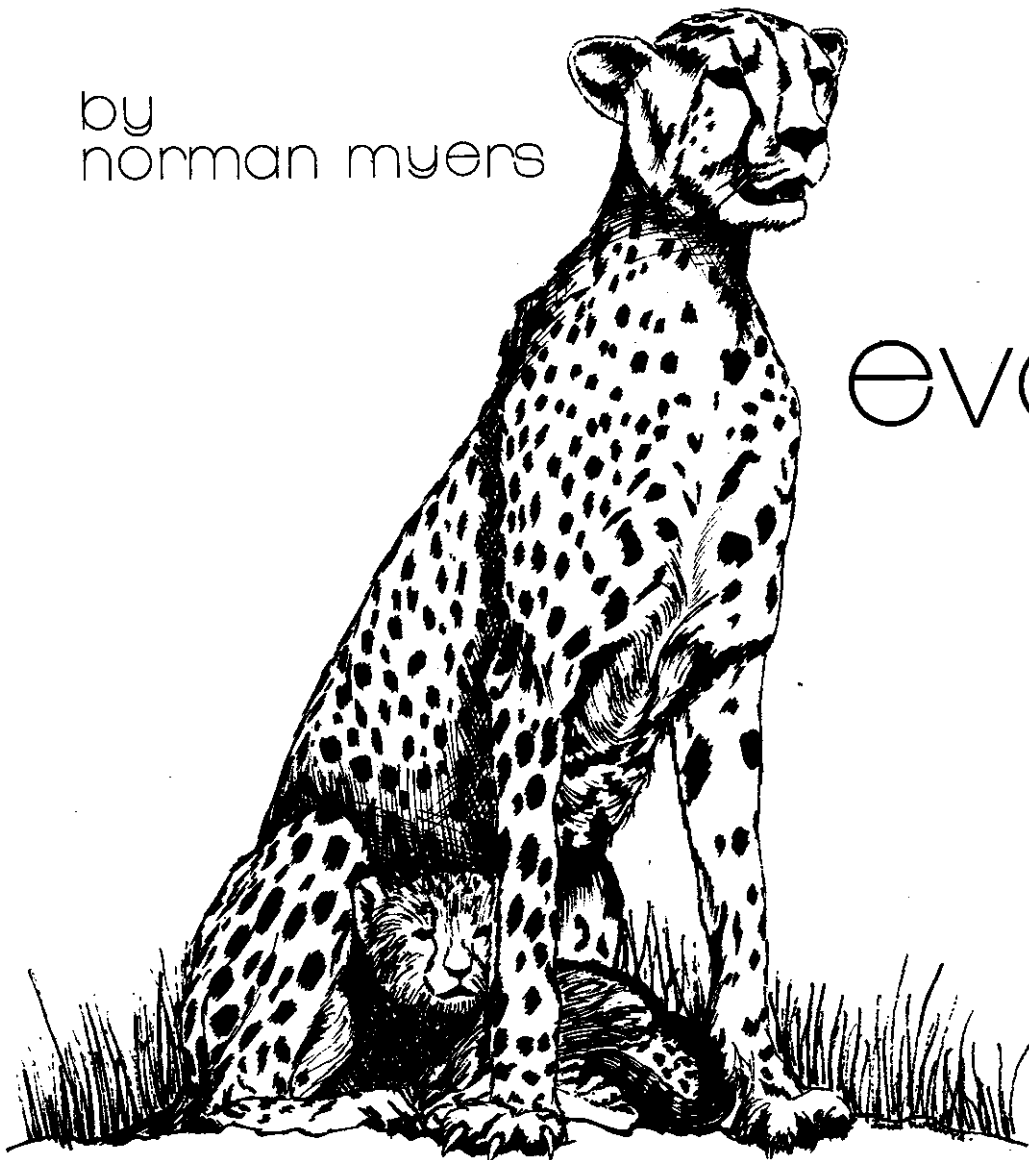


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Abstract: Various attributes of the cheetah's ecology and ethology not only limit its range, densities and numbers in Africa, but they likewise make it exceptionally sensitive to man's disruption of wild land habitats. As a nervous and cautious creature, the cheetah often disturbed by men's mere appearance on the landscape, much more so than other large predators. The best opportunity for cheetah's conservation seems at present to lie in some form of multiple-use pattern for conserving and exploiting rangeland resources.

