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Abstract: The cheetah *Acinonyx jubatus* is declining through its range because of loss of habitat, a declining prey base and competition with livestock interests. Throughout Africa there are less than 15000 animals remaining. The largest wild population of cheetahs is Namibia, although in the last 12 years numbers have been reduced by half to about 2500 animals. Significant declines have continued as farmers captured and removed cheetahs as "pests". Established in 1990, the Cheetah Conservation Fund aims to secure habitats for the long-term survival of the species and its ecosystems. The primary focus of the Fund is working outside of the protected reserves with the local livestock farming communities to develop ways to reduce conflict between humans and collaborative research, to disseminate information and to recommend management techniques to farmers.

CONSERVATION STRATEGY FOR THE LONG-TERM SURVIVAL
OF CHEETAH IN NAMIBIA

(1) Project Number and Title

GT/27 - Conservation Strategy for the Long-term Survival of the Cheetah in Namibia

(2) Name and Address of Project Executant

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(3) Reporting Period

16 November 1993 through 31 May 1994

(4) Introduction

Loss of habitat, declining prey bases, and competition with livestock/agricultural interests and large predators are taking a heavy toll on wild cheetah populations throughout Africa. The largest wild population of cheetahs is found in Namibia; however, in the last 10 years their numbers have been reduced by half to less than 2,500. Wild imports from Namibia continue to maintain the world's captive population, yet little is known about the behavior or physiology of this population.

The largest percentage of the world's remaining free-ranging cheetah are found outside of game reserves in Africa and are threatened with extinction due to growing human demands on resources. The cheetah's attraction to livestock farmland poses a direct threat to the species' survival. Significant local declines continue as farmers indiscriminately capture and remove a large number of cheetahs as "problem" animals. They perceive cheetahs as having a severe negative economic impact on their livestock and wild game; therefore, their attitudes must be reversed if we hope to save this endangered species.

CCF established its permanent base in Namibia since it is critical to the worldwide survival of the species to stabilize this, the largest, gene pool. The Fund's primary focus is in areas outside of the protected reserves, working with the local livestock farming communities to develop ways to reduce conflict between humans and cheetahs and devise a cheetah conservation management plan which secures habitat for the species and considers land use needs.

(5) Objectives

- Evaluate current livestock practices and their impact on cheetahs. Identify key components in farmland ecosystems necessary for the sustenance of healthy cheetah populations.
- Conduct conservation education programs in Namibian schools to increase awareness about cheetahs and provide students with the opportunity to participate in cheetah conservation efforts.
- Address conflicts between farmers and predators in order to develop a conservation and management strategy that benefits both humans and cheetahs.
- Conduct field research to learn more about the biology and overall health of the southern African wild cheetah population and to gain information about the animals' movements through the farmlands.
- Adapt model programs developed in Namibia for use in other southern African countries. Coordinate work with wildlife officials and other non-governmental organizations working with cheetahs.

(6) Methods and Activities

- o The Fund is currently finalizing its farm survey report to be distributed to livestock and game farmers, and other interested parties. The report will identify the priority needs for the cheetah and strategies for reducing conflict and will facilitate the development of policies and programs which strive to sustain cheetah populations and suitable prey populations, and thereby encouraging a healthy, balanced ecosystem. An initial report has already been published in Swara magazine (enclosed).
- o To promote cheetah conservation in schools, CCF continues to: (1) conduct interactive assembly programs which increase student awareness about their role in helping to conserve the cheetah; (2) distribute teachers' packets for cheetah education work in the classroom and activity sheets to learners to increase awareness about the plight of the cheetah; (3) attend educational workshops for teachers and teacher-trainers and, (4) sponsor and promote social and cultural programs which focus on environmental conservation.
- o Grass-roots communication with farmers and wildlife and agricultural officials form an important component in the program's work. CCF presents information from its survey on wildlife and livestock management, farmer's attitudes toward predators, and non-lethal measures farmers employ to reduce livestock loss to cheetahs at farmer

association meetings throughout the country. The Fund encourages farmers to think creatively about solutions to conflicts by presenting livestock management practices employed by other Namibian farmers who have shown that cheetah problems can be dealt with successfully by using non-lethal techniques.

- o The Fund continues to collect biological samples developing an extensive database on Namibia's wild population. To date, we have examined over 130 cheetahs, over 40 during the reporting period. We have 5 male cheetahs radio-collared and 22 ear-tagged in our research area, which encompasses about 7,000 km² in the Waterberg region of the north-central part of the country. We are tracking animals twice a week by fixed-wing airplane.
- o Working cooperatively with organizations located in Botswana, South Africa, Zimbabwe and Zambia, we are beginning to expand CCF's programs to other southern African nations. These countries have geographically connected cheetah populations and are important in the long-term strategy to conserve this larger gene pool.

