



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

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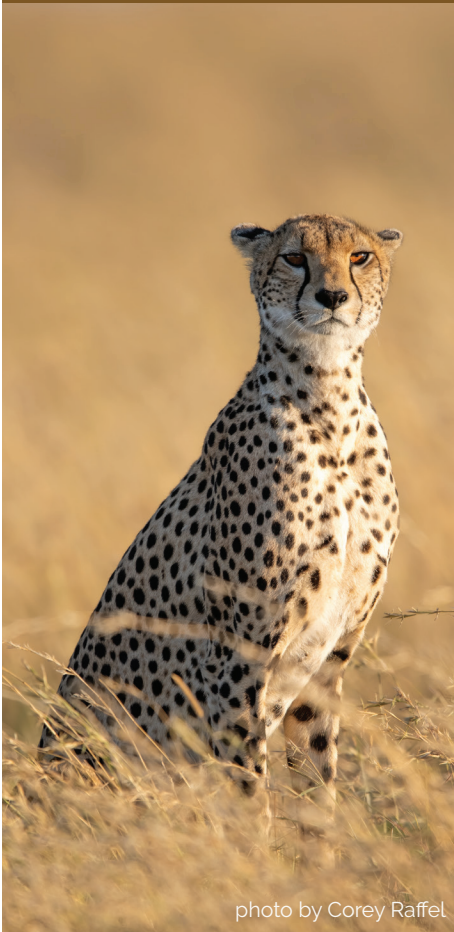


photo by Corey Raffel

The cheetah, *Acinonyx jubatus*, is one of the oldest big cat species, with ancestors dating back over five million years to the Miocene era. It is the world's fastest land mammal, a feline icon of nature. Cheetahs are built for speed, with all body parts evolved for precision and agility. Their small head, aerodynamic lean body, long legs, flexible backbone, and tail that works like a boat's rudder, along with semi-retractable claws resembling cleats on a running shoe, allow them to reach speeds of up to 70 mph (112 kph) and change direction in a split second. Additionally, the cheetah can accelerate from zero to 60 mph (96 kph) in just three seconds.

## Cheetahs: Big Cats Built for Speed

### PHYSICAL TRAITS

Cheetahs have a thin frame with a narrow waist and deep chest. They possess extra-large nostrils that enable increased oxygen intake, along with larger than normal heart and lungs, and robust arteries and adrenals that work together to circulate oxygen more efficiently. Their weight ranges from 75 to 125 pounds (34 - 55 kg), and their length, measured from the head to the hindquarters, can vary from 40 to 60 inches (100 - 150 cm), with an additional 24 to 32 inches (60-80 cm) for the tail. Most cheetahs stand 28 to 36 inches (70-90 cm) tall at the shoulder. While males are slightly bigger with larger heads, there is not much physical difference between the sexes. Identifying the cheetah's sex by appearance alone is challenging.

The cheetah's undercoat varies in color from light tan to deep gold and features solid black spots. Unlike the rosettes found on a leopard or jaguar's coat, these spots are not open, which serves as a quick way to distinguish the cheetah. Another distinctive feature of cheetahs is their black "tear marks" extending from the corners of both eyes along the sides of their noses to their mouths. These markings have a biological purpose, reducing sun glare and enabling cheetahs to see clearly across long distances. The cheetah's tail ends with a bushy tuft surrounded by five or six dark rings. These markings provide excellent camouflage during hunting and make it more challenging for other predators to spot them.

Unlike other big cats such as tigers, lions, leopards, and jaguars, cheetahs do not roar. Instead, they growl when they encounter danger, and their vocalizations are more akin to high-pitched chirps, bubbles, and barks when communicating with each other. An interesting distinction of cheetahs is their ability to purr while both inhaling and exhaling, a trait not found in other big cats.

### THE CHEETAH'S LIFE

The cheetah's lifecycle encompasses three stages: cubhood, adolescence, and adulthood. The gestation period is 93 days, and litters usually consist of one to six cubs (occasionally, eight cubs are recorded, but it's rare). At birth, the cubs weigh between 8.5 to 15 ounces (240 - 425 grams) and are born blind and helpless. The mother diligently grooms and comforts them, purring softly. After a day or so, she leaves to hunt while ensuring their care continues. The first few weeks are the most vulnerable, as the cubs are unprotected. They reside in a concealed nest for six to eight weeks, regularly moved by their mother to avoid predators. The mother independently cares for her cubs for the next year and a half.

At around six weeks of age, cheetah cubs begin joining their mother on her daily hunts as she searches for prey. During this period, the mother's limited mobility puts the cubs at higher vulnerability, resulting in high cub mortality. Sadly, less than one in 10

cubs will survive this phase, often falling victim to predation by larger predators like lions and hyenas or facing injuries. However, this time is crucial for imparting crucial life skills to them. The long mantle of hair on their backs serves a dual purpose: keeping them warm and providing camouflage, protecting them from predators that might mistake them for aggressive honey badgers.

Between four to six months of age, cheetah cubs become highly active and playful, displaying abundant energy and enthusiasm. They utilize trees as valuable vantage points to observe their surroundings and develop balancing skills. Their semi non-retractable claws are sharper at this age, helping them grip tall “play trees” as they climb and interact with their siblings. These playful activities and climbing exercises are crucial for their physical and cognitive development during this important phase of their lives.

Cheetah cubs begin learning to hunt around one year of age, participating in hunts with their mother. The hunt involves prey detection, stalking, the chase, tripping, and suffocation biting. At 18 to 22 months, the mother and cubs separate, and independent males and females form coalitions to enhance their hunting skills. Adolescent females attract dominant males during their cycling phase, leading to their brothers’ departure. This separation allows young cheetahs to establish territories and lead independent lives as adult cheetahs.

### MALE COALITIONS

Male cheetahs from the same litter form lifelong coalitions, enhancing hunting success and predator defense. After leaving their mother and sisters, adolescent males become dispersal males, roaming for a few years until they establish and defend their territory. They may travel several miles,

sometimes facing displacement by more dominant males. Cheetahs have extensive home ranges, averaging 1500 - 2300 mi<sup>2</sup> (580 - 2300 km<sup>2</sup>).

