Cheetah
CONSERVATION FUND

The cheetah, *Acinonyx jubatus*, is one of the oldest of the big cat species, with ancestors that can be traced back more than five million years to the Miocene era. The cheetah is also the world's fastest land mammal, a feline icon of nature. It is an animal built for speed, with all parts of its body having evolved for precision and agility. From their small, aerodynamic head, lean body and long legs, to a flexible backbone and tail that works like a boat's rudder, and semi-retractable claws like cleats on a running shoe, the cheetah can reach speeds of up to 70 mph and change direction in a split second. The cheetah also has the ability to accelerate from zero to 60 mph in just three seconds.

CHEETAHS:
BIG CATS BUILT FOR SPEED

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

RESEARCH
CONSERVATION
EDUCATION

cheetah.org

PHYSICAL TRAITS

Cheetahs have a thin frame with a narrow waist and deep chest. They have extra-large nostrils that allow for increased oxygen intake, with larger than normal heart and lungs and strong arteries and adrenals that work in tandem to circulate oxygen more efficiently. Their weight averages between 75 and 125 pounds (34 - 55 kg) and they can be anywhere from 40 to 60 inches in length, measured from the head to the hind quarters. The tail can add another 24 to 32 inches. Most cheetahs stand 28 to 36 inches tall at the shoulder. Males are slightly bigger with larger heads, but there is not much physical difference between the sexes. It is difficult to identify the cheetah's sex by appearance alone.

The cheetah's undercoat ranges in color from light tan to a deep gold and is marked by solid black spots. These spots are not open like the rosettes found on a leopard or jaguar's coat, which is one way to quickly identify the cheetah. Cheetahs are also recognized by their distinctive black "tear marks" that extend from the corners of both eyes along the sides of their noses to their mouths. The biological purpose for these markings is to keep the glare of the sun down so cheetahs can see more clearly across long distances. Their tail ends with a bushy tuft encircled by five or six dark rings. These markings provide them with excellent camouflage while hunting and make them more difficult for other predators to detect.

Unlike other big cats often grouped with the cheetah (i.e.- tiger, lion, leopard and jaguar), cheetahs do not roar. They growl when facing danger, and they vocalize with sounds more equivalent to a high-pitched chirp or bubble and bark when communicating with each other. The cheetah can also purr while both inhaling and exhaling, which other big cats cannot.

THE CHEETAH'S LIFE

There are three stages in the lifecycle of the cheetah: a cub's life, adolescence and adult life. The gestation period for the cheetah is 93 days, and litters range in size from one or two up to six cubs (the occasional litter of eight cubs has been recorded, but it is rare). At birth, the cubs weigh 8.5 to 15 ounces and are blind and helpless. Their mother will groom them patiently, purring quietly and providing them warmth and security. After a day or so, the mother will leave the cubs to hunt for herself, so she can continue to care for the cubs. This is the most vulnerable time for the cubs, as they are left unprotected. They will live in a secluded nest for the next six to eight weeks, being regularly moved by their mother from nest to nest to avoid detection by predators. The mother will care for her cubs on her own for the next year and a half.

At about six weeks of age, the cubs begin following their mother on her daily travels as she is looking for prey. During these first few months she cannot move far or fast and cub mortality is highest. Less than one in 10 will survive during this time, as they perish from predation by other large predators such as lions and hyenas, or from injuries. This is the time when life skills are taught. Their long mantle of hair on their backs serves the dual purpose of keeping them warm and helping hide them from predators who mistake them for the aggressive honey badger.

Between four to six months of age, cheetah cubs are very active and playful. Trees provide good observation points and allow for development of

skills in balancing. The cubs' semi non-retractable claws are sharper at this age and help them grip the tall 'playtrees' they climb with their siblings.

Learning to hunt is the most critical survival skill that the cubs will develop. At one year of age, cheetah cubs participate in hunts with their mother. The hunt has several components. It includes prey detection, stalking, the chase, tripping (or prey capture), and killing by means of a suffocation bite. At about 18 months of age, the mother and cubs will finally separate. Although not fully adept at hunting on their own, independent male and female cubs will stick together for a few more months to master their hunting skills. When the adolescent females begin cycling, dominant males will court them and drive their brothers away..

MALE COALITIONS

Male cheetahs from the same litter remain together for the rest of their lives, forming a cheetah coalition. Coalitions increase hunting success and defense against predators. They become dispersal males, on the move for a few years after leaving their mother and sisters, until they can defend a territory. They will travel hundreds of miles, being moved out of one area to another, pushed by more dominant males. Eventually, they will find a place where they can settle. Cheetahs require huge home range territory, covering an average of 1942 - 2300 km^2.

Adult life for a cheetah is difficult. Cheetahs live fast and die young. There is competition between territorial males, which often results in death. The lifespan of an adult male is 8 years. Adult mortality is one of the most significant limiting factors for cheetah population growth and survival..

CHEETAH SURVIVAL

Relatives of the modern cheetah had worldwide distribution until about 20,000 years ago, when the world's environment underwent drastic changes in the Great Ice Age. Throughout North America, Europe, and Asia, about 75 percent of the mammal species vanished. Only a handful of the modern cheetah remained, having gone through a "genetic bottleneck" that resulted in inbreeding, which detrimentally impacts species survival.

Once found throughout Asia and Africa, today there are fewer than 7,100 adult and adolescent cheetahs in the wild. This number has dropped from 100,000 a century ago, indicating a rapid decline. Cheetahs are listed as *Vulnerable* on the IUCN Red List. In Namibia, they are a protected species. Under the Endangered Species Act in the United States, they are considered *Endangered*. The Convention on International Trade in Endangered Species (CITES) lists them as an Appendix 1 species.

Most wild cheetahs exist in fragmented populations in pockets of Africa, occupying a mere 9 percent of their historic range. In Iran, less than 50 Asiatic cheetahs (a sub-species) remain. The largest single population of cheetahs occupies a six-country polygon that spans Namibia, Botswana, South Africa, Angola, Mozambique and Zambia. Namibia has the largest number of individuals of any country, earning it the nickname, "The Cheetah Capital of the World."

More than 75 percent of remaining wild cheetahs live on rural farmlands alongside human communities. The small populations that live in national parks and wildlife reserves must compete with larger, more aggressive predators, which can kill cheetah cubs and often steal their prey.

Their main threats to survival include human-carnivore conflict, loss of habitat and loss of prey, poaching and illegal wildlife trafficking, with cubs being taken from the Horn of Africa and smuggled into the exotic pet trade, primarily in the Gulf States.

Cheetah Conservation Fund

Cheetah Conservation Fund
P.O. Box 1755, Otjiwarongo, Namibia

Phone: +264 067 306 225
Fax +264 067 306 247

E-mail: ccfinfo@iway.na
info@cheetah.org

Cheetah
CONSERVATION FUND

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

RESEARCH
CONSERVATION
EDUCATION

cheetah.org

The Cheetah Conservation Fund's (CCF) research focuses on the biology, ecology and genetics of the southern African cheetah. Its findings form the basis for CCF's education and conservation programs. CCF is notable for being the first predator research program conducted outside a protected area and the first working with people on whose land the cheetah is living.

RESEARCH

GENETICS, HEALTH AND REPRODUCTION

CCF's ongoing research activities include collecting and analyzing blood, skin, tissue, sperm and fecal samples from the southern African wild cheetah. To date, CCF has sampled nearly 1,000 of these cheetahs to study genetics and the relatedness of the population. Samples indicate the incidence of disease, stress hormone levels, and the reproductive health of the population.

Wild cheetahs providing samples simultaneously undergo comprehensive examinations ("cheetah work-ups") that involve weighing and measuring for morphometric studies, analysis of their dental structure and reproductive fitness. These exams contribute to the assessment of the overall health of the world's cheetah population.

SCAT DETECTION DOGS

CCF pioneered the use of scat detection dogs to assist with cheetah census, genetic relatedness and demographic research. CCF ecologists employ dogs trained to sniff out cheetah scat with their sense of smell. The samples are processed in the laboratory, and DNA is extracted to identify individual cheetahs and gain insight into population structure.

GENOME RESOURCE BANK

Sperm, tissue and blood samples are cryopreserved and stored in CCF's Genome Resource Bank (GRB) to provide additional insurance for species survival. Established in 1991, CCF's cheetah GRB is one of the most extensive for an endangered species. To date, CCF has banked more than 320 cheetah semen collections from more 200 individuals and banked samples on nearly 1,000 cheetahs. CCF developed its best practices for storing samples and continues to refine cryopreservation methods with partners at the Smithsonian Institution. In 2007, in collaboration with Smithsonian researchers and those from University of California at Davis, CCF produced the first-ever *in vitro* cheetah embryos developed to the blastocyst stage. CCF's leadership in reproductive science also resulted in the first artificially-inseminated cheetah cub born from sperm frozen in Namibia.

LIFE TECHNOLOGIES CONSERVATION GENETICS LABORATORY

To address the challenge of effectively monitoring the wild cheetah population from a remote region in Namibia, CCF built and maintains the only fully capable conservation genetics laboratory at an *in situ* conservation site in Africa. The Life Technologies Conservation Genetics Laboratory is a state-of-the-art facility that produces analyses and results in house. The laboratory aims to address research questions involving cheetah gene flow and geographical patterns of genetic variation, as well as adaptive questions in relations to the cheetah's behavioral ecology in specific habitats. Open to researchers from other organizations, the lab benefits not only the cheetah but many other species, and it plays a key role in training the next generation of conservation geneticists

BEHAVIOR DEMOGRAPHICS, HOME RANGE AND REINTRODUCTION

CCF researchers investigate the movement of cheetah to determine home ranges, habitat preference, territoriality and behaviors of populations critical to their survival. CCF has tagged and released more than 600 cheetahs back into the wild and placed VHF satellite radio-tracking collars on more than 60 during 25 years of study. Working with CCF conservationists, CCF researchers evaluate relocation, reintroduction and non-invasive monitoring methods to support viable wild cheetah populations.

CHEETAH CENSUS RESEARCH

Cheetahs are notoriously difficult to count using conventional census techniques due to their secretive nature. CCF researchers have tested various census and monitoring techniques, including radio telemetry, spoor track counts and camera traps, while calibrating these to known density estimates. The data is used to identify potential "hot spots" for human-carnivore conflict and to persuade key stakeholders to adopt appropriate conservation measures to mitigate impact.

COLLABORATIVE RESEARCH PARTNERSHIPS

CCF has long-term research partnerships with academic and research institutions around the world, encompassing a broad spectrum of subject matter pertaining to the cheetah. CCF also maintains close ties with zoos and wildlife parks to collaborate on projects involving captive cheetah populations and genetics.

Beskee Bergen, Netherlands
Bronx Zoo, USA
Busch Gardens, USA
Cat Specialist Group of IUCN
Cheetah Species Survival Plan of AZA
Cincinnati Zoo
Colorado State University
Columbus Zoo
Dallas Zoological Society
Disney's Animal Kingdom
Durv Kralove
Earthwatch Institute
European Endangered Species Plan (EEP)
Indianapolis Zoo
Little Rock Zoo
Los Angeles Zoo
Maryland Zoological Society
Namibia Ministry of Environment and Tourism
Namibia University of Science and Technology (NUST)
Naples Zoo
National Cancer Institute
Oregon State University
Paradise Park
Park de Felines
Park de Thoiry
Saint Louis Zoo
San Diego Zoo
San Francisco Zoo
Smithsonian Conservation Biology Institute
Smithsonian Institution's National Zoo
University of California at Davis
University of Florida
University of Namibia
University of North Carolina
Virginia Zoo
White Oak Conservation Centre
Wildlife World Zoo

ECOLOGICAL RESEARCH

CCF evaluates cheetah habitat and prey base and monitors carnivores in the cheetah's ecosystem. CCF identifies vegetation and growth patterns, designates land for ecological management and investigates how bush encroachment affects biodiversity. CCF monitors habitat use by game species and determines hunting practices and prey preferences for individual cheetah populations. CCF also collects data on predation and develops methodologies for prey species reintroduction in cheetah range countries.

HUMAN-CARNIVORE CONFLICT

Research into human-carnivore conflict is critical for cheetah conservation, as more than 75 percent of cheetahs in Africa live outside protected areas and on lands shared with rural farming communities. CCF incorporates the needs of farmers in the development of agricultural management plans that benefit both farmers and cheetahs. CCF evaluates non-lethal predator control tools and livestock management techniques that reduce the number of cheetahs removed from the ecosystem by farmers.

Cheetah Conservation Fund

Cheetah Conservation Fund
P.O. Box 1755, Otjiwarongo, Namibia

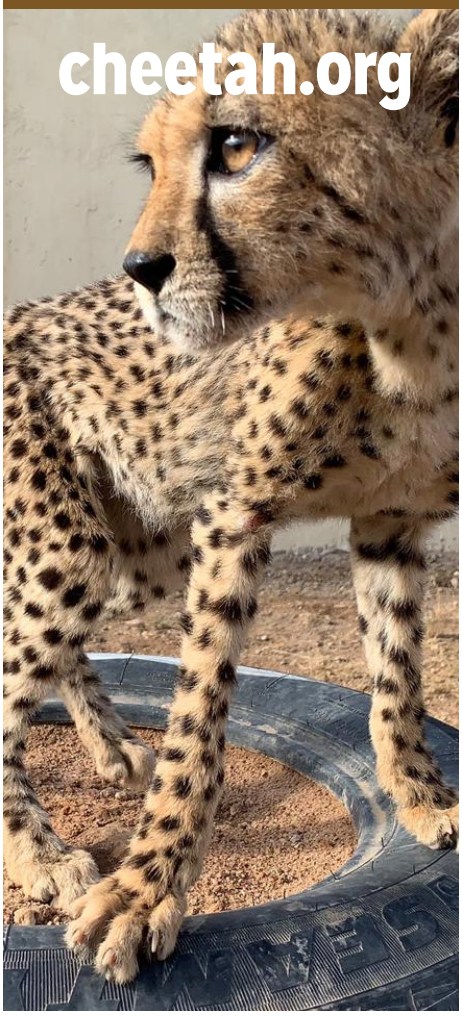
Phone: +264 067 306 225
Fax +264 067 306 247

E-mail: ccfinfo@iway.na
info@cheetah.org

Cheetah
CONSERVATION FUND

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

RESEARCH
CONSERVATION
EDUCATION



ILLEGAL PET TRADE

Cheetah Conservation Fund (CCF) tracks cheetah trafficking and assistswith confiscations. Cheetah trafficking incidents involve the capture and sale of live cheetahs or cheetah parts (skin, bones, teeth, claws, etc.). Most of the trade in live cheetahs occurs between East Africa and the Arabian Peninsula, where cheetahs are favored pets across theGulf States.

The live cheetahs in the pet trade are believed to originate from the wild populations in Ethiopia, northern Kenya and Somalia, and are smuggled mostly out of the Somaliland coast..

THE PROBLEM

Approximately ~300 cheetahs, mostly cubs, are smuggled out of East Africa every year, mostly through Somaliland (a region of Somalia). Many more die before being transported. Cubs usually between 3-10 weeks are taken from their mother while she is out hunting or taken in retaliation when she is perceived to be preying on livestock. The adult wild cheetah population in the affected areas of East Africa are estimated to be ~300 total. Re-introduction of confiscated cheetahs into the wild are not really possible as the cheetahs are often in poor condition and have been cared for closely after confiscation to get them back to health.

