Cheetah Conservation Fund

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CHEETAH CONSERVATION FUND
ANNUAL REPORT

1 JANUARY 1993 - 31 DECEMBER 1993

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PROJECT JUSTIFICATION

Loss of habitat, declining prey bases, and competition with livestock interests continue to take a heavy toll on wild cheetah populations living on private lands throughout Africa. Minimal work on conservation research and education has been conducted outside of protected areas on these populations. The Cheetah Conservation Fund is the first, long-term on-site program working with the livestock and game farming community to reduce problems with the cheetah. The Fund continues to expand its programs throughout Namibia and other southern African countries, namely Botswana, where a large percentage of the world's remaining free-ranging cheetahs are found.

Significant local declines in the southern African populations continue as farmers indiscriminately capture and remove cheetahs as "problem" animals. Their perception of cheetahs as having a severe negative economic impact on their livestock and wild game must be reversed if we hope to conserve this endangered species. During 1993, CCF's work with Namibian farmers progressed steadily and has produced far-reaching effects. There has been a marked change in farmers' attitudes toward cheetahs and the species' conservation on farmlands. Of the farmers interviewed by CCF, over 95% believe greater awareness of the cheetah's plight is necessary to help reduce conflict and aid in the protection of the species and proper management on farms. A number of farmers now consider themselves cheetah conservationists.

While captive breeding efforts for cheetahs have improved, the population is still not self-sustaining. Wild imports from Namibia continue to maintain the world's captive population; at the end of 1992, 27% of the world's cheetahs living in captivity were wild-caught with the majority being from Namibia. This number represents an increase from 1991 in the total number of wild-caught individuals in the captive population. CCF's co-director, Laurie Marker-Kraus, maintains the International Cheetah Studbook, a registry of all cheetahs in captivity world-wide and closely monitors the captive population.

The Fund has made much progress in the fulfilment of its objectives, especially in regards to community-based education and grass-roots communications. Our success with the farming community can be measured through our efforts to release cheetahs back into the wild. Over the past year, we have collected biological samples from over 60 cheetah and have tagged and released nearly 40 cheetahs. Following is the progress report covering the Fund's work for 1993.

OBJECTIVES FOR 1993

CCF's long-term objectives are to: (1) Conduct long-term conservation research and public outreach programs for cheetahs throughout their range; (2) identify important components of farmland ecosystems that are necessary to sustain healthy cheetah populations; (3) develop conservation management plans which are beneficial to both the cheetah and the farmers thereby ensuring the species survival on livestock farms and other suitable habitats; and, (4) promote livestock and game management practices that reduce loss to predators.

The Fund's objectives for the period covered in this report are as follows.

(1) **Grass-roots Communications:** Address conflicts between Namibian farmers and predators in order to develop a conservation and management strategy that benefits both humans and cheetahs. This includes compiling survey data for a report which will encompass facts about cheetahs in Namibia and recommendations for their survival. The report will be distributed to livestock and game farmers, government officials, and interested members of the public.

(2) **Continuation of Field Research:** Collect biological samples to learn more about the overall health and genetic makeup of the southern African wild cheetah population; and, radio-track cheetahs within a designated study area to gain information about the animals' movements through the farmlands.

(3) **Conservation Education:** Conduct educational programmes throughout Namibian schools in regions where cheetahs are found, and provide students with the opportunity to participate in cheetah conservation efforts in Namibia.

(4) **Programme Expansion into other southern African countries:** Investigate the Fund's growth into Botswana. Model programmes developed in Namibia will be adapted for use in Botswana which, together with Namibia, forms the greater part of the southern African gene pool.

(5) Captive Management of **Cheetahs in Namibia:** Work with individuals keeping cheetahs in captivity to improve conditions for the animals through education on dietary requirements and appropriate facilities for housing.

METHODS AND ACTIVITIES

(1) Grass-roots communication with farmers and wildlife and agricultural officials form an important component in the program's work. The Fund is currently analyzing farm survey results which will be ready for distribution early in 1994. To-date, 241 farmers owning 385+ farms, covering 2,672,000 hectares, have been surveyed. The survey encompasses questions on: wildlife and livestock management; farmers' attitudes toward predators; and, non-lethal measures farmers employ to reduce livestock loss to cheetahs. CCF presents the information 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

simple non-lethal techniques. To increase international attention on the plight of the cheetah and to encourage support of the Namibian government's efforts to conserve its cheetah population, CCF has given lectures in Namibia and the United States. Media attention has also aided the Fund's efforts as more farmers become aware of our work. A number of international periodical and television programs have focused on Namibia and its cheetah population; we believe that this will also encourage tourism as this species captivates people worldwide.

(2) The Fund continues to collect biological samples developing an extensive database on Namibia's wild population. To-date, we have examined over 100 cheetahs. Blood samples, skin biopsies, and a full set of measurements is taken on all animals. Since January 1993, we have collected blood on over 60 cheetahs of which 30 have been ear-tagged and released and another 6 were cubs not ear-tagged but caught with their 2 mothers which were tagged and all were released. See Appendix I for detailed list of cheetahs dealt with and worked on by CCF.

An extensive data base on the over-all health of the cheetahs has been developed. A full medical profile is run on all animals as well as serology testing for various diseases. Genetic analysis including family relatedness and regional genetic variation is being conducted on all animals sampled. Full necropsy and pathology are conducted on dead animals.