In adulthood, cheetahs encounter challenges. Their fast-paced and relatively short life spans, typically 8 to 10 years, are impacted by territorial competition among adult males, often leading to death. Adult mortality significantly limits cheetah population growth and survival.

### CHEETAH SURVIVAL

Relatives of modern cheetahs once had a global distribution, but their numbers declined drastically around 20,000 years ago due to environmental changes. Today, fewer than 7,500 cheetahs remain in the wild, classified as Vulnerable on the IUCN Red List. They face threats like human-carnivore conflict, habitat loss, poaching, and the illegal wildlife trade.

Cheetah populations are fragmented, covering only 9% of their historic range in Africa. The Asiatic cheetah is critically endangered, with less than 20 individuals remaining in Iran. Namibia has the largest cheetah population, earning it the nickname “The Cheetah Capital of the World.” Addressing these challenges is essential to conserving the future of these magnificent creatures and protecting their habitats.

### LEARN MORE



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[cheetah.org](http://cheetah.org)



photo by Chris Koseff



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

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

E-mail: [ccfinfo@iway.na](mailto:ccfinfo@iway.na)  
[info@cheetah.org](mailto:info@cheetah.org)





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The Cheetah Conservation Fund (CCF) conducts research on the biology, ecology, and genetics of cheetahs worldwide. Their research forms the foundation for CCF's education and conservation initiatives. Notably, CCF is the first predator research program operating outside a protected area and collaborating with local communities where cheetahs reside. Dr. Laurie Marker is the Founder and Executive Director of CCF with research programs directed by Dr. Anne Schmidt-Küntzel and Dr. Bogdan Cristescu.

## Research

### GENETICS, HEALTH AND REPRODUCTION

CCF conducts ongoing biomedical research by collecting and analyzing various samples from cheetahs across their range, including blood, skin, tissue, sperm, and fecal samples. So far, they have sampled thousands of cheetahs to gain insights into their overall health, disease, stress, hormones, and reproductive health in the wild population.

Sampled cheetahs undergo comprehensive examinations under anesthesia, which involve measurements and weight assessments for morphometric studies. Dental structure and reproductive fitness are also analyzed during these exams. These examinations contribute to assessing the overall health of the world's cheetah population.

### BEHAVIOR DEMOGRAPHICS, HOME RANGE AND REINTRODUCTION

CCF researchers study cheetah movement to understand home ranges, habitat preferences, territorial behavior, and other critical survival-related behaviors. Over 25 years, they have tagged and released hundreds of cheetahs back into the wild and equipped several hundred more with VHF and satellite radio-tracking collars. Working alongside CCF conservationists, researchers assess relocation, reintroduction, and non-invasive monitoring techniques to bolster sustainable wild cheetah populations.

### LIFE TECHNOLOGIES CONSERVATION GENETICS LABORATORY

To enhance wild cheetah population monitoring, CCF established the Life Technologies Conservation Genetics Laboratory, the sole fully capable facility of its kind at an in-situ conservation site in Africa. This state-of-the-art lab produces, analyzes, and provides results in-house, focusing on cheetah gene flow, genetic variation patterns, and behavioral ecology in specific habitats. Researchers from various organizations can access the lab, benefiting not only cheetahs but numerous other species and contributing to training conservation geneticists across Africa. CCF's efforts extend to the Horn of Africa, where they have extracted and genotyped samples from all confiscated cheetahs to determine their origin. This research could result in the uplisting of this subspecies to Critically Endangered, reinforcing the importance of their publication.

### GENOME RESOURCE BANK

CCF has taken significant steps to ensure species survival through the preservation of biological samples. Sperm, tissue, and blood samples are cryopreserved and stored in the Genome Resource Bank (GRB), which has been operational since 1991. This bank is one of the most extensive repositories for an endangered species, with semen from hundreds of wild-caught male cheetahs preserved using best practices. CCF continues to collaborate with the Smithsonian Institution to improve cryopreservation methods.

In 2007, CCF achieved a groundbreaking milestone by collaborating with researchers from the Smithsonian's National Zoo and the University of California at Davis to produce the first in vitro cheetah embryos developed to the blastocyst stage. Their leadership in reproductive science resulted in the birth of the first artificially inseminated (AI) cheetah cub, using frozen sperm from Namibia, and the first cubs born through in vitro fertilization (IVF) in the USA.

Furthermore, CCF has initiated a sperm bank for the UAE and conducted multiple workshops on collecting and effectively freezing sperm from adult male cheetahs to preserve the genetic diversity of the source populations. These efforts contribute significantly to the conservation and survival of cheetahs.

### ECOLOGICAL RESEARCH

CCF conducts comprehensive evaluations of cheetah habitat and prey availability while monitoring carnivores within the cheetah's ecosystem. This involves assessing vegetation and growth patterns, designating land for ecological management, and studying the impact of bush encroachment on biodiversity. Through long-term studies, CCF monitors how wildlife species utilize habitats and investigates hunting practices and prey preferences specific to different cheetah populations. They also collect data on predation and develop methodologies for reintroducing prey species in countries with cheetah populations. These efforts enhance our understanding of the cheetah's ecological dynamics and support conservation initiatives in cheetah range areas.

### CHEETAH CENSUS RESEARCH

Cheetahs are challenging to count using conventional census techniques because of their secretive behavior. CCF researchers have explored different census and monitoring methods, such as radio telemetry, spoor (track) counts, camera traps, and scat detection dogs. They employ known density estimates to calibrate population estimates, which helps identify areas of potential human-carnivore conflict. By presenting this data, CCF persuades key stakeholders to implement appropriate conservation measures to mitigate the impact on cheetah populations.

### SCAT DETECTION DOGS

CCF has been a pioneer in using scat detection dogs in Namibia for cheetah census, genetic relatedness, and demographic research. Their ecologists employ specially trained dogs with an exceptional sense of smell to locate cheetah scat, which is colloquially known as "black gold." Collected samples are then processed in CCF's genetics laboratory, where DNA is extracted to identify individual cheetahs and understand population structure. The scat detection dog team currently operates in Namibia and Angola, contributing valuable data to cheetah conservation efforts.