by  
norman myers



an  
evaluation  
of the  
status  
of the  
cheetah

drawing by John Kimunya

## *ECOLOGY AND ETHOLOGY*

In many respects, the cheetah's ecology and ethology place it at the opposite end of the felid spectrum from the leopard. It is thereby much less capable of adapting to man-dominated environments.

The cheetah is diurnal. It does not conceal or cache its food, nor does it scavenge. Being much less social than the lion or most other large African predators, its hunting capacities confine it to prey creatures no larger than its own body weight, i.e. 100-120 lbs. Thus, in order to maintain an adequate food supply, the cheetah must hunt more frequently than other predators. Its hunting techniques, dependent on a chase frequently extending over several hundred yards, draw attention to its activities in open environments, which cause it to be frequently deprived of its prey by other carnivores. A slight injury to a cheetah, while defending its kill, may leave it unable to hunt again before starvation ensues.

These and other sources of mortality seem to bear heavily on all age classes. Although reproduction and recruitment rates are no worse and frequently better than for other felids, cheetah numbers are lower than those of any other large predator in Africa (except possibly the wild dog). The cheetah's density rarely rises above one to thirty square miles, while one to one hundred and fifty square miles is not unusual in marginal environments. The situation in Nairobi National Park in Kenya, where the population has consisted of 10-15 adults cheetah plus cubs for at least 6 years and possibly longer, in an area of 44 square miles, is atypical. The Serengeti eco-unit of 12,000 square miles, with half a million gazelle and plenty of open environments such as seen suited to the cheetah's hunting style, nevertheless supports only 200-250 cheetah, as compared with 2000 lion, 3000 spotted hyena and at least 1,000 leopard. Kruger National Park in South Africa contains around 250-280 cheetah in rather over 7,000 square miles, much of it bush vegetation. Kalahari Gemsbok National Park also in South Africa supports 150 cheetah. Densities and population numbers for other areas are generally not available.

Thus, although the cheetah is adapted to open savannah ecotopes, it can also subsist in moderately bushy environments. Optimal habitats seem to be semi-arid areas such as the Sahel, with little carnivore competition. The cheetah has probably never enjoyed the wide distribution of the lion, and not a fraction the distribution of the leopard.

## *RESPONSE TO HUMAN PRESSURES*

Various attributes of the cheetah's ecology and ethology not only limit its range, densities and numbers in Africa, but they likewise make it exceptionally sensitive to man's disruption of wildland habitats. As a nervous and cautious creature, the cheetah is often disturbed by man's mere appearance on the landscape, much more so than other large predators. The cheetah does not share the catholicity of diet which allows the lion and notably the leopard to prey off a wide range of herbivore species and other food resources. This makes it susceptible to a change, let alone a decline, in the make-up of prey communities. If species the size of impala and Grant's gazelle, and smaller herbivores, are steadily phased out by virtue of man's modification of savannah lands, the cheetah then shows itself far less adaptable than the leopard. Indeed, a decline in wild herbivore numbers often causes a disproportionately greater fall-off in cheetah numbers. Something the same applies to other perturbations in wildland ecosystems of which the cheetah forms a part, e.g. moderate bush encroachment on savannah habitats can constitute severe limitation on the cheetah's status.

