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Abstract: In 1994, CCF dealt with 72 cheetahs of which 29 (21.8) were tagged and 4 (3.1) were radio-collared and relocated to Zambia for reintroduction, 28 (19.9) animals were dealt with in captivity. CCF's radio-tracking program continues with four males and one female. In October, a farm was purchased for CCF. This will help to establish an international cheetah research center. CCF's involvement in education has considerably grown over the past year.



# Cheetah Conservation Fund

P.O. Box 247 - WINDHOEK - NAMIBIA - Tel.: (0658) 11812 - Fax: (061) 248344

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1994

## ANNUAL REPORT

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**A Registered Namibian Trust:**

**The Honourable President Dr. Sam Nujoma - International Patron**

Namibian Board Members: Dr. H. Berry, Mr. D. Morsbach, Mrs. C. Olson, Dr. A. Bagot-Smith, Mr. E. lithete,  
Mrs. M. Kruger, Dr. J. Orford, Dr. R. Hassel, Mrs. J. Kaljavivi, Mr. B. Ulanga  
Mr. Daniel Kraus & Mrs. Laurie Marker-Kraus - Co-directors

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# Cheetah Conservation Fund

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

### Name and Address of Project Executant

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NAMIBIA

### Reporting Period

January 1994 through December 1994

### Introduction

Loss of habitat, declining prey bases, and competition with livestock/agricultural interests and larger predators are taking a heavy toll on wild cheetah populations throughout Africa. The largest wild population of cheetahs is found in Namibia; however, here their numbers have declined. Wild imports from Namibia continue to maintain the world's captive population and has been a continuous reservoir of wild-caught animals for re-stocking areas of southern Africa, 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.

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## Objectives

- 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.
- Evaluate current livestock practices and their impact on cheetahs. Identify key components in farmland ecosystems necessary for the sustenance of healthy cheetah populations.
- Address conflicts between farmers and predators in order to develop a conservation and management strategy that benefits both humans and cheetahs.
- Conduct conservation education programs in Namibian schools to increase awareness about cheetahs and provide students with the opportunity to participate in cheetah conservation.
- Adapt model programs developed in Namibia for use in other southern African countries. Work with wildlife officials and other non-governmental organizations in cheetah conservation.

## Methods and Activities

- o The Fund continues to collect biological samples developing an extensive database on Namibia's wild population. To date, we have examined over 160 cheetahs, several animals have been examined more than once. During 1994, 72 cheetahs were dealt with, some more than one time. At present, 5 male and 1 female cheetahs radio-collared and numerous cats are ear-tagged in our research area, which encompasses about 7,000 km<sup>2</sup> in the Waterberg region of the north-central part of the country. We are tracking animals twice a week by fixed-wing airplane.
- 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.
- 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 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 Working cooperatively with organizations located in Botswana, South Africa, Zimbabwe and Zambia, CCF's programs are beginning to expand 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.

## **PROGRESS DURING 1994**

During the past year, CCF has made progress in many different areas including research, livestock management and education. Public awareness about the cheetah has grown.

### **I. RESEARCH ACTIVITIES**

Research conducted by CCF involves biological analysis, radio-telemetry monitoring and re-location. Between January 1 and December 31, CCF dealt with 72 cheetahs of which 29 (21.8) were tagged and 4 (3.1) were radio collared and then released back onto Namibian farmlands; 2 were radio-collared and re-located to the Phinda Reserve in South Africa and 3 were radio-collared and re-located to Zambia for re-introduction programs; 28 (19.9) animals were dealt with in captivity, of which 2 were cubs that were caught and sent to the Tygerberg Zoo in South Africa, and blood was received for analysis only from 8 (7.1) other cheetahs. Samples were collected on 2 animals that were trophy hunted, one animal that was hit by a car, one animal that was living in captivity and died, 2 animals that were shot, and 1 ear-tag and 1 radio-collar were returned to CCF from two research animals that were shot (one because it was catching game and the other for unknown reasons). Of the cheetahs that were caught during this time, 8 were tagged animals that were recaptured, of which 2 were caught directly killing livestock. CCF's policy is to release non-problem animals in the same area where they were caught and if a re-location is attempted, the animals are not problem animals and are monitored by radio-tracking. At present 2 cheetahs are in holding at CCF's base and plans are being made for re-locating them to South Africa's Hluhluwe Umfolozi Park. See attached summary of cheetahs dealt with by CCF in 1994.

