

# **OVERVIEW**

## **2007**

### **Annual Report**

## **Cheetah Conservation and Human Impact in Kenya**

Mary Wykstra

Cheetah Conservation Fund, Kenya Representative

### **SUMMARY**

The Cheetah Conservation Fund - Kenya (CCFK) project was initiated in 2001 with the goal of conducting cheetah research to understand the issues facing the survival of cheetahs in Kenya. Since July 2005, the CCFK base of operations has been from a home in the Mt. View Estate just 3km north of Westlands, Nairobi. The Kenya Representative, Mary Wykstra, and Research Assistant, Cosmas Wambua, develop research and education programs under the support and mission of the Cheetah Conservation Fund (CCF). Mary works in affiliation with the Kenya Wildlife Services (KWS) under a permit through the Ministry of Education, Science and Technology which is valid through August 2010. Lumumba Mutiso works with as a Community Liaison Officer in the MWF collecting information on livestock losses and cheetah movements in the Makueni region. Sarah Brooke joined the Kenya team as a volunteer research assistant from June-December 2007 focusing efforts on the human wildlife conflict issues in the Machakos Wildlife Forum (MWF).

A case study in the MWF was launched in January 2004 utilizing community participation in cheetah monitoring. The MWF case study includes telemetry monitoring of a female cheetah and her cubs, verification of livestock losses and community development through Livestock Dips and data collection on livestock health and husbandry.

Field work for the nation-wide cheetah census was completed in September 2007. This project was launched in 2004 in collaboration with KWS and East African Wild Life Society (EAWLS). The census work includes identifying regions with reported conflicts with cheetah and confirming the presence of cheetahs through field work. The goal of the project is to assist KWS in identifying sustainable and unique populations of cheetahs to compare with historic cheetah range in order to focus future studies and programmes in the areas where they can have the most positive impact.

Supplemental programs in cheetah education and awareness are given in school, community and tourism sectors by request. Materials are developed with new information added as research findings support. Awareness and educational programs offer participatory involvement for mutual information sharing. Volunteers and student interns assist in program development and activity participation where possible.

### **ORGANIZATIONAL STRUCTURE**

Under the umbrella of CCF Namibia, Mary works in affiliation with the KWS and under advisement of Dr. Laurie Marker. Grants and donations specifically designated for Kenya are channeled through the General Operating Budget of CCF Namibia through CCF administration offices in the USA. In addition to directed donations, student and volunteer fees assist in support of the financial needs for CCFK projects. Semi-annual reports are written for CCF, KWS and donors.

## **BASE OF OPERATIONS**

CCFK operations are based in Nairobi with the focused field study in Salama. With the completion of the national survey in the identified priority regions, the generated report will be used to focus CCF involvement in regions where they will most compliment the KWS adopted National Strategic Plan for Cheetah and Wild Dog (2007). Involvement in cheetah projects will compliment the efforts of KWS and work in collaboration with other carnivore programmes.

## **I. ACCOMPLISHMENTS**

The list accomplishments from July – December 2007 includes:

### **RESEARCH**

- Utilizing the final report of 2002-4 interview evaluations of cheetah status for Nakuru, Machakos, Laikipia Wildlife Forums and CCFK game counts on Congreve section of Soysambu Farm to develop a monitoring programme in the Samala area of the Machakos Wildlife Forum;
- Completions of the field work for National Cheetah Survey in the Central and Northern Districts (previously identified as the Priority 2 region - Tsavo East, Taita, Taveta, Samburu, Isiolo, Meru, Garissa, Tana River, Ijara Wajir, Mandera, Marsabit and Turkana);
- Completion of initial case study cheetah monitoring initiated in 2004 via radio tracking;
- Continued community based monitoring of cheetah groups and predator conflicts in the Makueni District on farms in Machakos Wildlife Forum (MWF);
- Maintining photo census database for program analysis of photographs submitted to the Great Cheetah Census (tourist submissions);