CCF'S SOLUTIONS

To identify the origin of cheetahs in illegal trade and to assist criminal investigations, CCF collects genetic material for storage in a DNA database at our cheetah genetics laboratory in Namibia. DNA samples are collected from cheetahs, wild, captive, and deceased to expand the database.

CCF is researching and developing long-term holistic strategies to combat the live-trafficking of cheetah, addressing law enforcement, wildlife conservation, education, livelihood development and demand reduction. Working with all stakeholders is the key to successful implementation.

Currently, efforts are underway to develop a permanent wildlife sanctuary in Somaliland.

GEOGRAPHIC AREAS OF MOST CONCERN

East Africa - Active areas for trafficking include eastern Ethiopia, northern Kenya, Somaliland and Somalia. CCF supports governments from this region in the care for confiscations of illegally trafficked cheetah cubs, mostly in Somaliland, an autonomous region of Somalia. Somaliland is a preferred route for illegally trafficking cheetahs out of Africa. Cubs are taken to Yemen and distributed across the Gulf States to be illegally sold as pets.

Prior to 2016, confiscated cheetahs have been transferred to Born Free Foundation's sanctuary in Ethiopia and the DECAN Refuge in Djibouti. In 2016, the government of Somaliland reversed its policy and in favor of keeping confiscated animals in country. In response, CCF's team in Hargeisa, the capital city, began caring for cheetahs intercepted from the trade. Currently, there are cheetahs housed in two temporary shelters. CCF is working with the Ministery of Environment and Rural Development (MoERD) to develop strategies aimed to facilitate Somaliland's ability to fight the trafficking of wildlife including awareness as a top priority, capacity building, regional cooperation and, in the longer term, a sanctuary for confiscated wildlife.

The Arabian Peninsula - Wild, exoticanimals are in high demand in theGulfStates. In addition to tigers, lions, sun bears, clouded leopards, jaguars, chimpanzees, orangutans and many other protected species, it is estimated that hundreds of cheetahs are kept as pets in houses and compounds, in the ArabianPeninsula. Evidence sug-

gests that most of these cheetahs have been sourced illegally from the Horn of Africa.

CCF's Founder and Executive Director, Dr. Laurie Marker visited the UAE twice to raise awareness, and organized a workshop to train veterinarians in proper cheetah care. Additionally, CCF has formed alliances in the UAE to obtain samples of captive cheetahs for its growing DNA database.

In December 2016, the UAE enacted a national law banning private ownership of exotic and dangerous pets. To date, no cheetah confiscations have been reported; however, CCF continues to follow developments in the UAE closely, both directly and through its collaborators and allies on the ground.

South Africa - CCF has received reports of cheetah skins, skulls and other body parts being sold at traditional medicine markets in South Africa. The most widely known markets are the Faraday and Mai Mai markets in Johannesburg.

During 2017 alone, in three separate visits to the Mai Mai market, a CCF supporter reported having seen 56 cheetah skins or heads. CCF's Executive Director, Dr. Laurie Marker, also visited the markets and recorded 17 cheetah products.

The origin of the cheetah products is unknown. South African experts believe they could originate from free-roaming wild cheetahs, which usually survive on farmland along the borders, or from captive-breeding facilities.

South Africa is the world's largest breeder and exporter of cheetahs. Captive-bred cheetahs are traded under the terms of Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) Appendix II, and concerns about the possibility that cheetahs are being taken from the wild have been raised at CITES level.

PUBLIC POLICY

In 2007, CCF became a founding member of the Coalition Against Wildlife Trafficking (CAWT), a group of governments and NGOs dedicated to bringing public and political attention to the issue of illegal wildlife traficking in cheetahs. CAWT was initially focused mainly on the trafficking of ivory, and rhino horn. The cheetah was formally included in the CAWT agenda in 2010.

CCF's illegal cheetah trafficking database was utilized to support a proposal by Kenya, Ethiopia and Uganda to include illegal cheetah trade in the CITES 16th Conference of the Parties agenda (CoP16). This was the first time that the illegal trafficking in cheetahs was part of a global discussion. The following year, a CITES-commissioned study on illegal cheetah trafficking was presented at the CITES 27th Animal Committee Meeting.

CCF works alongside governments and NGOs to carry forward the issue of illegal wildlife trafficking in cheetahs. Following the CITES 65th Standing Committee meeting in 2014 (SC65), an inter-sessional working group surveyed laws and cheetah trade activities in all CITES Parties and held a workshop, hosted by the State of Kuwait.

COLLABORATIONS

Visiting veterinarians from the European universities listed below assist with cheetah care and give lectures for veterinary students at the University of Hargeisa.

- Vétérinaires Sans Frontières Czech Republic (VSF-cz)
- USAMV Cluj-Napoca (Romania)
- University of Veterinary and Pharmaceutical Sciences Brno (UVPS, Czech Republic)
- University of Hargeisa (UOH)
- University of Burao (UB)

CCF works in partnership with the following NGOs and governmental organizations.

- Cheetah Conservation Botswana
- Action for Cheetahs in Kenya
- Cheetah Outreach
- Morad & Heritage Somaliland
- Cat Specialist Group
- Rangewide Cheetah & Wilddog program
- Association of Zoos and Aquariums (AZA) Cheetah SSP
- Wildlife Conservation Society
- International Fund for Animal Welfare (IFAW)
- Department for Environment, Food and Rural Affairs (DEFRA)

Cheetah Conservation Fund
P.O. Box 1755, Otjiwarongo, Namibia
Phone: +264 067 306 225
Fax +264 067 306 247
E-mail: ccfinfo@iway.na
info@cheetah.org

Cheetah
CONSERVATION FUND

Ninety percent of Namibia's cheetahs live on farmlands in central Namibia, which also support 80% of the game species that are the cheetah's natural prey. Living on farmland puts cheetahs in contact with farmers, their livestock and game farming enterprises. To maintain ecosystem balance, it is critical that conservation strategies encourage sustainable land use while accommodating the coexistence with native predator species. It is equally important to educate people about the cheetah and its ecosystem from a young age and train the next generation of African biologists, geneticists and ecologists to ensure Cheetah Conservation Fund's (CCF) programs are sustainable.

EDUCATION

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

RESEARCH
CONSERVATION
EDUCATION

cheetah.org

FUTURE FARMERS OF AFRICA

CCF developed **Future Farmers of Africa (FFA)** to teach integrated livestock and wildlife management techniques to land users and managers. FFA builds practical skills, enabling rural Namibians to engage in sustainable livestock farming that provides direct and indirect economic benefits. Training courses are conducted at CCF's Field Research and Education Centre using CCF's Model Farm and related agricultural enterprises as training facilities. In addition, FFA workshops are also held in communal conservancies to reach the most remote rural farming communities. Topics include livestock health and veterinary care, livestock husbandry, fire prevention and suppression, livestock valuation, predator spoor identification, differentiating predator kill techniques and best practices to reduce livestock losses. Tools for non-lethal predator control, such as the use of CCF Livestock Guarding Dogs, are also part of the training.

FUTURE CONSERVATIONISTS OF AFRICA

Each year, CCF educators present programs for approximately 20,000 young learners in schools throughout Namibia. This initiative engages the nation's youth on the value of wildlife, Namibia's most precious natural resource, as well as the importance of maintaining healthy ecosystems. Since 1994, more than 500,000 students have participated in an outreach program. In addition, the CCF Field Research and Education Centre has hosted more than 20,000 young learners for an environmental course. Groups of up to 35 stay at CCF's overnight facility for students, **Camp Lightfoot**. Together, these activities comprise CCF's **Future Conservationists of Africa (FCA)** program.

TRAINING FOR YOUNG PROFESSIONALS

With populations dwindling through most cheetah range countries, cheetah survival depends on people using an informed, integrated approach to conservation that incorporates humans, wildlife, and habitat. Since 2005, CCF has conducted month-long international courses to bring together conservation managers, scientists, and community representatives from cheetah range countries in Africa and Iran. More than 300 that have participated in CCF's training are now leaders managing cheetah conservation programs in their respective countries. The courses build capacity, with a goal of

establishing and increasing wild cheetah populations.

INTERNSHIPS
CCF is an official fourth-year placement for students from Namibia's two major universities, University of Namibia and Namibia University of Science and Technology. In addition, CCF welcomes interns from undergraduate and graduate university programs all over the world. Aspiring biologists, geneticists and ecologists pursuing masters and Ph.D. degrees come to CCF to work on research and thesis projects year 'round.

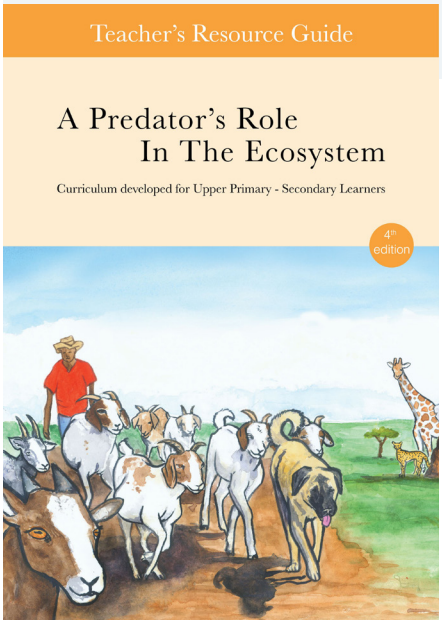
CCF PUBLICATIONS
CCF has publications and resources for people who want to learn more about the species.

BOOKS
Cheetahs: Biology and Conservation - 1st Edition 2018, published by Elsevier
Chewbaaka: My Life at Cheetah Conservation Fund - Dr. Laurie Marker & Jessie Jordan
A Future for Cheetahs - Dr. Laurie Marker & Suzi Eszterhas

SCIENTIFIC PAPERS
CCF'scientific papers are available online: www.cheetah.org/research/by-type/scientific-papers/

EDUCATION RESOURCES AND GUIDEBOOKS
Guide to Integrated Livestock and Predator Management
A Predator's Role in the Ecosystem - CCF's Teachers Resouce Guide, 4th Edition - revised in 2017
International Cheetah Day Conservation Passport

CHEETAH STUDBOOKS
North America: 1983 - 1987
International: 1988 - present



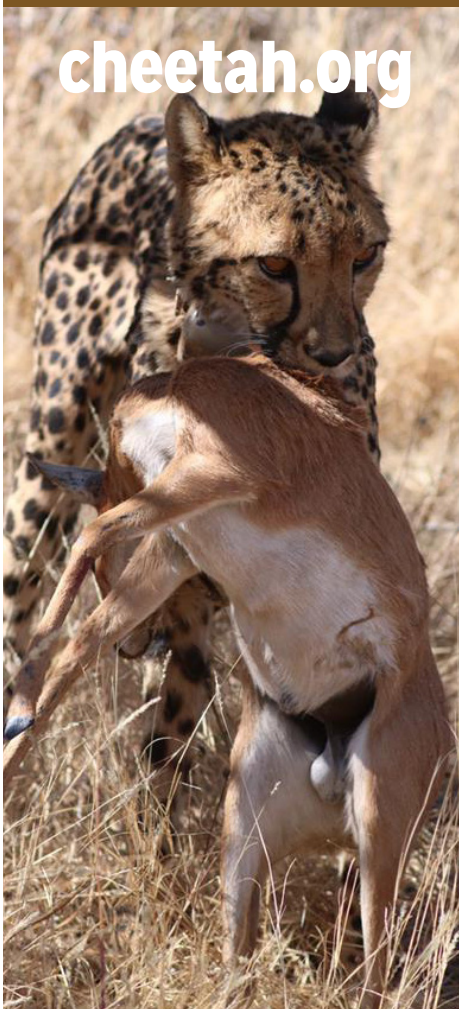
Cheetah Conservation Fund
Cheetah Conservation Fund
P.O. Box 1755, Otjiwarongo, Namibia
Phone: +264 067 306 225
Fax +264 067 306 247
E-mail: ccfinfo@iway.na
info@cheetah.org

Cheetah
CONSERVATION FUND

CONSERVATION

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

RESEARCH
CONSERVATION
EDUCATION



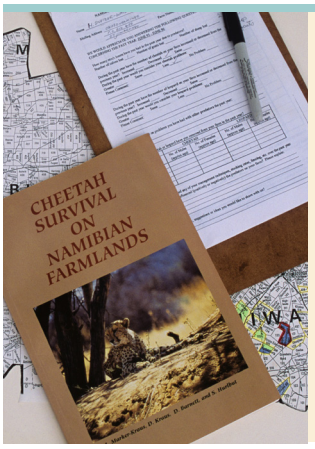
HUMAN-WILDLIFE CONFLICT MITIGATION

Ninety percent of Namibia's cheetahs live on livestock and game farms, outside protected areas, alongside rural farming communities. Sharing farmlands makes cheetahs more visible to farmers and puts them in contact with livestock and game farming enterprises. Cheetahs and other predators have been traditionally looked upon as a threat and not as a valuable component of a thriving ecosystem. To farmers, especially communal farmers who may be very poor, the loss of even a single animal can be devastating.

During the 1980's, livestock and game farmers cut the Namibian cheetah population by half, removing over 8,000 cheetahs from the landscape. Dr. Marker understood that to maintain ecosystem balance, conservation strategies must be put in place to encourage sustainable land use while accommodating coexistence with native predator species. To prevent further cheetah population decline, CCF began conducting research into conflict mitigation in 1991, and from this emerged CCF's integrated livestock and wildlife management training, **Future Farmers of Africa (FFA**). CCF researchers develop and test predator-friendly livestock management techniques and tools on CCF's Model Farm. CCF promotes these solutions in farmer publications and media, and at agricultural shows, meetings, and colleges and universities and through FFA training courses.

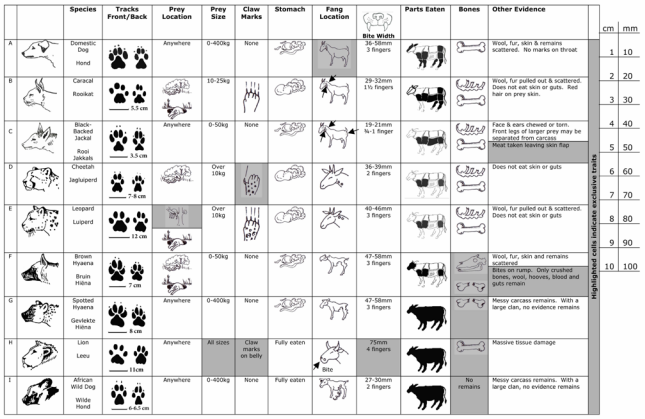
The single most-effective, non-lethal predator control tool CCF has developed for farmers is the CCF **Livestock Guarding Dog (LGD)**. CCF breeds, trains and places Anatolian shepherd and Kangal dogs with farmers, at little cost, to help guard small stock like goats and sheep. The presence of the large dogs with exceptionally loud barks is enough to keep most predators at bay. Farmers who use CCF LGDs to guard their herds report a drop in predation rates ranging over 80%, thus reducing pressure on farmers to kill or capture cheetahs. Since 1994, the LGD program has placed more than 650 dogs throughout Namibia and has helped launch similar programs in South Africa with Cheetah Outreach, in Botswana with Cheetah Conservation Botswana, and in Tanzania in collaboration with the Ruaha Carnivore Project.

