

Gros PM, Caro TM. Hunting as a tool for conserving cheetahs in Namibia?
Ref Type: Unpublished Work

Keywords: 1NA/Acinonyx jubatus/cheetah/conservation strategy/hunting (by human)/ population/
Safari Club International/trophy/wildlife

Abstract: Trophy hunting was legalized in Namibia in 1992, and now the Republic of Namibia and Safari Club International are petitioning the US Fish and Wildlife Service to down-list the cheetah in order to authorize the import of hunted trophies into the US. The petition's rationale is that Namibia's cheetah population is the largest and healthiest in Africa, that it is stable, and that assigning a monetary value to cheetahs through hunting would encourage farmers to conserve the species on their land. How do these claims stand up to scrutiny?

Hunting as a tool for conserving cheetahs in Namibia?

by

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Running head: Hunting and conservation of Namibian cheetahs

Word count: 796 including title

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There are several established avenues for conserving species and habitats, ranging from complete protection to controlled exploitation. However, the efficacy of these methods as conservation tools is poorly understood owing to a dearth of empirical data (Soulé, 1986; Harcourt, 1995). The issue of down-listing cheetahs from endangered to threatened in Namibia illustrates this paradox and highlights the risk involved in basing conservation decisions on scarce field data.

In 1975, using a questionnaire survey, Joubert and Mostert (1975) estimated 6,000 cheetahs in Namibia, a substantial part of the 7,000-25,000 thought to occur in Africa at the time (Myers, 1975). Subsequently, after a two-year field-study, Morsbach (1987) reported 2000-3000 cheetahs in Namibia, 95% of which were found on privately-owned farms. Between 1981 and 1990, about 6,800 cheetahs were removed as vermin from Namibian farmlands by either killing (86%) or exporting them alive (14%) (CITES, 1992). Trophy hunting was legalized in Namibia in 1992, and now the Republic of Namibia and Safari Club International are petitioning the US Fish and Wildlife Service to down-list the cheetah in order to authorize the import of hunted trophies into the US (Jackson & Stovall, 1995). The petition's rationale is that Namibia's cheetah population is the largest and healthiest in Africa, that it is stable, and that assigning a monetary value to cheetahs through hunting would encourage farmers to conserve the species on their land. How do these claims stand up to scrutiny?

PG conducted interview-surveys in Namibia and Kenya in 1990 (Gros, under review; unpublished data), a method shown

to estimate the size and status of cheetah populations accurately (Gros et al., in press). She estimated that 1273-3345 cheetahs live in Kenya (Gros, under review), which approximates the current figure of 2000-3000 in Namibia (Morsbach, 1987; Jackson & Stovall, 1995) Moreover, demographic parameters derived from PG's surveys were comparable in both countries (adult group size: $X = 1.75$, 1.77 for Namibia and Kenya respectively, $N = 20$, 249 sightings reports, Mann-Whitney $U = 2451$, NS; number of dependent cubs: $X = 3$, 2 , $N = 12$, 120, $U = 600$, NS; cub-to-adult ratio: 0.77 , 0.51 , $N = 83$, 910, $\chi^2 = 3.049$, NS). Based on these data, cheetah populations do not appear larger nor healthier in Namibia than in Kenya. In Kenya, the cheetah's distribution remained stable over the last 30 years but it is unclear whether present numbers of cheetahs are stable or decreasing (Gros, under review). Under such circumstances it would be unwise to advocate cheetah utilization in Kenya, or in Namibia where demographic characteristics are comparable. Moreover, recent studies (Morsbach, 1987; Marker-Kraus & Marker in Jackson & Stovall, 1995) indicate that cheetah numbers have declined in Namibia by 50% every ten years in the last twenty years rather than remained stable (Table 1).

Experimental hunting has occurred unofficially in Namibia since 1983, and in 1992 CITES permitted a yearly quota of 150 cheetahs to be hunted or exported alive (Figure 1). The number of cheetahs killed as pests by farmers, which represented the majority of cheetahs removed from farmlands (Figure 1), was negatively correlated with the number of cheetahs hunted for sport ($N = 9$ years, $r^2 = 0.69$, $p = 0.0008$). Such a relationship could mean that hunting reduces

the numbers of cheetahs killed by farmers, as advocated in the petition. More likely, the correlation could stem directly from the large observed decline in cheetah numbers with low levels of hunting having little effect on pest removal practices. More importantly, and contrary to the thesis that utilization (i.e. hunting and export) limits killing, there was no association between the number of cheetahs killed by farmers and the number of cheetahs hunted for sport and exported alive ($r^2 = 0.03$, NS).

Wildlife biologists recently attempted to model sustainable cheetah harvest considering both utilization and killing on Namibian farms (Berry *et al.*, 1996). However, we caution against using the current model's predictions as management guidelines for Namibian cheetahs for at least two reasons. First, accurate population sizes and demographic parameters are not yet available for Namibian farmlands, and second the sensitivity of the model's outcome to parameters input values has still to be reported.

Controlled sport hunting might be the appropriate answer to the dilemma of managing cheetahs, which are protected by law but in conflict with farmers' interests in Namibia. However, more empirical data are needed before the value of sport hunting as a conservation option can be assessed. Unless decisions about legal exploitation are rooted in precise knowledge of local population size and demographic parameters, and unless the effects of off-take on population dynamics are thoroughly documented, utilization of rare species remains a potentially dangerous conservation fad.