### **EDUCATION AND AWARENESS**

- Presentations to 18 tourist groups (over 200 people) in 2007;
- Presentation of school programmes at 4 schools in Gilgil and Salama (500 students);
- Showing cheetah/leopard videos in 9 communities (estimated attendance of over 2000 people) during July and August Surveys in Samburu and Isiolo Districts in cooperation with Shivani Bhalla of Save the Elephant and Ewaso Lion Projects;
- Strengthen inter-Africa links through active participation in the Mpala Eastern Africa Regional Cheetah and Wild Dog Strategic Planning workshop in February 2007;
- Presentations for members of East African Wildlife Society and Friends of Nairobi National Park.
- Presentations to US Donors and interest groups with updates on Kenya cheetah conservation activities from 2006-7.

### **COMMUNITY DEVELOPMENT**

- Monitoring of Community development activities as a three-year commitment of support for sustainable development of four Community Livestock Dips in the Kiu-Salama region;
- Capacity Building workshops in April in July 2007 and individual follow-up discussions on basic bookkeeping and record keeping for Community Dips;
- Baraza on human-Wildlife conflicts in July and October allowing people to air their concerns about cheetah livestock losses and develop potential solutions to their problems;
- Cooperation with the KWS Community Officer for the Machakos/Makueni/Kajiado region (Julius Manza) in organizing and implementing snare removal exercises with international and local community volunteers;

## **II. RESEARCH AND EDUCATION ACTIVITIES**

### **A. ECOSYSTEM AND PREDATOR CONFLICT RESEARCH**

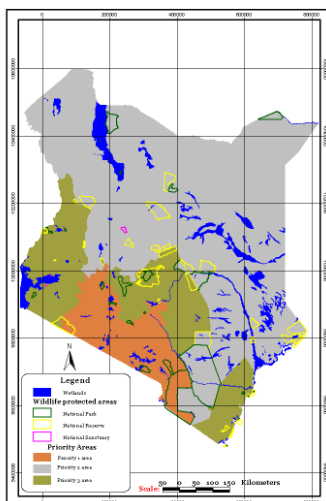
The main focus of CCFK's research in Kenya is the evaluation of farmland ecosystems for the long-term habitat viability for the cheetah. Information was collected from Wildlife Forum interviews in 2002-4 (Nakuru, Laikipia and Machakos), Nation-wide Census data (2004-2007), and focused research in the Salama area (2003-present - Machakos Wildlife Forum in the Kajiado District). This information can now be combined to determine areas in need of further evaluation, and areas of model programmes for supporting sustainable cheetah habitat in human dominated landscapes outside of Protected Areas.

Understandably, attitudes towards predators are negatively affected by livestock losses. Interviews conducted by CCFK show conflicts between people and predators vary from region to region. Links with the other large carnivore programs provide comparative information and evaluation of the effects of other predators on cheetah populations. Affiliations with KWS include predator conflict data searches and access to data on predator numbers within and around KWS managed National Parks. CCFK has ongoing cooperation with the KWS Veterinary and Research Departments in protocol development for research and biomedical sampling (i.e. blood, hair, skin...), monitoring, trapping, collaring, knock down (tranquilizing) and necropsy procedures. The protocols are essential for consistency in data collection including measurements and health evaluations of cheetahs.

## 1. National Census

The current status of cheetah in Kenya is believed to be on a continuing decline. Past population estimates were based on calculations from studies mainly focused within Parks and Reserves. The base of this project is utilizes local staff from the EAWLS office in Nairobi. The census allows us to estimate population density and to determine where conservation efforts will have the most impact on future cheetah survival. Current population studies were initiated in 2004, in affiliation with KWS and EAWLS, with the aims of 1) mapping cheetah related conflict through analysis of KWS predator conflict reports; 2) evaluating cheetah presence through field data collection; 3) identifying areas of cheetah sustainability or unique circumstances. This can now assist KWS and their partners in identifying areas for further studies.