Fortunately, the cheetah is not nearly so sought after by the international fur trade as is the leopard, on the grounds that its skin represents only one third as much value at best. Consequently, only 1,500 cheetah skins, as compared with around 4000 leopard skins, were entering North America each year at the height of the spotted-skin boom in the late 1960's. But, given the cheetah's present status, even moderate poaching pressures can prove critical.

As subsistence pastoralism in emergent Africa is upgraded into commercial ranching, the cheetah finds itself squeezed out of extensive tracts of rangeland habitats. This process is pronounced in Kenya, Tanzania, Somalia, lowland Ethiopia, floodplain Zambia and parts of the Sahel zone (though in the Sahel the problem is not so much intensified livestock husbandry as sheer overburdening of physiobiotic environments by excess numbers of domestic stock). In Southern Africa, commercial ranchers wish to meet the opportunities of the world beef famine, while at the same time finding themselves subject to narrowing profit margins. This makes them less inclined than ever to share the range with wild predators, of which the most prominent is now the cheetah. This situation is aggravated by the market for live cheetah, which induces ranchers in S.W. Africa and Rhodesia

to dispose of cheetah on their properties to trappers, whether the cheetah in question are predators on livestock or not.

Land-use trends in appreciable areas of savannah Africa are likely to parallel the experience of South Africa, where the cheetah has been eliminated from almost all its former range. Since the cheetah is hardly disposed to scavenge, it is not subject to anti-predator measures such as poison which is now widely and cheaply available in rangeland Africa. But given the pressures generated by the livestock industry against wild predators, an evaluation of the cheetah's role in developing Africa is urgently required, within a policy framework directed at optimal conservation of predators. This implies that predator control should be construed as a single sector of predator management, which in turn should form part of an overview evaluation of natural resources and their value to society at large. This appraisal would modify the present position, which is dominated by narrow sectoral interests on the part of the ranching community—however legitimate their interests, and however vital and viable the ranching industry must remain in emergent Africa, wild predators should not be viewed by stockmen as private property to be disposed of as they wish.

A further factor is even more significant for the cheetah's future than modernized ranching. As the fertile arable areas of tropical Africa become over-burdened with excess human populations, an overspill of cultivators is now triggering off a migratory surge toward the next most favourable ecotopes for human settlement, viz. the savannah grasslands. This trend is accelerated by the development of drought-escaping maize, such as the Katumani breed in Kenya which reaches maturity in only 5-7 inches of rain per season. This means that at least one third of Kenya is now opened up to cultivation, as opposed to only one tenth in the past. This one third will include virtually all the savannah grassland areas. Parts of eastern Kenya are experiencing an increase in the human populace of between 10 per cent and 35 per cent per year. Similar trends, though not so pronounced, are to be found in lowland Ethiopia (especially following malaria eradication campaigns), in the one tenth of Zambia which lies outside the *miombo* woodland zone and is therefore free from tsetse, in much of northern Tanzania, and in appreciable parts of Angola and Mozambique. This trend will present the single greatest threat to the cheetah in both the immediate future and in the long term.

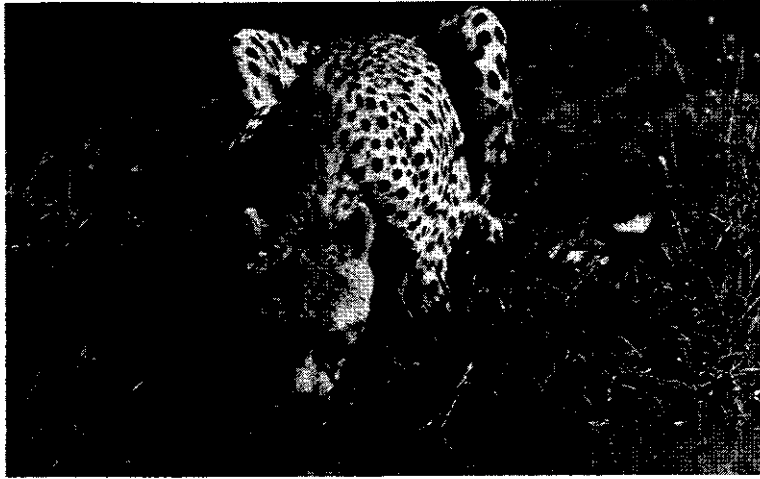
## PRESENT STATUS

For purposes of a working figure for cheetah numbers throughout sub-Saharan Africa, a biome-by-biome estimate has been attempted. This represents a rough approximation of totals, nothing more. It was considered worthwhile to indicate the magnitude of the problem facing conservation of the cheetah during the next few decades.