We have 8 cheetahs radio-collared (7 males and 1 female) and 21 ear-tagged in our research area which encompasses about 7,000 km^2 in the Waterberg region of the north central part of the country. We are tracking the animals twice a week by fixed-wing airplane; it is impossible to track them by vehicle because of the thick bush, inaccessibility due to the criss-crossing of farm fences, and the large area covered by the cheetah (up to 40km in 3 days). By ear-tagging cheetahs, we have been able to monitor their gross movements if they are re-caught. All information is regularly shared with the farmers through personal visits to the farms and at local farmers association meetings.

(3) To promote cheetah conservation in schools, CCF is: conducting interactive assembly program which increase student awareness about their role in helping to conserve the cheetah; distributing subject-specific teachers' packets for cheetah education work in the classroom; disseminating activity sheets to learners to increase awareness about the cheetah; and, sponsoring a writing competition and assisting in an arts competition to promote social and cultural activities.

(4) In June 1993, CCF made its first exploratory trip to Botswana at the invitation of the Department of Wildlife. The trip was very successful in laying the ground work for the expansion of CCF's efforts into Botswana in 1994. Working cooperatively with non-governmental organizations located in Botswana, South Africa, Zambia, and Zimbabwe, we plan to expand programs into other southern African nations as they contain geographically connected cheetah populations. Established programs in each of these countries are important in the long-term strategy to conserve this larger regional gene pool for the species. We have already begun contact with groups in Zimbabwe, Zambia, and South Africa to facilitate expansion of our program into those countries.

(5) Many Namibian farmers or guest lodge owners keep cheetahs as pets or in camps for tourists to observe. Over the past year CCF has been involved in many cases involving captive cheetahs and health related problems. Several of these problems have involved cheetahs in game dealers' facilities suffering from malnutrition and poor husbandry conditions causing urine burns and pressure sores. We are encouraging individuals keeping cheetahs in captivity to employ husbandry techniques used in internationally accredited zoological facilities to maintain the animals in top physical health. Information on proper care of the species in captivity has been distributed to the countries' veterinarians and to private facilities which have cheetahs. The Ministry of Wildlife, Conservation, and Tourism requested our assistance in developing new minimum standards for facilities (private and dealers) keeping cheetahs in Namibia.

PROGRESS NARRATIVE

The Cheetah Conservation Fund was established in 1990 to secure the survival of free-ranging cheetahs. Its permanent base is in Namibia, as the conservation of this cheetah population is critical to the worldwide survival of the species. The Fund's primary focus is in areas outside of the protected reserves, working with the local farming communities to develop ways to reduce conflict between humans and cheetahs, and develop a cheetah conservation management plan to benefit both the species and farmers while securing habitat for the long-term survival of this big cat.

Environmental education and the development of an active grassroots constituency form the largest component of the project. The Fund is informing farmers, teachers, and the public about the need and the ways to conserve Namibia's rich biodiversity and the role of the cheetah in healthy ecosystems. This includes working with farmers to reduce cheetah/livestock and game conflicts. In the past two years the Fund has noticed a marked positive change in farmers' attitudes toward cheetahs. The Fund's co-directors continue to share all information collected with the farming community through their presentations at farmer association meetings and distribution of CCF newsletters. During 1993, two farmers newsletters have been produced and distributed, and in the past 6 months the Krauses have attended 5 farmers' association meetings.

Public education is an integral component of the overall cheetah conservation program. Community awareness about the plight of the cheetah and the development of national pride in the cheetah are critical to its long-term survival in Namibia. Two points from the Fund's interviews with farmers underline the need for extensive public education. Of the farmers interviewed, over 51% said that the main solution to the long-term survival of the cheetah on their farmlands included conservation education and awareness. One comment that was repeated by over 95% of the farmers was that no one had ever told them of the world view of the cheetah and that Namibia played such an important role in this species' survival.

In Namibia, 70% of the wildlife including 95% of the countries' cheetahs live on the commercial livestock farmland. The species' adaptation to the farmland is due to the absence of other large predators and increased water availability that attracts wild prey populations. However, the cheetah's attraction to agricultural land poses a direct threat to the species' survival. Although not threatened with extinction, local declines in the Namibian cheetah population continue as farmers

indiscriminately capture and remove cheetahs as "livestock killing" animals. Much of this removal is done as a preventative practice and not only if livestock loss has occurred. This practice appears to create a vacuum as territories are opened thus allowing more animals to move into the area.

Loss to cheetahs is an emotional issue. Farmers perceive cheetahs as having an excessive economic impact on their livestock and wild game. Yet a majority of Namibian farmers have done little, from a management perspective, to mitigate or alleviate their problems in a non-lethal manner. Fifty percent of the farmers interviewed to-date, by the Cheetah Conservation Fund, admit to having no form of livestock management practice in place to prevent loss to predators. Therefore, their attitudes must be reversed and improved management schemes be put in place, if we hope to save this endangered species. Despite these problems, wild cheetahs have a chance for long-term survival on the extensive Namibian farmlands with their rich prey base.

