

LOSERS OR SURVIVORS

THE MARA'S CHEETAH ADAPT TO SURVIVE

Elena Chelysheva has spent four three decades studying cheetah, especially in the Maasai Mara, where they are a must-have in the tourists' photo album. In this article she shares some of her expert knowledge and, like Jonathan Scott and Jake Grieves-Cook in this section, appeals for more understanding from their viewers.



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is manager and principal investigator of the Mara-Meru Cheetah Project. Member of IUCN Breeding Conservation Specialist Group, she obtained her PhD in cheetah Ecology and behaviour and has spent three decades studying cheetah in captivity and in the wild, especially in the Maasai Mara, where they are a must-have in the tourists' photo album.

At the start of the 20th century, there were more than 100,000 cheetahs (*Acinonyx jubatus*) roaming vast areas in Asia and Africa. By the end of the century, the global population was estimated as 15,000 animals, while today approximately 7,500 cheetahs are left in the wild.

This article looks at some of the reasons for such a dramatic decline of a species that has co-existed with humans for 4,500 years. They were kept as pets,

trained for hunting and also hunted. The more research that we do, the less, it appears, we know. Here are some key facts to bear in mind next time you come across them.

- Year by year cheetah numbers decline drastically primarily due to increasing habitat loss and fragmentation, the reduction of prey density and killings due to conflict with livestock and hunting for live trade and skins.
- In Kenya, cheetah are now resident in about 23% of their historical range, mostly in unprotected areas. However, even in protected areas, chances of survival are



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limited by inter-guild competition for territory and resources with lions and hyenas – major cheetah enemies. Alongside reduction of prey availability, cheetahs are forced out of protected lands, where they come into conflicts with herders. Among other problems, cheetah are susceptible to diseases affecting both felines and canids.

- The Maasai Mara National Reserve and adjacent areas as a part of the of Mara-Serengeti Ecosystem are a perfect example of an almost full range of the problems cheetahs experience in the wild and the high adaptability the species exhibits. As the boundaries between these two parks and conservancies are not fenced, cheetahs freely migrate within the ecosystem. The Maasai Mara National Reserve is one of the most-visited parks in the world, with the number of visitors and facilities growing each year. There is a complex of interconnected factors, which directly and indirectly affect cheetah survival. Among them there are: reduction in prey base

(which escalates conflict with other predators), conflict with herders, tourist activity and disease (sarcoptic mange).

- In counting cheetahs, we used an individual identification method, which I developed in 2001. It is based on visual analysis of the unique spot patterns on front limbs (from toes to shoulder) and hind limbs (from toes to the hip), and spots and rings on the tail.

Mara-wide counts of cheetahs were performed in 2002, 2005, and 2013. The 2002 survey identified 28 adult cheetah utilizing the Mara ecosystem, with 19 individuals spotted in the Reserve. In 2005, Stephanie Dloniak identified 41 adult cheetah in the Reserve. In 2013, the Mara-Meru Cheetah Project identified 44 adults, of which, 38 were in the Reserve. Thus, the median density for cheetahs in the Reserve was the lowest in 2002 (1.25/100 km²), highest in 2005 (2.7/100 km²), with a small reduction in 2013 (2.5 /100 km²). The Talek region of the Reserve maintained the highest

densities in 2005 and in 2013, in addition to the Sopa area being relatively high in 2013.

Although high densities of cheetahs exist in the Talek region, this area is also exposed to a high level of livestock grazing and tourism, and a reduction in resident prey numbers. Why this region maintains a high density of cheetahs despite widespread ecological change is unknown. One potential reason could be the positive indirect effects of cattle grazing on vegetation, improving hunting success for cheetahs. Another possible explanation could be differences in the makeup of the carnivore guild.

Cheetah share habitat with lion prides and hyena clans and their meetings become vital as they provide cheetah an opportunity to work out the best survival strategies. Hyenas are known to snatch cheetah prey and kill and eat cubs. Lions, apart from taking away cheetah kills, kill cubs and adult cheetah.