#### Biological Analysis

The Fund has continued to develop its biological data-base on wild-caught cheetahs. Detailed information, including body measurements, ID characteristics, vital statistics, skin biopsies and blood samples, is obtained on each animal. CCF is working in cooperation with several researchers in the United States and South Africa to analyze the samples. Samples taken from wild-caught cheetahs are making a significant contribution in the assessment of the overall health of the wild population.

Animals that have died and necropsies conducted have been analyzed by Dr. Linda Munson, a specialist in cheetah pathology at the University of Tennessee.

CCF works with two serology labs in a comparative analysis of infectious diseases, Dr. Jenni Spencer's lab at the Department of Tropical Diseases at Onderstepoort and the Department of Biology at Medunsa in South Africa, and Dr. Jim Evermann's Animal Disease Laboratory, College of Veterinary Medicine at Washington State University in the United States. CCF is facilitating these two labs in an attempt to correlate their results so that uniform and standard analysis can be used. To this end, preliminary results of some of our findings was presented at Faculty Day for the Faculty of Veterinary Science, University of Pretoria and won the Dean's Award for the best poster. This data is currently being analyzed for further publication.

Genetic analysis on the samples collected by CCF is being done at Dr. Stephen O'Brien's laboratory at the National Cancer Institute in the United States. Preliminary findings were discussed in November when the Krauses were in the U.S.A.. The samples being analyzed will be looked at for family relatedness and regional genetic differences.

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.

Two veterinary students worked as volunteers with CCF from June to August 1994 analyzing biosamples. One student from the University of Wisconsin, is looking at blood parasites from CCF's blood slide library. The second student from Tufts University, began a project with CCF on fecal hormone analysis. A protocol has been developed by research collaborators at the Smithsonian's NOAHS Center for extracting hormones from feces. Fecals are collected daily on CCF's two tame cheetahs, and behavioral observations are conducted daily. Fecals are also being collected on two tame female cheetahs in Hochfeld, as well as on two tame males in the UIB area. Preliminary results show that the females' cycles are being detected. Both of these studies are ongoing.

### Radio Telemetry Monitoring

CCF's radio-tracking program continues with four males and one female currently collared. The actual number of animals being followed, as some of the animals are traveling together, is 7 males and 2 females. These other animals are ear-tagged and the groups are spotted regularly.

Since June, there are two new cheetahs being radio monitored of which one is a female with 3 cubs. Another of the cheetahs recently collared was the brother of a collared cheetah that was found dead in May. The brothers had been traveling together. Therefore, having the opportunity to collar this cat in July has allowed us to continue monitoring this animal's movements. It has been very interesting to note that, with the loss of his brother, this cat apparently can not find an area to re-establish itself, and its movements have been very quick and long distances covered. Since July, he has traveled in a wide area that has a north south axis of  $\pm 100$  km.

These five animals continue to be tracked by airplane twice a week, with a total of over 150 fixes having been made on several of these animals thus far. The data from the past year shows a continued wide range of movement, with some of them consistently covering over 1,500 km<sup>2</sup>, and yet some others have reduced their area. Some, which are consistently in one relatively small area, periodically expand their home range for a few weeks at a time. An interesting range variation has taken place at the beginning of the rainy season in both 1994 and in 1993.

Attrition of five collared animal took place in 1994. One collared cheetah was shot by a farmer and the radio collar was returned to CCF. One collared male was shot by a farmer and not directly reported to CCF, but we were able to obtain the mortality information indirectly. Another male was either killed in the same area or his already faulty collar ceased working, and a fourth male died of unknown causes (remains and collar were recovered). One collared male, along with its brother, is presently being held at CCF's base as it was caught depreddating livestock.