Conservancies in Namibia are a systematic approach to managing the nation's wildlife. CCF has been instrumental in advancing this system, which have effectively curbed domestic poaching of endangered wildlife species and are now considered the African model. Namibia's conservancy system is successful because it joins the fate of the people to the fate of the local wildlife, enabling humans and animals to thrive together. CCF has been involved in the Waterberg Conservancy since its inception and is a founding member of the Greater Waterberg Landscape (GWL), a large landscape initiative, and sits on its steering committee.



THE TOOLS FOR CONFLICT MITIGATION

CCF's farmer training book *Guide to Integrated Livestock and Predator Management* and teacher's resource book *A Predator's Role in the Ecosystem* are utilized in training to assist in Human-Wildlife Conflict Mitigation. The guide books give farmers and students the knowledge necessary to take non-lethal measures to prevent livestock losses. Activities like CCF's Kill ID chart (*right*) are used by CCF's education team. These resources are given to all CCF's coursework participants.



CCF BUSH AND BUSHBLOK

Cheetahs hunt using bursts of speed in open or semi-open savannah, however, because of unpredictable droughts, climate change, and certain livestock farming practices, native thorn bush species are encroaching on Namibian farmlands. Bush encroachment changes the habitat and the mix of prey species that can survive and it hurts the economy by reducing the amount of grazing lands.

In 2001, with the help of a USAID grant, **CCF Bush** was developed to encourage habitat restoration and to create a viable market for biomass products harvested in an environmentally and socially appropriate way. CCF Bush project has since selectively harvested thousands of hectares of bush to produce **Bushblok**, an award-winning low-emission, high-heat fuel log, from the harvested biomass. In 2008 CCF won the Tech Museum's Intel Prize for the Environment for the Bushblok innovation. CCF is developing ecological standards for ramping up bush harvesting with the goal of restoring landscape-scale tracts of cheetah habitat throughout Namibia. In 2006, CCF Bush obtained certification from the Forest Stewardship Council (FSC), confirming that it manages forest resources responsibly and sustainably. The Biomass Technology Demonstration Centre (BTDC) and Bushblok production operation provides 30 jobs for Namibians, with the potential to provide many more.

ILLEGAL WILDLIFE TRADE

Although trade in wildlife species products is regulated by the Convention on International Trade in Endangered Species (CITES) both international and national laws, the Illegal Wildlife Trade is estimated to be worth between $50-150 billion annually. Cheetahs, listed as an Appendix 1 species under CITES, are often removed from the wild for their body parts or, more so, the illegal pet trade.

CCF first became actively involved with issues involving the illegal trade in cheetahs in 2005. Since then, CCF has been monitoring cheetah trafficking and organizing confiscations through the proper authorities whenever possible. CCF collects genetic samples for analysis and trains staff at cheetah-holding facilities to ensure the proper care for confiscated animals.

CCF also works to educate the public about illegal trade. Even though the intrinsic nature of illegal wildlife trade makes it difficult to collect full or reliable information, CCF has recorded hundreds of cases involving nearly 2,000 cheetahs. Currently, CCF holds the most extensive database for cheetah trafficking worldwide. CCF takes every opportunity at national and international forums to ensure that the problem is not ignored. CCF participates in the Convention on International Trade in Endangered Species (CITES) inter-sessional working group on the illegal trade in cheetah and was instrumental in making recommendations unanimously adopted by CITES at CoP17.

Cheetah Conservation Fund
P.O. Box 1755, Otjiwarongo, Namibia
Phone: +264 067 306 225
Fax +264 067 306 247
E-mail: ccfinfo@iway.na
info@cheetah.org

Cheetah
CONSERVATION FUND

CCF FACILITIES

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

RESEARCH
CONSERVATION
EDUCATION

cheetah.org

CHEETAH CONSERVATION FUND FIELD RESEARCH AND EDUCATION CENTRE

CCF's Field Research and Education Centre (The Centre) is set on a 100,000-acre, private wildlife reserve at the base of the Waterberg Plateau in Otjiwarongo, Namibia. The Centre is open to the public 364 days a year from 8:00 a.m. to 5:00 p.m. (08:00 to 17:00), and closed on December 25. Visitors tour the facilities and engage in cheetah learning activities, like the Cheetah Run, Cheetah Feeding or Cheetah Drive. The Centre's facilities include a Visitor Centre, Cheetah Museum, Cheetah Sanctuary, Genetics Laboratory, Veterinary Clinic, Model Farm, Dancing Goat Creamery, Cheetah Cafe and Biomass Technology Demonstration Centre. Visitors may stay overnight at CCF's Babson Guesthouse or Cheetah View Lodge as well as housing and a dining hall for staff, interns and volunteers. The Centre also has Camp Lightfoot, a tented facility for school groups up to 35.

Being open to the public is central to CCF's mission. More than 85,000 people from all over the world have traveled to CCF's Centre to experience this iconic feline in its natural environment. CCF encourages every person who visits to become an ambassador for the species by carrying what they've learned back to their communities.

VISITOR CENTRE

CCF's Visitor Centre is a modern, multi-purpose building that houses the main visitor reception area. Its facilities include the Cheetah Cafe, gift shop, classrooms, administrative offices, a large group instruction hall and the Life Technologies Conservation Genetics Laboratory. Currently, CCF receives approximately 12,000 visitors annually. Ecotourism dollars spent at the Centre help support cheetah conservation activities.

CHEETAH MUSEUM

Exhibits detailing the history of cheetahs in Namibia and CCF's conservation activities fill the museum hall. Visitors can also walk through an outdoor predator "preyground," a playground that allows people to take the role of predator or prey and test their survival skills.

CHEETAH SANCTUARY

The Centre provides a permanent home for cheetahs that have been orphaned or injured and unable to fend for themselves in the wild. These cheetahs are known as CCF resident cheetahs. Their number fluctuates, but it is generally between 35 and 50. The cost of keeping each resident cheetah is approximately $5,000 annually for food and veterinary care. Cheetah "adoptions" (sponsorships) help underwrite the costs of care.

LIFE TECHNOLOGIES CONSERVATION GENETICS LABORATORY

CCF has built the only fully capable genetics laboratory located at an *in situ* conservation site in Africa. The Life Technologies Conservation Genetics Laboratory is used by CCF researchers studying the cheetah and by researchers from other organiza-

tions studying other species such as, African lion, brown hyena and plants. The lab is in the Visitor Centre, so visitors can easily meet the researchers and learn about their projects.

HAAS FAMILY VETERINARY CLINIC

Having the Haas Family Veterinary Clinic at the Centre enables CCF staff enables the collection of samples from cheetahs taken in by CCF and allows for prompt veterinary care for the cheetahs, dogs, goats and other animals when in need. Dental procedures and surgery can also be performed on site, which is far less stressful to the animal.

MODEL FARM AND DANCING GOAT CREAMERY

The Model Farm is a commercial venture that tests and deploys predator-friendly farming techniques on integrated livestock/wildlife farmlands within CCF's reserve. The Model Farm also serves as a training facility for community members and university students studying agriculture and food sciences. Profits generated by the Model Farm support CCF's conservation and education programs. The primary business on the Model Farm is livestock farming. CCF maintains herds of cattle, goats, and sheep. In 2005, CCF planted grapevines on the farm with an eye towards developing a cheetah-friendly Namibian wine label. In 2013, CCF added an apiary and beekeeping program. In 2009, the Dancing Goat Creamery began producing cheese, ice cream, and fudge made from milk supplied by CCF's Saanen and French Alpine dairy goats (farmed under the protection of CCF Livestock Guarding Dogs). In pioneering these types of small enterprises, CCF provides practical, hands-on training and demonstrates how additional income streams that compliment livestock farming can be created.

CHEETAH CAFÉ

The Cheetah Cafe is located in the Visitor Centre and open daily from 8:00 a.m. – 5:00 p.m. (08:00 -17:00). The café serves locally grown and sourced vegetables, meats and cheeses. Several menu items are made at CCF's Dancing Goat Creamery including delicious ice cream, three cheeses -- feta, chevre and ricotta -- and fudge.

BIOMASS TECHNOLOGY DEMONSTRATION CENTRE

CCF researches, tests and produces clean-burning energy products made from sustainably harvested thorn bush at its Biomass Technology Demonstration Centre (BTDC). BTDC research encompasses a wide range of biomass technologies, including pyrolysis-based electrical generation and the manufacturing of briquette logs, charcoal hex logs and lump charcoal.

BABSON HOUSE

Babson House is a private, three-bedroom accommodation that sleeps up to six people in luxury style. The gated complex overlooks a wildlife habitat that is home to several resident cheetahs. A large veranda offers unparalleled views of the Waterberg Plateau.

CHEETAH VIEW LODGE

The new, five-suite Cheetah View Lodge is built in modern bush chalet style a few minutes' walk from the Visitor Centre. The lodge's accommodations include four units with two beds and a larger "family suite" with two queen beds and a sleeper sofa. A private restaurant with an open-air veranda for lounging and wildlife watching provides full food and beverage services on site.

CAMP LIGHTFOOT

Camp Lightfoot is a permanent tented camping facility for groups of up to 35 persons. It is most often used by school groups visiting CCF for a two-day, immersive, education experience.

Cheetah Conservation Fund
Cheetah Conservation Fund
P.O. Box 1755, Otjiwarongo, Namibia
Phone: +264 067 306 225
Fax +264 067 306 247
E-mail: ccfinfo@iway.na
info@cheetah.org

Cheetah
CONSERVATION FUND

Dr. Laurie Marker is a conservation biologist and research scientist recognized as one of the world's leading experts on the cheetah. As Founder and Executive Director of Cheetah Conservation Fund (CCF), Dr. Marker has pioneered research and developed conservation models and cooperative alliances credited with stabilizing the largest remaining population of wild cheetah. Under her leadership, CCF has grown into a world-class research, education and conservation institution situated near Otjiwarongo, Namibia, on a 100,000-acre private reserve.

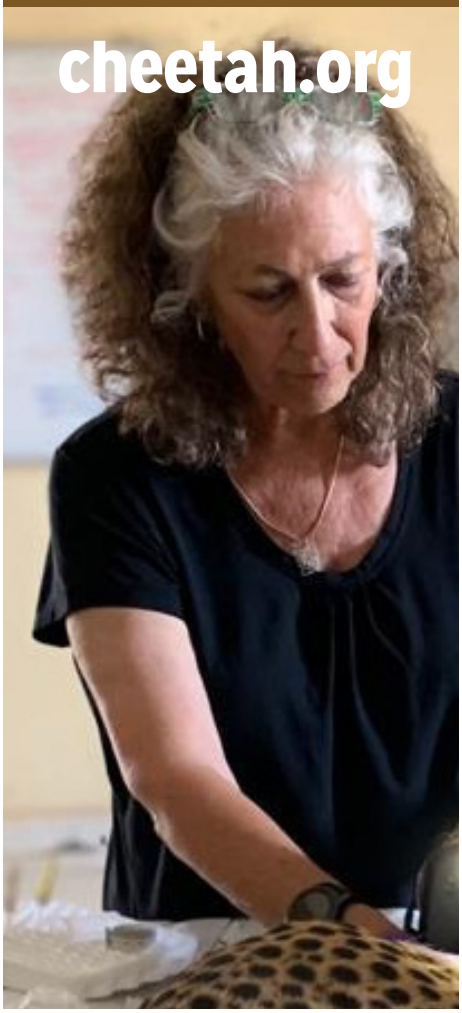
DR. LAURIE MARKER

CCF FOUNDER AND EXECUTIVE DIRECTOR

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

RESEARCH
CONSERVATION
EDUCATION

cheetah.org



Dr. Marker began working with cheetahs at Oregon's Wildlife Safari (1974-1988). While there, she developed one of the most successful captive cheetah breeding programs in the world and initiated a groundbreaking research project that brought her to Namibia for the first time in 1977. She hypothesized that a captive-born cub could be taught to hunt, and she tested this theory with Khayam, a young cheetah she had raised from birth. Dr. Marker successfully taught Khayam to hunt, but more importantly, she discovered livestock farmers in Namibia were killing hundreds of cheetahs each year because they viewed them as threats to their livestock and livelihoods. This prompted her to undertake the first of its kind *in situ* research into cheetah ecology, biology, demographics, genetics and home range. Using the findings of her research, she began developing conservation strategies to mitigate the conflict.

Already a species in peril due to habitat loss and lack of genetic diversity, the actions of Namibia's livestock farmers were driving the cheetah even closer toward extinction and at an accelerated pace. As the Executive Director of the New Opportunities in Animal Health Sciences (NOAHS) Center at the Smithsonian's National Zoo (1988-1991), Dr. Marker searched for an organization or an individual to champion the cheetah from her post in Washington, DC. She traveled back and forth to Namibia for the next 13 years, gathering data and networking with conservation biologists and researchers studying predators, and writing letters.

After an exhaustive but fruitless search, Dr. Marker decided to take on the role herself and dedicate her life to the long-term sustainability of the cheetah. Dr. Marker established the Cheetah Conservation Fund in 1990, and a year later, she permanently relocated to Namibia, establishing a research base in a borrowed farmhouse outside Otjiwarongo. For the first few years, she drove door-to-door in an old Land Rover and surveyed local farmers. These early interactions inspired Dr. Marker to develop the highly effective, non-lethal predator control methods that CCF employs today. Her innovative strategies that balance the needs of people and wildlife sharing land have not only stabilized the cheetah population in Namibia, but have also helped mitigate human-wildlife conflict with large carnivore species in many regions around the globe.

Initially rebuffed by Namibians fearing change, Dr. Marker's rigorous scientific research and holistic conservation programs that consider all stakeholders have gained her the respect of an entire nation. The vital information she has assembled on cheetah health, reproduction, ecology and genetics has proven invaluable in the management of both wild and captive cheetah populations around the world.

Dr. Marker earned her DPhil in Zoology from the University of Oxford in the UK. She has published more than 120 scientific papers in peer-reviewed journals. She is a Steering Committee member for the Natural Resource Department of Namibia University of Science and Technology and an Adjunct Professor at the University of Omaha and Purdue University.
In 2013, Dr. Marker was named an A. D. White Professor-at-Large at Cornell University, where she spends one week as a guest lecturer-in-residence every other year.

In 2015, Dr. Marker was recognized with an Eleanor Roosevelt Val-Kill Medal Award, an E.O. Wilson Biodiversity Technology Pioneer Award, and the Ulysses S. Seal Award for Innovation in Conservation. Dr. Marker has been awarded the Tyler Prize for Environmental Achievement (2010), The Tech Museum of Innovation's Intel Environmental Prize (2008), and is a two-time finalist for the prestigious Indianapolis Prize. She was named a Hero for the Planet by TIME Magazine and has been featured in the page of *Smithsonian, National Geographic, Discover* and *The New York Times*, and appeared on numerous television shows, including *The Tonight Show, Good Morning America, The Charlie Rose Show* and *Today.*

Dr. Marker is the author of *A Future for Cheetahs*, a book detailing the plight of the species and the efforts to save them (with photos by wildlife photographer Suzi Eszterhas) and *Chewbaaka*, an illustrated children's book about CCF's most famous cheetah ambassador. She is the head co-editor of *CHEETAHS: Biology and Conservation,* a comprehensive textbook weaving together the work 150 conservationists and researchers fighting to save Africa's most endangered big cat and the co-author of numerous chapters.

