

Nowell K. 1997. Namibia's cheetah conservation strategy. *Cat News*:12-14.

Keywords: 1NA/Acinonyx jubatus/cheetah/conservation/endangered species/population/predator/recommendation/strategy

Abstract: The Namibian Ministry of Environment and Tourism (MET) recently commissioned the drafting of a national conservation strategy for cheetahs. The strategy was adopted in late 1996 and already several of its key recommendations have been put into action. Namibia is one of very few countries to have a national conservation strategy for a big cat species, and to have a high ranking government post devoted to predator conservation. Namibia is believed to hold one of the largest national population of cheetah, which is highly significant for one of the world's more endangered big cats. MET wants to ensure that this population is viable and effectively conserved.

Namibia's Cheetah Conservation Strategy

by Kristin Nowell*

The Namibian Ministry of Environment and Tourism (MET) recently commissioned the drafting of a national conservation strategy for cheetahs. The strategy was adopted in late 1996 and already several of its key recommendations have been put into action. Cat Specialist Group member Philip Stander was appointed Carnivore Conservation Officer for MET, with oversight responsibility for predator management and conservation on a national scale. Namibia is one of very few countries to have a national conservation strategy for a big cat species, and to have a high ranking government post devoted to predator conservation.

Purpose of the Namibian Cheetah Conservation Strategy

Namibia is believed to hold one of the largest national populations of cheetah throughout the species' range. This is a highly significant population of one of the world's more endangered big cats. The Ministry of Environment and Tourism wants to ensure that this population is viable and effectively conserved. However, it is not because the cheetah is in need of urgent recovery effort that this strategy was developed. The main reason is that, although the cheetah is a species under government protection, they occur mainly on Namibia's commercial farmland, where they are considered problem animals. Large numbers of cheetah have been removed from the population by farmers seeking to prevent predation on their livestock and game.

Two non-governmental organizations, Africa and the Cheetah Conservation Fund, are working with farmers to try to help reduce their losses. This situation warrants a close degree of MET cooperation with the private sector, and the Strategy structures a linkage between MET goals and private sector initiative.

Background on the Namibian cheetah

The cheetah is probably the most specialized member of the cat family, in terms of both physiology and behaviour. The cheetah has an extraordinary lack of genetic variation in comparison to other animals, but the conservation consequences of this are not clear. The cheetah is an arid-adapted cat which appears to have evolved to follow migrating antelope herds. It has very large home ranges in comparison to other cats, and its mating system is also different. The cheetah's use of large, prominent "play trees" for intraspecific communication and finding mates has made it vulnerable to trapping by farmers.

While the cheetah is roughly of the same vulnerability status as the lion, according to the Cat Specialist Group's Cat Action Plan, its situation is very much different. The lion's stronghold is the protected area network of Africa, but cheetahs tend to occur at low densities where lion numbers are high, so that conservation of cheetah outside protected areas is of key importance to conserving viable populations of the species.

Legislation and policy on the cheetah

The cheetah has been listed on CITES Appendix I since 1975, and probably will remain there under newly-developed listing criteria. Appendix I listing prohibits commercial trade in the cheetah. When Namibia joined CITES in 1992, other member nations voted to allocate a special export quota for Namibian cheetahs, allowing 150 live animals and/or sport hunting trophies to be exported every year. Namibia has not yet used its full quota, exporting only 42 cheetahs in 1994 (25 live animals and 17 hunting trophies). However, at least 150 cheetahs were removed

from the Namibian population that year, primarily by commercial Namibian farmers seeking to protect their livestock and game.

The cheetah is protected under Namibian national law. It is prohibited to hunt cheetahs without a MET permit except "in defense of a human life or to prevent a human being from being injured or protect the life of any livestock, poultry or domestic animal of such owner, lessee or occupier whilst the life of such livestock, poultry or domestic animal is actually being threatened."

People who kill or capture cheetahs under such circumstances are required to report to MET within 10 days. It is also forbidden to keep or transport cheetahs without a permit from MET. Import or export without a CITES permit is also prohibited.

In practice, the stricture that cheetahs may only be hunted to protect human life or while actually threatening livestock has been ignored. Many farmers have over the years shot or removed cheetahs from their land on a precautionary principle, viewing them as a potential threat to life or livestock. Some farmers have taken more than 100 cheetahs from their property over a decade. MET has not legally challenged their right to do so, as it would be practically impossible to stop farmers from removing cheetahs if they want to, and MET conflict with farmers over cheetahs would quite possibly harm the cause of predator conservation.