NAMIBIAN FARMLANDS SURVEY

The Cheetah Conservation Fund (CCF) has spent the two years surveying livestock and wildlife farmers to identify problem areas of 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 have been interviewed about their 385+ farms totalling over 2,672,000 hectares of commercial farmland. This represents over 14% of the countries commercial cattle farmland. Livestock numbers included 15% of the countries cattle on commercial lands, and 1.4% of the small stock found on commercial farmlands. Countable wildlife numbers in this same area included over 126,300 head. Of the farmers interviewed, 54% reported to have or have had cheetah problems and 73% have had loss to predators; 4% of those that have had loss to cheetahs have reported to have heavy losses of 10 calves or more per year and less than 1% had heavy losses of small stock, where they lost 10 or more per year. Of the farmers interviewed, 50% do not use any form of farm management practices to protect their livestock from predators. One hundred and seventy farmers indicated that they removed (killed or sold) over 3060 cheetahs since 1980 and 92 farmers indicated that they had removed 124 cheetahs in 1991.

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 to improve 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. Within the next six months we will complete and begin distribution of a report containing the data obtained in the farm surveys. This report will be circulated to the farming community with suggestions by the Namibian farmers for improved livestock management techniques which reduce loss to predators. We encourage farmers to become involved in the management of the wild population of cheetahs and consider alternative solutions to livestock/predator problems.

To this end, we have invited the Director of the Livestock Guard Dog Association from Amherst, Massachusetts to start a pilot project in Namibia. Anatolian Shepards, a large breed of livestock guard dogs, will be employed to protect cattle, sheep and goat herds from cheetah, jackal and possibly leopard. Currently, one farmer who raises small livestock in our study area will participate in the guard dog program. We hope that the success with this pilot project will encourage others to become involved. We have arranged for the Director of the Livestock Guard Dog Association to present workshops at farmers association meeting during his stay in order to share with the farming community his experience with this form of non-lethal predator control in several countries of the world.

From the survey report, a management strategy will be devised for the long-term survival of the species outside of protected areas. Farmers are interested in the sustainable use of the species. The report and management strategy 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 quotas are enforceable. It is important to note that the Fund's work is conducted directly with the farmers.

CONSERVATION RESEARCH

Cheetah distribution and movement through the farmland is being studied through the use of radio-telemetry. Presently, we have 8 cheetahs radio-collared (7 males and 1 female) and 21 ear-tagged in our research area which encompasses about 7,000 km^2 in the Waterberg/Otjiwarongo region of the north central part of the country. In order to systemically collect information on the movements of the cheetahs through this area, we are tracking the animals twice a week by fixed-wing airplane. By ear-tagging cheetahs, we have been able to monitor their gross movements if they are re-caught. This monitoring is very important to our work with the farming community. By learning more about the movements of the cheetahs through the farmlands, valuable information is gained and shared with the farmers about the movements of the animals. The radio telemetry program is being conducted in the same area where creative livestock management strategies are being tested and in the area where the Livestock Guard Dog pilot program will be located.

An important component of the management strategy is the assessment of the overall health of the population, and its distribution within the farmlands. A full medical profile has been run on all of the cheetahs from which we have collected biological samples (over 100). Of the serology work completed to-date on 66 animals, all of the cheetahs sampled have been negative for the feline immune deficiency virus (FIV); however, a large percentage of the animals have tested positive for various other potentially lethal viruses, including 34% positive for corona/feline infectious peritonitis virus (FIP), 34% positive for feline panlukopenia, 17% positive for herpes and calices viruses, and 78% positive for Toxoplasmosis.

Dr. Linda Munson, pathologist for the North American Felid TAG and Cheetah SSP, has received cheetah necropsy samples. She has found spiral bacteria in one wild-caught animal. In March 1993, she visited CCF's Namibian base and reviewed much of our research data. During her visit, Dr. Munson conducted seminars for the Namibian Veterinary Association and the Etosha Research Institute.

A major problem in long-term cheetah management and conservation is the species lack of genetic variation, making the species more vulnerable to ecological and environmental change. To monitor the genetic health of the Namibian cheetah population, biological samples are also collected for genetic analysis. Relatedness of these animals is being constructed through the use of DNA analysis by a graduate student assigned to the Cheetah Conservation Fund's research, at the National Cancer Institute in the United States. In many cases we suspect relatedness in some of the cheetahs which were caught together, but with the unique social behaviour of Namibian cheetahs we will not be sure until the results of the genetic analysis are available in 1994. Through our collaborative research, genetics laboratories in the United States have shown that the southern African cheetah is much more genetically compromised than the East African cheetah; therefore, careful management of the population is necessary to ensure stabilization of the gene pool and to permit sustainable utilization.

The United States National Zoo's Center for New Opportunities in Animal Health Sciences' Mobil Laboratory team including Drs. Howard, Wildt, O'Brien, and Bush, and Jack Grisham, North American Cheetah Sepcies Survival Program Coordinator, will be coming to Namibia in February 1994, in collaboration with the Cheetah Conservation Fund. The reproducative physiology team will collect and freeze sperm from captive/wild Namibian cheetahs for artificial insemination use in the North American cheetah population, thus bringing in new founder blood. In order to allow them to share their knowledge with the Namibian scientific and farming community, we are arranging various lectures for the group while they are in Namibia.

CAPTIVE MANAGEMENT IN NAMIBIA

Although a few of the world's cheetah facilities have had significant reproductive success, importation of wild-caught animals into the captive population has been a primary reason for the population's growth. As the free-ranging cheetah population continues to decline at an alarming rate and a large amount of genetic diversity of the remaining free-ranging population is lost, the captive and wild populations should be managed in cooperation. In the future, without further imports from the wild, the size of the world's captive population would be expected to decline, unless there is improvement in captive breeding.

