

# Man and the Mara Cheetahs

Cheetahs have the dubious honor of being one of the most sought-after tourist attractions in many East African national parks and game reserves. On the other hand, should a cheetah go outside the reserve boundaries, the chances are good that it will occasionally see local people who are on foot and well-armed.

Can the cheetah cope with this human pressure? For 17 months I investigated this question in and around the Maasai Mara National Reserve of southwestern Kenya. My wife Lida and I followed cheetahs, usually in a four-wheel-drive vehicle, recording their behavior and collecting data on their interactions with tourists, Maasai tribesmen, professional cinematographers, and service personnel.

As part of my work towards the M.Sc. Biology of Conservation degree at the University of Nairobi, I submitted a thesis entitled "*The Effects of Human Activities on Cheetahs in the Mara Region of Kenya.*" The African Wildlife Leadership Foundation was one of the sponsors of the project.

I soon found that the cheetah is not an easy animal to study. Radio collars had proven to be little help in other studies of the cheetah: they don't transmit far enough to give much advantage on a ground-dwelling creature in open country. Handling such a rare creature is also somewhat controversial, since there is the possibility of accidentally killing or injuring a



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study animal. Instead, we depended on our sight and gradually increasing knowledge of their habits to find cheetahs. Professional drivers and game scouts working in the Mara were also helpful.

Since I was particularly interested in seeing how man affects the cheetah, my observation methods had to be as unobtrusive as possible. By parking our vehicle usually between 100 meters and one kilometer from the cheetahs, preferably in a location well off the game-driving circuits, we could watch the cheetahs through binoculars and a spotting telescope without being a disturbance (and usually without divulging the cheetahs' location to passing tourists).

By cataloguing the distinctive patterns of black and white near the ends of the cheetahs' tails, we could quickly distinguish the 29 individuals that we periodically relocated in our study areas. Other cheetahs passing through or living in sections of the Mara region in which we seldom worked brought the total to 61 individuals (excluding those known to have died during the study). About 41% of all the cubs we knew about died before the age of three months, but the birth rate was quite high: litters of 5 and 6 were recorded, with an average of about 3.5.

Causes of cub deaths included lions, hyenas, a leopard, a flood, and, in two cases reported from previous years, automobiles. Domestic dogs belonging to

Maasai and a male cheetah were probable causes in one case each. None of the adults studied died during the project, but a 10-month-old cub was injured by a leopard and subsequently killed by hyenas. Two adults with leg injuries continued to hunt and kill for themselves, and eventually recovered.

Whether visited by tourists or not, cheetahs in the Mara tended to move about and hunt in the morning and early evening. The pattern had numerous exceptions, however. Nearly one-quarter of the total hunting efforts was recorded in the hottest four hours of the midday period, when virtually all tourists are back at the facilities having lunch and a rest.

Cheetahs also hunted, fed, and moved at night. Two kills were recorded well after night-fall. Shortly after sunset was frequently an active period. These observations conflict with the popular

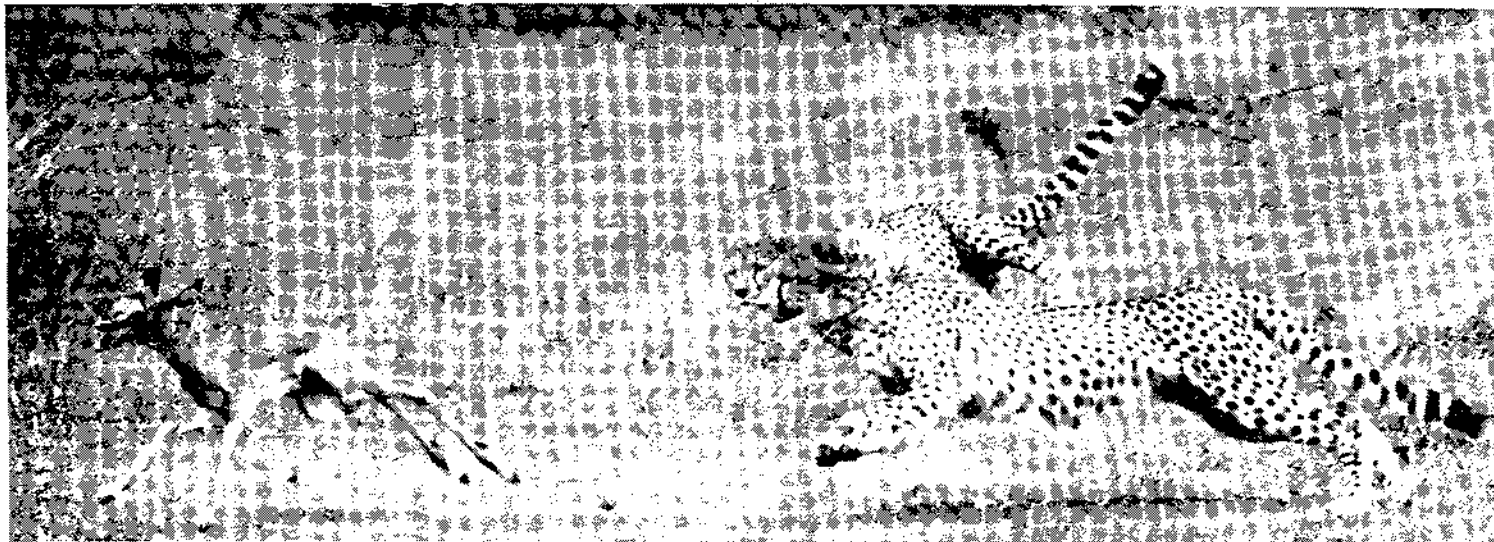
notion of the cheetah as an almost exclusively diurnal animal. I was equally surprised to find that Mara cheetahs showed a preference for areas with a moderate amount of cover, such as grasslands with scattered trees and shrubs. Hunting and resting were recorded in all available plant communities, including riverine woodlands, shrub thickets, rocky bluffs, and tall-grass swamps.