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Table 1. Estimates of cheetah numbers in Namibia between 1975 and 1995

Author	Date	Total population	Method	Trend
Myers (I. U. C. N.)	1975	1500	interviews and written questionnaires	possibly 1000 in 1980
Joubert & Mostert (Nature Conservancy)	1975	6252	written questionnaires	recent increase
Morsbach (Nature Conservancy)	1986	2000-3000	2.5-year study on farmlands using interviews, telemetry and trapping	down 50% since 1976
Marker-Kraus & Kraus Cheetah Conservation Fund (in attachment 1 of petition)	1995	1000-2500	interviews and telemetry on farmlands	down 50% since 1986
Petition	1995	2500-3000	unspecified	stable
Namibian Professional Hunters Association (attachment 3 of petition)	1995	about 4000	unspecified	na

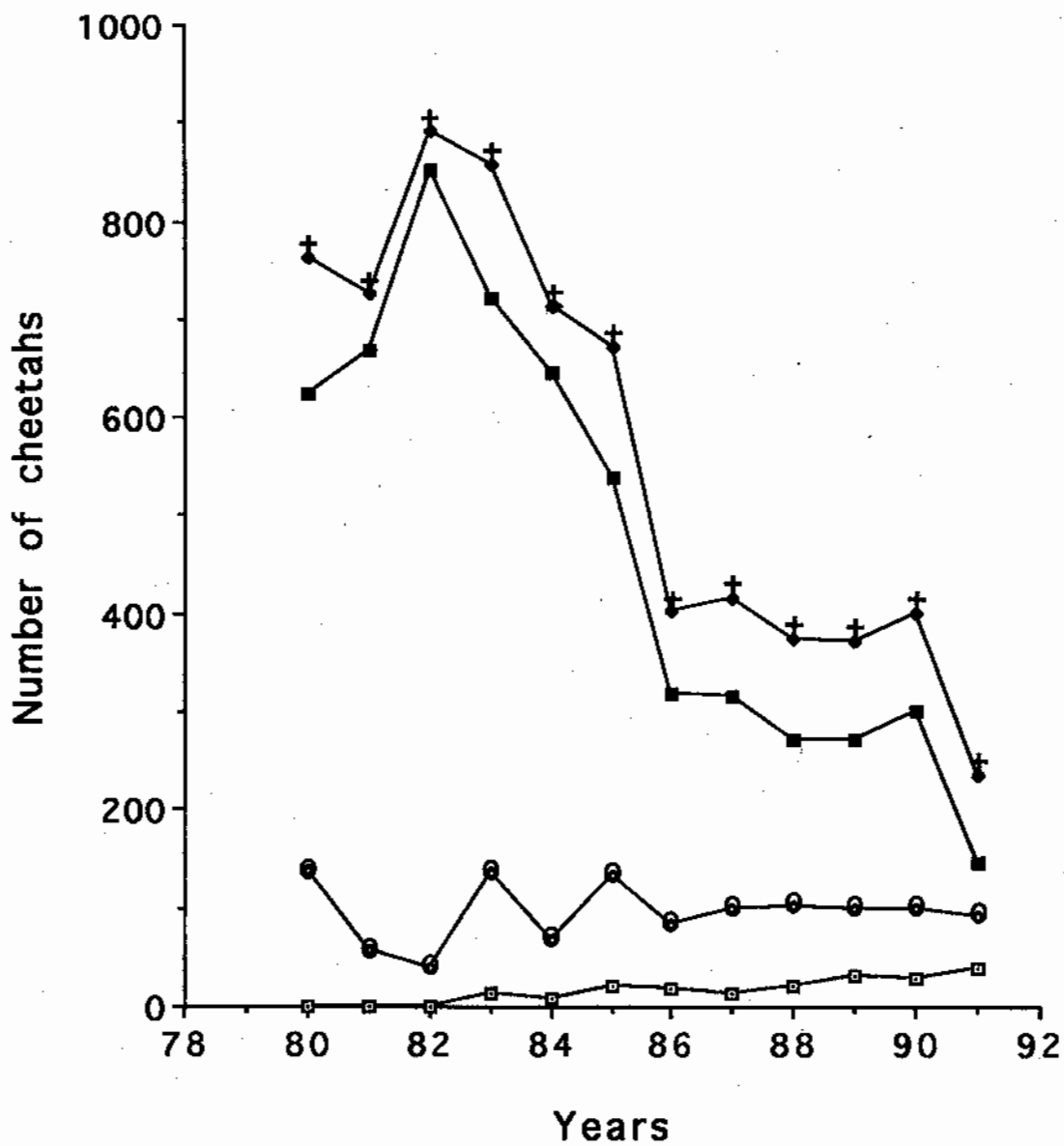


Figure Legend

Figure 1. Number of cheetahs removed from Namibian farmlands between 1980 and 1991 (from C.I.T.E.S., 1992). ■ cheetahs hunted for sport; ● cheetahs exported alive; ■ cheetahs killed as pests by farmers; † total cheetah removed from farmlands.