Field work was based on evaluation of KWS predator conflict records from 1994-2004 and reviewing existing research reports from the areas targeted. Field work included interview and observation based data collection for analysis through GIS mapping. Information on cheetah presence and areas of highest density are used as justification for long-term program development. Phase one, completed in 2005, tested methodology where there was a higher degree of infrastructure in conservation, road network and security. Priority two areas with less infrastructure and fewer past studies for comparison were completed in September 2007. A final report will be generated in early 2008 showing the current estimated cheetah presence throughout the Priority 1 and 2 regions. Workshops in collaboration with other conservation partners will target areas for further research and community programmes.



Areas targeted for the Nation-wide census include:

**Priority 1** (completed 2005) – Map of presence, and baseline population estimates to fill in knowledge gaps. This phase evaluated selected areas in Narok, Kajiado, Nakuru and Magadi districts.

**Priority 2** (completed 2007)– Map of presence, and baseline population estimates in areas of less infrastructure and fewer past studies. It includes: Laikipia, Tsavo East, Samburu, Isiolo, Meru, Marsabit, Turkana, Wajir, Mandera, Tana River, Ijara, Lamu and Garissa.

**Priority 3** – (Not complete) This area has little past records of cheetah and has high human numbers. It includes: Ruma (from Masai Mara), from Nairobi to Thika and Tsavo East, Shimba Hills (South of Tsavo).

**Target Priorities for  
Nation Wide Census**

## **2. Human Impacts on Cheetah**

Land use changes and an increase in human population and activity levels throughout Kenya affect wildlife density and distribution. While pocketed populations of game are still strong on large commercial farms and on unsettled public land, these populations are changing over time. Subdivision of land, disease, human-wildlife conflict and poaching reduces prey base. Livestock loss to cheetah is typically viewed as a minimal threat compared to that of lion, leopard, jackal and hyena, however localized cheetah problems are reportedly increasing in settlements where cheetah populations exist in close proximity to people and the larger carnivores are present in small numbers.

The case study in the Kiu region of the MWF provided an opportunity to identify patterns of cheetah movement and livestock losses that have recently subdivided group managed commercial ranches into subsistence plots from 5 to 27 acres. In the Kiu area, cheetahs have been opportunistically reported killing goats, sheep and calves since August 2002. CCFK was invited to conduct studies on the issues facing the people in terms of wildlife conflict on behalf of the MWF and the community leaders. The reported cheetah problem provides CCFK with the opportunity to involve community members in research and awareness towards the plight of the cheetah. Herders and managers assist in reporting livestock losses and cheetah sightings to a Community Liaison Officer (CLO). Sightings and conflict reports are entered into a data base in order to evaluate the cheetah population density and to map the conflict cases in relation to identified cheetah ranges and human settlements.

Telemetry studies were initiated in March 2005 to provide detailed information on the movements of a female cheetah. Her core home range is less than 25 square kilometers. From 2005-6 more than 80 families lost livestock to cheetahs, but from this monitoring there are several instances where she was not in the proximity of the loss. Thus, it has been possible to estimate that there are several cheetahs (12-28) in different social groupings, as well as leopard, lion and hyena, are reported in and around the study area.

Cheetah habitat use and proximity to livestock and settlements have been recognized within the community. The people have developed a network of communication whereby the locations of the cheetahs give warning of areas to be aware of when grazing. The study cheetah family and several other cheetahs in the area have opportunistically killed livestock throughout the study period. It has become evident that a number of cheetah in the area are responsible for the conflicts

The focal cheetah was initially collared when, with her five sub-adult cubs, she killed a calf on a commercial ranch. The cheetah family was suspected to have been killing several goats and sheep from a neighboring settlement area. The collared family was tracked until October 2007 when the collar battery lost its power. She moves through dense vegetation, steep hills and areas of high human settlement - thus challenging the traditional thoughts of cheetah movement as well as habitat and prey preference. The study cheetah gave birth to two subsequent litters of cubs, thus a baseline behavior pattern is the basis for more detailed monitoring and comparisons to other regions. Tracking for 24 hours and on consecutive days shows us a clearer picture of her daily movements in order to aid in conflict analysis and understanding her movement.