The cheetahs' unexpected versatility may explain why, in general, disturbance by tourists and Maasai seemed to have so little effect on the cheetahs' survival in the Mara. The cheetahs were very successful hunters. The overall success rate for

*Mara cheetahs are efficient hunters. Although they often hunt singly, siblings and male groups sometimes cooperate.*

cheetahs that made an all-out chase after prey was about 60%. For the 46 hunts with tourist vehicles present that we watched, the hunting success was, by comparison, slightly higher! Although the difference was not statistically significant, it certainly suggests that the cheetahs we studied most had adjusted to some extent to the presence of vehicles. When attacking prey, the cheetahs took advantage of the distraction of the herbivores caused by the vehicles or the visual screening they provided. In one case, on the other hand, a pair of mini-buses frightened a shy female cheetah and her cubs away from a freshly-killed impala, and a hyena boldly walked past the vehicles and stole the kill.

Large aggregations of tourist vehicles around cheetahs (such as one often sees in Amboseli and Nairobi National Parks of Kenya) are rare in the Mara, probably owing to the generally poorer visibility and



David & Lida Burney

lower tourist density in the Mara. When a professional photographer or tourist vehicle stayed near the cheetahs for long periods, however, visitation rates would usually be higher, because suspiciously stationary vehicles are easier to spot than a cheetah. Only two-thirds of all tourist vehicles passing within 250 meters of cheetahs we were studying actually found the cheetahs, but the success rate went up to almost 100% when a vehicle was already stopped nearby.

A few adult cheetahs in the Mara were so afraid of vehicles that they never allowed tourists to approach them at all. These individuals were never seen hunting when other vehicles were present. The individual cheetahs' differences in behavior toward tourist vehicles was very pronounced: several cheetahs that frequented areas near tourist facilities would generally allow a vehicle to approach them to 5 meters or less. Three individuals we studied, however, rarely allowed tourist vehicles closer than about 100 meters. One male that we nicknamed "the phantom" would even climb the steep Oloololo Escarpment near our camp to escape vehicles ½ kilometer away! Some cheetahs were intermediate between these extremes.

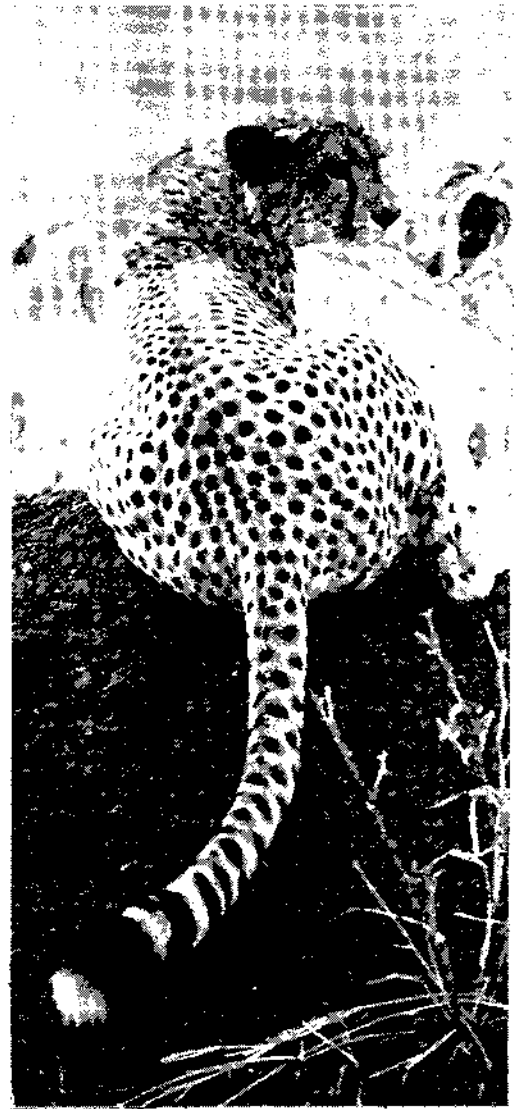
It appears that tolerance of tourist vehicles is a learned behavior. A very "shy" family of cheetahs that we were studying but couldn't approach closely was followed persistently and carefully by a certain wildlife cinematographer for a few days each month for about a year. By the time this very patient man's film on the family was completed, they were among the cheetahs most tolerant of vehicle approaches, and the maturing cubs even