CCF's radio telemetry program is being conducted in the same area where creative livestock management strategies are being tested and in the same area where the Livestock Guarding Dog pilot program is operating. The monitoring (ear-tagging and radio-tracking) is important to our work with the farming community. By learning more about the movements of the cheetahs, valuable information is gained and shared with the farmers about the movements of the animals. Through this, one can begin to identify if there are certain regions where cheetahs are more prone to travel and what times of the month or year the cheetahs frequent specific farms.

Between January and December 1994 CCF has tagged and released 33 cheetahs. By ear-tagging cheetahs, we have been able to monitor the cats' gross movements if they are re-caught. Eight of CCF's tagged research cats were re-caught during this time and 1 was shot.

It is not always easy to find a solution for each cat caught, but we work in cooperation with the farmers and other organizations to find the best solution. Over the past three years, the vast majority of cheetahs that CCF has dealt with were not trapped because of livestock predation but just because the farmers saw them. This indiscriminate catching can cause greater problems by opening up territories, thus allowing other cheetahs access to the area. In certain cases, indiscriminate catching can actually create a problem animal, for example, through the separation (breaking up) of a family unit (female and sub-adult cubs).

#### Re-location/Re-introduction of Cheetahs

During the past year, CCF has been collaborating with several organizations on relocation and reintroduction of cheetahs. Re-introduction of predators is not simple and straight-forward. There are several factors which must be considered including size of area, prey base and existing predator populations. These variables are difficult to measure and the success rate in re-location or re-introduction is quite low. CCF will only participate in re-locations accompanied by a monitoring program.

In February, two male cheetahs, both livestock killing "problem" animals, were re-located to the Phinda Reserve in South Africa where they were held in a boma for two months prior to release. Both cats were fitted with radio-collars and after release into the reserve monitored daily. These two male cheetahs have since both died. The first was found dead in a meat poachers snare in June. The second was killed in August by two male cheetahs which were dominant in the reserve. It was felt that if the first cat had not died in the snare, the two cats together could have held their ground from the other two cheetahs. Although both cats died, a great deal of useful information was gathered which will assist in future re-locations.

In August, in cooperation with the Zambian Department of Wildlife, Japanese AID and a private camp in the lower Zambezi National Park, CCF re-located three male cheetahs to the lower Zambezi National Park in Zambia. The three cats had been caught on a private fenced game farm in Namibia. All three of these animals were radio-collared in order to monitor their progress in re-location. They were held in a boma for six weeks and released into the reserve in October. During the month, the cheetahs continued to head in a southwesterly direction. In early December, two cats were found dead in snares near the border of the park and the third has not been found, but it has been assumed that it too was caught in a snare. Again, a great deal of useful information has been collected from this re-location. The Zambian cooperative group is committed to re-establishing a cheetah population in the Lower Zambezi and would like to try another re-location attempt in 1995.

In a re-location experiment in Namibia, CCF released a female with her 3 cubs into a new territory in CCF's research area. The female had come from another area in Namibia. Virology and disease analysis had been completed prior to release. The female was released in an area where there was plenty of wildlife, mostly oxen farms, and where many other cheetahs in the area are being monitored by CCF. This cat had not been a "problem" livestock catching cat. It has been seen that most cats move out of a new area and will return to their old range after release. This group, a mother and young cubs, appears to be staying in this new area. This may be due to the age of cubs, as they were too young to travel far and yet were old enough that the female had developed a strong maternal bond and did not abandoned them.

CCF has begun communications with officials in the Hluhluwe Umfolozi Park to collaborate in a re-location effort to take place over the next year. This collaboration will work towards a meta-population management strategy. The researchers understand that a minimum viable population can not be achieved in the Hluhluwe Umfolozi conservation area therefore, translocation among other areas will be necessary.

## **II. FARM MANAGEMENT**

### Farm Survey Report

CCF spent two years surveying livestock and wildlife farmers to identify problem areas in livestock and wildlife management which are leading to the cheetah's decline. These farmers offer the greatest hope in the struggle to sustain a free-ranging cheetah population for future generations. The survey has identified the key problems causing conflict between cheetahs and livestock/game farmers, and has identified the priority areas to intensify research and conservation efforts.