(7) Progress

During the past six months, the CCF has made progress in many different areas. In November 1993, CCF's Co-Directors conducted a six-week fundraising and lecture tour in the United States. Fourteen lectures were given in seven cities to a diverse array of audiences. These tours are important in developing funding for and providing exposure to CCF's efforts (see CCF Newsletter for more information). CCF received media attention that included newspaper, radio and television in each city and a CNN-TV interview that was aired internationally.

The Fund has continued to develop its biological data-base on wild-caught cheetahs. Between November 16 and May 31, CCF has tagged and released 14 cheetahs. CCF's policy is to release non-problem animals in the same area where they were caught and re-locate problem animals. Detailed information, including body measurements, ID characteristics, vital statistics, skin biopsies and blood samples, is obtained on each animal. In addition, the CCF, in cooperation with the Conservation Corporation, successfully re-located two male cheetahs (livestock-killing "problem" animals) from Namibian farmlands to the Phinda Reserve in South Africa. These animals have been radio-collared in order to monitor their progress in re-location. The Fund has begun communications with officials in Zambia to facilitate a similar re-location effort in the Lower Zambezi National Park in the coming month.

The samples taken from wild-caught cheetahs make a significant contribution in the assessment of the overall health of the wild population. The CCF is working in cooperation with two serology labs (one U.S., one South African) in a comparative analysis of infectious diseases. Seventy-four blood samples have been analyzed within the last six months by a serology lab in the United States. This data is currently being analyzed for publication. Genetic analysis on the samples collected is being done by a Master's student in the U.S.

CCF's radio-tracking program continues, with five (males) of the original eight collared animals still being monitored. The status of the single collared female is unknown, as she moved out of the tracking area and has not been able to be found. One collared male was

shot by a farmer, and another male died of unknown causes (remains were recovered). The five remaining animals continue to be tracked by airplane twice a week, with a total of over 100 fixes having been made on several of these animals thus far. The data from the past six months shows a continued wide range of movement (1,500 km²) for each animal, with an interesting range variation beginning in the rainy season.

In January, CCF and the Livestock Guarding Dog Program from Hampshire College (Massachusetts, USA) set up a pilot program on one of the farms in CCF's research area. Four Anatolian Shepherds, a breed of Livestock Guarding Dog from Turkey, were established with herds of sheep and goats. Several talks were given at Farmers Association meetings to familiarize the farming community with the program. A Hampshire student monitored the program as a part of her honors thesis for a five-month period. In June, CCF and the Livestock Guarding Dog Program are bringing in another student and six more Anatolian Shepherds for placement on farms. There is much interest from the farming community in continuing the program.

In February, a multi-institutional research team from the United States Cheetah Species Survival Program came to Namibia to collaborate with the CCF on evaluating the reproductive and other health aspects of Namibia's cheetahs. CCF conducted a two-day seminar for Namibian veterinarians and wildlife researchers, as well as students at the Technikon and the University of Namibia, and students at the German and Afrikaaner High Schools in Otjiwarongo. The team spent 16 days collecting biological samples from 19 wild-caught and captive cheetahs. These samples included blood, skin, stomach lining and sperm samples (see Summary Report).

CCF's involvement in education has grown significantly in the past six months, though our emphasis has changed. At the present time, we are working with a smaller number of schools in a more direct capacity, over an extended period of time. This type of involvement assists schools in organizing environmental education programs and projects which they can build upon in the future. The Fund has continued to conduct its educational assembly programs and distributes educational activity sheets and informational materials to all student audiences. In the past six months, CCF has conducted 17 programs at 9 schools, reaching approximately 1400 students. During the past year, CCF, in cooperation with the Ministry of Education, has been developing a 100-page cross-curricular teacher's resource guide which emphasizes cheetah and general predator conservation. The resource guide is now at the printer and will be ready for distribution to schools throughout Namibia in July.

Several schools are directly involved in CCF's programs. At one local school, Rogate Primary, CCF and the Cincinnati Zoo have developed a sister school program with a school in Ohio. In Swakopmund, the German High School recently held a benefit fun-run with the proceeds going to the Cheetah Conservation Fund. The school's student council will be visiting the CCF base later in June. And, the International School in Windhoek is planning an Annual National Cheetah Week in August, promoting the need for Namibians to conserve the cheetah. These students will be attending a weekend workshop at the CCF base in June during which they will make posters for Cheetah Week.

Students from the Otjiwarongo Secondary School, located near CCF's base, have taken cheetah conservation on Namibian farmlands as their project for a national environmental competition called Conservo. The students are working with the CCF on public awareness, research, and conservation strategies. Much of CCF's efforts have gone into this program,

as many of the students' parents own farms in CCF's research area and can play a critical role in the conservation of Namibia's cheetahs.