Females take care to avoid conflict. Female cheetahs are more successful hunters. Immediately after a successful hunt, a Mara cheetah drags it to a safer place (under a bush or into a small patch of tall grass) and does not open it straight away but stays for up to one hour scanning the area and starts eating only when sure that there are no other predators around. Once the prey is opened, a cheetah eats continuously for up to three hours and leaves the spot, unlike Serengeti cheetah, which eats faster and leaves before kleptoparasites arrive (Caro 1994). During the rain Mara cheetah will stay with the kill at the same spot for two days continuously feeding from the same carcass because the rain creates a natural barrier for dispersal of smell so hyena within 200m cannot detect a kill.

- Despite the fact that cheetahs roam within the Mara-Serengeti ecosystem, they display different patterns of behavior and different survival strategies depending on

the area they inhabit. In Serengeti, the minimum distance at which a cheetah allows an approach by a vehicle would be 15 meters, while in the Mara the relationship between cheetahs and tour vehicles is a controversial issue. Some cheetah allow cars to approach to a distance of 20-30 meters and take off at attempts to get closer. Some use them as shelter and observation points, which is a cause for concern. Serengeti cheetah which visit the Reserve are very different. We have watched a male following a Mara female to mate. When the female fearlessly passed between cars at a distance of 2-3m, he hesitated at a distance of 15-20 meters.

- Cheetahs learn the behavior of visitors and differentiate it in different areas. For example, in the Triangle, in the areas where off-road driving is restricted, females with cubs can tolerate vehicles at a distance of 15 and less meters. The same females in areas that allowed off-road driving kept a distance of

more than 30m.

- Mothers teach cubs by showing examples of different behavioral strategies in various situations. If a mother tolerates vehicles, cubs adopt the same behavior. During playing, cubs improve their hunting and climbing skills. Being curious, they try all elevated objects, starting from the mother's back and then bushes and trees. Depending on the level of tolerance to the vehicle of their mother, they might approach tour vehicles.
- In the 1980s in the Reserve, there were at most 1-3 cars near the cheetah and the maximum number of vehicles simultaneously present at a cheetah site was six. In 2002, the maximum number of cars watching a cheetah at the same time was 23, while in 2012 we observed 63 vehicles near one cheetah.
- Our previous study in the Mara in 2002 showed that in the presence of tourists, cheetah behavior was changing by 75%.



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Cars at a distance greater than 13m had less influence on cheetah activity and behavior. The critical distance at which cars with tourists had the greatest impact on cheetah behavior was around 6-8m. Reducing the distance further produced a reduction in activity, when cheetah lies down (sometimes with closed eyes) and does not show any sign of activity. Such behavior is a sign of apathy (stress immobility) induced by tourists. The more cars surround cheetah, or the shorter the distance became, the more often cheetah lie down.

- While travelling, cheetahs leave messages on their physiological and reproductive status to their counterparts by scent marking different substances. They claw different surfaces and urinate and defecate on elevated objects such as termite mounds, logs, tree trunks and forks. Cheetah that climb cars often defecate on the roof. They leave their marking scents to pass out information to their counterparts. Thus, if this is done on a tour vehicle, the information becomes lost in the mail!
- Visitors should ensure maximum silence at animal sightings with zero harassment such as calling or whistling at sleeping animals.

Do not follow cheetah going for hunt or courtship; observe them from a distance for this will reduce incidences of interrupted hunts and mating. Avoid 'markings' under trees, bushes and on the grass as these are greatly utilized by animals as resting points, marking areas and food. Do not allow cheetah to climb your tour vehicle; as much as cheetahs use elevated areas as observation points, they also utilize them as marking points leaving a message addressed to another cheetah.