The use of a global management program is a critical component to the genetic management for the long-term future of the species. To this end, CCF's co-director, Laurie Marker-Kraus, is the Studbook Keeper of the the International Cheetah Studbook and maintains the registry of all cheetahs in captivity world-wide. The 1992 Studbook is in print now and will be distributed in early 1994. Bi-annual newsletters are distributed to all the international captive cheetah facilities. The purpose of the newsletter is to keep the cheetah facilities informed of CCF's work in Namibia as well as what is being done throughout the world to improve captive breeding and maintenance of the species.

All Namibian captive cheetahs are also registered in the International Cheetah Studbook. Many of the cheetahs have been screened for over-all health and presence of disease. CCF assists the facilities in Namibia with information about the proper husbandry and dietary needs for cheetahs. The Fund has assisted with the development of proper cheetah holding facilities at 2 private farms: Okonjima Guest Farm outside of Otjiwarongo where there are 6 cheetahs in captivity; and a private zoo housing cheetahs at the farm of Mr. van der Merwe outside of Gobabis.

Over the past several months CCF has been involved with many different cases involving captive cheetahs. Several cases involved health problems of animals in captive facilities. Listed below are the cases investigated by the Fund.

(1) Three cubs were found by a farmer in a rock den on the top of the highest mountain in the region. The discovery of cubs in a mountainous area is very interesting as it has never been noted that cheetahs are seen, let alone give birth, at the top of mountains. The cubs which were estimated to be 6 days old were taken by the farmer for hand-raising. At age three months, the Krauses were called for assistant after one of the cubs died of severe convulsions. A complete necropsy was performed but pathological results showed nothing diagnostic. The other two cubs are doing fine.

(2) One 10 month old cheetah, in captivity for 9 months, had a severe calcium deficiency, resulting in a pathological fracture of the humerus. The cat recovered slowly. Later in the year the three cheetahs at this facility were abandoned. One cheetah was operated on with a severe laceration of hind leg due to an attacked by the other two cheetahs. One cheetah has been re-housed by CCF and the other 2 are at a temporary holding facility.

(3) Two cheetahs in a captive facility were found to be extremely anaemic. It is believed that these two cats had haemobartonella infection. After an examination of the animals, one cat required a blood transfusion. The blood for the transfusion was taken from an adult cheetah from the same facility. The cats responded to treatment and have recovered completely.

(4) CCF was called in to review the health of two cheetahs after one cat died of starvation at Ongava Ranch near Etosha. The two remaining animals were quite weak from malnutrition. Physical examinations showed that the animals had lost nearly 25% of their weight, they had severe diarrhoea and were dehydrated. The animals were moved to Okonjima, near Otjiwarango, where they were put in a large camp. The cats regained their original weights and were housed at the facility for 1 1/2 months. Unfortunately, the two cats escaped through a hole dug under the fence in the camp. One of the cats has subsequently died in a farmer's trap in the Waterberg Study Area.

(5) CCF collected blood samples from ten cheetahs held at African Game's facilities outside of Okahandja. The animals were housed in small quarantine cages (2.5 meters by 3 meters) for nearly 4 months with two cats per cage. The cats were in poor condition and very thin. Their fur was full of urine and faeces, and several had pressure sores on their hocks and hips. Blood results showed elevated white cell counts, indicating infection. The cats were exported to a zoological facility over seas. All cheetahs were registered in the International Cheetah Studbook. Identification photographs, farm capture histories, and blood results were sent to the facility. One of the cheetahs died one week after arrivial to the over seas zoological facility.

This situation was discussed with officials at the Ministry of Wildlife, Conservation and Tourism Department of Permits. Suggestions were given to the game dealer on proper feeding, housing and care while in the holding facility. CCF feels that cheetahs exported from Namibia should leave the country in excellent condition. CCF is concerned with the legal and ethical way that game dealers advertise in the newspapers for cheetahs. Advertisements in newspapers encourages farmers to capture more cheetahs than required by the dealer as there is no individual contract established for capture of a specific number. The cheetahs that are not needed are usually then killed.

Limited exports of cheetah trophies and live specimens for research and enhancement of the captive gene pool are currently allowed under an Appendix I exception. The encouragement of captive breeding of cheetahs in Namibia and intensive management of the wild population should be encouraged in Namibia as it would allow zoos in the world to have access to new animals while providing farmers with economic incentives to conserve the cheetahs. Furthermore, it would encourage farmers to manage the population and consider solutions to livestock problems with cheetahs. We encourage conducting these efforts directly with the farmers and not wildlife dealers as they lack proper husbandry skills and the animals are maintained in poor condition. Also, the farmers do not realize the economic benefits from the species when import is handled through dealers.

CCF continues to support the trade in cheetahs under an Appendix I exception. Conservation of the Namibian/Botswana/Zimbabwea cheetah population is paramount to the survival of the species in the wild and captivity. We encourage the Namibian government to support the breeding of cheetahs in captivity for importation to international cheetah breeding facilities under strict management by CITES. Captive bred cheetahs, free of disease and with known genetic lines, will provide greater economic benefits to farmers than wild-caught animals. However, qualified breeding facilities must be developed, and they must be able to demonstrate their ability to propagate the species without undue reliance on collection from the wild population. CCF is assisting a few individuals in the country on the development of such facilities.