AWARDS

2015 Ulysses S. Seal Award for Innovation in Conservation
2015 E.O. Wilson Biodiversity Technology Pioneer Award
2015 Eleanor Roosevelt Val-Kill Medal Award
2013 International Conservation Caucus Foundation Good Steward Award
2013 Andrew D. White Professor-at-Large, Cornell University
2013 Distinguished Alumni, Eastern Oregon State University
2011 Rainer Arnhold Fellow
2010 The Explorers Club Lowell Thomas Award
2010 Indianapolis Prize Finalist
2010 Tyler Prize for the Environmental Achievement Laureate
2009 BBC World Challenge Finalist
2009 St Andrews Prize for the Environment Finalist
2009 International Wildlife Film Festival Lifetime Achievement Award
2008 Tech Museum Intel Environmental Award
2008 San Diego Zoo Lifetime Achievement Conservation Award
2008 Society of Women Geographers' Gold Medal
2008 Indianapolis Prize Finalist
2005 Living Desert Tracks in the Sand - Conservationist of the Year
2003 Chevron-Texaco Conservationist of the Year
2002 Audi Terra Nova Awards Finalist, Southern Africa
2001 Humanitarian of the Year, Marin County Humane Society
2001 Paul Harris Fellowship, Rotary Club International, Windhoek, Namibia
2000 Burrows Conservation Award, Cincinnati Zoo
2000 Hero for the Planet, Time Magazine
1997 Distinguished Leadership Award, American Biographical Institute
1992 Conservationist of the Year, African Safari Club, Washington, DC
1988 White Rose Award, Oregon's Top Ten Women
1985 Outstanding Young Women of America
1981 Oregon's Young Careerist, Business and Professional Women, Southern Oregon Division

Dr. Laurie Marker speaking at an event in Somaliland


Dr. Laurie Marker caring for orphaned cheetahs confiscated from the illegal pet trade in Somaliland

Cheetah Conservation Fund
Cheetah Conservation Fund
P.O. Box 1755, Otjiwarongo, Namibia
Phone: +264 067 306 225
Fax +264 067 306 247
E-mail: ccfinfo@iway.na
info@cheetah.org

Cheetah
CONSERVATION FUND

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

RESEARCH
CONSERVATION
EDUCATION

The Cheetah Conservation Fund (CCF) maintains the Biomass Technology Demonstration Centre (BTDC) at its Field Research and Education Centre to test, develop and produce clean-burning energy products made from sustainably harvested thorn bush. The objectives of having this facility are to catalyze a biomass industry while restoring encroached habitat and farmlands for wildlife and livestock grazing. With up to seven tons of woody thorn bush per acre, the central Namibia region is an ideal location to demonstrate the full economic potential of biomass and to research sustainable harvest methodologies. Bringing commercial enterprises to central Namibia has the combined benefits of creating much needed employment, generating power for areas that do not have electricity, reducing conflict between carnivores and farmers, and improving farmland productivity.

BIOMASS TECHNOLOGY DEMONSTRATION CENTRE

RESEARCH & EVALUATION

BTDC research encompasses a wide range of biomass technologies with an emphasis on those capable of generating sustained economic enterprises. Initial technology includes manufacturing of briquette logs, charcoal hex logs, lump charcoal, and for pyrolysis-based electrical generation. Phase two will include other promising technology, such as wood pellet production, alternative chipping power trains and Stirling engines.

CCF ecologists conduct long-term monitoring of harvested areas to provide detailed information on habitat recovery. The BTDC team evaluates new machinery and considers how harvest methods can be efficiently and cost-effectively scaled. Commercial biomass operations require large quantities of raw wood delivered at predictable intervals throughout the year, so matching input needs to harvesting equipment, methods and transportation is vital.

Other forms of renewable energy technologies that will be evaluated at the BTDC include photo voltaic (solar) systems, alternative battery and energy storage systems, and micro-grid deployments. As biomass industries expand in central Namibia, the absence of electrical power will be a barrier to success for many villages. It is likely that biomass-based electricity and solar electricity will both be important sources of energy for rural biomass industry, so the BTDC will investigate how to best implement small grids in rural areas.

BIOMASS AS A VIABLE BUSINESS

The BTDC draws on academics, researchers, and engineers to implement, evaluate and validate each technology, determining its suitability for the type of biomass available in the region. As required, equipment and processes are customized. Regular evaluations are made on the overall economic potential of specific industries to assure that cost of production is low enough to result in profitable end sales of biomass products.

Over the past decade, CCF has been leading the way in thorn bush harvest methods. CCF's bush project production of Bushblok is certified by the Forestry Stewardship Council (FSC), a standard that ensures products come from responsibly managed lands and provide environmental, social and economic benefits. This certification indicates the highest standard in forestry management.

With a wide range of installed operating equipment, tuned methods of operation, and a detailed understanding of cost economics and wood harvest methods, the BTDC is the ideal location to demonstrate biomass technologies. The BTDC attracts entrepreneurs, existing companies, international grant foundations, NGOs, and investors from all over the world. By connecting investment capital to businesses and sharing knowledge, the BTDC seeks to catalyze a new growth of biomass industry in central Namibia. With millions of acres of invasive bush, biomass will become a regional economic powerhouse, creating much needed jobs, new tax revenue, and improved livelihoods.

2018 Biomass Technology Day celebration held at CCF's newly finished Biomass Technology Demonstration Centre at CCF's Headquearters in Namibia.

A TEACHING FACILITY

The final role of the BTDC is education and training. The production floor and nearby classrooms at CCF are used to train workers on equipment operation, safety procedures, use of personal protective equipment, employment laws and other relevant topics. Live field training covers planning a harvest, safety in the environment, harvest equipment operation, and implementation of FSC-compliant methods. Community based businesses and entrepreneurs receive additional education on the economics of biomass businesses, distribution and transportation alternatives, and access to local and international capital. Additionally, the BTDC welcomes international and Namibia academic institutions for student education and as a base for continued research.

OUTLOOK FOR THE FUTURE OF BIOMASS

The potential of biomass is huge. With millions of tons of available thorn bush located in a region with high unemployment and little electricity, no other idea could have such an impact on central Namibia. CCF has studied the region for more than a decade. A sustainable, responsible harvest of excess thorn bush is not only possible, but highly desirable. CCF coordinates international donors and investors to fund and support the BTDC. Through continued research, demonstration of related technology and training, CCF intends to catalyze a new wave economic activity in Namibia focused on biomass.

Before harvest: CCF's habitat restoration efforts focus on clearing thickened thorn bush from cheetah habitat. While thorn bush is a native plant, due to the decline of large grazers, the plants become overgrown, clogging the landscape.

After harvest: The cheetah needs open landscape like this to successfully hunt. Research is being conducted on the effects thorn bush removal has on the soil composition and wildlife density.

Cheetah Conservation Fund
Cheetah Conservation Fund
P.O. Box 1755, Otjiwarongo, Namibia
Phone: +264 067 306 225
Fax +264 067 306 247
E-mail: ccfinfo@iway.na
info@cheetah.org

GENERAL INFORMATION

Name: Laurie Marker, DPhil
Title: Founder and Executive Director
Date of Birth: 20 January 1954
Nationality: American
Place of Residence: Namibia

RESEARCH AREAS

- Conservation Biology
- Genetics
- Biomedical
- Health
- Reproduction
- Wildlife Management
- Agriculture
- Biodiversity
- Human Dimensions in Conservation
- Community-Based Natural Resource Management

CURRICULUM VITAE - DR. LAURIE MARKER

EDUCATION AND QUALIFICATIONS

1998-2003: DPhil, Department of Zoology, University of Oxford, United Kingdom.
Thesis Title: Aspects of Cheetah (*Acinonyx jubatus*) Biology, Ecology and Conservation Strategies on Namibian Farmlands.
1986-1990: Bachelor of Science, Eastern Oregon State University, La Grande, Oregon
1979-1980: Umpqua College, Roseburg, Oregon
1972-1973: Napa College, Napa Valley, California
1971-1972: San Francisco State University, San Francisco, California

PROFESSIONAL EXPERIENCE

1990 to present: Founder and Executive Director, Cheetah Conservation Fund, Namibia, Africa
1991 to present: Research Fellow, NOAHS Center, National Zoo, Smithsonian Institution, Washington, DC
1988-1991: Executive Director, NOAHS Center, National Zoo, Washington, DC
1980-1988: Director, Marketing and Education, Wildlife Safari, Winston, Oregon
1977-1988: Cheetah Curator, Wildlife Safari, Oregon
1976-1980: Veterinary Clinic Supervisor, Wildlife Safari, Oregon
1974-1976: Veterinary Clinic Assistant, Wildlife Safari, Oregon
1973-1988: Co-Owner, Jonicole Vineyards and Winery, Oregon

WORK-RELATED ACTIVITIES

2012 to present: Steering Committee, Natural Resource Department, Namibia University of Science and Tech.
2011 to present: Steering Committee, Greater Waterberg Complex, Namibia
2010 to present: Adjunct Professor, University of Omaha, Nebraska, USA
2008 to present: Board Member, Oregon Cougar Action Team (ORCAT)
2008 to present: Cat Advisory Council Member, Panthera
2002 to present: Adjunct professor, Purdue University, Indiana, USA
2001 to present: Core Group Member, IUCN/SSC Cat Specialist Group -
1997 to present: Chair, Large Carnivore Management Association of Namibia
1997 to 2012: Conservancy Assoc. of Namibia, Executive Committee (Vice Chair 2000- 06, Chair 07 – 11).
1996 to present: Executive Committee, Waterberg Conservancy
1996 to present: Veterinary Association of Namibia
1995 to 2002: Cheetah Species Coordinator, African Preservation Programme of the African Association of Zoological Gardens and Aquaria (PAAZAB)
1995 to 2001: Co-Chair, IUCN/SSC Cat Specialist Group
1993 to present: Namibia Professional Hunting Association, Rare Species Committee (1994-2000)
1991 to present: Member, IUCN/SSC, Conservation Breeding Specialist Group
1988 to present: Member, IUCN/SSC Cat Specialist Group
1988 to 2000: Advisor, Cheetah Species Survival Plan (SSP), Propagation Committee, Association of Zoos and Aquariums
1987 to present: Founding International Cheetah Studbook Keeper
1987-1988: Species Coordinator Cheetah SSP
1984-1988: Founding Member, Cheetah SSP, Propagation Committee,
1982-1998: Founding North American Regional Cheetah Studbook
1977-1978: Re-introduction Research of Cheetah in Namibia

RELATED ORGANIZATIONS

2010 to present: Cosmos Club (Washington DC)
2007 to present: Explorers Club (New York)
1990 to present: Society of Women Geographers
1985 to present: World Conservation Union (IUCN)
1982 to 2010: American Association of Zoological Parks and Aquariums
1974-1992: American Association of Zoo Keepers
1975-1992: National Pygmy Goat Association
1979-1991: National Pygmy Goat Judge
1979-1986: Board of Directors, National Pygmy Goat Association
1985-1987: Judges Training Committee National Pygmy Goat Association
1986-1991: Breed Standard Committee National Pygmy Goat Association

HONORS:

2015 Ulysses S. Seal Award for Innovation in Conservation
2015 E.O. Wilson Biodiversity Technology Pioneer Award
2015 Eleanor Roosevelt Val-Kill Medal Award
2013 International Conservation Caucus Foundation Good Steward Award
2013 Andrew D. White Professor-at-Large, Cornell University
2013 Distinguished Alumni, Eastern Oregon State University
2011-2012 Rainer Arnhold Fellow
2010 The Explorers Club Lowell Thomas Award
2010 Indianapolis Prize Finalist
2010 Tyler Prize for the Environmental Achievement Laureate
2009 BBC World Challenge Finalist
2009 St Andrews Prize for the Environment Finalist
2009 International Wildlife Film Festival Lifetime Achievement Award
2008 Tech Museum Intel Environmental Award
2008 San Diego Zoo Lifetime Achievement Conservation Award
2008 Society of Women Geographers' Gold Medal
2008 Indianapolis Prize Finalist
2005 Living Desert's Track's in the Sand - Conservationist of the Year
2003 Chevron-Texaco Conservationist of the Year
2002 Audi Terra Nova Awards Finalist, Southern Africa
2001 Humanitarian of the Year, Marin County Humane Society
2001 Paul Harris Fellowship, Rotary Club International, Windhoek, Namibia
2000 Burrows Conservation Award, Cincinnati Zoo
2000 Hero for the Planet, Time Magazine
1997 Distinguished Leadership Award, American Biographical Institute
1992 Conservationist of the Year, African Safari Club, Washington, DC
1988 White Rose Award, Oregon's Top Ten Women
1985 Outstanding Young Women of America
1981 Oregon's Young Careerist, Business and Professional Women, for Roseburg, Southern Oregon Division and State of Oregon

SELECTED PUBLICATIONS:

1. Marker, L.L.: 1983, 1984, 1985, 1986 North American Regional Cheetah Studbook, Wildlife Safari, Winston, 1983, 1985, 1986, 1987

2. Marker, L.L.: North American Cheetah Studbook Questionnaire Survey, Wildlife Safari, Winston, 1985.

3. Marker, L.: International Cheetah Studbooks, Smithsonian Press, Washington, DC, 1988, 1989, 1990, 1991, 1992, 1993, 1995, 1996, 1997, 1999, 2000, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2012, 2013.

4. Marker Kraus, L.: International Cheetah Studbook Questionnaire Summary, Smithsonian Press, Washington DC, 1990.

5. O'Brien, S.J., Roelke, M.E., Marker, L., Newman, A., Winkler, C.A., Meltzer, D., Colly, L., Evermann, J.F., Bush, M., and Wildt, D.E. Genetic basis for species vulnerability in the cheetah. Science 227: 1428 1434, 1985.

6. Marker, L.L, and O'Brien, S.J. Captive breeding of the cheetah (Acinonyx jubatus) in North American zoos (1871 1986), Zoo Biology. 8: 3 16, 1989.

7. Heeney, J.F., Evermann, J.F., McKeirnan, A.J., Marker Kraus, L., Roelke, M.E., Bush, M., Wildt, D.E., Meltzer, D.G., Colly, L., Lucas, J., Manton, V.J., and O'Brien, S.J. Prevalence and implications of coronavirus infections of captive and free ranging cheetahs (Acinonyx jubatus). Journal of Virology. 64(5): 1964 72, 1990.

Cheetah Conservation Fund
P.O. Box 1755, Otjiwarongo, Namibia

Phone: +264 067 306 225
Fax +264 067 306 247

E-mail: director@cheetah.org

8. Marker-Kraus, L., and Kraus, D. Investigative trip to Zimbabwe and Namibia. Cat News. 12:16-17. 1990.

9. Marker-Kraus, L., and Grisham, J. Status of the North American Cheetah Population, Zoo Biology, 12:5-18, 1993.

10. Marker-Kraus, L., and Kraus, D. History of cheetah in Namibia. SWARA Nov/Dec. 1993.

11. Marker-Kraus, L., and Kraus, D. How Long Will the Cheetah Run. The New Explorers, Weldon Owens Publishing, Sydney, 1995.

12. Marker-Kraus, L., and Kraus, D. The Namibian Free-ranging Cheetah. Environmental Conservation, 21(4): 369-70, 1995.

13. O'Brien, S.J, Martenson, J.S., Wildt, D.E., Bush, M., Winkler, C.A., Roelke, M.E., Marker-Kraus, L., and Grisham, J. The cheetah's legacy: Retrospective interpretations. IUDZG, The World Zoo Organization, Scientific Session, 1-5 October 1995.

