

Frame GW. 1986. Comments on the Caro and Laurenson project proposal.

Keywords: 1Afr/Acinonyx jubatus/Amboseli/cheetah/conservation/decline/monitoring/National Park/project/research/Serengeti

Abstract: Frame is commenting Caro and Laurenson's project proposal "The causes of the decline of the Serengeti population". His opinion is, that the cheetah decline on the plains is still speculative. The proposed project is for him only of moderate conservation importance. Carnivore populations naturally fluctuate. However, continued funding of the carnivore research projects in the Serengeti ecosystem is a good investment for conservation in the long term. This proposed cheetah project should be a part of the larger WWF/IUCN project that is now underway and he recommends that additional funds be provided in the WWF project for the continued monitoring of cheetahs that is the essence of Caro and Laurenson's proposal.

Subject: Comments on the Caro and Laurenson project proposal "The Causes of the Decline of the Serengeti Cheetah Population."

Although the cheetah is not endangered, this study is important because it will help to elucidate the complex relationships that exist among coexisting carnivores. From the case presented, it appears that the Serengeti cheetahs may be in the early stage of a population decline due to increased interspecific competition and predation, or because of changing patterns in prey availability.

My data of 96 cheetah litters from the Serengeti in 1972-78, do not dispute their case for a decline. I had a mean of 2.80 cubs per litter (mode = 2, median = 2, range 1-6). They say there currently is an average of 2.0 cubs per litter. In my study when litters were first seen, 49 of 96 (51%) consisted of 1 or 2 cubs only, and 15 of 96 (16%) consisted of 5 or 6 cubs. Their three data points between 1983 to 1986 vary from about 68% to 32% to 70% for sightings of litters with 1 or 2 cubs (Fig. 2)--that is not convincingly different from my 51%. However, both this and their calculation that only 2% of the litters are now large (i.e. 5 or 6 cubs) are not exactly comparable to mine, because they are calculating sightings, not different litters. Sightings are highly biased by the observers' work patterns.

Their argument of a food shortage for cheetahs is interesting in that there is a documented decline in Thomsons gazelles (probably population suppression due to the huge number of wildebeest), but my research showed that cheetahs don't need high densities of prey. Prey distribution, however, is highly variable and cheetahs on the Serengeti Plains might recently have had poor availability of prey due to a decrease in dry season rain showers. This year's transect survey of carnivores on the Serengeti Plains gave a low estimate of cheetah numbers, but that could be a result of the timing of the survey. The cheetah population on the plains can fluctuate several-fold in a matter of several weeks, depending upon the occurrence of rain and the consequent prey movements.

The data in Figures 1-5 are not altogether supportive of their supposition, although they are quite suggestive. They have a good working hypothesis, which they will be able to either confirm or reject.

In summary, the case for a cheetah decline on the plains is, in my opinion, still speculative. The proposed project is of considerable theoretical interest for community ecology, but of only moderate conservation importance. Carnivore populations naturally fluctuate, and even if the cheetah numbers are declining on the plains, they are not necessarily declining in the adjacent woodlands. However, continued funding of the carnivore research projects in the Serengeti ecosystem is a good investment for conservation in the long term, because this is one of the few examples of an ecosystem that has been sufficiently well studied to provide an understanding of the dynamics of the rainfall-vegetation-herbivore-carnivore plexus. That understanding of the dynamics will be invaluable for conservation management in the future, when the Serengeti becomes an isolated ecological island.

This proposed cheetah project should be a part of the larger WWF/IUCN project that is now underway, the WWF 3721: Tanzania, Serengeti Ecosystem, Monitoring & Training Programme. I recommend that additional funds be provided in the WWF 3721 project for the continued monitoring of cheetahs that is the essence of Caro and Laurenson's proposal.

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