CONSERVATION EDUCATION -- NATIONAL AND INTERNATIONAL INITIATIVES

In the past, there has been minimal educational efforts on the importance of predators to health ecosystems. Worldwide, many farmers and governments used to deem it necessary to have a policy of predator eradication on commercial livestock lands in order to protect human lives and economic interests. From an early age, people were taught to fear predators and destroyed them on sight. Today, with a growing environmental education movement among people, and our world leaders' recognition as to the importance of biodiversity to the survival of our planet, individuals and governments are taking strident actions to right past wrongs and improve natural resource management in order to genuinely conserve wild species for future generations.

The Namibian government is committed to making environmental education a part of each student's education. Namibia's commitment to the conservation of natural resources and protection of its environment coupled with its life science education program, offer hope that we can address the conflicts between humans and predators, and develop a conservation strategy that will benefit both species.

We have made several public speaches in the past year. In April, we spoke to the Namibian National Council. The members were very interested in the efforts of CCF. In May, the Fund was invited to present a talk at Namibia's second Environmental Conference. The Conference was attended by educators and environmentalist from throughout the country. All who attended learned more about the countries' cheetahs and what can be done to assist rural and commercial farmers in livestock protection versus cheetah eradication. Several Namibians from many areas of the country have offered to join to CCF in its information gathering and helping to assist local livestock farmers with cheetah problems. We continue to work with many conservation and agricultural non-governmental organizations.

Beginning in July 1993, CCF began conducting interactive assembly programs in Namibian schools situated in regions inhabited by cheetahs. We are visiting towns where volunteer teachers are located and giving presentations at schools in those areas. These schools are the first to be targeted because of the ability of volunteer teachers to help with the organization of programs. Second, we will visit schools where the English level among students is good enough to understand the assembly program. To-date, we have visited 25 schools totalling approximately 2,400 students. The schools were located in Damaraland, Swakopmund, Grootfontein, Outjo, Otavi, Tsumeb, and Otjiwarongo. We have also given presentations at several environmental workshops for teachers including talks given at the teachers training college in Windhoek and Oshikati. The Fund was invited to the Ogongo Agricultural College to give a seminar on livestock management techniques which reduce loss to predators.

The assembly programs offer students and teachers the opportunity to participate in cheetah conservation activities and increase student awareness of the threats to survival of this rare species. The programs have increased student motivation and excitement about Namibia's natural wonders, and help students better understand the importance of their role in the conservation of Namibia's rich biodiversity. Assembly activities are focused on how students can become more involved in species conservation through art and literature, observation, letter-writing, and non-formal education from community leaders. CCF can now count a growing number of young cheetah conservationists. Teachers packets, developed by CCF, include a cross-currricular approach to conservation education and include lessons in English, geography, math, history, natural science, genetics, art, writing composition, and sports. Although the teachers packets are self explainitory, CCF offers teacher training in the use of the packets at workshops.

Because of the importance the environment plays in our everyday lives, the Cheetah Conservation Fund is taking a cross-curricular approach to cheetah conservation education; integrating the subject into not only required courses subjects but also employing approaches not always available to students. To this end, the Cheetah Conservation Fund is sponsoring a short story/poem writing competition and collaborating with the Shell Art Competition (which has choosen Namibian predators for 1994) in addition to the assembly program. The assembly programs not only provide a way for students to learn about the cheetah but also offer an enjoyable means by which to do it. Artwork, stories, and poetry have tremendous influences in our lives. These mediums provide students with doorways of exploration into the natural world and aid in cultural preservation.

Educating Namibia's youth about the conservation of the earth's biological diversity by helping to sustain key species and vital ecological processes will be crucial to the survival of the cheetah. Environmental education must be a continuous process throughout life as it is through education that we become responsible stewards of wildlife and natural resources. Namibia's progressive world-view on the environment offers hope that we can address the conflicts between humans and predators, and develop a conservation strategy that will benefit both humans and cheetahs.

The Fund's work with students has complemented its on-going work with the farming community. Farmers continue to be supportive and interested in our research and survey findings. Of the farmers we have interviewed, over 95% of them feel that greater awareness of the cheetah's plight is necessary to help reduce conflict and aid in protection of the species and proper local management of the species.

To aid in the conservation of the larger southern African gene pool, CCF has begun its expansion into other countries. In June 1993, we made our first exploratory trip to Botswana at the invitation of the Department of Wildlife. The trip, arranged by Dr. Steve Osofsky, Botswana's wildlife veterinarian, was very successful; laying the ground work for the expansion of CCF's efforts into Botswana in 1994. Presentations were made to the senoir staff of the Department Wildlife and Parks, and to the Kalahari Conservation Society. Discussions were also held with the Bostwana Wildlife Society and an article was submitted for publication in their magazine. We hope in the next few years to have programs throughout southern Africa as the cheetah in Botswana, Namibia, South Africa, and Zimbabwe are geographically connected populations. We believe programs in these countries are very important in the long-term strategy to conserve this larger gene pool of cheetah. Programs being developed in Namibia will be adapted for use in these other countries. In 1994 CCF will expand into Botswana.

In November and December 1993, the Krauses visited the United States and travelled to several cites to lecture and fund raise. Public lectures were given at the Explorers Club in New York, the New Canan Libary in Conneticut, the National Zoo in Washington, D.C., the Atlanta Zoo in Georgia and the Washington Zoo in Seattle, Washington, as well as many private lectures and events. Both of the Namibian Ambassadors based in the United States were a part of the events held in their cities. The Krauses appeared on several local TV and radio progams. Recognition is growing steadily and people around the world are taking interest in the cheetahs of Namibia.