Through monitoring we have also become more aware of the impact of this highway on the cheetah population of the region, as there have been 7 cheetah deaths on a section of about 15 kilometers since 2003. Additionally two cheetahs were killed in poacher's snares and two were reported to have been killed by herders. Most recently a mother cheetah and 3 small cubs were reportedly killed in a range fire in August 2007. The population of cheetahs in this region is still estimated at 15-28 based on sighting reports and social groupings. Continuing telemetry and monitoring through sighting reports will be expanded in 2008 to include fecal collection for hair and other analysis with the goal of expanding

monitoring through use of the advanced technology of GSM (Global Satellite to Mobile phone) collars (Chifuyu Bennett, PhD student).

With good cell phone reception in this area, the detail received through GSM collars would be extremely beneficial in ongoing monitoring efforts. GSM uses a Short Message System to download data from the cheetah's collar to collect data throughout the day and night on regular intervals. This method is less time consuming and is financially better (car maintenance, fuel to and from study site, time spent ground tracking) provides quick and accurate input of information into computer data bases and mapping programmes.

### **3. Livestock Husbandry and Health**

Community Development in the Kiu area has been directed through the renovation of four livestock cattle dips in the cheetah monitoring region. A livestock dip uses a short acting chemical bath (acaricide) to aid in control of disease by treating livestock to kill and repel ticks and tse-tse flies. CCFK chose improvement of livestock dips as a target community project based on a needs assessment in 2005. In 2006, renovations to community managed dips built in the early 1900's included resurfacing concrete entry and exit paths, sealing water tanks, replacing fence posts, rails and roofing.

Dip management workshops were held in April and July 2007 using local trainers to address issues of management through committees and community members holding meetings and keeping minutes, maintaining transparent accounts, and stock taking. Local Administration Officers, the local Veterinary Department and product suppliers participated in each workshop.

This project aims to develop a sustainable community project through a three year (through 2009) plan whereby CCFK collects data on livestock husbandry and predator tolerance issues while assisting in improved livestock husbandry and improved understanding of predator issues. Baseline data collection on the animals taken to the dip was conducted in May - November 2007. Questions asked about recent diseases, effectiveness of the dip and attitudes towards cheetah and other wildlife. The report from these interviews compliment the conflict interviews and increase CCFK's presence in the community. This report will also be available in early 2008.

## **B. PUBLIC EDUCATION ACTIVITIES**

### **1. Education**

CCFK conducts education presentations to schools, communities and tourists on request. CCFK presentations to communities include showing educational videos, public speaking at baraza (community meetings) and informal discussions with various groups of people and communities. Information in the tourism presentation explains CCF links with local and international partners. CCFK staff remain members of the Kenya Professional Safari Guides Association as bronze members.

Local and International volunteers assist in drafting materials and activity pages to be used as supplemental material during school presentations. A volunteer with a local performing group, Knowledge is Power, from the slums of Nakuru town has created a play to use the plight of the cheetah in an educational act which presents the issue facing the conservation of Kenya's wildlife. This performance is available to schools as a part of the group's educational activities. CCFK will request the group during student events in 2008.

### **2. Capacity Building**

Research Assistant, Cosmas Wambua, was accepted into a Master's course at the Department of Biology, Ecological and Systematic Zoology in Addis Ababa University in Ethiopia in 2006. Following two terms of coursework in Ethiopia (November 2006 – July 2007), his field work began in October 2007 to

evaluate the ecological impact of the subdivision on habitat and prey base in the Salama area of the Kiu region. His studies compliment the existing CCFK work in the region and provide a platform on which policy recommendations can be based for the land use in the area. Proposals are being evaluated for additional attachments of local and international students to supplement and compliment CCFK and KWS missions and studies.