14. Marker-Kraus, L., Kraus, D., Barnett, D., and Hurlbut, S. Cheetah Survival on Namibian Farmlands. Cheetah Conservation Publication, Windhoek, 1996.

15. Berry, H., Bush, M., Davidson, B., Forge, O., Fox, B., Grisham, J., Howe, M., Hurlbut, S., Marker-Kraus, L., Martenson, J., Munson, L., Nowell, K., Schumann, M., Shille, T., Stander, F., Venzke, K., Wagener, T., Wildt, D., Ellis S., and Seal, U. (Editors) 1997. 1996 Population Habitat Viability Assessment for the Namibian Cheetah and Lion. IUCN/SSC Conservation Breeding Specialist Group.

16. Marker-Kraus, L. and Kraus, D. Conservation Strategies for the Long-term Survival of the Cheetah Acinonyx jubatus by the Cheetah Conservation Fund. International Zoo Yearbook, 35: 59-66, 1997

17. Marker-Kraus, L. Captive History of the Cheetah, Acinonyx jubatus, in the World's Zoos 1829-1994. International Zoo Yearbook, 35: 27-43, 1997.

18. Marker, L. The Role of the South African zoos in the survival of the cheetah. Proceedings of the Annual Pan African Association of Zoos, Aquariums and Botanical Gardens Conference, May 1997.

19. Munson, L., and Marker, L. The impact of capture and captivity on the health of Namibian farmland cheetahs (Acinonyx jubatus). Proceedings of the 50th Namibian Vet Congress, Sept. 1997.

20. Marker, L. Morphological abnormalities in Namibian cheetahs (Acinonyx jubatus). Proceedings of the 50th Namibian Vet Congress, Sept. 1997.

21. Munson, L., Marker, L., O'Brien, S.J., Everman, J.F., and Spencer, J.A. Prevalences of antibodies to viral diseases in Namibian farmland cheetahs (Acinonyx jubatus). Proceedings of the 50th Namibian Vet. Congress, Sept. 1997.

22. Terio, K.A. and Marker, L. Measuring gonadal and adrenal steroids in the feces of wild and wild-caught Namibian cheetah (Acinonyx jubatus). Proceedings of the 50th Namibian Vet. Congress, Sept. 1997.

23. Marker, L. Lymphosarcoma in a captive Namibian cheetah (Acinonyx jubatus), a case study. Proceedings of the 50th Namibian Vet Congress, Sept. 1997.

24. Muroua, D. and Marker, L. The Cheetah Conservation Fund's Mission: To Ensure Long-term Survival of Cheetah and their Ecosystem. Proceedings of the National AZA Conference, Sept. 1997.

25. Marker, L. Current Status of the Cheetah (Acinonyx jubatus). Cheetah Symposium, South African Vet Association, 1998.

26. Marker, L. and Schumann, B.D. Cheetahs (Acinonyx jubatus) as problem animals: Management of Cheetahs on Private Land in Namibia. Cheetah Symposium, South African Vet Association. 1998.

27. Marker, L. Aspects of the ecology of the Cheetah (Acinonyx jubatus) on north central Namibian farmlands.

Cheetah Conservation Fund
P.O. Box 1755, Otjiwarongo, Namibia

Phone: +264 067 306 225
Fax +264 067 306 247

E-mail: director@cheetah.org

Namibia Scientific Society Journal, 48: 40-48, 2000.
28. Marker, L. Reducing conflicts between Namibian farmers and cheetahs. Book Chapter In. Wildlife, Land and People, Priorities for the 21st Centry. Eds: Field, R., Warren, R.J., Okama, A., and Severt, P.R. Proceedings of the Second International Wildlife Management Congress. The Wildlife Society, Behtesda, Maryland, USA. Pages 184-188 2001.
29. Bartels, P., Berry, H.H., Cilliers, D., Dickman, A., Durant, S.M., Grisham, J., Marker, L., Munson, L., Mulama, M., Schoeman, B., Tubbesing, U., Venter, L., Wildt, D.E., Ellis, S., and Freidmann, Y., editors. Global Cheetah Conservation Action Plan - Final Report from the Workshop. Global Cheetah Conservation Action Plan - Workshop held at Shumba Valley Lodge in South Africa from the 27th to the 30th of August 2001. 2002.
30. Bartels, P., Bouwer, V., Crosier, A., Cilliers, D., Durant, S.M., Grisham, J., Marker, L., Wildt, D.E., and Friedmann, Y., editors. Global Cheetah Action Plan Review final workshop report. 2002.
31. Marker, L. Aspects of Namibian Cheetah (Acinonyx jubatus) Biology, Ecology and Conservation Strategies. DPhil Thesis, Department of Zoology, University of Oxford. 2002.
32. Marker, L.L., Muntifering, J.R., Dickman, A.J., Mills, M.G.L., and Macdonald, D.W. Quantifying prey preferences of free-ranging Namibian cheetahs. South African Journal of Wildlife Research, 33: 43-53, 2002.
33. Marker, L., Dickman, A.J., Jeo, R.M., Mills, M.G.L., and Macdonald, D.W. Demography of the Namibian cheetah. Biological Conservation. 114(3): 413-425. 2003.
34. Marker, L., Dickman, A.J., Mills, M.G.L., and Macdonald, D.W. Aspects of the management of cheetahs trapped on Namibian farmlands. Biological Conservation 114(3): 401-412. 2003.
35. Marker, L.L., and Dickman, A.J. Morphology, physical condition and growth of the cheetah (Acinonyx jubatus jubatus). Journal of Mammalogy, 84: 840-850, 2003.
36. Marker, L., Mills, M.G.L., and MacDonald, D.W. Factors influencing perceptions and tolerance towards cheetahs on Namibian farmlands. Conservation Biology. 17(5): 1-9, 2003.
37. Munson, L., Marker, L., Dubovi, E., Spencer, J.A., Evermann, J.F., and O'Brien, S.J. A Serosurvey of Viral Infections in Wild Namibian Cheetahs (Acinonyx jubatus). Journal of Wildlife Diseases 39(3): 690-695, 2003.
38. Marker, L. Munson, L., Basson, P.A., and Quackenbush, S. Lymphosarcoma Associated with Feline Leukemia Virus infection in a Captive Namibian Cheetah (Acinonyx jubatus). Journal of Wildlife Diseases, 39: 922-926, 2003.
39. Marker, L. and Dickman, A. Conserving Cheetahs Outside Protected Areas: An Example from Namibian Farmlands. Cat News, 38: 24-25, 2003.
40. Kerio, K.A., Marker, L., Overstrom, E.W., and Brown, J.L. Analysis of ovarian and adrenal activity in Namibian cheetahs. South African Journal of Wildlife Research. 33(2): 71-78, 2003.
41. Bashir, S., Daly, B., Durant, S.M., Förster, H., Grisham, J., Marker, L., Wilson, K., and Friedmann, Y. (editors). Global Cheetah (Acinonyx jubatus) Monitoring Workshop. Final workshop report. Conservation Breeding Specialist Group (SSC / IUCN). Endangered Wildlife Trust. 2004.
42. Marker, L.L., and Dickman, A.J. Dental anomalies and incidence of palatal erosion in Namibian cheetahs (Acinonyx jubatus jubatus). Journal of Mammalogy, 85(1): 13-18, 2004.
43. Marker, L. and Dickman, A.J. Human aspects of Cheetah Conservation: Lessons learned from the Namibian farmlands. Human Dimensions of Wildlife. 4(9): 297-305, 2004.
44. Molia, S., Chomel, B.B., Kasten, R.W., Leutenegger, C.M., Steele, B.R., Marker, L., Martenson, J.S., Keet, D.F., Bengis, R.G., Peterson, R.P., Munson, L., and O'Brien, S.J. Prevalence of Bartonella infection in wild African lions (Panthera leo) and cheetahs (Acinonyx jubatus). Veterinary Microbiology, 100: ½, 31-41. 2004.
45. Terio, K.A., Marker, L. and Munson, L. Evidence for Chronic Stress in Captive But Not Free-Ranging Cheetahs (Acinonyx jubatus) Based on Adrenal Morphology and Function. Journal of Wildlife Diseases, 40(2): 259-266. 2004.
46. Terio, K.A., Munson, L., Marker, L., Aldridge, B.M. and Solnick, J.V. Comparison of Helicobacter spp. in Cheetahs (Acinonyx jubatus) and without Gastritis. Journal of Clinical Microbiology, 43(1): 229-234. Jan. 2005.
47. Munson, L., Terio, K., Worley, M., Jago, M., Bagot-Smith, A. and Marker, L. Extrinsic Factors Significantly Affect Patterns of Disease in Free-Ranging and Captive Cheetah (Acinonyx jubatus) Populations. Journal of Wildlife Diseases, 41(3): 542-548. 2005.
48. Marker, L.L., and Dickman, A.J. Factors affecting leopard (Panthera pardus) spatial ecology, with particular reference to Namibian farmlands. South African Journal of Wildlife Research 35(2): 105-115, 2005.
49. Marker, L.L., and Dickman, A.J. Notes on the spatial ecology of caracals (Felis caracal), with particular reference to Namibian farmlands. African Journal of Ecology. 43: 73-76. 2005.
50. Marker, L., Dickman, A.J., and Schumann, M. Using Livestock Guarding Dogs as conflict resolution strategy. Carnivore Damage Prevention News. Bern, Switzerland. 8: 28-32, 2005.
51. Marker, L., Dickman A., and Macdonald, D. Perceived effectiveness of Livestock Guarding Dogs placed on

Namibian Farms. Journal of Rangeland Management. 58(4): 329-336, 2005.
52. Marker, L.L., Dickman, A.J., and Macdonald, D.W. Survivorship of livestock guarding Dogs implications for human-predator conflict resolution. Journal of Rangeland Management. 58(4): 337-343, 2005.
53. Wacher, T., De Smet, K., Belbachir, F., Belbachir-Bazi, A., Fellous, A., Belghoul, M. and Marker, L. Sahelo–Saharan Interest Group Wildlife Surveys. Central Ahaggar Mountains, iv + 34 pp. March 2005.
54. Dickman, A., Marnewick, K., Daly, B., Good, K., Marker, L., Schumann, B., Ezequiel, F., de Jonge, M., Stein, A., Hengali, J., Eddins, S., Cilliers, D., Selebatso, M., Klein, R., Melzheimer, J., Beckhelling, A., Schulze, S., Carlisle, G. and Friedmann, Y., (editors). 2006. Southern African Cheetah (Acinonyx jubatus) Conservation Planning Workshop. Final workshop report. Conservation Breeding Specialist Group (SSC / IUCN). Endangered Wildlife Trust.
55. Crosier, A.E., Pukazhenthi, B.S., Henghali, J.N., Howard, J.G., Dickman, A.J., Marker, L., and Wildt, D.E. Cryopreservation of spermatozoa from wild-born Namibian cheetahs (Acinonyx jubatus) and influence of glycerol on cryosurvival. Cryobiology 52: 169-181, 2006.
56. Muntifering, J.R., Dickman, A.J., Perlow, L.M., Hruska, T., Ryan, P.G., Marker, L.L. and Jeo, R.M. Managing the matrix for large carnivores: a novel approach and perspective from cheetah (Acinonyx jubatus) habitat suitability modelling. Animal Conservation 9:103-112. 2006.
57. Schumann, M., Schumann, B., Dickman, A., Watson, L.H and. Marker, L. Assessing the use of swing gates in game fences as a potential non-lethal predator exclusion technique. South African Journal of Wildlife Research 6(2): 173-181. October 2006.
58. Busby, G.B.J., Gottelli, D., Durant, S., Wacher, T., Marker, L., Belbachir, F., De Smet, K., Belbachir-Bazi, A., Fellous, A., and Belghoul, M. A Report from the Sahelo Saharan Interest Group – Office du Parc National de l'Ahaggar Survey, Algeria (March 2005) - Part 5: Using Molecular Genetics to study the Presence of Endangered Carnivores (November 2006). Unpublished Report. vi + 19 pp. 2006
59. Crosier, A.E., Marker, L., Howard, J., Pukazhenthi, B.S., Henghali, J.N., and Wildt, D.E. Ejaculate traits in the Namibia cheetah (Acinonyx jubatus): influence of age, season and captivity. Reproduction, Fertility and Development, 19: 370-382. 2007.
60. Marker, L., Dickman, A., Wilkinson, C., Schumann B., and Fabiano E. The Namibian Cheetah: Status Report. IUCN/SSC Cat News Special Issue N˚ 3, December 2007.
61. Purchase, N., Marker, L., Marnewick, K., Klein, R., and Williams, S. Regional Assessment of the Status, Distribution and Conservation Needs of Cheetahs in Southern Africa. Cat News, Special Issue No 3. 2007.
62. Marker, L.L., Dickman, A.J., Mills, M.G.L., Jeo, R.M., and Macdonald, D.W. Spatial Ecology of Cheetahs (Acinonyx jubatus) on North-central Namibian farmlands. Journal of Zoology, London. 226-238, 2008.
63. Marker, L., Pearks-Wilkerson, A.J., Sarno, R.J., Martenson, J., Breitenmoser-Wursten, C., O'Brien, S.J., and Johnson, W.E. Molecular Genetic Insights on Cheetah (Acinonyx jubatus) Ecology and Conservation in Namibia. Journal of Heredity. 99(1): 2-13, 2008.
64. Marker, L.L. Cheetah Conservation Strategies in Namibia - A Model for the Future. African Wildlife Conference Proceedings. Zoo Dvur Kralove (Czech Republic). May 6-11, 2008.
65. Marker, L.L. Cheetah Survival Strategies in Namibia. Wild Cat News (The Cougar Network). 4(1):3-8. Spring 2008.
66. Marker, L., Fabiano, E¬., and Nghikembua, M. The Use of Remote Camera Traps to Estimate Density of Free-Ranging Cheetahs in North-Central Namibia. Cat News (49): 22-24. 2008.
67. Busby, G.B.J., Gottelli, D., Wacher, T., Marker, L., Belbachir, F., De Smet, K., Belbachir-Bazi, A., Fellous, A., Belghoul, M., and Durant, S.M. Leopards and cheetahs in southern Algeria. Fauna & Flora International, Oryx, 43(3): 412–415. 2008.
68. Crosier, A.E., Henghali, J.N., Howard, J., Pukazhenthi, B.S., Terrell, K.A., Marker, L. and Wildt, D. Improved Quality of Cryopreserved Cheetah (Acinonyx jubatus) Spermatozoa After Centrifugation Through Accudenz. Journal of Andrology.30(3) May/June 2009.
69. Marker, L. Overview of Long-Term Health, Reproduction and Genetic Research on Namibia Cheetah (Acinonyx jubatus). International Conference on Diseases of Zoo and Wild Animals. Netherlands. May 2009.
70. Marker, L. Overview of Long-Term Health, Reproduction and Genetic Research on Namibia Cheetah (Acinonyx jubatus). International Conference on Diseases of Zoo and Wild Animals. Netherlands. May 2009.
71. Marker, L., and Sivamani, S. Policy for human-leopard conflict management in India. Cat News. 50, Spring 2009.
72. Marker, L.L., Fabiano, E. and Nghikembua, M. A rapid ecological survey in the Iona National Park, Namibe, Angola, March 2010, Cheetah Conservation Fund, Otjiwarongo, Namibia. 2010
73. Stein, A.B., Erckie, B., Fuller, T.K. and Marker, L. Camera trapping as a method for monitoring rhino populations