The Cheetah Conservation Fund's work in Namibia is progressing steadily and with much success. We are gaining national and international media attention with film crews and news reporters visiting from the United States, Germany, France, and South Africa (See Appendix II). National media attention is aiding in our work as farmers are more aware of the existence of the Fund and our efforts to reduce conflict between humans and cheetahs. Many local farmers have participated with CCF in this international media, thus making them a greater part of the over-all program. Our membership and funding bases are also growing as a result of increased community awareness and media attention. Volunteers continue to help staff our farm base; working on youth education, public relations and awareness, and media outreach, as well as assisting with conservation research.

CHEETAH CONSERVATION FUND
A NAMIBIAN TRUST AND AN INTERNATIONAL FOUNDATION

The Cheetah Conservation Fund became a registered Namibian Trust in 1992. In 1993, two board meetings were held. The board of the CCF was expanded in 1993 to include 13 Board Members. An International Research Advisory Board has also been developed. Members of both boards are included in Appendix III.

Internationanlly, the CCF is within the International Wilderness Leadership (WILD) Foundation, a US based conservation organization. In 1993, a National Cheetah Committee was set up to help raise funds and awareness for CCF. This group was responsible for successfully setting up th multi-city lecture and fund raising tour for the Krauses in November 1993. Several foundations were met with during the 5 week tour.

OBJECTIVES FOR 1994

(1) Complete analysis of farm surveys and write a report documenting:

- (A) Components of farmland ecosystems that are necessary to sustain healthy cheetah populations;
- (B) Existing farm and wildlife management practices that aggravate or eleviate livestock losses from cheetahs;
- (C) Attitudes of farmers who kill and trap cheetahs because of their misperceptions of the species or lack of information on the cat;
- (D) Key farmers in each district who are willing to work with CCF towards its long-term goal of securing a habitat for free-ranging cheetahs on Namibian farmland; and
- (E) Priority areas for expansion of research and conservation efforts.

(2) Enhance community awareness, both locally and internationally, about the special conservation problems facing cheetahs. Working together with local farming communities to offer solutions to human/cheetah conflicts through the use of creative livestock and wildlife management methods.

(3) Continue to conduct conservation education programs througout Namibian schools and provide students with the opportunity to participaate in cheetah conservation efforts.

(4) Expand radio-telemetry research on cheetahs in study area. Radio-telemetry research is providing a better understanding of cheetah movements on farmlands and allows for the monitoring of cheetahs in areas where new livestock and wildlife management practices developed by CCF are being tested.

(5) Identify key farmers in areas inhabited by cheetahs to establish cheetah conservancies.

(6) Program expansion into Botswana. Model programmes developed in Namibia will be adapted for use in Botswana in 1994. The program will begin through a country wide survey and incorporating CCF's conservation education into the Botswana schools. Investigate Fund's growth into other southern African countries.

(7) Purchase/have donated a farm base in the north central part of Namibia to establish a permanent research/education centre for the conservation of the cheetah and its ecosystem, a farmland ecological centre.

APPENDIX I

Animal # & Sex	Tag#	Tattoo #	Farm Where Caught	Date of Work Up	Comments
816 M	--	0153	Waldeck area	9-6-92	Kept in capture cage at Waldeck for @ 2 mo. Cub is @ 6 mo. old now. Severe Urine burns & pressure sores in hocks. Traded to Stromer by African Game. In July taken to Okonjima. Still there in Cheetah Camp.
817 M 818 M 819 M	7 18 19	017 018 019	Hein's Farm Hochfeld area	22-7-92	Date Caught: 10/5/93 in game farm, being held in holding pens. Moved all 3 to Ongave Lodge 4 ha holding pen on 3-11-92. 818 died - starvation. On 19/3/93 - 817 & 819 moved to Otjiwarongo vet clinic in state of severe starvation. 30/3/93 moved to holding area at Okonjima. Escaped from camp 5/93. 1/10/93--819 found dead in cage in Outjo area, Pureses Mts.
820 F	--	820	Ozonjache Game Farm, Otjiwarongo	13-8-92	Released: 14/8/92 on Ozonjache
821 M	21	821	Ozonjache Game Farm	26-8-93	Released: 26/8/93
821 M	21	821	Gelukwater Game Farm Otjiwarongo	18-6-93	Released: 19/6/93 w/radio collar (148.052) on Okarui. Caught again on Gelukwater 6-7-93 and Released same day on Okarui.
822 F	--	822	Buitepos Area 2 yrs ago w/825	2-10-92	Captive at van der Merwe's in Gobabis. Full of fleas & ticks.

Animal # & Sex	Tag#	Tattoo #	Farm Where Caught	Date of Work Up	Comments
801 M 802 M	--	--	Butta Stormer's Windhoek Airport Area	28-11-91	Caught 7/11/91 in game farm. Selling to African Game
803 M	--	--	Otavi area #752	13-2-92	Pet, owned by Von Leipzig 5 yrs. Dew-claw removal. Very poor anesthia, Dr. Hartmann.
804 F 805 M 806 F	--	--	Steir's farm Garfield, Otjiwarango area	12-3-92	Date Caught -10/3 to 12/3 1992. Female with 2 cubs @ 6 months old. On Kudu calf. All 3 sold to Delfs.
807 F 808 M 809 M	--	0123 0124 0125	Hein's farm Hochfeld area	4-5-92	Date Caught: 18/3/92 in game farm. Dam w/2 M 12-13 mo.old cubs. Dam blind in Left eye. Cats exported to Dewildt Centre, SA.
810 F 811 M 812 M 813 F 814 M 815 M	--	0126 0127 0128 0129 0132 0134	Butta Stormer's Near Windhoek Ariport	9-6-92	Date Caught: 812 & 815 10/5/92. 810,811,813, 814 caught 17-21/5/92. All caught in game farm. 812 & 815 older males. Stormer is keeping for cheetah camp. 810 is dam to 811,813,814 aged 14-16 months. Stormer is keeping 810 & 813. 811 & 814 being sold to African Game.