Believing that enhancing the economic value of cheetahs is the best incentive to encourage farmers to tolerate cheetahs on their land, MET initiated a trophy hunting policy for cheetahs in 1982. At present, MET is cooperating with the Namibian Association of Professional Hunters (NAPHA) by incorporating their "Cheetah Compact" into its trophy hunting program. Farmers signing the NAPHA Compact agree to conserve cheetahs on their farm, and if one is trophy hunted, to donate N\$1,000 of the trophy fee to a fund for cheetah conservation. The MET permit office has helped to link farmers reporting cheetah problems to professional hunters with clients seeking cheetah trophies.

The cheetah has also been affected by other MET wildlife policies. Transfer of ownership of certain huntable game species (including the kudu and gemsbok) from the State to private land owners in 1967 helped lead to a huge increase in ungulate populations on the commercial farmlands, providing a substantial prey base for the cheetah population. Farmers now consider wild game on their farms to be an economic asset, whereas in the early 1960s farmers considered game as competition for livestock graze, and aimed to keep their farms "game-free".

Game farming is becoming a significant sector of the national economy, but cheetah predation on game is unlikely to be tolerated by farmers unless the cheetah has some value to compensate

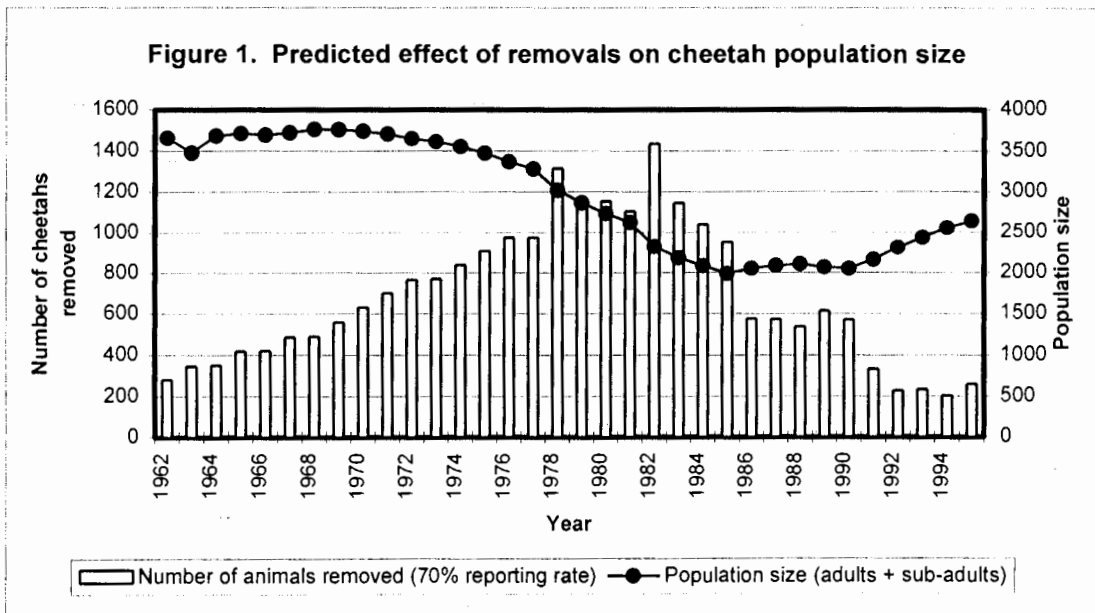


Table 1. Estimates of cheetah population size in Namibia

Year	Number of cheetahs	Methodology
1926	3,010	Survey of magistrates
1975	1,500-3,000	Extrapolated density (1/150 km ² , no field data)
1975	5,000 ^a [2,500]	Unknown (official DNC estimate)
1975	6,252 ^{a*} [3,100]	Farmers estimate no. of cheetah on their property
1987	2,000-3,000	Extrap. density (1/50 km ²) fm field study
1992	4,688 ^{a*} [2,350]	Farmers estimate no. of cheetah on their property
1996	2,905	Extrap. density based on 4 studies

* Number refers to farmland population only.
 a These estimate may include cubs; the farmers' estimate almost certainly does. If so, the estimated number of adult cheetah would be on the order of 2,000-3,500 (assume 40-60% of the population is cubs).

for its costs. MET encourages farms and communities to form conservancies — associations which cooperate in the management of their wildlife. Larger units are more ecologically appropriate for an arid country like Namibia. The conservancy structure is also more appropriate for cheetah conservation, as the home range of a cheetah typically covers 10-20 farms. Conservancy-type wildlife management should also benefit the cheetah's ungulate prey base.

