

Project Title: Apicomplexan parasites, immunity and its link to life history states in cheetahs

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Project Description:

This project will investigate parasite load and immune responses in a genetically monomorphic carnivore, the cheetah. Little is known about parasite susceptibility of free-ranging vulnerable wildlife species. Cheetahs exhibit a low level of variability at fitness-related immune genes (MHC) and are highly susceptible to infectious diseases when kept in zoos but not in the wild. This project will analyse samples collected from free-ranging and captive cheetahs in Namibia and examine how apicomplexan infections and parasite load depend on reproductive status, territorial status and group size of cheetahs. It will further examine the extent to which other components of the immune system can compensate the low MHC variability. For a more comprehensive understanding of these topics, the project will also compare immune parameters with free-ranging Namibian leopards, a species with a high level of variability at the MHC.

Some protocols for testing particular components of the immune system of the cheetahs and leopards are already developed, others will be developed during this project. An important part of the project will also be the management of several thousand samples from several hundred cheetahs.