Within these reservations, the number is put at somewhat under 14,000 cheetah. The number could conceivably be as high as 24,000, or it could already be under 10,000. Whatever figure one selects, the total is almost certainly only half as large as in 1960. Furthermore, unless stringent conservation measures can be implemented at once, the number will be reduced by a further one half by 1980. In rough terms—to stress the point once



L. J. Parker



again—East Africa probably contains over 3000, with a prospect of 1800 or less by 1980. The *miombo* woodland zone, comprising Angola, Zambia, Mozambique and Malawi, presently contains over 1500, though the total will almost certainly fall below 1000 by 1980. Southern Africa, viz. Botswana, Rhodesia, S.W. Africa and South Africa, could contain as many as 4600, with a likelihood of falling to 3,000 or less by 1980. West Africa, i.e. the countries of the Sahel zone plus Cameroon, contains well under 2000, and could lose virtually all its cheetah by 1980 unless the biome is subject to strict rehabilitation measures forthwith. North-eastern Africa, i.e. Sudan, Ethiopia and Somalia, could feature as many as 2500 at present, though human pressures from the last few years, together with long-term degradation of the biotas, will leave less than 1000 by the year 1980. Southern Zaire contains a few hundred, but they could be pretty well phased out by the end of the decade. This means that 1980 is likely to see less than 7500 cheetah in Africa south of the Sahara, possibly as few as 5000.

A comparison of this situation with the Bengal tiger's is in order. The cheetah is not in such poor straits as the tiger, but does not lend itself nearly so well to the "sanctuary strategy". Africa's parks and reserves cover an area of 150,000 square miles, almost the size of California. But only one third contains

cheetah, for a total of 3000 at most. A five hundred square mile piece of forest habitat can protect at least 5 and sometimes 10 times as many tigers as a similar-sized piece of savannah achieves for cheetah. Moreover, a relic population of 100 tigers stands a better chance of surviving as a viable gene pool than 100 cheetah. The critical factor for the cheetah is how soon effective protection can be implemented. If the situation is allowed to deteriorate until 1980, saving the cheetah—per unit animal and per unit part of a species—could cost much more than saving the tiger, with less assurance that the investment will pay.

#### *FUTURE MEASURES FOR CHEETAH CONSERVATION*

The best opportunity for cheetah conservation seems at present to lie in some form of multiple-use pattern for conserving and exploiting rangeland resources. Cheetah needs should be integrated with the needs of intensified livestock husbandry. Possible methods to this end include reducing livestock losses from cheetah, and extending compensation for such depredations as occur. Eventually, these measures could be implemented through an institutional framework similar to the World Heritage Trust, directed at species rather than biotopes and ecosystems. The two approaches would overlap in certain instances, but insufficiently for the cheetah. An approach of this type would allow the world at large to appraise its responsibility for contributing to the conservation of a common property resource such as is partially represented by the cheetah, as part of mankind's patrimony.

Meantime, the cheetah should be accorded every form of absolute protection, in line with the provisions of the Washington Convention of early 1973.

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*In 1972 Dr. Myers carried out a survey of cheetah for the International Union for the Conservation of Nature (I.U.C.N.) World Wildlife Fund which took him to a number of African Countries. Previous to this study very little was known of the status of cheetah, although pessimistic reports of its condition were frequently coming in.*