CONSERVATION SCIENTIFIC RESEARCH EDUCATION

RESEARCH CLINIC

Founded in 1990, CCF is a Namibian non-profit incorporated association dedicated to the long-term survival of the cheetah and its ecosystems.

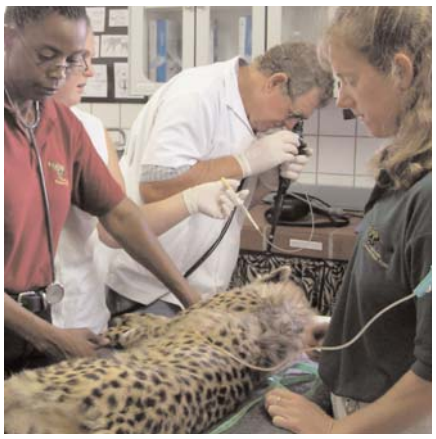
CCF VISION

To see a world in which cheetah live and flourish in co-existence with people and the environment.

CCF MISSION

To be an international centre of excellence concerning cheetah conservation, and multi-disciplinary research and education programmes; working with all stakeholders to achieve best practice in conservation and management.

CCF's activities include conducting international research, conservation and education programmes to ensure the survival of the cheetah for future generations.



The Cheetah Conservation Fund's (CCF) 'Haas Family' clinic provides facilities to conduct long-term studies to understand and monitor the factors affecting the cheetah's survival. The CCF's current research programmes include a combination of in-situ and ex-situ conservation efforts.

WILD CHEETAH EXAMINATIONS

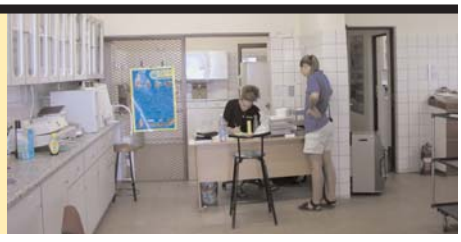
Whenever possible, CCF examines animals captured by farmers. The CCF research team collects biological samples from wild cheetahs to assist in evaluating the health, reproduction, and genetic status of the cheetah population. A full biomedical assessment is performed and recorded on each cheetah that comes into the clinic. Over 700 cheetahs have been assessed with blood, skin and other tissues collected as well as a standard suite of morphological measurements are taken on all live animals. All samples collected by CCF are meticulously stored and serve as a reference database for future studies. Continuing research provides the basis of a disease surveillance system for cheetahs in Namibia and elsewhere, as catastrophic disease is a major threat to the long-term viability of cheetah populations. Semen samples are collected from male cheetahs and the information gathered from the sperm is used to contribute to a Genome Resource Bank (GRB). The CCF's extensive database is continually updated with new information. Cheetahs are then marked with ear and tags and/or radio-collars and released with the farmer's permission.

ANNUAL HEALTH EXAMINATIONS

The CCF takes every effort to maintain a healthy population of resident captive cheetahs. This is accomplished by annual health exams with veterinarian, Dr. Arthur Bagot-Smith (CCF Board Chairperson), which includes vaccinations for rabies and feline viruses. Blood is collected and tested for health and body function of vital organs along with feline viral diseases. Other aspects of maintaining a healthy cheetah population include quarterly de-worming of the individual cheetahs, daily observations of the cheetahs and accurate feeding and behaviour records. In addition, semen samples of CCF's captive male cheetahs are regularly collected for a Glycerol Toxicity Cryopreservation Study to develop more successful freeze thaw methodologies for this species.

" We must learn as much as we can about the cheetah so we are completely prepared in the fight for its survival. "

-DR. LAURIE MARKER,
CCF EXECUTIVE DIRECTOR



MORE RESEARCH CLINIC

REPRODUCTIVE STUDY

Extensive studies of both captive and wild cheetah have shown that males commonly produce abnormal sperm cells. This problem may be related to the low genetic variation of cheetahs. To further complicate this issue, animals held in captivity have the added stress of housing limitations and behavioural conflicts, which reduce their reproductive success. It is crucial that genes from Namibian cheetahs be harvested and stored for future use.

The research conducted by the Smithsonian Institution and CCF led to a milestone for reproductive technology - cheetah cubs were produced for the first time by artificial insemination using the shipment of frozen sperm from Africa to the United States. The underlying importance of this accomplishment was that the genetics of a male cheetah living in Namibia were used for the production of cubs in the USA without removing that male from his natural habitat. These events were extremely encouraging to the hopes of saving this very vulnerable and endangered species. The CCF reproductive research plan is to continue to develop and refine procedures for freezing and thawing cheetah sperm cells. These technologies helped in the development of a Genome Resource Bank and will result in the advancement of many more techniques to benefit the cheetah.

GENOME RESOURCE BANK

The CCF researches the optimal procedures for freezing and thawing the cheetah sperm which is held at CCF's on-site Genome Resource Bank (GRB). A GRB is a warehouse of biological materials including sperm, blood products, skin and other tissues. The establishment of CCF's efficient GRB containing sperm could enable the future transfer of genes to female animals worldwide without removing male animals from their natural habitat. In this way, technologies such as artificial insemination (AI) can be utilized to create new individuals by the incorporation of genes from males living in Africa. Further, this repository will serve as a hedge against unforeseen catastrophe, such as disease, that could disastrously affect the cheetah population.

NECROPSIES

The CCF collects biological data and samples whenever possible to assist in the health evaluation of the population. A full biomedical collection of two sets of samples, including vital organs, lymph nodes, bone, muscle, skin and reproductive tract are taken on all necropsied animals, as well as blood, skin, and morphometric measures on live animals. These samples can provide necessary information to determine cause of illness or death, and are invaluable for the species' biological database. Skeletons are cleaned, labelled and stored for future studies.

GASTRITIS STUDY

Internationally, captive cheetahs suffer from gastritis, an inflammation of the stomach that is caused by the Helicobacter spiral bacteria -which causes ulcers in humans- and impacts negatively on the cheetah's health. Stress is implicated as one of the possible causes of this disease. The CCF monitors faecal cortisol levels in relation to effects of stress on captive and wild cheetahs, and gastric biopsies are collected on all CCF resident cheetahs bi-annually, and on all free-ranging cheetahs that CCF handles to determine the level of gastritis in these animals. The research is providing a greater understanding of the disease and how it affects captive animals over time. In addition, faecal samples are used to evaluate oestrogen levels to determine if the females are experiencing normal oestrous cycles. These data are correlated with behavioural observations, to support the endocrinology data. The endoscope, used for gastric biopsies, was donated by Olympus.

INTERNATIONAL COLLABORATION

The CCF's research is done in collaboration with scientists from the Smithsonian Insitution, National Cancer Institute, University of California at Davis, White Oak Conservation Center and the Cincinnati Zoo.

CHEETAH CONSERVATION FUND

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