Over 240 farmers were personally interviewed about their 385+ farms totalling over 2,672,000 hectares of commercial farmland. This represents over 14% of the country's commercial cattle farmland. Livestock numbers included 15% of the country's cattle on commercial lands and 1.4% of the small stock found on commercial farmlands. Of the farmers interviewed, 51% said that the main solutions to the long-term future for the cheetah on their farmlands included conservation education and awareness, maintaining large enough wildlife populations for the cheetah to reduce conflict with livestock, and improving their livestock management. One comment which was repeated by over 95% of the farmers interviewed was that no one had ever told them of the world picture of cheetah and that they played such an important role in this species' long-term survival.

A report summarizing the survey results is almost complete. At present the report is being circulated for review and will be completed early in 1995. It will be distributed widely throughout the country. This report includes suggestions by the Namibian farmers and CCF for improved livestock management techniques which reduce loss to predators. Farmers are encouraged to become involved in the management of the wild cheetah population and to consider alternative solutions to livestock/predator problems. CCF continues to present information at farmer association meetings, and six talks were given during the reporting period.

The survey report will address the issues of captive breeding and the management of the wild population in order to ensure that all trade in cheetahs is sustainable and legal and that hunting quotas are enforced by the farming community themselves.



## CCF and the Namibian Professional Hunters Association

Many farmers are interested in the sustainable use of the cheetah. It is legal to trophy hunt cheetahs in Namibia. There is a quota of 150 animals, and the Namibian Professional Hunters' Association has asked for the Cheetah Conservation Fund's input. The Krauses made a presentation at the hunters' annual meeting and presented CCF's research findings and the importance of ethical hunting. Since this meeting, a committee has been formed to develop guidelines for the professional hunters, and CCF has participated. A researcher from the United States, hired by the Safari Club International, visited Namibia in July to investigate the viability of the cheetah population. CCF assisted with this visit and provided CCF's research findings. From this visit, a compact has been developed by the Safari Club International which asks farmers to hunt the cheetah only as a part of sustainable conservation for the enhancement of the species. It is hoped that the hunting and farming community will follow the guidelines and help conserve the cheetah. CCF will remain active in the Professional Hunters Association as it relates to the cheetah.

## Livestock Guarding Dogs

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. A report summarizing these first five months was presented in the CCF Newsletter.

In June, CCF and the Livestock Guarding Dog Program brought in a second student (also conducting her honors thesis) and six more Anatolian Shepherds. All were puppies of less than 15 weeks of age, and they were placed on six farms. In August, 11 Anatolian puppies were born at CCF's base, and the puppies were placed on farms the end of September. At present, 16 dogs are working on 16 farms and one dog is at CCF's base as a breeding bitch.

Information about the program has been shared through an nbc-TV feature program called "Agriculture for All", as well as through lectures and personal communications. The Guarding Dog Program has made great progress and a network of farmers has been established who are committed to the success of the program, the protection of their stock, and the survival of the cheetah. There is considerable interest from the farming community in continuing the program. A breeding program will begin in 1995 with the dogs that farmers have now, as all the dogs come from different bloodlines. All dogs have been donated to the program and this will continue.

## **III. EDUCATION**

### CCF Education Programs

CCF's involvement in education has grown over the past year. The Fund has continued to conduct its educational assembly programs at schools throughout the country and distribute educational activity sheets and informational materials to all student audiences. In the past year, CCF has conducted programs at over 40 schools, reaching over 5,000 students.

CCF's Teachers Resource Guide, which has taken nearly a year in its development, has been completed and distributed to schools throughout Namibia. The 100-page, cross-curricular teacher's guide entitled Cheetah: A Predator's Role in the Ecosystem emphasizes cheetah and general predator

conservation. The resource guide is currently being used during teacher training workshops conducted by CCF. Teachers are introduced to the guide and are taught how to use it. These workshops have met with great enthusiasm and will continue to be an important component to CCF's educational program.

Educational materials have been shared with various environmental organizations throughout southern Africa as well as Europe and the United States. Many of the world's zoological facilities that exhibit cheetahs are now incorporating CCF's educational materials into their zoo education programs.

CCF is working with a few 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.