within the Waterberg Plateau Park, Namibia. Pachyderm. 48: 67-70. July–December 2010.
74. Marker, L., Dickman, A.J., Mills, M.G.L., and Macdonald, D.W. Cheetahs and Ranches in Namibia: A Case Study. Book Chapter In: Biology and Conservation of Wild Felids. Eds: Macdonald, D.W. and Loveridge, J. Oxford University Press. 353. 2010.
75. Shaw, D., and Marker, L. (Ed). The Conservancy Association of Namibia: An Overview of Freehold Conservancies. CANAM, Windhoek. 2011.
76. Stein, A.B., Fuller, T. K., DeStefano, S., and Marker, L.L. Leopard population and home range estimates in north-central Namibia. African Journal of Ecology. pp 1 – 5, 2011.
77. Crosier, A.E., Comizzoli, P., Baker, T., Davidson, A., Munson, L., Howard, J., Marker, L.L. and Wildt, D.E. Increasing Age Influences Uterine Integrity, but Not Ovarian Function or Oocyte Quality in the Cheetah (Acinonyx jubatus). Biology of Reproduction 85: 243–253. August 2011
78. Terrell, K.A., Wildt, D.E., Anthony, N.M., Bavister, B.D., Leibo, S.P., Penfold, L.M., Marker, L.L., and Crosier, A.E. Oxidative Phosphorylation Is Essential for Felid Sperm Function, but Is Substantially Lower in Cheetah (Acinonyx jubatus) Compared to Domestic Cat (Felis catus) Ejaculate. Biology of Reproduction 85: 473–481. 2011.
79. Farhadinia, M. S., Hosseini-Zavarei, F., Nezami, B., Harati, H., Absalan, H., Fabiano, E. and Marker, L. L. Feeding ecology of the Asiatic cheetah Acinonyx jubatus venaticusin in low prey habitats in Northeastern Iran: implications for effective conservation. Journal of Arid Environments. 8:206-2011. December 2012.
80. Marker, L. Reintroduction of Cheetah to Uzbekistan – feasibility study Field Trip Report 10 August 2012. Cheetah Conservation Fund Technical Report. Otjiwarongo. 2012.
81. Kaelin, C.B., Xu X., Hong, L.Z., David, V.A., McGowan, K.A., Schmidt-Küntzel, A., Roelke, M.E., Pino, J., Pontius, J., Cooper, G.M., Manuel, H., Swanson, W.F., Marker, L., Harper, C.K., van Dyk, A., Yue, B., Mullikin, J.C., Warren, W.C., Eizirik, E., Kos, L., O'Brien, S.J., Barsh, G.S., and Menotti-Raymond, M. Specifying and sustaining pigmentation patterns in domestic and wild cats. Science. 337(6101):1536-41.September 2012.
82. Mény, M., Schmidt-Küntzel, A. and Marker, L. Diagnosis-based treatment of helminths in captive and wild Cheetahs (Acinonyx jubatus). Journal of Zoo and Wildlife Medicine 43(4):934-938. 2012.
83. Johnson, S., Marker, L., Mengersen, K., Gordon C.H., Melzheimer, J., Schmidt-Küntzel, A., Nghikembua, M., Fabiano, E., Henghali, J., and Wachter, B. Modeling the viability of the free-ranging cheetah population in Namibia: an object-oriented Bayesian network approach. Ecosphere. 4(7):90. 2013.
84. Stein, A. B., Fuller, T. K., and Marker, L. L. Brown hyena feeding ecology on Namibian farmlands: consequences of a depauperate large carnivore fauna. So. African Journal of Wildlife Research. 43(1):27-32. 2013.
85. Potgeiter, G. C., Marker, L.L., Kerley, G.I.H., and Avenant, N. Why Namibian farmers are satisfied with their livestock guarding dogs. Human Dimensions in Wildlife. 8(6): 403-415. 2013.
86. Rust, N., and Marker, L. Cost of carnivore coexistence on communal and resettled land in Namibia. Environmental Conservation. 3:1-9. 2013.
87. Rust, N., and Marker, L. Attitudes towards predators and conservancies amongst Namibian communal farmers. Human Dimensions of Wildlife. 18:463–468. 2013.
88. Gehring, T.M., VerCauteren, K., Landry, J-M., and Marker, L. Dogs as mediators of conservation conflicts. Book Chapter. In. Free-Ranging Dogs and Wildlife Conservation. Ed: Gompper, M.E. Oxford University Press, Oxford. 336 pages. 2013.
89. Marker, L. and Eszterhas, S. A Future for Cheetahs. Cheetah Conservation Fund. 2014.
90. Kaiser, C., Wernery, U., Kinne, J., Marker, L. and Liesegang, A. The role of Copper and Vitamin A- Deficiencies leading to neurological signs in captive cheetahs (Acinonyx jubatus) and lions (Panthera leo) in the United Arab Emirates. Food and Nutrition Sciences. 5(20): DOI: 10.4236/fns.2014.520209. October 2014.
91. Rust, N., Nghikembua, M., Kasser, J., and Marker, L. Environmental factors affect swing gates as a barrier to large carnivores entering game farms. African Journal of Ecology. DOI: 10.1111/aje.12188 (first published online: 23 DEC 2014).
92. Marker, L., and Boast, L. Human Wildlife Conflict 10 Years Later – Lessons learnt and their application to Cheetah Conservation. Human Dimensions of Wildlife. 20(4):1-8. July2015.
93. Franklin, A. D., Schmidt-Küntzel, A., Terio, K. A., Marker, L., and Crosier, A. E. Serum Amyloid A Protein Concentration in Blood is Influenced by Genetic Differences in the Cheetah (Acinonyx jubatus). Journal of Heredity. 107(2): 115-121 (first published online November 19, 2015). 2016.
94. Flacke, G, L., Schmidt-Küntzel, A., and Marker, L. Chronic multifocal ulcerative dermatitis associated with Feline Herpesvirus-1 in a captive cheetah (Acinonyx jubatus) in Namibia. Journal of Zoo and Wildlife Diseases. 46(3): 641-646. September 2015.
95. Marrow, J. C., Woc-Colburn, M., Hayek, L. C., Marker, L., and Murray, S. Comparison of two a2-adrenergic

agonists on urine contamination of semen collected by electroejaculation in captive and semi-free ranging cheetah (Acinonyx jubatus). Journal of Zoo and Wildlife Diseases. 2015.
96. Weise, F.J., Lemeris Jr, J., Stratford, K. J., van Vuuren, R. J., Munro, S. J., Crawford, S. J. Marker, L. L., and Stein, A. B. A home away from home: insights from successful leopard (Panthera pardus) translocations. Biodiversity Conservation, 24(7): 1755-1774. DOI 10.1007/s10531-015-0895-7. 10 March 2015.
97. Potgieter, G. C., Marker, L.L., and Kerley, G. I. H. More Bark than Bite? The Role of Livestock Guarding Dogs in Predator Control on Namibian Farmlands. Fauna and Flora International. Oryx. 50(3): 514-522. Published online: 20 May 2015.
98. Dobrynin, P., Liu, S., Tamazian, G., Zijun Xiong, G., Yurchenko, A. A., Krasheninnikova, K., Kliver, S., Schmidt-Küntzel, A., Koepfli, K., Johnson, W., Kuderna, L.F.K., García-Pérez, R., de Manuel, M., Godinez, R., Komissarov, A., Makunin, A., Brukhin, V., Qiu, W., Zhou, L., Li, F., Yi, J., Driscoll, C., Antunes, A., Oleksy, T.K., Eizirik; E., Perelman, P., Roelke, M., Wildt, D., Diekhans, M., Marques-Bonet, T., Marker, L., Bhak, J., Wang, J., Zhang, G., and O'Brien, S.J. Genomic legacy of the African cheetah, Acinonyx jubatus. Genome Biology. 16:277. 2015.
99. Switzer A.D., Munson L., Wilkins P., Hoffmaster A., and Marker, L. Free-ranging Namibian farmland cheetahs (Acinonyx jubatus) demonstrate immunologic naivety to anthrax (Bacillus anthracis). Journal of Zoo and Wildlife Diseases. 2016.
100. Buyer, J.S, Schmidt-Küntzel, A., Nghikembua, M., Maul, J.E., and Marker, L. Soil microbial communities following bush removal in a Namibian savannah. SOIL, 2: 101–110, 2016.
101. Terrell, K.A., Wildt, D.E., Anthony, N.M., Bavister, B.D. Leibo, S.P., Penfold, L.M., Marker, L.L. and Crosier, A.E. Glycolytic Enzyme Activity is Essential for Domestic Cat (Felis catus) and Cheetah (Acinonyx jubatus) Sperm Motility and Viability in a Sugar-Free Medium. Biology of Reproduction. 84(6): 1198-206. doi: 10. 95/biolreprod.110.090225. Epub 2011 Feb 2016. June 2011.
102. Terrell, K.A., Crosier, A.E., Wildt, D.E., O'Brien, S.J., Anthony, N.M., Marker, L,, and Johnson, W.E. Continued decline in genetic diversity among wild cheetahs (Acinonyx jubatus) without further loss of semen quality. Biological Conservation. 200: 192–199. 2016.
103. Nghikembua M., Harris J., Tregenza T., and Marker L. Interactions between bush encroachment and large carnivore habitat selection: a case study on GPS satellite collared cheetahs in northern Namibia. OJF 6(4). July 2016.
104. Buyer, J. S, Schmidt-Küntzel, A., Nghikembua, M., Maul, J.E., and Marker, L. Soil microbial communities following bush removal in a Namibian savannah. SOIL, 2: 101–110, www.soil-journal.net/2/101/2016/ doi:10.5194/soil-2-101-2016. 2016.
105. McGowan, N.E., Marks, N.J., Marker, L., Schmidt-Küntzel, A., Maule, A.G., and Scantlebury, M. No temperature limit for hunting carnivores (in revision).
106. Walker, E.H., Nghikembua, M., Bibles, B., and Marker, L. Scent-post selection in free-ranging Namibian cheetahs. Global Ecology and Conservation. (8): 55–57. 2016.
107. Durant, S.M., Mitchell, N., Groom, R., Pettorelli, N., Ipavec, A., Jacobson, A., Woodroffe, R., Bohm, M., , Hunter, L. T.B., Becker, M.S., Broekuis, F., Bashir, S., Andresen, L., Aschenborn, O., Beddiaf, M., Belbachir, F., Belbachir-Bazi, A., Berbash, A., Brandao de Matos Machado, I., Breitenmoser, C., Chege, M., Cilliers, D., Davies-Mostert, H., Dickman, A.J., Ezekiel, F., Farhadinia, M.S., Funston, P., Henschel, P., Horgan, J., de Iongh, H.H., Jowkar, H., Klein, R., Lindsey, P.A., Marker, L., Marnewick, K., Melzheimer, J., Merkle, J., M'soka, J., Msuha, M., O'Neill, H., Parker, M., Purchase, G., Sahailou, S., Saidu, Y., Samna, A., Schmidt-Kuntzel, A., Selebatso, E., Sogbohossou , E.A., Soultan, A., Stone, E., van der Meer, E., van Vuuren, R., Wykstra, M., and Young-Overton, K. The global decline of cheetah Acinonyx jubatus and what it means for conservation. Proceedings of the National Academy of Sciences of the United States of America. doi: 10.1073/pnas.1611122114. 2016.
108. Xu, X., Dong, G., Schmidt-Küntzel, A., Zhang, X., Zhuang, Y., Fang, R., Sun, X., Hu, X., Zhang, T., Yang, H., Zhang, D., Marker, L., Jiang, Z., Li, L., and Luo, S. The genetics of tiger pelage color variations. Cell Research. doi:10.1038/cr.2017.32. 10 March 2017.
109. Marker, L., Boast, L. and Schmidt-Kuntzel, A. (2018). Biodiversity of the World: Conservation from Genes to Landscape. Elsevier. San Diego, CA.
110. Marker, L., Grisham, J., and Brewer, B. A brief history of cheetah conservation. Book Chapter In. Biodiversity of the Wold-Cheetahs: Biology and Conservation. Eds: Maker, L., Boast, L.K., and Schmidt-Küntzel, A. San Diego, Elsevier. 3-14. 2018.
111. Pang, B., Valkenburgh, B.V., Kitchell, K.F. Jr., Dickman, A., and Marker, L. History of the cheetah-human relationship. Book Chapter In. Biodiversity of the World--Cheetahs: Biology and Conservation. Eds: Maker, L., Boast L.K. and Schmidt-Küntzel, A. San Diego, Elsevier. 17-23. 2018.
112. Marker, L., Cristescu, B., Morrison, T., Flyman, M.V., Horgan, J., Sogbohossou, E.A., Bissett, C., van der Merwe, V.,