### HUMAN-CARNIVORE CONFLICT

Research on human-carnivore conflict plays a vital role in cheetah conservation, especially since many cheetahs live outside protected areas and coexist with rural livestock farming communities in Africa. CCF recognizes the importance of considering farmers' needs in developing management plans that benefit both their livestock and wildlife, including cheetahs. To address conflicts, CCF evaluates and implements non-lethal predator control tools and livestock management techniques. One successful approach involves the use of livestock guarding dogs, which effectively protect livestock and reduce the need to remove cheetahs from the ecosystem. CCF's Future Farmer of Africa training programs disseminate these conflict mitigation techniques, and their Model Farm demonstrates their successful implementation. These efforts aim to foster coexistence between farmers, wildlife, and cheetahs, ultimately supporting conservation outcomes.

### ILLEGAL WILDLIFE TRADE STUDIES

To combat the illegal wildlife trade, CCF has collaborated with Somaliland wildlife authorities to establish a Cheetah Research and Conservation Center. This center is dedicated to rescuing and rehabilitating nearly dozens of animals that have been rescued from the pet trade. Genetic samples from all confiscated animals have been collected, allowing CCF scientists to gain insights into their origins and better address the issue of illegal wildlife trade. Furthermore, CCF has received samples from veterinary and breeding facilities in the UAE, further enhancing their research and conservation efforts in combating this trade.

### 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.

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

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

E-mail: [ccfinfo@iway.na](mailto:ccfinfo@iway.na)  
[info@cheetah.org](mailto:info@cheetah.org)





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CCF tracks and combats cheetah cub trafficking, assisting in confiscations of cubs destined for the illegal wildlife trade. The trade involves live cheetahs or cheetah parts (skin, bones, teeth, claws) and is prevalent between East Africa and the Arabian Peninsula, where cheetahs are popular pets. Cheetahs are sourced from wild populations in Ethiopia, Somaliland, northern Kenya, and Somalia, and smuggled primarily through Somaliland to Yemen. CCF's efforts aim to protect cheetah populations and stop this illicit trade.

## Illegal Wildlife Trade

### THE PROBLEM

CCF's research indicates that 200 to 300 cheetah cubs are smuggled out of the Horn of Africa annually, primarily through Somaliland. Unfortunately, many more cubs die before transport. These cubs, typically aged between 3 to 10 weeks, are separated from their mothers during hunting expeditions or as retaliation for perceived livestock predation. The adult wild cheetah population in the affected areas of the Horn of Africa is estimated to be less than 500 in total. Re-introducing confiscated cheetahs into the wild is unfeasible due to their poor condition after confiscation and close care required to restore their health.

### 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 in favor of keeping confiscated animals in the 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 Ministry 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, exotic animals are in high demand in the Gulf States. 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 Arabian Peninsula. Evidence suggests 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 in traditional medicine markets in South Africa, notably at the Faraday and Mai Mai markets in Johannesburg.

In 2017, during three separate visits to the Mai Mai market, a CCF supporter witnessed 56 cheetah skins or heads, while CCF's Executive Director, Dr. Laurie Marker, recorded 17 cheetah products during her visit.

The origin of these cheetah products remains unknown. South African experts speculate that they may come from free-roaming wild cheetahs, which often inhabit 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 regulations of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) Appendix II. Concerns about the possibility of cheetahs being taken from the wild have been raised at the CITES level.

### CCF'S SOLUTIONS

CCF is actively researching and devising comprehensive, long-term strategies to combat the live trafficking of cheetahs. Their approach encompasses law enforcement, wildlife conservation, education, livelihood development, and demand reduction. Collaboration with all stakeholders is crucial for successful implementation.

To aid criminal investigations and identify the origin of cheetahs in illegal trade, CCF collects genetic material stored in a DNA database at their cheetah genetics laboratory in Namibia. DNA samples are gathered from cheetahs, both wild and captive, as well as deceased individuals to continually expand the database.

### PUBLIC POLICY

In 2007, CCF joined the Coalition Against Wildlife Trafficking (CAWT), dedicated to addressing illegal wildlife trafficking, initially focusing on ivory and rhino horn. Cheetahs were formally included in CAWT's agenda in 2010.

CCF collaborates with governments and NGOs to advance the issue of illegal wildlife trafficking in cheetahs. After the CITES 65th Standing Committee meeting in 2014 (SC65), an inter-sessional working group surveyed laws and cheetah trade activities across CITES Parties, holding a workshop hosted by the State of Kuwait.

Utilizing their illegal cheetah trafficking database, CCF supported a proposal by Kenya, Ethiopia, and Uganda to include illegal cheetah trade in the CITES 16th Conference

of the Parties agenda (CoP16). This marked the first global discussion on this issue. A year later, a CITES-commissioned study on illegal cheetah trafficking was presented at the CITES 27th Animal Committee Meeting.

Furthermore, CCF engages with the CITES Big Cat Task Force and the CMS Advisory Committee on Illegal Killing and Trade for more comprehensive conservation efforts.

The Big Cat Task Force aims to strengthen law enforcement responses and develop strategies for species of highest concern: Cheetah, Mainland Clouded Leopard, Sunda Clouded Leopard, Lion, Jaguar, Leopard, Tiger, and Snow Leopard. These big cat species have faced threats from illegal trade for their furs, teeth, bones, and live animal trade. According to IUCN data, their global populations are decreasing, making illegal trade a significant threat to their survival.

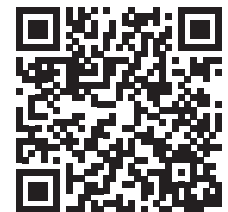
The Task Force focuses on enforcement and implementation challenges, sharing information about illegal trade routes and methods, forensics for identifying big cat specimens in trade, and enhancing frontline cooperation and coordination among countries. It seeks to identify best practices and innovative approaches to address the illegal trade and build strong professional relationships with law enforcement counterparts worldwide.