Animal # & Sex	Tag#	Tattoo #	Farm Where Caught	Date of Work Up	Comments
834 M 835 M 836 M	34 35 36	834 835 836	Otjiwa Game Farm Otjiwarongo	22-1-93 28-1-93	Capture date: ~22-12-92. Medical work up when 1st heard about cats in cages. Cats in poor condition, pressure sores & urine burns. Discussed cats release with List Co. Was given OK to take cats for release. Moved cats to Okonjima 28-1-93 to be held in camp for recovery. Cats escaped 2 weeks later.
837 F 838 M	--	837 838	Evergreen #73 Otjiwarong	13-2-93	Capture Date: Ap/M 92 With another cat thought to be Dam. She died 3 days later. In captivity at von Seydlitz.
839 F	--	839	Okandivi #322 Otjiwarongo	31-2-93	Capture Date: 7-92. In captivity at von Seydlitz. Cat not in good health.
840 M	Ceasar	--	Otjiwa	13-2-93	Capture Date: 1991. At Okonjima since 7/91. Small camp near house, Pet.
841 F	--	--	Uib Outjo/Otavi	15-2-93	Death date: 14/2/93. Capture Date: 6/11/92 @ 6 days old. Hand raised with 2 M cubs. Suffered w/convultions since infant. Necropsy showed meningitis.
842 M	42	842	Ozonjache	13-3-93	Released 14-3-93 with radio collar (148.442).

Animal # & Sex	Tag#	Tattoo #	Farm Where Caught	Date of Work Up	Comments
823 F	--	823	Witvli Area 2 yrs ago w/824	2-10-92	Captive at van der Merwes.
824 M	--	824	Witvli Area 2 yrs ago w/823	2-10-92	Cative at van der Merwes.
825 M	--	825	Buitepos Area 2 yrs ago W/822	2-10-92	Captive at van der Merwes.
826 M 827 M	--	826 827	Buitepos Area	2-10-92	Caught 1 week ago. Captive at van der Merwes.
828 M	--	--	Okaputa	Oct 92	Trophy hunted on H. Erpf's farm. Muscle tissue collected.
829 F	--	829	U.D. Voight's farm in Aris	25-10-92	Capture Date: 1/10/92. Not causing problems. Sent to van der Merwe's.
830 F	30	830	Ozonjache Game Farm	23-12-92	Released on 24/12/92
831 M 832 M	31 32	831 832	Ozonjache Game Farm	21-1-93 14-4-93	Released on 21-1-93 & 14-4-93. Radio collar on #831 (148.320). 831 shot on 23-4-93 on van Studen's farm (2 farms from release).
831 M	31	831	Ozonjache	13-5-93	Released on Alogrove
831 M	31	831	Ozonjache	23-6-93	Released on Grovener. Next day at Ozonjache 3 other cheetahs were caught, 867,868,869.
833 M	33	833	Ozonjache	22-1-93	suffocated by 832 as both were waking from anesthesia. Necropsy showed Psudeamonius bacteria in Rt. eye and sprial bacteria in stomach.

Animal # & Sex	Tag#	Tattoo #	Farm Where Caught	Date of Work Up	Comments
860 F 861 M	--	60 61	Steir's farm Garfield near Kalkfeld	7-5-93	caught together, 3rd cat got away. Sold to De Youngs'.
862 M 863 M 864 F	62 63 64	62 63 64	C. Coetzee's farm Uib area	15-6-93	Capture Date: between 26-5 & 7-6. Wouldn't sell or give to us. Sold to I. De Young.
865 M 866 M	65 66	65 66	Gelukwater Otjiwarongo	21-6-93 2-7-93	Capture Date: 17/6/93. In large holding pen. Planned to sell them but let us come back and release them on the farm. 865 radio collared (148.022)
867 M 868 M 869 M	-- 68 69	67 68 69	Ozondjache	29-6-93	Capture Date: 25/27-6-93. 867 radio collared (148.190) all 3 released on Okonjima 29-6.
868 M 869 M	68 69	68 69	Ozondjache	25/8/93 11/10/93	Re-captured 20/21-8-93 released on Okonjima 25-8-93. Re-captured 8/9-10/93 Radio collared 869 (148.082) released 11/10/93 at Okonjima.
870 M	--	--	Okaputa	3-7-93	Dead - Hit by car.
871 F 872 F 873 M 874 M 875 M 876 M	71	71	Cramer's Farm Steinhausen	7-7-93	Capture Date: 26-6 to 2-7-93 Dam and 5 cubs (4.1) @ 2 months old. Farmers kept 1 cub #873. Released rest 7-7-93.

