the hair could provide insights into the cheetah's distribution and help determine the relationships of cats living in a given area. This led to experiments with a "hair trap". The prototype consisted of a dog grooming brush, minus the handle, anchored to a log and sprayed with Calvin Klein's "Obsession for Men". Within minutes, all the cheetah hair wanted had been collected.

It is hoped that the perfume will work when applied to hair traps set for with cheetahs in the wild.

Ocelot Obsession

Calvin Klein men's cologne was tried by chance on ocelots in Dallas Zoo, Texas, in 1999, when researchers used various scent sources in order to find a way to attract rare ocelots near the Texas border with Mexico. One researcher borrowed her boyfriend's cologne and used it in a test. The ocelots responded "like a cat in heat", according to the researchers.

One female ocelot rubbed against the lure and rolled and lay on it - "it was almost embarrassing", one researcher said.

The effect is similar to that of the scent of catnip (*Nepeta cataria*), a mint family plant native from the eastern Mediterranean to the eastern Himalaya, whose attraction for cats has been known since Roman times.