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

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

E-mail: [ccfinfo@iway.na](mailto:ccfinfo@iway.na)  
[info@cheetah.org](mailto:info@cheetah.org)





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Over 90% of Namibia's cheetahs reside on farmlands, which also support 80% of their natural prey species. This leads to conflicts with farmers and their livestock and game farming ventures. To maintain ecosystem balance, conservation strategies must promote sustainable land use while facilitating coexistence with native predator species. Educating people about the cheetah's vital role as an apex predator and training the next generation of African scientists is crucial for CCF's sustainable programs. Fostering pride in wildlife within local communities is essential for the cheetah's survival.

## Education



### 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

CCF's educational programs reach around 20,000 students annually in Namibian schools, highlighting the value of wildlife and the significance of healthy ecosystems. Since 1994, over 750,000 students have participated in the outreach program. The Field Research and Education Centre also hosts thousands of young learners for environmental courses, accommodating them at the Camp Lightfoot overnight facility. Collectively, these efforts form CCF's Future Conservationists of Africa program, which has been adapted for use in Somaliland as well.

### TRAINING FOR YOUNG PROFESSIONALS

Cheetah survival relies on an integrated conservation approach involving people, wildlife, and habitat. CCF hosts training sessions for conservation managers, scientists, and community representatives from cheetah range countries in Africa, India, and Iran. Experts teach various subjects, including cheetah conservation biology, ecology, natural resource management, and predator management. The goal is to build capacity and empower participants to lead cheetah conservation programs in their respective countries, ultimately contributing to the establishment and growth of wild cheetah populations.

## INTERNSHIPS

CCF is an official fourth-year placement for students from Namibia's major universities, the University of Namibia and Namibia University of Science and Technology. The organization also welcomes interns from various global undergraduate and graduate university programs. Aspiring biologists, ecologists, animal scientists, and geneticists pursuing degrees at all levels, from undergraduate to Ph.D., conduct research and thesis projects at CCF throughout the year.



## CCF PUBLICATIONS

CCF has publications and resources for people who want to learn more about the species.  
Visit: <https://cheetah.org/learn/resource-library/>

## BOOKS

Cheetahs: Biology and Conservation - 1st Edition 2018, Eds, Laurie Marker, Lorraine Boost, Anne Schmidt-Kuentzel, 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

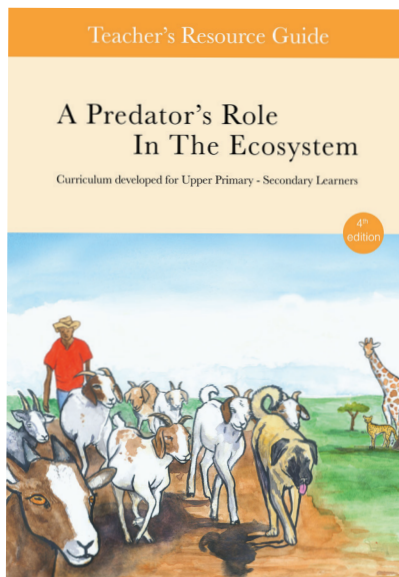
CCF's scientific papers are available online: [www.cheetah.org/research/by-type/scientific-papers/](http://www.cheetah.org/research/by-type/scientific-papers/)

## EDUCATION RESOURCES AND GUIDEBOOKS

Guide to Integrated Livestock and Predator Management Adapted for the Horn of Africa in 2023 (available in Somali language).  
A Predator's Role in the Ecosystem - CCF's Teacher's Resource Guide, 4th Edition - revised in 2017, Adapted for the Horn of Africa in 2023 (available in Somali language).  
International Cheetah Day Conservation Passport

## CHEETAH STUDBOOKS

North America: 1983 - 1987  
International: 1988 - present



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

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

E-mail: [ccfinfo@iway.na](mailto:ccfinfo@iway.na)  
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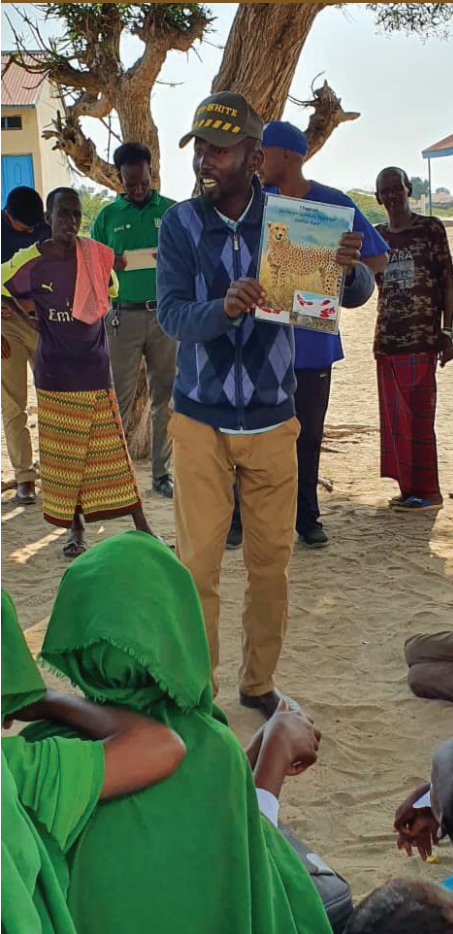


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# Conservation



## HUMAN-WILDLIFE CONFLICT MITIGATION

Ninety percent of Namibia's cheetahs live on livestock and game farms, outside protected areas, alongside rural farming communities. This proximity makes cheetahs more visible to farmers and exposes them to livestock and game farming enterprises. Unfortunately, cheetahs and other predators have historically been perceived as threats rather than valuable components of a thriving ecosystem. For farmers, especially those who are economically disadvantaged, the loss of even a single animal can have devastating consequences.

During the 1980s, Namibia's cheetah population was drastically reduced by half, with over 8,000 cheetahs removed from the landscape by livestock and game farmers. Recognizing the importance of maintaining ecosystem balance, Dr. Marker established conservation strategies to promote sustainable land use while fostering coexistence with native predator species. In 1991, CCF began researching conflict mitigation, which led to the development of the integrated livestock and wildlife management training known today as Future Farmers of Africa (FFA). CCF's researchers create and test predator-friendly livestock management techniques and tools on their Model Farm. These solutions are promoted through farmer publications, media, agricultural shows, meetings, colleges, universities, and FFA training courses to prevent further cheetah population decline.