Animal # & Sex	Tag#	Tattoo #	Farm Where Caught	Date of Work Up	Comments
843 F	Chile	--	Hochfeld area	3-4-93	Captive since 6/6/92 from Heins to E. Pugh's in 9/92. Suffering from calcium defiency, frature of humerous.
844 M 845 F 846 F	ID 44 45 46	--	Kubish's farm Steinhausen	4-5-93	Capture Date: 15-1-93 & sent to I. De Young, game dealer. All 3 cats in very poor condition, bloated bellies, emicated conditon, presure sores & urine burns. Cats shipped to Bangkok Safari Park.
847 F 848 F	ID 48 (same as 813) ID 49 (same as 810)	0129 0126	Butta Stormer's	4-5-93	Capture Date: 17-5-92. At I. De Youngs since 1-93. Very poor condtion. #848 (810) very deep pressure sores on hips and hocks. Sent to Bangkok Safari Park. *848 (810) died 1 week after arrival.
849 F 850 F 851 F 852 M 853 F	ID 49 50 51 52 53	--	Dedig Farm Otjiwarongo	4-5-93	853 dam of others. At I. De Youngs since 1/93. Poor condtion pressure sores on hocks full of urine burns. Exported to Bangkok Safari Park
854 F 855 F	--	54 55	Coetzee's farm Omitata area	6-5-93	Capture Date: Nov/Dec-92. In captivity at Schmitts. Good condition
856 M 857 M 858 M 859 M	--	56 57 58 59	Waldeck Auction 1991	6-5-93	In captivity at Schmitt's since 5/91, purchased at Waldeck. In excellent condtion. Removed cancer on lip of 857.

Animal # & Sex	Tag#	Tattoo #	Farm Where Caught	Date of Work Up	Comments
888 M	88	88	Next to Bagot-Smith's farm Otjiwarongo	19-8-93	Capture Date: 12/10/93 in gin trap. Front toe ampuated at clinic and taken to Okonjima on 19/10/93. Taken to Hobitari 26/10/93. Released w/897 on 13/12/93.
889 M	--	889	Viviers farm, Owessa #122 Gobibis	12-11-93	Capture Date: 24/10/93 - to Okonjima 11/11/93 & Released 12th
890 M	L9	--	E. Meyer's farm, Omaurur	4-11-93	Capture Date: 9/93. Being kept in captivity at Okonjima.
891 F	91	91	P. Shoneke's farm in Kalkfeld	9-12-93	Capture Date: 3/12/93. Brought to vet clinic. Deep open wound on leg. DIED: 17/12/93 choaked on food.
892 F	92	892	Omaruru area	9-12-93	Capture Date: 1/12/93 in springbok area. Dam w/2 cubs (1.1) @ 7 mo. old. Held at Clinic ~ 1 week then released 9/12/93 on Ameib Farm
893 M	93	893			
894 F	94	894			
895 F	95	895	Hochfeld area	12-12-93	Capture Date: 10-11-93, Dam w/4 (2.2) cubs @ 4 months old. Zwar kept 2 cubs as pets. Took Dam and 2 cubs to holding at Okonjima. Released Dam and 2 cubs (896 + M) on Zwar's 12/12.
896 F	--	--	Zwar's farm		
897 M	97	897	Gero Dickman's farm Near Hochfeld	13/12/93	Capture Date: 8/12/93. Taken to Hobitare and released w/M #888. Took off together.
898 M	--	--	Kellner's near Seise	12-12-93	Capture Date: 12/10/93. In captivity for 2 months.

Animal # & Sex	Tag#	Tattoo #	Farm Where Caught	Date of Work Up	Comments
877 M 878 F	77 78	77 78	Kubish's Farm Steinhausen	15-7-93 7-9-93	Capture Date: 8/9-7-93. Brought to Okonjima for holding. Radio collared #878. Released 7-9-93. Lost contact with cats 2 1/2 weeks later ast they moved out of area. Heading in S.E. direction.
879 ?	--	--	Hoffman's Farm Oros	19-7-93	Dead - decomposed found in field. Think related to #870 as 2 were hit by car.
880 M	--	--	Kamanjab area	28-7-93	Dead - pet, brought to Otjiwarongo vet clinic. Instestinal blockage.
881 M	81	81	Otjiwa	5-8-93	Capture Date: 2-8-93. Radio-collared (148.640) released on Okonjima.
882 M 883 M	82 83	82 83	Omatakos area Sheperdson's farm	27-8-93	Capture Date: Feb 93. Kept in holding area. Arrived at Okonjima 13-8-93. Released on Okonjima 27-8-93.
884 M 885 M	84 85	84 85	Unknown received from I. De Young's	20-8-93	At von Seck's farm. Very poor condition, 60% hair loss from urine burns, pressure sores on hocks. Released 9/93.
886 M	--	--	Okaputa area on Main Hi-way	10/9/93	Hit by car 11/8/93. ~4 months old. Taken ot Otjiwarongo vet clinic. Moved to Okonjima 19-10-93 they will keep.
887 F	--	--	Khomas Hochland area	1/12/93	Capture Date: 28/11/93. thin, hand caught. DIED in cage 1/12/93. Skin for genetics

Animal # & Sex	Tag#	Tattoo #	Farm Where Caught	Date of Work Up	Comments
899 M	Cheeky	--	Brakwater -Elsa Pugh's	6-12-93	in captivity for 2 years. Was in fight w/2 other cheetahs.
900 M	??	--	Meyer's farm	27/12/93	Unknown capture date. Released on Okonjima 27/12/93, by Hanssen's. Only received blood.
901 F	??	--	Omararu		

APPENDIX II