### **3. Volunteer Programme**

Local Kenya residents Amanda Perret, Cheryle Robinson and Alex Joji (Knowledge is Power) continue assisting with education materials, program development and fundraising activities. Intern, Wallace Isaboke, from East African Wildlife Society assists with the national census project. Sarah Brooke volunteered as a research assistant for 10 months in 2007. Maxime Lapidair worked CCFK in January for the mentor programme through her secondary school in the Netherlands. Her father Hein and two teachers participated in school presentation, dip activity and radio tracking. Susanne Garrison and Christian Pilard (Eco-Sys Hong Kong) visited in May and October to evaluate their participation in education and craft programmes. Philippe Gavotto (Eco-Sys France), Wil Raymakers and Sandra Raymakers (Eco-Sys friends) also spent time with the CCFK team. Robert Joseph, Schlomit Hoffmann, Christine Weinbrenner, Carla Raniki, Sue Unger, Laila Bahaa-el-Din, Kristel Van Doorslaar, Taryn Danford, and Reid Yester were general volunteers who ranged from 2-6 weeks assisting with various projects in 2007. Elizabeth Fellows joined CCFK in November as an intern from St. Lawrence University on the Independent Study portion of her international university program.

### **4. US Fundraising Tour**

CCF Kenya's Program Director, Mary Wykstra, gave lectures at Binder Park Zoo (Michigan), Toledo, Cleveland and Columbus zoos (Ohio), Utah's Hogle Zoo (Utah) and attended the AZA Conference in Philadelphia, Pennsylvania, and presented at the AAZK Conference in Galveston, Texas. School presentations were given at Chime Elementary in Kalamazoo (MI), Olympus Junior High School (UT), Park City Cub Scout (Utah), and at Grand Rapids and Wayand Middle Schools (Michigan). Mary met Dr Marker at WCN to assist in presenting the joint efforts for cheetah conservation in Kenya using Namibia programmes as a model. Kenya crafts were again featured at each of the venues.

## **III. BENEFITS TO KENYA.**

The cheetah census results promote a strong base for claims of declining cheetah populations and the need for conservation efforts which work with all stakeholders. The census assists KWS, CCF and EAWLS in identifying areas for long-term cheetah conservation programs and can be used in policy decisions on translocation and problem predator control.

Monitoring of cheetahs in Machakos Wildlife Forum give answers to some of the issues of cheetah movements in recently sub-divided areas. Data from the 2005-7 cheetah movements and livestock loss patterns enable CCFK evaluate the solutions and options for problem cheetah protocols. The habitat useage of the case study show the cheetahs remarkable adaptations in land use and prey preference in an area of increasing land fragmentation. This report will determine the direction of ongoing and/or comparative monitoring projects in other areas.

Community development activities build capacity within a community in business and livestock management. These programmes pave the way for future partnerships and encourage positive attitudes for wildlife. The development of programmes for schools and tourists directly benefit the recipients, and indirectly benefit those with whom the recipient shares information. Tourism is one of the largest revenue generators in Kenya, and cheetah are one of the key species that people come to see. The people of Kenya will only benefit from their relationship with tourists if the key animals, like cheetah, continue to thrive.

## **IV . PLANNED ACTIVITIES – 2008-10**

### **RESEARCH**

- Collect data on livestock health and wildlife attitudes at the Kiu Livestock Dip sites in affiliation with local and international universities;
- Monitor conflicts in the Kiu area and develop mitigation and awareness programme;
- Evaluate information on cheetah sightings throughout Kenya using submissions from the “Great Cheetah Census” and “Snap-A-Cheetah” campaigns;
- Utilize biomedical sampling and measurement protocols in focusing efforts for cooperation with KWS for nation-wide use;
- Collaborate with KWS projects in the Masai Mara and other approved cheetah study areas;
- Monitor the case study cheetahs in the Machakos Wildlife Forum and link the monitoring program with Global Satellite to Mobile network technology through collaboration with PhD student (Chifuyu Bennett – permit approved November 2007);
- Advise in detailed cheetah census study in the Tsavo/Rukinga region (Cherie Schroff – pending permit approval by KWS and Kenya Ministry).

### **EDUCATION AND AWARENESS**

- Use the national census data to conduct stakeholder workshops for identifying cheetah conservation focal areas in collaboration with KWS, EAWLS and other partners;
- Utilize trend information to compliment the National Strategic Plan for cheetahs in Kenya;
- Continue the development of education and awareness programs and materials for primary, secondary, local adult and tourism sectors;
- Continue development of local and international student intern programmes by identifying study sites and focus projects with KWS and other stakeholders;
- Participate in the KWS Large Carnivore Working Group to promote links with other predator projects in Kenya for the benefit of ecosystem preservation;
- Continue linking Kenya research with the goals of CCF and the Global Cheetah Master Plan.