The 9th grade learners are using CCF's survey results as a base to conduct their own survey. They are currently conducting personal interviews with farmers in an effort to learn more about livestock management techniques and non-lethal predator control methods which reduce the need to kill cheetahs. This group is also actively involved in CCF's radio-tracking, learning about how radio telemetry works and about the movements of the cheetahs, as many of the student's families own farms transversed by CCF's radio-collared cheetahs.

A 10th grade group of learners have used their involvement with CCF's biological research to aid in the development of a project which addresses the genetic plight of the cheetah and the management of a wild and captive population of animals. This group has actively participated in the collection and processing of biological samples from cheetahs and are learning to analyze the results obtained from the laboratories.

The third group, 11th graders, have chosen civic awareness. These learners have designed and exhibited cheetah conservation posters in guest lodges, hotels, and the Etosha National Park; developed and presented an interactive school assembly program for learners in the Ojjiwarongo schools, and are assisting with a cultural exchange program between a local primary school and a sister school in Cincinnati, Ohio, USA.

In the first half of 1994, CCF sponsored a cheetah writing competition. Over 500 entries were received and are currently being judged. CCF was also a co-sponsor of the Annual Shell Art Competition. The theme of this year's competition was predators. The 35 winners of the art competition spent a day at the CCF base, learning about cheetahs and cheetah conservation. The ultimate goal of these two competitions is to produce a book on cheetahs from the entries received.

CCF's work with colleges remains an important part of its education programs, as these students will soon take on important roles as teachers, wildlife managers or farmers. Our most recent involvement has included giving presentations at Technikon, the University of Namibia, Rundu Teachers College and Neudam Agricultural College, as well as organizing a series of field trips to game farms for Technikon agriculture and wildlife management students.

During the past reporting period, CCF has gained much exposure through media. Television film crews from 50/50 in South Africa, Reuters International, a station in San Francisco, and Discovery have all done programs on CCF. Additionally, NBC-TV (Namibia) is doing a story, which will be aired on children's programs in August, on each of the three Conservo groups working with CCF. Two French photo-journalists recently worked on a story about the CCF, and many newspaper and magazine articles have been written about CCF (see enclosed).

CCF's volunteer program continues to provide valuable support. There are typically three full-time volunteers working for CCF at any one time, and volunteer terms overlap. During this most recent reporting period, a total of 13 volunteers have assisted in all aspects of CCF's work. The terms of these volunteers have ranged from three weeks to 11 months.

CCF's programs are already being expanded into Botswana. Preliminary surveys of tour operators and hunting guides are being conducted by a Botswana based volunteer. Later this year, a Master's student from the U.S. under the direction of CCF will begin a year-long research program in Botswana in order to learn about attitudes toward cheetahs and investigate human interaction with cheetahs. He is currently awaiting confirmation of funding.

(8) Planned Activities for the Next Reporting Period

During the next six months, CCF's radio-tracking program will be expanded to include more collared cheetahs, with an emphasis on female cheetahs. We will continue working with farmers in our tag-and-release program and biological sampling of wild-caught cheetahs. Two students from the U.S. will work with the CCF from June to August analyzing biosamples. One student will be looking at blood parasites, and the other student will be conducting fecal hormone analysis.

The Livestock Guarding Dog Program will also be expanded in the coming months, as six more Anatolian Shepherds and another Hampshire student will be coming to work with the CCF from June - September. Because of the great interest of the farming community in the program, there is currently a waiting list for guarding dogs. With the increase in numbers of Anatolian Shepherds, it will soon be possible to breed guarding dogs in Namibia for placement on farms.

CCF will continue to conduct educational assembly programs in schools throughout Namibia and will assist teachers in the use of CCF's Teacher's Resource Guide. In June, CCF and the Otjiwarango Conservo team will participate in World Environmental Day in Windhoek. The Conservo groups will present the results of their months of hard work at the national competition in Windhoek, which will take place in August. Another highlight of CCF's education programs will be the Windhoek International School's Cheetah Awareness Week in August. The Week will include a benefit Fun Run for the Cheetah Conservation Fund.

CCF will continue to expand its programs into other southern African countries, as a Master's student from the U.S. begins a year-long research program in Botswana and CCF begins re-location of cheetahs from Namibia into Zambia. Within Namibia, CCF is investigating the possibilities of securing a permanent research and education center on a farm in the north-central region.

Finally, at the end of the next reporting period, CCF's co-directors will be conducting a lecture/fundraising tour in the U.S., and possibly in Great Britain. Planning has already begun for the trip, which will include media coverage from many sources.