CCF's most effective non-lethal predator control tool for farmers is the CCF Livestock Guarding Dog (LGD). Anatolian shepherd and Kangal dogs are bred, trained, and placed with farmers at minimal cost to protect small stock like goats and sheep. The presence of these large dogs with their loud barks deters most predators, resulting in over an 80% reduction in predation rates for farmers using CCF LGDs. This reduces the need for farmers to harm cheetahs. Since 1994, the LGD program has placed over 750 dogs in Namibia and has inspired similar initiatives in South Africa, Botswana, Tanzania, as well as other regions worldwide.

CCF has played a crucial role in advancing the conservancy system in Namibia, which effectively combats domestic poaching of endangered wildlife species and serves as a successful African model. Conservancies require defined membership, boundaries, committees, and equitable benefit distribution, linking the fate of local people with that of wildlife for mutual thriving. CCF is actively involved in the Waterberg Conservancy and is a founding member of the Greater Waterberg Landscape initiative, contributing to its steering committee. Additionally, CCF is a member of the Namibian Association of Community-based Support Organizations (NACSO). Utilizing Namibia's conservancy system as a model, CCF is establishing a similar organization, the Somaliland Association of Community-based Support Organizations (SACSO), in collaboration with the Somaliland government and NGOs in Somaliland.

	Species	Tracks Front/Back	Prey Location	Prey Size	Claw Marks	Stomach	Fang Location	Parts Eaten	Bones	Other Evidence	cm	mm
A	Domestic Dog		Anywhere	0-400kg	None		20-25mm			Wool, fur, skin & remains scattered. No marks on throat.	1	10
B	Caracal		Anywhere	10-25kg			20-25mm			Wool, fur pulled out & scattered. Does not eat skin or guts. Red dirt on prey skin.	2	20
C	Black-backed Jackal		Anywhere	0-50kg	None		15-21mm			Face & ears chewed or torn. Front legs or hooves may be separated from prey area. May be present without leaving clear sign.	4	40
D	Cheetah		Anywhere	Over 10kg			30-35mm			Does not eat skin or guts.	6	60
E	Lion		Anywhere	Over 10kg			40-45mm			Wool, fur pulled out & scattered. Does not eat skin or guts.	7	70
F	Brown Hyena		Anywhere	0-50kg	None		47-55mm			Wool, fur, skin and remains scattered. Bones all sharp. Only scattered debris, such as hooves, blood and guts remain.	8	80
G	Spotted Hyena		Anywhere	0-400kg	None		47-55mm			Heavy carcass remains. With a large claw, no evidence remains.	9	90
H	Leopard		Anywhere	All sizes			17-20mm			Measure tissue damage.	10	100
I	African Wild Dog		Anywhere	0-400kg	None		17-20mm			No remains. Heavy carcass remains. With a large claw, no evidence remains.		

## THE TOOLS FOR CONFLICT MITIGATION

CCF provides training resources to assist in Human-Wildlife Conflict Mitigation. Their farmer training book "A Guide to Integrated Livestock and Predator Management" and teacher's resource book "A Predator's Role in the Ecosystem" are used to educate farmers, teachers, and students on non-lethal measures to prevent livestock losses. CCF's educational teams utilize resources like the Kill ID chart to aid in their training activities. These materials are provided to all participants in CCF's coursework, teacher, and field training programs.

## CCF BUSH AND BUSHBLOK®

Cheetahs' hunting behavior is adapted to open or semi-open savannahs, but bush encroachment caused by factors like droughts, climate change, and overgrazing has altered Namibian farmlands, affecting the habitat and prey species mix. To address this, CCF developed the CCF Bush project in 2001, promoting habitat restoration and bush thinning while creating a sustainable market for harvested biomass products. The project has selectively harvested acres of bush to produce BUSHBLOK®, an eco-friendly, low-emission, high-heat premium fuel log. CCF's efforts received recognition, including the Tech Museum's Intel Prize for the Environment in 2008. CCF aims to establish ecological standards for expanded bush harvesting to restore significant tracts of cheetah habitat in Namibia. The project is certified by the Forest Stewardship Council (FSC®)(FSC-C004580) for responsible and sustainable forest resource management. The Biomass Technology Demonstration Centre (BTDC) and BUSHBLOK® production operation provide employment opportunities for over 50 Namibians, with the potential for further growth.



## 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 over 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, and with the Convention for Migratory Species (CMS) African Big Cat Initiative (ACI).

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**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





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# Facilities: Namibia



## CHEETAH CONSERVATION FUND FIELD RESEARCH AND EDUCATION CENTRE

CCF's Field Research and Education Centre (The Centre) is situated in Otjiwarongo, Namibia, on a 140,000-acre (56,000 ha) Model Farm and Private Wildlife Reserve at the base of the Waterberg Plateau. The Centre is open to the public 364 days a year, offering cheetah-related activities like the Cheetah Run, Cheetah Feeding, and a Cheetah Safari Drive. It features a Visitor Centre, Cheetah Museum, Cheetah Sanctuary, Genetics Laboratory, Veterinary Clinic, Model Farm, Dancing Goat Creamery, Cheetah Cafe, and Biomass Technology Demonstration Centre. Overnight accommodations include Babson Guesthouse, Cheetah View Lodge, and Camp Lightfoot for educational groups (up to 35 people).

CCF's public accessibility is crucial to its mission. Over 200,000 visitors from around the world have come to CCF's Centre since its inception in 2000, experiencing the iconic cheetah in its natural habitat. CCF encourages each visitor to become an ambassador for the species, spreading the knowledge gained to their communities and joining the efforts to Save the Cheetah for future generations.

### VISITOR CENTRE

CCF's Visitor Centre is a modern, multi-purpose building featuring the main reception area, Cheetah Cafe, gift shop, classrooms, administrative offices, a large instruction hall, and the Life Technologies Conservation Genetics Laboratory. Each year, around 15,000 visitors come to the Centre, and the ecotourism contributions go towards supporting cheetah conservation efforts.