At one local school, Rogate Primary in Orwetoveni, CCF and the Cincinnati Zoo have developed a sister school program with a school in Ohio. As a part of the sister school exchange program, Mr. Paulus Haipare, the head master of Rogate Primary School, traveled to Cincinnati, Ohio (USA) for a three-week visit in September. This was the first step in an actual personal exchange between the two schools. Mr. Haipare spent time at Rogate's sister school, Kilgour Elementary, as well as the Cincinnati Zoo and attended two education and conservation conferences at the University of Ohio. This exchange has set the stage for future international links.

In Swakopmund, the Learner's Representative Council of the Deutsche Oberschule Swakopmund, held a benefit Fun Run for CCF in April. In June, the students visited CCF's base to learn more in-depth about cheetah conservation and research activities. Proceeds from the Run will be used for an informational poster that the students are helping to design.

Students from the Otjiwarongo Secondary School, located near CCF's base, used cheetah conservation on Namibian farmlands as their project for a national environmental competition called Conservo. Since January, the students worked with 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 students participated in the following:

- 1) The 9th grade learners used CCF's survey results as a base to conduct their own survey. They conducted 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 also actively participated in CCF's radio-tracking, learning how radio telemetry works and followed the movements of the cheetahs, as many of the student's families own farms transversed by CCF's radio-collared cheetahs.

- 2) The 10th grade group of learners used their involvement with CCF's biological research to aid in the development of a project which addressed the genetic plight of the cheetah and the management of a wild and captive population of animals. This group participated in the collection and processing of biological samples from cheetahs and learned how to analyze the results obtained from the laboratories.

- 3) The 11th graders chose civic awareness. These learners 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 Otjiwarongo schools, and assisted with a cultural exchange program between a local primary school and a sister school in Cincinnati, Ohio,

USA. In June, they organized a cheese and wine function to introduce the Fund's conservation work to a larger audience and raised funds which they donated to assist with CCF's on-going programs.

In August, as a part of Cheetah Awareness Week, a three-part series was shown on nbc-TV featuring the CONSERVO learners. After nearly eight months of hard work with this project, all three groups made it to the CONSERVO finals (15 projects out of 300 entries) and all three groups won first place (only 3 categories). The 11th graders, who's project was civic awareness, were the over-all winners of the Namibian CONSERVO competition. In September, the 11th grade group went to South Africa to compete in the International CONSERVO Competition. These students won one of the five merit awards. All three groups will continue to assist CCF and new CONSERVO projects will be developed for 1995.

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, Windhoek and Ongwediva Teachers' Colleges, 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 first half of 1994, CCF was involved with the Shell Art Competition (the theme was predators) and sponsored a cheetah writing competition. The competition was open to all ages, from primary school to adult. Over 800 entries, including stories, essays, poems and drawings about the cheetah, were received and prizes were awarded in June. A total of 25 winners were named from schools throughout Namibia. The writing competition was a huge success; and a lot of great stories and poems have now been compiled. CCF is planning to produce a book on Namibia's cheetahs from the entries received from the writing and art competitions.

### Public Awareness

CCF's team of volunteers and students participated in Namibia's celebration of World Environment Day which included a parade and then joining other organizations in talking with the public about environmental issues. Volunteers helped with cheetah face painting and distributed CCF educational materials.

The Co-directors were invited to South Africa in June to present their research at two conferences. Lectures were given at the Pan African Zoo Association's annual meeting hosted by the Johannesburg Zoo, as well as the International Wildlife Veterinary Student Conference. While in South Africa, Lauric assisted with the Genome Resource Banking (GRB) Workshop in compiling a working document on GRB for southern Africa.

The first annual "Cheetah Awareness Week" took place from 21 August to 29 August sponsored by Chevron and Caltex. The goal of the week was to raise awareness about the plight of the cheetah in Namibia and how we can work together to live with this species. The week began with a fun run/walk for CCF at the International School in Windhoek. Educational activities were held during the following days, including school assembly programs and public lectures. During the week, several programs were shown on TV. CONSERVO students from the Otjiwarongo High School helped during the week.