### **COMMUNITY DEVELOPMENT**

- Continue to Develop the Kiu Livestock Dip Project as a sustainable business supporting increased livestock productivity within the community.
- Develop Craft Sales Programme to create a business which offers an outlet to community based crafts relating wildlife and the environment.

## **CCF KENYA STAFF**

### **MARY WYKSTRA – CCF Kenya Representative**

Mary has been working with wildlife her whole life. After studying pre-veterinary medicine at Calvin College in Grand Rapids, Michigan from 1982 to 1984, she received a Bachelor of Science degree in Zoology with a focus in Animal Behavior from Michigan State University in 1987. After college, Mary worked as a Zoo Keeper at Binder Park Zoo in Battle Creek, Michigan. In 1989, she moved to Salt Lake City and worked at Utah’s Hogle Zoo as an Exhibit Technician responsible for fabrication of enclosures for a large variety of animals ranging from insects to elephants. In 1992, she was promoted to Exhibits Curator and duties were expanded to design the enclosures and supervise construction and renovations. In

1998, Mary became involved with the Cheetah Conservation Fund (CCF), chairing a zoo keeper initiated fundraiser event. This event (the Cheetah Cha-cha) is now an annual event at Utah's Hogle Zoo. In 2000, Mary moved to Namibia for six months to work as coordinator for the design and construction team of CCF Namibia's Education Centre. In 2001, she returned to Namibia and spent another six months as a Research Assistant assisting in all aspects of cheetah care and research at the facility. In December, 2001, Mary was appointed the CCF Representative in Kenya and launched a study of farmland issues affecting cheetah in Kenya. Utilizing information gathered from interviews with farmers and land managers in the Rift Valley region, this project aims to develop solutions to cheetah-human conflict issues. Mary is in close communication with both CCF Namibia and the Kenya Wildlife Service, in the attempt to establish cooperation in understanding cheetah status in Kenya and developing programs in conservation and education.

### **COSMAS M. WAMBUA – Research Assistant, CCF Kenya**

Cosmas was born in April 1975 in Machakos, Kenya. After graduating with a Bachelor of Science degree in Biology from Dr. B R Amedkar University (Agra) in India, Cosmas volunteered with the Kenya Wildlife Service (KWS) for two years. His main duties involved mapping (GIS), vegetation mapping and animal census in various parks throughout Kenya. In February 2002, Cosmas joined the Cheetah Conservation Fund (CCF) - Kenya team as a research assistant. He now assists with data collection, data entry and analysis, and the development of education programs. He continues to utilize his knowledge of mapping to assist the CCFK through mapping and vegetation analysis to aid in understanding the status of cheetah habitat outside of protected parks. In July 2005 Cosmas attended an ESRI sponsored GIS training course in Redlands California, USA to supplement his mapping skills.

### **P. LUMUMBA MUTISO – Community Liaison Officer, CCF Kenya**

Lumumba is a small scale farmer in the Kiu/Salama area. In 2003 his livestock were being killed by cheetah and leopard, but he became interested in the predators after meeting CCFK staff. Lumumba was hired as the Community Liaison Officer in 2004. Using a motorcycle, bicycle and foot travel he collects data on livestock losses, cheetah sightings and is the relay for information to and from the people of his community.

### **SARAH BROOKE – Research Assistant, CCF Kenya**

Sarah conducted field work under affiliation with CCF in the Nakuru Wildlife Forum MSc through Manchester Metropolitan University in 2003. She worked as a Research Assistant with a variety of projects in the UK, Namibia, and Tanzania from 2004-6. She returned to Kenya in 2007 to assist with data collection, analysis, mapping from June – December. Sarah has strong skills in community, research and mapping which aid CCFK in programme development. Her primary focus is currently in Human-wildlife conflict resolution and community development, working primarily with the Kenya case study area in the Machakos Wildlife Forum.