### CHEETAH MUSEUM

CCF's museum hall features exhibits showcasing the global and Namibian history of cheetahs, the biology and ecology of CCF's research, and CCF's conservation initiatives. Visitors are welcomed with a multi-language video introducing them to CCF's global research and conservation efforts.







### **CHEETAH SANCTUARY**

The Centre serves as a permanent home for around 30 to 40 resident cheetahs that have been orphaned or injured and cannot survive in the wild. Each resident cheetah requires approximately US\$5,000 annually for food and veterinary care, which is supported through cheetah “sponsorships.”

### **LIFE TECHNOLOGIES CONSERVATION GENETICS LABORATORY**

CCF’s Life Technologies Conservation Genetics Laboratory, located at the Visitor Centre, is the only fully capable genetics lab at an in-situ conservation site in Africa. It supports research on cheetahs and various other species, including African wild dogs, lions, brown hyenas, soil, and plants. Visitors have the opportunity to meet researchers and learn about their projects while at the lab.

### **HAAS FAMILY VETERINARY CLINIC**

The Haas Family Veterinary Clinic at the Centre provides prompt veterinary care for cheetahs, dogs, goats, and other animals in need. On-site dental procedures and surgeries are less stressful for the animals. CCF’s veterinarians and interns also study cheetah diseases and curate the collection of cheetah samples for the Genome Resource Bank (GRB), which is one of the world’s largest banks for a wild species.



### **MODEL FARM AND DANCING GOAT CREAMERY**

The Model Farm implements predator-friendly farming techniques on integrated livestock/wildlife farmlands within

CCF’s reserve. It serves as a training facility for community members and university students studying agriculture and food sciences. Profits from the farm support CCF’s conservation and education programs. Livestock farming, including cattle, goats, and sheep, is the primary business. Additionally, the farm has grapevines for a cheetah-friendly Namibian wine label and the Dancing Goat Creamery, producing cheese, ice cream, fudge, and soap from milk supplied by CCF’s dairy goats protected by CCF Livestock Guarding Dogs. Through these ventures, CCF demonstrates practical, hands-on training and the potential for additional income streams that complement livestock farming.

### **CHEETAH CAFÉ**

The Cheetah Cafe, located in the Visitor Centre, is open daily from 8:00 a.m. to 5:00 p.m. (08:00 -17:00). It offers a variety of menu items made with locally grown and sourced vegetables, meats, and cheeses. Some of the delectable offerings include ice cream, feta, chevre, ricotta cheese, and fudge from CCF’s Dancing Goat Creamery.

### **BIOMASS TECHNOLOGY DEMONSTRATION CENTRE**

CCF’s Biomass Technology Demonstration Centre (BTDC) focuses on researching and developing clean-burning energy products using sustainably harvested thorn bush. This includes technologies like pyrolysis-based electrical generation and the production of briquette logs, charcoal hex logs, and lump charcoal. BUSHBLOK® is certified by the Forest Stewardship Council (FSC®)(FSC-C004580), highlighting its commitment to sustainable practices.

### **BABSON HOUSE**

Babson House is a luxurious private accommodation with three bedrooms, accommodating up to six people. The gated complex provides stunning views of the Waterberg Plateau and overlooks a wildlife habitat that is home to several resident cheetahs.

### **CHEETAH VIEW LODGE**

The new Cheetah View Lodge is a modern bush chalet-style accommodation, located just a short walk from CCF’s Visitor Centre. The lodge offers five suites, including four units with two beds and a spacious “family suite” with two queen beds and a sleeper sofa. Guests can enjoy full food and beverage services at the lodge’s private restaurant, which features an open-air veranda for wildlife watching and relaxation.

### **CAMP LIGHTFOOT**

Camp Lightfoot is a permanent camping facility that can accommodate groups of up to 35 people. It is primarily utilized by farmers and school groups for a two-day immersive educational experience during their visit to CCF.





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# Facilities: Somaliland



## **CHEETAH RESCUE AND CONSERVATION CENTRE (CRCC)**

In partnership with the Somaliland Ministry of Environment and Climate Change (MoECC), the Cheetah Conservation Fund (CCF) established Cheetah Safe Houses in Hargeisa from 2018 to 2023 to address the increasing number of confiscated cheetah cubs from the illegal wildlife trade. These Safe Houses provided crucial care and shelter for the rescued animals. In 2023, the operations were consolidated into a single centralized location called the Cheetah Rescue and Conservation Centre (CRCC) in Geed-Deeble. The CRCC now serves as the main intake point for confiscated cheetah cubs, offering housing and a dedicated quarantine area. Construction of the CRCC, designed to emulate CCF's renowned Centre in Namibia, began on 16th December 2021, aiming to be a significant wildlife conservation and education destination in Somaliland.

## **FACILITY**

The CRCC, situated on 1,800 acres (800 ha) in Geed-Deeble, a forest reserve an hour's drive from Hargeisa, serves as a permanent home for cheetahs rescued from the illegal pet trade or human-wildlife conflict situations by the MoECC and placed under CCF's care.

## **NATURALISTIC ENVIRONMENT**

The CRCC features expansive, 5 - 12 acres (2-5ha), enclosures that provide a naturalistic environment for the animals. The spacious, fenced enclosures allow for freedom of movement and play, essential for the cheetahs' well-being and rehabilitation process.

## **VETERINARY CLINIC AND LAB**

The CRCC houses a fully-equipped veterinary clinic and laboratories to provide world-class care for confiscated animals. Here, confiscated cubs receive immediate medical attention, addressing any health issues resulting from the illegal trade and improving their chances of survival and rehabilitation. It is operated by professionally trained international veterinary staff who live on-site.

## **CUB NURSERY**

The CRCC nursery is specifically designed for the needs of the youngest cheetahs and provides a safe and nurturing environment for the rescued cubs.

## **EMERGENCY QUARANTINE**

The CRCC maintains an emergency quarantine area to isolate and treat animals that might pose a health risk to the other cheetahs in care.