In September, the first environmental week was held at schools in Otjiwarongo and Orwetoveni. CCF assisted by conducting teachers' workshops and school assembly programs. This area of the country is now very well informed about cheetahs role in the ecosystem.

From mid-October through the third week of November 1994, CCF's Co-directors conducted a six-week fundraising and lecture tour in the United States. Over 20 lectures were given in 14 cities to a diverse array of audiences.

### Volunteer Program

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 29 volunteers have assisted in all aspects of CCF's work. These volunteers have come from the United States, Germany, United Kingdom, South Africa and Namibia. Terms of these volunteers have ranged from three weeks to 11 months.

### Expansion into Other Southern African Countries

CCF's programs have begun to expand into other areas of southern Africa. In September, under the direction of CCF, a Master's student from the United States began a year-long research program in Botswana in order to learn about attitudes toward cheetahs and investigate human interaction with cheetahs. The program will include a country-wide survey using personal interviews, in-depth questionnaires and sighting surveys. The information will help to determine the present status of the cheetah in Botswana and the extent and nature of predator/livestock conflicts in the country, and to assess the composition and abundance of the prey available to cheetah.

CCF's educational materials have been distributed to many environmental organizations in southern Africa. Organizations in Botswana, Zimbabwe, South Africa and Zambia are using these materials. Communications about livestock management programs which reduce livestock loss to predators are being shared with farming organizations in these countries as well. CCF will continue to work with these other countries.

## **IV. PURCHASE OF A FARM BASE FOR AS THE INTERNATIONAL CHEETAH RESEARCH AND EDUCATION CENTER**

In October, a farm was purchased for CCF, primarily sponsored by Cathryn and Carl Hilker and the Cincinnati Zoo's Angel Fund along with a few other private donors. The establishment of an International Cheetah Research and Education Center and a permanent base of operations in Namibia has been one of CCF's long-term goals. The farm, Elandsvreugde, is located in the Otjiwarongo area and will house CCF's growing research and educational activities. The farm is ideally situated in the center of CCF's research area. It has easy access from the main highways and will facilitate visits by student groups and the public. Also, easy access is important for researchers and educators to come and go from the center to the community and around the country. The farm is located in a wildlife friendly area with neighboring farmers that believe in a conservation ethic, thus ensuring a large wildlife prey population which is important for the cheetah population. CCF has since joined the Waterberg Conservancy.

## V. PLANNED ACTIVITIES FOR 1995

During the next year CCF will:

- Publish and distribute its farm survey report.
- Continue to conduct educational assembly programs in schools throughout Namibia and will assist teachers in the use of CCF's Teacher's Resource Guide through teacher training workshops.
- Expand the Livestock Guarding Dog Program. Due to the interest of the farming community in the program, there is currently a waiting list for guarding dogs. With the Anatolian Shepherds now in the country, it will soon be possible to begin breeding guarding dogs in Namibia for placement on farms. Another student is expected to come and assist with the program.
- Continue to expand the radio-tracking program 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.
- Expand student research. A diplom biology student from Friedrich-Alexander-Universitat Erangen-Nurnberg, Germany, will be based at CCF for a year beginning in December 1994. The purpose of this collaborative study is to begin investigating the use of playtrees and their significance to the Namibian cheetah on commercial farmlands. During the next six months, other students will also be joining CCF for shorter projects.
- Continue re-location research of cheetahs from Namibia into Zambia and South Africa. Educational components will be incorporated into the re-location projects.
- Continue expanding programs into other southern African countries. The survey in Botswana will begin to identify conservation priorities and geographic areas where more concerted attention is needed, and by extension work identifying and promoting solutions to predator/livestock conflicts. Environmental education programs will also be introduced and taken to rural communities to promote an ecosystem approach to the environment. Programs developed in Namibia will be adapted for use in this expansion to Botswana.
- Begin to develop long-term plans for the International Cheetah Research and Education Center. CCF envisions the Center to include research facilities and a public education center. In the future, the Center will incorporate a holistic management program, demonstrating livestock and wildlife management practices which reduce human/predator conflicts. CCF research will expand into the ecology of the farmland ecosystem that supports the cheetah including prey base and habitat use.