de Matos Machado I.B., Fabiano, E., van der Meer, E., Aschenborn, O., Melzheimer, J., Young-Overton, K., Farhadinia, M., Wykstra, M., Chege, M., Samna, A., Amir, O.G., sh. Mohanun, A., Paulos, O.D., Nhabanga, A.R., M'soka, J.L.J., Belbachir, F., Ashenafi, Z.T., and Nghikembua, M.T. Cheetah Rangewide Status and Distribution. Book Chaper In. Biodiversity of the World--Cheetahs: Biology and Conservation. Eds: Marker, L., Boast, L.K. and Schmidt-Küntzel, A. San Diego, Elsevier. 34-51. 2018.
113. Schmidt-Küntzel, A., Dalton, D.L., Menotti-Raymond, M., Fabiano, E., Charruau, P., Johnson, W.E., Sommer, S., Marker, L., Kotzé, A., and O'Brien, S. Conservation genetics of the cheetah: genetic history and implications for conservation. Book Chapter In. Biodiversity of the World--Cheetahs: Biology and Conservation. Eds: Marker, L., Boast, L.K. and Schmidt-Küntzel, A. San Diego, Elsevier. 72 – 89. 2018.
114. Meachen, J., Schmidt-Küntzel, A., Haefele, H., Steenkamp, G., Robinson, J., Randau, M., McGowan, N., Scantlebury, D.M., Marks, N., Maule, A., Marker, L. Cheetah specialization: physiology and morphology. Book Chapter In. Biodiversity of the World--Cheetahs: Biology and Conservation. Eds: Marker, L., Boast, L.K., and Schmidt-Küntzel, A., San Diego, Elsevier. 93 – 102. 2018.
115. Marker, L., Cristescu, B., Dickman, A., Nghikembua, M.T., Boast, L.K., Morrison, T., Melzheimer, J., Fabiano, E., Mills, G., Wachter, B., and Macdonald, D.W. Ecology of free-ranging cheetahs. Book Chapter In. Biodiversity of the World--Cheetahs: Biology and Conservation. Eds: Marker, L., Boast, L.K., and Schmidt-Küntzel, A., San Diego, Elsevier. 107 – 116. 2018.
116. Wachter, B., Broekhuis, F., Melzheimer, J., Horgan, J., Chelysheva, E.V., Marker, L., Mills, G., Caro, T. Behavior and Communication of Free-Ranging Cheetahs. Book Chapter In. Biodiversity of the World--Cheetahs: Biology and Conservation. Eds: Marker, L., Boast, L.K., and Schmidt-Küntzel, A. San Diego, Elsevier. 121 – 133. 2018.
117. Marker, L., Rabeil, T., Comizzoli, P., Clements, H., Nghikembua, M.T., Hayward, M.W., and Tambling, C.J. The status of key prey species and the consequences of prey loss for cheetah conservation in North and West Africa. Book Chapter In. Biodiversity of the World--Cheetahs: Biology and Conservation. Eds: Marker, L., Boast, L.K., and Schmidt-Küntzel, A. San Diego, Elsevier. 151 – 159. 2018.
118. Nghikembua, M.T., Lehner, F., Ottichilo, W., Marker, L., and Amstrup, S.C. The impact of climate change on the conservation and survival of the cheetah. Book Chapter In. Biodiversity of the World--Cheetahs: Biology and Conservation. Eds: Marker, L., Boast, L.K., and Schmidt-Küntzel, A. San Diego, Elsevier. 163 – 169. 2018.
119. Dickman, A., Rust, N.A., Boast, L.K., Wykstra, M., Richmond-Coggan, L., Klein, R., Selebatso, M., Msuha, M., and Marker, L. The costs and causes of human-cheetah conflict on livestock and game farms. Book Chapter In. Biodiversity of the World--Cheetahs: Biology and Conservation. Eds: Marker, L., Boast, L.K., and Schmidt-Küntzel, A. San Diego, Elsevier. 173 – 186. 2018.
120. Tricorache, P., Nowell, K., Wirth, G., Mitchell, N., Boast, L.K., and Marker, L. Pets and pelts: understanding and combating poaching and trafficking in cheetahs. Book Chapter In. Biodiversity of the World--Cheetahs: Biology and Conservation. Eds: Marker, L., Boast, L.K., and Schmidt-Küntzel, A. San Diego, Elsevier. 191 – 203. 2018.
121. Dickman, A., Potgieter, G., Horgan, J., Stoner, K., Klein, R., McManus, J., and Marker, L. Use of livestock guarding dogs to reduce human-cheetah conflict. Book Chapter In. Biodiversity of the World--Cheetahs: Biology and Conservation. Eds: Marker, L., Boast, L.K., and Schmidt-Küntzel, A. San Diego, Elsevier. 209 – 219. 2018.
122. Wykstra, M., Combes, G., Oguge, N., Klein, R., Boast, L.K., Mosimane, A.W., and Marker, L. Improved and alternative livelihoods: the link between poverty alleviation and biodiversity conservation. Book Chapter In. Biodiversity of the World--Cheetahs: Biology and Conservation. Eds: Marker, L., Boast, L.K., and Schmidt-Küntzel, A. San Diego, Elsevier. 223 – 236. 2018.
123. Powell, L.A., Kharuxab, R., Marker, L., Nghikembua, M.T., Omusula, S., Reid, R.S., Snyman, A., Weaver, C., and Wykstra, M. Coordination of large landscapes for cheetah conservation. Book Chapter In. Biodiversity of the World--Cheetahs: Biology and Conservation. Eds: Marker, L., Boast, L.K., and Schmidt-Küntzel, A. San Diego, Elsevier. 239 – 248. 2018.
124. Hughes, C., Horgan, J., Klein, R., and Marker, L. Cheetah conservation and educational programs. Book Chapter In. Biodiversity of the World--Cheetahs: Biology and Conservation. Eds: Marker, L., Boast, L.K., and Schmidt-Küntzel, A. San Diego, Elsevier. 251 – 262. 2018.
125. Cristescu, B., Lindsey, P., Maes, O., Bissett, C., Mills, G., and Marker, L. Protected areas for cheetah conservation. Book Chapter In. Biodiversity of the World--Cheetahs: Biology and Conservation. Eds: Marker, L., Boast, L.K., and Schmidt-Küntzel, A. San Diego, Elsevier. 265 – 272. 2018.
126. Boast, L.K., Chelysheva, E., van der Merve, V., Schmidt-Küntzel, A., Walker, E.H., Cilliers, D., Gusset, M., and Marker, L. Cheetah translocation and reintroduction programs: past, present and future. Book Chapter In. Biodiversity of the World--Cheetahs: Biology and Conservation. Eds: Marker, L., Boast, L.K., and Schmidt-Küntzel, A. San Diego, Elsevier. 275 – 287. 2018.

Cheetah Conservation Fund
P.O. Box 1755, Otjiwarongo, Namibia
Phone: +264 067 306 225
Fax +264 067 306 247
E-mail: director@cheetah.org

127. Marker, L., Vannelli, K., Gusset, M., Versteege, L., Ziegler Meeks, K., Wielebnowski, N., Louwman J., Louwman, H., and Bingaman Lackey, L. History of cheetahs in zoos and demographic trends through managed captive breeding programs. Book Chapter In. Biodiversity of the World--Cheetahs: Biology and Conservation. Eds: Marker, L., Boast, L.K., and Schmidt-Küntzel, A. San Diego, Elsevier. 309 – 320. 2018.
128. Colburn, A.M.W., Sanchez, C.R., Citino, S., Crosier, A.E., Murray, S., Kaandorp, J., Kaandorp, C., and Marker, L. Clinical management of captive cheetahs. Book Chapter In. Biodiversity of the World--Cheetahs: Biology and Conservation. Eds: Marker, L., Boast, L.K., and Schmidt-Küntzel, A. San Diego, Elsevier. 335– 345. 2018.
129. Terio, K.A., Mitchell, E., Walzer, C., Schmidt-Küntzel, A., Marker, L., and Citino, S. Diseases impacting captive and free-ranging cheetahs. Book Chapter In. Biodiversity of the World--Cheetahs: Biology and Conservation. Eds: Marker, L., Boast, L.K., and Schmidt-Küntzel, A. San Diego, Elsevier. 349 – 360. 2018.
130. Crosier, A.E., Wachter, B., Schulman, M., Lüders, I., Koester, D.C., Wielebnowski, N., Comizzoli, P. and Marker, L. Reproductive physiology of the cheetah and assisted reproductive techniques. Book Chapter In. Biodiversity of the World--Cheetahs: Biology and Conservation. Eds: Marker, L., Boast, L.K., and Schmidt-Küntzel, A. San Diego, Elsevier. 385 – 399. 2018.
131. Schmidt-Küntzel, A., Wultsch, C., Boast, L.K., Braun, B., Van der Weyde, L., Wachter, B., Brummer, R., Walker, E. H., Forsythe, K., and Marker, L. Mining black gold - insights from cheetah scat using non-invasive techniques in the field and laboratory: scat-detection dogs, genetic assignment, diet and hormone analyses. Book Chapter In. Biodiversity of the World--Cheetahs: Biology and Conservation. Eds: Marker, L., Boast, L.K., and Schmidt-Küntzel, A. San Diego, Elsevier. 438 – 445. 2018.
132. Marker, L., Schmidt-Küntzel, A., Portas, R., Dickman, A., Good, K., Hartman, A., Cristescu, B., and Melzheimer, J. Capture, care, collaring and collection of biomedical samples in free ranging cheetahs. Book Chapter In. Biodiversity of the World--Cheetahs: Biology and Conservation. Eds: Marker, L., Boast, L.K., and Schmidt-Küntzel, A. San Diego, Elsevier. 457 – 468. 2018.
133. Cristescu, B., Schmidt-Küntzel, A., Schwartz, K.R., Traeholt, C., Marker, L., Fabiano, E., Leus, K., and Traylor-Holzer, K. A review of population viability analysis and its use in cheetah conservation. Book Chapter In. Biodiversity of the World--Cheetahs: Biology and Conservation. Eds: Marker, L., Boast, L.K., and Schmidt-Küntzel, A. San Diego, Elsevier. 517 – 529. 2018.
134. Marker, L., Boast, L.K., and Schmidt-Küntzel, A. What does the future hold?. Book Chapter In. Biodiversity of the World--Cheetahs: Biology and Conservation. Eds: Marker, L., Boast, L.K., and Schmidt-Küntzel, A. San Diego, Elsevier. 549 – 556. 2018.
135. Place, N.J., Crosier, A.E., Comizzoli, P., Nagashima, J.B., Haefele, H., Schmidt-Küntzel, A., and Marker, L.L. Age-associated and deslorelin-induced declines in serum anti-Müllerianhormone concentrations in female cheetahs, Acinonyx jubatus. General and Comparative Endocrinology. 250: 54–57. 2017.
136. OBrien, S.J., Johnson, W.E., Driscoll, C.A., Dobrynin, P., and Marker, L. Conservation Genetics of the cheetah – Prospects for Conservation Management. Journal of Heredity. 108: 5. 2017.
137. Zimmermann, I., Nghikembua, M., Shipingana, D., Aron, T., Groves, D., and Marker, L. The influence of two levels of debushing in Namibia's thornbush savanna on overall soil fertility measured through bioassays. Namibian Journal of Environment. 1: 52-59. 2017.

Cheetah Conservation Fund
P.O. Box 1755, Otjiwarongo, Namibia

Phone: +264 067 306 225
Fax +264 067 306 247

E-mail: director@cheetah.org

International Cheetah Day happens annually on December 4th. The day is a chance to learn more about the cheetah and the threats it faces across its range.

internationalcheetahday.org

CHEETAH FACTS

RANGE & POPULATION

Once found throughout Asia and Africa, the species is now only scattered in Iran and various countries in sub-Saharan Africa. Home ranges in Namibia for males can be up to 1,500 square km and over 2,000 square km for females. Less than 8,000 cheetahs remain in 20 African countries, and less than 100 cats survive in Iran. Southern Africa has the world's largest number of cheetahs, representing one half of the remaining wild population

STATUS

Endangered under the United States Endangered Species Act. Listed on CITES Appendix I (Convention on the International Trade in Endangered Species). Listed as Vulnerable on IUCN Red List of Threatened Species.

HABITAT & DIET

Cheetahs thrive in areas with vast expanses of land where prey is abundant. Cheetahs have been found in a variety of habitats, including grasslands, savannahs, dense vegetation, and mountainous terrain. In Namibia, nintety-percent of cheetahs live on commercial and communal farms. A cheetah's diet consists of small antelope, young of large antelope, warthog, hare, and game birds.

DESCRIPTION

The cheetah has a slender, long-legged body with blunt semi-retractable claws. Its coat is tan with small, round black spots and the fur is coarse and short. The cheetah has a small head with high-set eyes. Black "tear marks," which run from the corner of its eyes down the sides of the nose to its mouth, keep the sun out of its eyes and aid in hunting. Adult body length 112-135 cm; tail length 66-8 cm; shoulder height 73+ cm; weight 34-5 kg. The male is –°slightly larger than the female.

Photo taken by Barth Balli at Erindi Private Game Reserve.

SPECIALISATIONS

The cheetah's flexible spine, oversized liver, enlarged heart, wide nostrils, increased lung capacity, and thin muscular body make this cat the swiftest hunter in Africa. Covering 7-8 meters in a stride, with only one foot touching the ground at a time, the cheetah can reach a speed of 110 km/h in ~3 seconds. At two points in the stride, no feet touch the ground.

BEHAVIOUR

Cheetahs have a unique, well-structured social order. Females live alone except when they are raising cubs. The females raise the cubs on their own. In the first 18 months of a cub's life they learn survival lessons such as how to hunt wild prey species, maintain a territory, and avoid other predators such as leopards, lions, hyaenas and baboons. By 18 months of age, the mother leaves the cubs, which then form a sibling group staying together for another 6 months. At about 2 years, the female siblings leave the group and the young males remain together for life. Males live alone or in coalitions made up of brothers from the same litter. Some coalitions maintain territories in order to find females with which they will mate. Fierce fights between male coalitions, resulting in serious injury or death, can occur when defending territories. Cheetahs hunt in the late morning and early evening. They capture their prey by stalking it until the prey is within 10-30 meters before chasing it and tripping it with their dewclaw. The prey is then suffocated when the cheetah bites the underside of the throat. Chases usually last about 20 seconds and rarely longer than 1 minute. Only about half of these chases are successful. In Namibia, cheetahs use play-trees (large and visually conspicuous trees, sometimes with sloping trunks and low branches) to observe their surroundings and mark the area.

Continued on back ->

Cheetahs make chirping sounds and hiss or spit when angered or threatened. They purr very loudly when content. Cheetahs do not pose a threat to humans.

REPRODUCTION

Sexual maturity occurs at 20-23 months. The gestation period is about 95 days, and the average litter size is 4-5 cubs. The cubs are up to 30 cm long and weigh 250-300 grams at birth; they are smokey-grey in colour with long hair, called a mantle, running along their backs. The mantle has several purposes: it is thought to camouflage the cub in dead grass, hiding it from predators, and to work as a mimicry defense causing the cub to resemble a notoriously vicious species, the honey badger.

LIFE EXPECTANCY

Studies have not been conducted in the wild on longevity of cheetahs; 8-12 years is an average lifespan in captivity. Cub mortality is high for the species in both the wild and captivity. On average 30 percent of all cubs born in captivity die within one month of birth, and in Tanzania's Serengeti National Park, about 90 percent die before reaching 3 months of age, mostly due to being killed by other predators.

NATURAL HISTORY

Cheetah relatives had worldwide distribution until about 20,000 years ago, when the world's environment underwent drastic changes in the Great Ice Age. Throughout North America, Europe, and Asia, about 75 percent of the mammal species vanished. Only a handful of the modern cheetah remained, having gone through a "genetic bottleneck" that resulted in inbreeding that now affects the species' survival. In c1700 BC the Egyptians worshipped cheetahs and individuals have been kept in captivity for some 5,000 years. However, they breed poorly in captivity. The many national parks and nature reserves of Africa offer protection for only a small amount of cheetahs. In these parks, lion and hyaena numbers are high and the cheetahs cannot compete with these large predators, which kill cheetah cubs and steal their prey. Evolution has favoured speed and not strength for this species. Therefore, most of the cheetah population is found outside of protected reserves.

SURVIVAL THREATS

Decline in prey, loss of habitat, poaching, and indiscriminate trapping and shooting threaten the survival of the cheetah throughout its range.

LEGAL PROTECTION

As a protected species in Namibia, people are allowed to remove cheetahs only if they pose a threat to livestock or human life. Unfortunately, some farmers will capture cheetahs indiscriminately (the "problem" animals may not be singled out), often removing or killing those that have not taken any livestock. Limited international trade in live animals and skins is permitted from Namibia, Zimbabwe, and Botswana. Illegal trafficking in other parts of Africa, mainly for the pet trade, and indiscriminate capture and removal in southern Africa continue to threaten the survival of this species.

CONSERVATION

To help this sleek hunter of the African wild win its race against extinction, we must (1) help protect its habitat and ensure a place for it on Namibian farmlands and beyond, (2) aid in the conservation of the wild prey base, (3) halt the indiscriminate capture and removal of the cheetah, (4) improve livestock and game management, and (5) educate everyone about the need to conserve biological diversity, and the predators' unique role in a healthy ecosystem.