## STAFF AND EXECUTIVE ACCOMMODATIONS

The CRCC provides on-site housing for both the professional staff and visiting executives, ensuring round-the-clock care for the cheetahs and continuous operation of the facility. In addition, the site features a dedicated dining area, fostering a communal space for sharing meals and ideas.

## FUTURE DEVELOPMENTS

Plans are underway to build additional educational and vocational training facilities to benefit various stakeholders, including students, teachers, pastoralists, wildlife caregivers, eco-rangers, and local CRCC staff. Once complete, the CRCC will also be open for public tours to educate both local and international visitors about the country's ecosystems and indigenous wildlife.

## KEY ACHIEVEMENTS

The CRCC is a testament to the progress made by CCF and the MoECC in addressing the illegal trade in cheetahs. It stands as the first facility of its kind in the Horn of Africa, a region where most cheetah confiscation events occur.



## TRAINING AND EDUCATION

CCF envisions the CRCC as a vital training hub for the next generation of Africans in leadership roles, offering programs in biology, ecology, pastoralism, rangeland management, and cheetah and wildlife conservation.



## PARTNERSHIPS

The CRCC stands as a testament to the fruitful partnership between CCF and the MoECC, marked by a 30-year collaboration agreement. This joint effort encompasses the establishment and management of the CRCC. Over this span, CCF's role will transition to that of fostering sustained operation under the Somaliland government's stewardship. Within the scope of CCF's wider initiatives, the CRCC holds a pivotal position. It fulfills a crucial function in the trajectory of confiscated cheetah cubs, guiding them from rescue through rehabilitation and potentially towards release. This pivotal role underscores the CRCC's significant contribution to CCF's overarching mission to safeguard and preserve cheetah populations.

## REPORTING

For immediate reporting of IWT concerns, contact:  
Abdinasir (Director of Wildlife, Somaliland)  
at (+252) 62 4246955.

## LEARN MORE



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cheetah.org

**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





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Welcome to the  
cheetah Conservation Fund  
Research and Education Centre



Dr. Laurie Marker, the Founder and Executive Director of the Cheetah Conservation Fund (CCF), is a distinguished conservation biologist and research scientist renowned for her expertise in cheetahs. She has trailblazed research, conservation models, and cooperative partnerships, notably stabilizing Namibia's largest wild cheetah population. Since 1990, her leadership has elevated CCF into a premier institution for research, education, and conservation, nestled on a 140,000-acre (56,000ha) reserve and Model Farm near Otjiwarongo, Namibia.

Since 2018, Dr. Marker has directed efforts in Somaliland to combat the Illegal Wildlife Pet Trade (IWT) and inaugurated CCF's Cheetah Rescue and Conservation Center (CRCC) spanning 1400 acres (800 ha) in Geed-Deeble. This facility shelters cheetahs seized from the illicit trade. Furthermore, Dr. Marker and CCF played a pivotal role in reintroducing eight cheetahs to India in 2022, imparting training to the Indian Project Cheetah team and facilitating the transfer of cheetahs gifted by Namibia.

## Dr. Laurie Marker

Dr. Marker grew up with animals. She rode horses from four years of age, was a veterinary technician, had her own dairy goat herd and was a goat judge. Her first University studies were in agriculture, entomology and viticulture at Napa College and University of California at Davis, and she pioneered the Oregon Wine Industry. In 1974, 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 cheetah could be taught to hunt, and tested this theory with Khayam, a cheetah she hand raised from a small cub. Dr. Marker successfully taught Khayam to hunt, but during her time in Namibia, she learned that livestock farmers were killing thousands of cheetahs each year as a perceived threat to their livestock and livelihoods. She returned to the USA and developed the International Cheetah Studbook, a registry of all cheetahs in captivity, to assist with captive management of the species and collaborated in groundbreaking research revealing that cheetahs greatly lacked genetic diversity.

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 at an accelerated pace. Dr. Marker moved to Washington, DC as the Executive Director of the New Opportunities in Animal Health Sciences (NOAHS) Center at the Smithsonian's National Zoo (1988-1991), and searched for an organization to champion the cheetah. Between 1977 and 1990, she traveled back and forth to Namibia and other cheetah range countries, gathering data and networking with conservation biologists and researchers studying cheetahs and other predators.

In 1990, after an exhaustive but fruitless search for someone to take the lead on saving the species, Dr. Marker set up the Cheetah Conservation Fund (CCF), sold her worldly belongings, and moved to Namibia in order to dedicate her life to supporting the long-term survival of the cheetah in the wild.

Her in-situ research in Namibia was the first of its kind into cheetah ecology, biology, demographics, and genetics. Her work was the first predator research done outside of protected areas, specifically with the livestock farmers who were living with and killing cheetahs. Using the findings of her research, she began developing conservation and educational strategies to mitigate the conflict.

Living in a borrowed farmhouse outside of Otjiwarongo, for the first couple of years Dr. Marker drove door-to-door in an old Land Rover and surveyed rural

farmers about cheetahs and their impact on the livestock farming industry. These early interactions inspired Dr. Marker to develop the highly effective, non-lethal predator control methods that CCF employs today on CCF's Model Farm. 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 world.

In 1994, she introduced Livestock Guarding Dogs to Namibia. The LGD program is one of the most successful programs, with Kangal and Anatolian Shepherd Dogs being bred and placed with rural farmer's livestock. The use of the LGD has shown an 80-100% decrease in livestock loss and the reduced need for farmers to kill cheetahs and other predators.

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 and ground breaking 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.

In 1994, Dr. Marker moved to and built CCF's Field Research and Education Centre, a working livestock farm which today is over 140,000 acres (56,000ha), a private game reserve and model farm, within the Waterberg Conservancy and the Greater Waterberg Landscape. Dr. Marker has worked through the cheetah's range and helped develop programs in many countries and has trained several hundred conservation scientists from most cheetah range countries.