Conservation of a viable cheetah population

The table reviews the history of cheetah population size estimates in Namibia. The main factor facing the viability of this population is the level of removals by livestock and game ranchers. Most of the cheetahs trapped by land owners are killed, but some are kept in captivity or exported live. There is also limited trophy hunting. According to records from the MET permit office, from 1978-1995 an average of 419 cheetahs were killed each year in defense of livestock, 98 were captured live, and 20 were trophy hunted. Total reported annual removals averaged 533, and altogether over 18 years at least 9,500 cheetahs were removed from the population.

In addition, anecdotal reports suggest that cheetah removals in the 1960s and early 1970s ranged from 200 up to 700-800 per year. There has been a strong male bias in the off-take. There are indications that removals have been and still are under-reported to the MET permit office. If only 50-70% of removals are reported, as many as 10,000-15,000 cheetahs could have been killed by livestock owners over the past 20 years.

But cheetah removals have been declining. From the mid-1970s to the mid-1980s, an average of 827 cheetahs were removed annually, declining by a factor of nearly three to 297 cheetahs per year from the mid-1980s to the mid-1990s. Because there is concern about whether this indicates that the cheetah population is declining, a simple population model was developed to examine quantitatively how the reported cheetah removals could have affected population dynamics. The model suggests that the high levels of removals in the early 1980s could have caused the population to decline by nearly half.

The model suggests that, during the early 1980s, up to half of the male population was removed each year, and up to 10% of the females. However, the model also suggests that the lower removals in the 1990s could have allowed the cheetah population to increase up to approximately 2,500 in 1996. Because the cheetah is adapted to have a high reproductive rate in comparison to other big cats, the population should be relatively resilient to high off-takes and mortality. The figure compares annual reported levels (inflated to account for the estimate that only 70% of actual removals are reported to the government) with predicted population dynamics.

The population model suggests that annual removal of up to 20% of the male population (adults + sub-adults) and 5% of the female population is sustainable and should not lead to population declines. It is suggested that MET endeavour to keep annual

removals on the order of 200 cheetahs per year, and consider ceasing to issue permits if the off-take approaches 300 in any year. The sex-age composition of the removals is an important component of ensuring sustainability, and MET should make sex and age a reporting requirement when issuing cheetah permits in the future.

The conservation strategy recommends that MET undertake the following actions: 1) Cooperate with NGOs on research into cheetah density to refine estimation of total population size; 2) Improve monitoring of cheetah removals; 3) Ensure sustainability of removals; 4) Monitor population trend through multiple indices in cooperation with private sector.

Improving MET coordination with the private sector to achieve effective cheetah conservation

The major role that the Ministry has to play in the conservation of wildlife on private lands is to ensure that wildlife utilization is sustainable. Because most of the Namibian cheetah population occurs on commercial farmland, it will be necessary for MET to cooperate actively with the private sector in order to achieve its goal of conserving a viable cheetah population.

Thanks in large part to the efforts of the cheetah NGOs to promote cheetah conservation, many farmers who capture cheetahs on their property are now reluctant to shoot them, and they increasingly contact MET or the NGOs to ask them to take the animals off their hands. MET has no program or facilities to handle these animals, but translocation and release of cheetahs captured by farmers is a major activity of both the Cheetah Conservation Fund and Africat. The organizations encourage farmers to re-release cheetahs where they were captured, on the grounds that the vacant territory will attract new cheetahs and possibly increase his problems. The effects of these cheetah releases and translocations are largely unknown, and deserves further research.

Cheetahs have more cost than value, and are seen as a liability because of their predation on livestock and game. Land owners may be more willing to tolerate the presence of cheetahs on their property if the potential value of the animals mitigates their potential cost. At present, the main economic value of cheetahs is for trophy hunting. Although it is a small industry, it is set up to have wider benefits to cheetah conservation beyond encouraging the tolerance of individual farmers, through the NAPHA Cheetah Compact which allocates a portion of the trophy fee to a fund for cheetah conservation.

It is also recommended that MET cooperate with the private sector to increase the tourism value of cheetahs on private lands. Training on the use of radio-telemetry should be offered to game farmers who want to give tourists an unparalleled opportunity to observe wild cheetahs in a bushland environment.

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Anatolian Shepherd Dogs Guard Livestock in Namibia

Nearly 30 Anatolian shepherd dogs are protecting smallstock from attacks by cheetahs and other predators in Namibia, according to the Cheetah Conservation Fund (CCF) newsletter (December 1996), and there is a waiting list of farmers wanting to join the program.

The newsletter said that a farmer's time and investment with these special dogs will be returned many times over. Farmers indicated that incorporating a livestock guarding dog into their farm management program has had a positive financial benefit. The dogs discourage most predators, including cheetahs, caracals,