- The Mara is a fast-changing ecosystem where land fragmentation and habitat loss for the cheetah is leading to increased levels of human-cheetah interactions. This is because, as cheetahs move across the ecosystem, they often pass by human habitation and sometimes go for small domestic stock. In retaliation, Maasai livestock owners want to do away with the predator.
- It's becoming difficult for cheetahs to move around freely because of the increasing number of fences going up. Traditionally, the Maasai were nomadic but now they are settling down – hence the increased private land delineation by fencing. Interviewing Maasai around the Reserve revealed

that 67% respondents out of 63 confused cheetah for leopard. They use mostly one word for both carnivores - Olouwaru keri - meaning "spotted one", Nearly 60% blamed cheetah for losses, and out of these, 37% pointed at a cheetah photo but described leopard behaviour: "At night the cat climbed into a boma, took a sheep/goat and ate it up on a tree".

- To save the cheetah in the wild, we have to save its environment. And this means enhancing the well being of those communities that bear the direct cost of living with wildlife, cheetah.
- For us, education and public awareness is key to saving the cat. Working with the communities, we are researching their perceptions, knowledge and attitude towards wildlife in general and cheetah in particular to form the basis for producing the most relevant and easy to understand education materials for them.
- Since we identified core conflict zones around the reserve, we are working out different ways of mitigating human-wildlife conflict in the area. Apart from applying boma-improving strategies, we are developing educational materials targeting different age categories – from kids to elders.
- For the Maasai, cattle are their





PHOTOS BY: MARA MERU CHEETAH PROJECT

wealth and premier source of income. But, with little pasture and drought, alternatives to maximizing benefits accruing from cattle keeping should be sought. These alternatives should be of ecological sound acceptable within the culture and way of life by the Maasai lead.

- Despite being classified as a felid, Cheetah have the following common features with the Canids; the skeleton is similar to the dog with a scapula built like in a Grey wolf. Its milk is 99% equal to that of the African Wild dog and more similar to the milk of Grey wolf than to any cat. It has color binocular distant vision. The cheetah’s retina has more cones (photoreceptor cells responsible for day vision and color perception) and fewer rods (responsible for peripheral and night vision, to detect brightness and shades of gray) than in other cats. This explains the cheetah’s poor vision in darkness when compared with other felids. In addition, Cheetah has a visual field span of 210 degrees versus 140 in humans and, it can isolate details up to a

distance of 5 km during the day.

- Cheetahs exist in a variety of habitats ranging from the savannah to deserts and high mountains. They are tolerant to high temperatures, daytime fluctuations, and the snow. They swim across rivers, climb trees and rocky hills. They are active by day and night. Their prey varies from small to medium and fast moving to slow moving large ungulates. Cheetah exhibit different hunting techniques depending on the type of habitat and number of individuals involved in the hunting exercise.
- Their social organization is unique and represented by temporary and permanent units. A litter size of up to eight cubs is thought to be an adaptation to high cub mortality whereas a high growth rate of cheetah cubs, compared to other felids, is thought to be a further adaptation to high predation risk. After the mother leaves her sub-adult cubs, they stay together for about half a year, after which a litter split occurs. Depending on the number of males, they start solitary life or group life in

a permanent unit – a coalition, which lasts life-long and may accept unrelated males. Most females live a solitary life, but in certain environmental conditions, they also form coalitions from sisters-littermates.

- Out of five identified subspecies, four live in Africa and one in Eurasia, where only 120 individuals of the so-called Asiatic cheetah survive in Iran. Recent study proved three subspecies to be genetically distinctive: Northern-East African cheetahs (*Acinonyx jubatus soemmeringii*), Asiatic cheetahs (*Acinonyx j. venaticus*) and South-African (*Acinonyx j. jubatus*), which gives hope for greater genetic diversity of the species.
- There are two stronghold populations left in the world: one in Southern Africa (Namibia, Botswana and South Africa), and the other in Kenya and Tanzania, represented by different subspecies. Except for two subspecies, cheetahs are considered “Vulnerable” by the IUCN and are listed in CITES Appendix I. ●