Currently, Dr. Marker is working actively in Somaliland to stop the Illegal Wildlife Pet Trade in live cheetah cubs from the Horn of Africa to the Middle East. She has created CCF's Cheetah Rescue and Conservation Center (CRCC) in Geed-Deeble for animals confiscated by the government of Somaliland and is developing strategies in Somaliland and Ethiopia to address the root causes of threats to cheetahs in the Horn of Africa region.



In 2022, she facilitated the introduction of eight cheetahs gifted from Namibia to India as part of Project Cheetah to reintroduce the species to India after being extinct for over 75 years.

Dr. Marker earned her DPhil in Zoology from the University of Oxford, WildCRU in the United Kingdom. In 2013, she was named an A.D. White Professor-at-Large at Cornell University in Ithaca, New York. She has published more than 150 scientific papers in peer-reviewed journals, several book chapters and four books, including being the lead editor of *Cheetahs: Biology and Conservation*, a comprehensive textbook on cheetahs.

Dr. Marker is the Chair of the Large Carnivore Management Association of Namibia (LCMAN), a core member of the IUCN Cat Specialist Group, and resides on the Scientific Committee of both Panthera and the Mountain Lion Foundation.

Dr. Marker has been the recipient of many awards including:

- 2020 Explorer's Club President's Award for Conservation
- 2015 Ulysses S. Seal Award for Innovation in Conservation
- 2015 E.O. Wilson Biodiversity Technology Pioneer Award
- 2015 Eleanor Roosevelt Val-Kill Medal Award
- 2010 The Explorers Club Lowell Thomas Award
- 2010 Tyler Prize for the Environmental Achievement Laureate
- 2008 Tech Museum Intel Environmental Award
- 2008 San Diego Zoo Lifetime Achievement Conservation Award

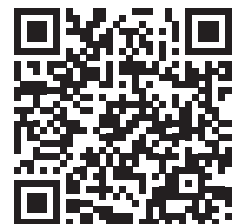
Dr. Marker was featured by TIME Magazine as a Hero for the Planet. She was also featured publications including: Smithsonian Magazine, National Geographic Magazine, Discover Magazine and The New York Times. She appeared on numerous television shows, including The Tonight Show, Good Morning America, The Charlie Rose Show and the Today Show.

In 2021, Dr. Marker became a founding Trustee of the Arabian Leopard Fund, an organization working to return wild leopard and cheetah populations to Saudi Arabia.

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

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

E-mail: [ccfinfo@iway.na](mailto:ccfinfo@iway.na)  
[info@cheetah.org](mailto:info@cheetah.org)





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Situated at CCF's Namibian Field Research and Education Centre, the Biomass Technology Demonstration Centre (BTDC) focuses on creating sustainable clean energy from thorn bush. This initiative promotes biomass industry growth while restoring habitats for wildlife and livestock. The region's ample thorn bush, up to seven tons per acre, showcases biomass potential and sustainable practices.

The BTDC aims to attract ventures, create jobs, offer electricity to underserved areas, mitigate conflicts, and enhance farmland. Combining conservation, economy, job creation, and sustainable energy, the BTDC contributes to a prosperous and ecologically balanced future.

## Biomass Technology Demonstration Centre

### RESEARCH & EVALUATION

The BTDC's research covers a broad spectrum of biomass technologies, focusing on those that can foster sustained economic ventures. Initial technologies encompass the production of briquette logs, charcoal hex logs, lump charcoal, and pyrolysis-based electrical generation. The next phase will introduce promising advancements like wood pellet production, alternative chipping power trains, and Stirling engines.

CCF's ecologists conduct ongoing monitoring of harvested areas to gauge habitat recovery progress. The BTDC team assesses novel machinery and explores ways to scale harvesting methods and transportation effectively. Successful commercial biomass operations require consistent deliveries of raw wood, aligned with equipment capabilities and seasonal demands.

The BTDC will also evaluate other renewable energy options, including photovoltaic (solar) systems, alternative energy storage solutions, and micro-grid setups. Given the expanding biomass industry in central Namibia, lack of electricity access could hinder rural development. Thus, the BTDC will investigate optimal approaches for implementing small grids in these areas, potentially integrating biomass-based and solar electricity to address local energy needs.

### BIOMASS AS A VIABLE BUSINESS

The BTDC collaborates with academics, researchers, and engineers to implement, assess, and validate each technology, tailoring them to the available biomass in the region. Customizations are made as needed to equipment and processes. Ongoing evaluations are conducted to assess the economic viability of specific industries, ensuring that production costs remain sufficiently low for profitable sales of biomass products.

In the past decade, CCF has been at the forefront of thorn bush harvest methods. CCF's bush project's BUSHBLOK® is certified by the Forest Stewardship Council (FSC®) (FSC-C004580, guaranteeing responsible land management and holistic benefits encompassing environmental, social, and economic aspects. This certification signifies the highest forestry management standards.

The BTDC, equipped with diverse operating equipment, optimized operational methods, and a thorough grasp of cost economics and wood harvesting techniques, serves as the perfect platform for showcasing biomass technologies. This center draws interest from entrepreneurs, established companies, international grant organizations, NGOs, and investors worldwide. By linking investment capital with businesses and fostering knowledge exchange, the BTDC aims to stimulate a burgeoning biomass industry in central Namibia.



Given the vast expanse of invasive bush covering millions of acres, biomass is poised to emerge as a robust regional economic force, generating essential employment opportunities, fresh tax revenue streams, and enhanced livelihoods.

### A TEACHING FACILITY

The BTDC also acts as an educational and training center. It trains workers in equipment use, safety, and employment regulations, while field training covers topics like harvest planning and FSC®-compliant methods. Local businesses and entrepreneurs receive education on biomass economics, distribution, and funding access. The BTDC is open to academic institutions for student education and research.

### OUTLOOK FOR THE FUTURE OF BIOMASS

The biomass potential in central Namibia is enormous, with abundant thorn bush resources in an area with unemployment and limited electricity. CCF's extensive research supports the sustainable and responsible harvesting of this resource.

International donors and investors are brought together by CCF to support the BTDC. Through ongoing research, technology demonstrations, and training, CCF aims to stimulate a new economic wave centered around biomass in Namibia.

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[bushblok.com](http://bushblok.com)



*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.*