CAPTIVITY

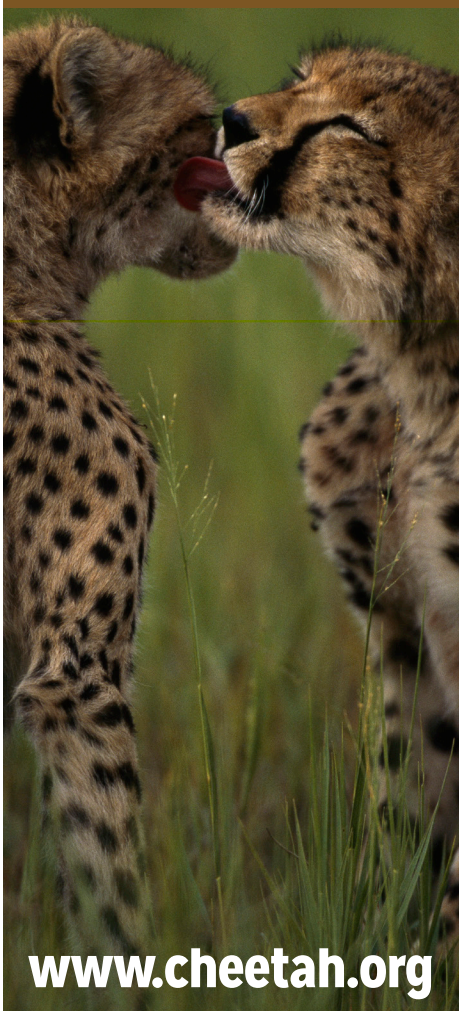
Cheetahs are wild animals. Capture of wild cheetahs threatens the survival of the species in two ways. First, the removal of individuals reduces the species' genetic diversity in the wild. And secondly, cheetahs do not breed well in captivity. The Asiatic cheetah is nearly extinct partly because of its capture for private use. Special dietary requirements, special needs, and unpredictable behaviour make this a poor choice for a pet. Wild instincts remain intact even with tamed and captive raised animals.

Cheetah Conservation Fund
P.O. Box 1755, Otjiwarongo, Namibia
Namibia: +264 067 306 225
US +1 866 909 3399
ccfinfo@iway.na
info@cheetah.org

CHEETAH Facts For Kids

Cheetah Conservation Fund (CCF) works to save the cheetah in the wild. CCF's Research and Education Centre is located in Namibia, Africa. CCF's programs are based on...

RESEARCH
CONSERVATION
EDUCATION



Cheetah
CONSERVATION FUND

How Big are Cheetahs?

Cheetahs are the smallest of the "big cats". A classification that includes: lions, tigers, leopards, jaguars and cougars). Adult cheetahs weigh up to 125 pounds and can measure up to 60 inches, their tails add up to 32 inches more. That's a total of up to 7.5 feet.

Built for Speed

Cheetahs have long legs and very slender bodies. Just like race cars they have light body frames and a streamlined shape that makes them highly aerodynamic (air passes around them efficiently reducing drag). Cheetahs have large nostrils that allow them to take in lots of oxygen per breath. They have a large and powerful heart and lungs that work together to circulate oxygen through their body very efficiently. Because of their unique anatomy they can attain speeds of up to 70 mph.

"Cleat" feet and "Rudder" tails

Cheetah's foot pads are hard and textured like tire treads providing cheetahs with increased traction in fast, sharp turns. Cheetahs have short blunt claws, which are considered semi-retractable (they don't pull in fully like other cats' claws). The claws are closer to that of a dog than of other cats. Cheetah claws work like the cleats of a track shoe to grip the ground for traction when running to help increase speed.

The extreme flexibility of the cheetah's spine is unique. The cheetah's long muscular tail works like a rudder on a boat. This allows sudden sharp turns during high speed chases as the cheetah swings its tail back and forth as its prey weaves to escape.

Spots, stripes and grey fluff

The cheetah's undercoat ranges in color from light tan to a deep gold and is marked by solid black spots. The spots on a leopards' or jaguars' coats are open in the center like a ring donut. Comparing spots is one way to quickly identify the cheetah from other spotted cats. Not only does the cheetah's fur have spots, so does their skin! The black fur actually grows out of the black spots on their skin.

Distinctive black stripes run from the cheetah's eyes to their mouth. The stripes are thought to protect the eyes from the sun's glare. It is believed that they have the same function as a rifle scope, helping cheetahs focus on their prey at a long distance range by minimizing the glare of the sun.

Cheetah tails end with a bushy tuft encircled by five or six dark rings. These markings provide them with excellent camouflage while hunting and make them more difficult for other predators to detect. The tail is also thought to be a signaling device, helping young cubs follow their mothers in tall grass. The tip of the tail varies in color from white to black among individuals.

Cheetah cubs are born with fluffy grey backs. Known as a mantle, this cute mohawk-like hairstyle runs from their neck to the base of their tail. The mantle makes a cheetah cub look like a honey badger (insert side by side). A honey badger is a formidable animal that most predators will avoid so looking like one helps protect the cubs from attack. The mantle also makes them hard to see. When the mother cheetah goes out to hunt the cubs will stay hidden in tall grasses.

More about cheetah cubs

At birth, the cubs weigh 8.5 to 15 ounces and are blind and helpless. After a day or so, the mother will leave the cubs to hunt. This is the most vulnerable time for the cubs, as they are left unprotected. They will live in a secluded nest until they are about six to eight weeks old. Their mother will move the cubs from nest to nest to avoid detection by predators. The mother will care for her cubs on her own for the next year and a half.

At about six weeks of age, the cubs begin following their mother on her daily travels as she is looking for prey. This is the time when life skills are taught.

Between four to six months of age, cheetah cubs are very active and playful. The cubs' claws are sharp at this age and help them grip the tall 'playtrees' they climb with their siblings. Learning to hunt is the most critical survival skill that the cubs learn. At one year of age, cheetah cubs participate in hunts with their mother.

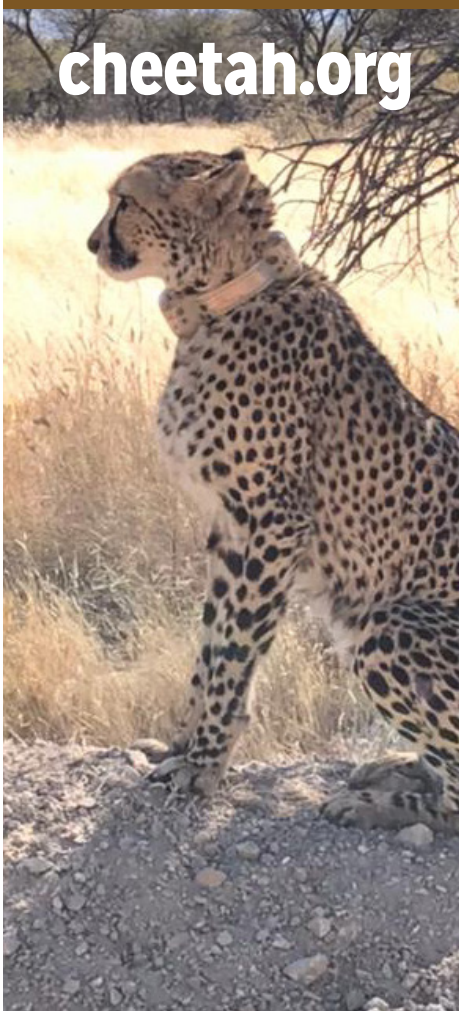
At about 18 months of age, the mother and cubs will finally separate but the cubs will stick together until they are about two years old.

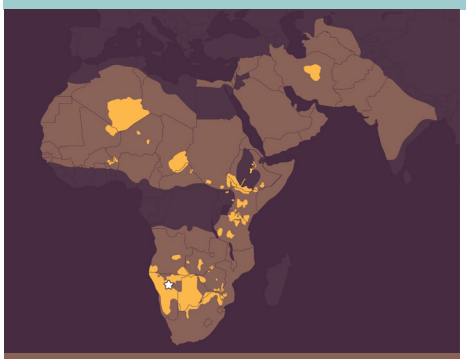
Cheetah
CONSERVATION FUND

OVERVIEW

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

RESEARCH
CONSERVATION
EDUCATION





HISTORIC RANGE (PRE-1900)
CURRENT RANGE

In the last 100 years, the world has lost 90% of the wild cheetah population. Today, less than 7,500 cheetahs remain with one third of wild cheetahs living in southern Africa. CCF is working across Africa to save the species throughout its range.

The three main threats to the wild cheetah population are:

HABITAT LOSS

Over 80% of cheetah are living outside of protected areas due to competition from other larger predators that out compete cheetahs. The result of human population growth and increased land usage for livestock and game farming means that the available land for cheetahs is declining.

HUMAN WILDLIFE CONFLICT

One of the greatest threats to the cheetah in the wild is human-wildlife conflict. With over 80 percent of cheetahs living outside protected areas, means that they live alongside human commu- nities. Most of these are commercial and rural communal livestock farming communities raising cows, goats and sheep.

ILLEGAL WILDLIFE TRADE - IWT

Cheetah cubs are captured from the wild and then smuggled through the Horn of Africa, destined primarily for the Middle East. CCF estimates that only one in four cubs survives the journey to illegal buyers.
Cheetah cubs have specialized dietary and veterinary needs that are not easily met. Even if cubs are intercepted and confiscated their chances of survival are extremely slim.

IWT in East Africa - Active areas for trafficking include eastern Ethiopia, northern Kenya, Somalia and Somaliland. CCF supports governments to care for these illegally confiscated cheetah cubs in this region, mostly in Somaliland, an autonomous region of Somalia. Somaliland is a preferred route for the illegal trafficking of cheetahs out of Africa. Illegally trafficked cubs are taken to Yemen and distributed across the Gulf States to be illegally sold as pets. CCF's research shows that close to 300 cheetah cubs are being illegally trafficked each year from this region, out of a wild population of only 300 adults. This has resulted in a crisis for this vulnerable cheetah population in this region..

In response to the high numbers of confiscated cubs, CCF's team in Hargeisa, the capital city of Somaliland, is caring for these cheetahs intercepted from this illegal trade. **Currently, there are 33 cheetahs housed in two temporary shelters**. CCF is working with the Ministery of Environment and Rural Development (MoERD) to develop strategies aimed to facilitate Somaliland's ability to fight the traffick- ing of wildlife including awareness as a top priority, capacity building, and regional cooperation. CCF will assist in developing a permanent wildlife sanctuary for confiscated cheetah and wildlife.

CCF'S SOLUTIONS FOR IWT

To identify the origin of cheetahs in illegal trade and to assist criminal investigations, CCF collects genetic material for storage in its DNA database and analysis at our cheetah genetics laboratory in Namibia. DNA samples are collected from wild, captive and deceased cheetahs.

CCF is researching and developing long-term holistic strategies to combat the live-trafficking of cheetah, addressing law enforcement, wildlife conservation, education, livelihood development and demand reduction. Working with all stakeholders is the key to success.
CCF is looking for partners to help stop the illegal wildlife trafficking of cheetah

cubs in the Horn of Africa.

COLLABORATIONS - IWT

Visiting veterinarians from the European universities listed below assist with cheetah care and give lectures for veterinary students at the University of Hargeisa.

- Vétérinaires Sans Frontières Czech Republic (VSF-cz)
- USAMV Cluj-Napoca (Romania)
- University of Veterinary and Pharmaceutical Sciences Brno (UVPS, Czech Republic)
- University of Hargeisa (UOH)
- University of Burao (UB)

CCF works in partnership with many NGOs and govern- mental organizations including but not limited to:

- Morad
- Heritage Somaliland
- IUCN Cat Specialist Group
- CITES Cheetah Working Group
- Rangewide Cheetah & Wilddog program
- Association of Zoos and Aquariums (AZA) Cheetah SSP
- Department for Environment, Food and Rural Affairs (DEFRA)

CCF'S PROGRAMS

Farmer Training And Community Outreach

As 90 percent of Namibia's wild cheetahs live on farmlands and come into conflict with farmers, livestock and game farming interests, CCF conducts a specific environmental education program for the farming community. CCF makes presentations at individual farms, farmers' association meetings and agricultural shows, highlighting proven cheetah behavioral characteristics and predator-friendly livestock management techniques.

Future Farmers of Africa (FFA) is focused on building practical skills in livestock farmers, teaching best practices in sustainable livestock, wildlife and rangeland management and showing them how to maximize both economic and environmental benefits using resources available to them. The courses include the use of livestock guarding dogs, a highly effective non-lethal method for controlling predation introduced into Africa by CCF in 1994.

Livestock Guarding Dogs

CCF's Livestock Guarding Dog (LGD) program is proven to reduce livestock losses to predators. CCF's long-term scientific studies show that farmers with a LGD are less likely totrap or shoot cheetahs and reduce livestock loss by 80 to 100%. LGDs are a major part of CCF's holistic conservation strategy.

CCF breeds Anatolian shepherd and Kangal dogs as LGDs. Now, and for thousands of years, the breeds are used to guard small livestock against wolves and bears in Turkey. LGDs are placed with livestock they are to protect as puppies. The puppies bond with the herd or flock. As they grow

Biomass Technology Development and Bushblok

In 2001, the Cheetah Conservation Fund (CCF) and the United States Agency for International Development (USAID) collaborated to find a habitat improvement program that would be good for both the biodiversity and the economy.

CCF is working on a long-term research and development project to restore habitat while developing a renewable fuel source. Overgrown thorn bush is harvested and made into high-heat, low-emission, fuel logs for consumer use as well as conducting research into bush to animal feed and biomass electricity.

Livelihood Development

The key to securing a future for the cheetah, is to secure the livelihoods of the people who share its habitat. Through livelihood development, CCF assists the communities living in cheetah-country. People learn the skills to expand their income at our Model Farm. CCF helps local artisans by promoting their jewelry craft and cultural art pieces in our on-site gift shop.

The Dancing Goat Creamery creates and sells dairy products made from CCF's goat milk. The Creamery serves as an example for small stock farmers. Farmers learn how to expand their income by creating new and marketable products. CCF produces honey at our apiary, and grows grapes for wine making. CCF continues to develop new ways for communal farmers to boost their income.

The Life Technologies Conservation Genetics Laboratory and The Haas Family Veterinary Clinic

CCF is home to a world class research facility that is unique in Africa. The Life Technologies Conservation Genetics Laboratory is the only fully-equipped genetics lab in situ at a conservation facility in Africa. From this facility, CCF collaborates with scientists around the globe. Research not only benefits the cheetah and its ecosystem, but other predators and wildlife species as well.

The Haas Family Research Centre houses CCF's registered Veterinary Clinic where wild, injured or orphaned cheetahs are cared for at our facility. The clinic is an ideal space to give prompt veterinary care to wild and non-releasable cheetahs (CCF cares for 40 orphan cheetahs), dogs, goats and other animals that live at our Namibia centre.

Genome Resource Bank

CCF uses best-practice techniques for storing sperm, tissues and blood samples in its Genome Resource Bank (GRB). These materials provide 'insurance' for the cheetah's survival. As a result, CCF maintains one of the largest GRB's for an endangered species.

Cryopreservation methods continue to be studied and refined in collaboration with the Smithsonian Institution in Washington DC, USA.

Behavior Demographics, Home Range, and Reintroduction

CCF investigates the movement of released cheetahs to determine home ranges, habitat preference and seasonal use, territoriality, and behaviors. The behaviors are unique to individual cheetah populations and may prove critical for the cheetahs' survival.

CCF develops and implements relocation, reintroduction, and non-invasive monitoring methodologies to ensure a viable wild population. Data is gathered on the status of wild cheetahs across the species' range.

Cheetah Conservation Fund
Cheetah Conservation Fund
P.O. Box 1755, Otjiwarongo, Namibia
Phone: +264 067 306 225
Fax +264 067 306 247
E-mail: ccfinfo@iway.na
info@cheetah.org