climbed on stationary vehicles occasionally.

Tourism is very unevenly distributed in the Mara, so cheetahs in some areas see vehicles regularly, but others do not. Also, how one approaches a cheetah clearly affects the cheetahs' response. Cheetahs fled significantly more often from rapid, direct approaches than from slow, indirect approaches. Nearly all Mara cheetahs appeared intolerant of close encirclement by a large group of vehicles. The sound of the human voice elicited a response more often than any other category of sounds made by tourists and vehicles.

All but one individual was occasionally seen outside the reserve, where they were less assured of protection. Three adults were never seen inside the reserve. The 76 interactions between Maasai and cheetahs we recorded were interesting to compare with the nearly 500 tourist vehicle-cheetah encounters. When cheetahs met these well-armed tribesmen afoot outside the reserve, even those cheetahs most habituated to tourist vehicles fled at relatively long distances—usually 100 meters or more and beyond the effective range of any weapon but a rifle. There was no difference between "tame" and "shy" cheetahs in their response to man on foot. This was also confirmed by what happened when a tourist got out of a vehicle near a cheetah that otherwise tolerated vehicle

*Cheetahs generally spot approaching humans at surprisingly long distances. They nearly always flee people on foot at distances greater than the effective range of most weapons.*



David & Lida Burney

approaches. In the 32 cases that persons got out of a car within 200 meters of a cheetah and in full view, the cheetahs fled or showed some other fright response in 90% of the instances. Perhaps the cheetahs' association with man and his ancestors, which may go back 3 million years or more, has left the species with an instinctive fear of the ominous two-legged carnivore. Cheetahs' responses to lions are very similar. Cars, on the other hand, are a relatively recent innovation—cheetahs have to rely on less instinctive behavior in deciding what to do, perhaps.

This apparent great fear of man on foot continues to serve the cheetah well. Unlike lions and other large carnivores, they almost never disturb Maasai livestock. They probably co-exist better with low-density pastoralism than do these more aggressive predators. I found that the density of cheetahs in Maasailand on the north side of the reserve was over

twice as high as in the adjacent reserve! Perhaps the scarcity of lions and other carnivore competitors in Maasailand is the proper explanation, but more study of the population dynamics of all the large carnivores in the Mara region is needed before any conclusions can be reached.

Even poaching does not seem to affect cheetahs in the Mara much at present, although poaching for cheetah skins and live cubs is prevalent in some African countries, such as Djibouti and Namibia. Mara poachers are concentrating on the rhinos and leopards, I suspect. Most poaching incidents that occurred in the Mara during our study took place in places and times in which other human activities were at a minimum. Tourism and pastoralism may serve as indirect deterrents to poaching by distributing "eye-witnesses" about the area.

Based on the cheetahs' population structure, it was my impression that, if

nothing changes in the Mara region in the near future, cheetahs will not only survive, but probably increase. But as long as man is present, changes will occur in the Mara, as man changes. Tourism, the reserve's much-needed economic justification, is on the increase. The Maasai are also increasing, and their grass-fires and livestock may reduce the vegetation cover in some parts of the region. Some land in the area has already been diverted from multiple-use rangeland (suitable for both livestock and wildlife) to intensive fenced ranching and large-scale wheat agribusinesses, land uses less compatible with wildlife. Kenya's burgeoning population may bring pressure in the future for diversion of more land in the Mara region to farming and ranching. Some cheetahs appear to have adapted to man's presence in the Mara, but man and the cheetah share an uncertain future.

*Drivers and game scouts often find cheetahs by locating long-stationary vehicles. Professional cinematographers, by staying with cheetahs for many hours, may attract large numbers of tourist vehicles. Some movie-makers try to minimize this effect by working outside the reserve whenever possible.*



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