Celebrating 10 Years

ANNUAL REPORT 2014

A gold coins from the new 'Nocturnal Hunters Natura Range' launched by SA Mint; overstruck in the Red Cederberg, each bearing a leopard paw print and inscribed with the letters CLT.

Table of Contents

Letter from the Chairman

It is amazing to think that this year the Cape Leopard Trust (CLT) has celebrated its 10th anniversary. We look back over this time with great appreciation for the support we received from so many individuals, our corporate sponsors, as well as the increasing numbers of farmers and private landowners who help and encourage us to work on their land and have joined us on this journey. Together we have achieved much to be proud of. They provide the foundation that makes it possible for us to forge a way forward and continue our efforts to find workable solutions whereby humans and wildlife can co-exist, an ideal that gets more difficult by the day as human communities expand.

While we celebrate this milestone, we also bid farewell to Quinton Martins, CEO and co-founder of the CLT. Quinton was the visionary driving force making the CLT what it is now, a well established organization with its own momentum and permanence. He will be relocating to the USA to join the Snow Leopard Conservancy, but will remain involved as a CLT trustee and non-executive director. We will remember Quinton for his passionate efforts to make a difference to the wellbeing of our leopards. For Quinton this was never just a job, but rather a calling and a duty which he tackled with great zeal. Our best wishes go to him and his family.

We were elated to hear of the wonderful decision by the SA Mint to partner with the CLT and dedicate the newly launched Leopard Edition gold coin in their “Nocturnal Hunters” collection to the CLT in recognition of the work being done by us, in particular our Environmental Education Project. This announcement was the pinnacle of our 10th anniversary year. A total of 600 gold coins were overstruck in the Red Cederberg with a leopard paw print and the letters CLT, at the same place where the first leopard was photographed by Quinton in 2004. We are grateful for this special honour.

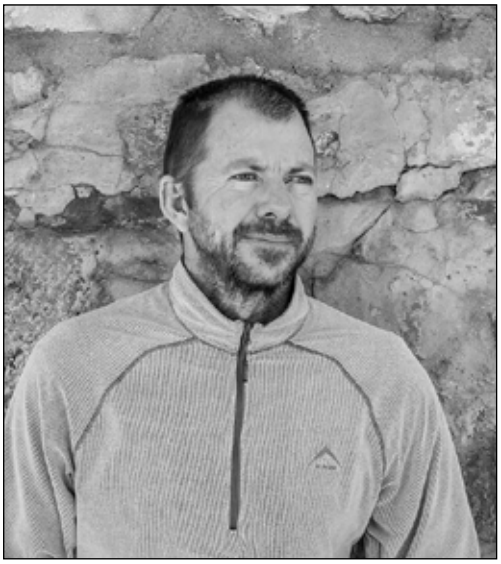
A word of thanks to CapeNature, our partners in the Western Cape, who over the years supported our conservation efforts in the Cederberg, Boland and Gamka and also provide us with accommodation facilities at some of their reserves, especially the Matjiesrivier Reserve in the Cederberg, the location of our Environmental Education Project. This wilderness camp continues to be hugely popular and in demand. We are very proud of the role it plays to connect our children with their natural heritage.

I wish to particularly commend our personnel for their dedication and dependability. We are blessed to have a team of researchers, educators and administration staff in our organization who continue to uphold a culture of conscience and hard work. With the calibre of people we have in the CLT I am confident that the organization will continue to grow in strength and relevance in the years to come.

Lastly I would like to thank my fellow trustees for their support and for the great care with which they perform their fiduciary duties. It is an honour for me to serve on the Board of Trustees together with them.

Johan van der Westhuizen
Chairman
The Cape Leopard Trust Board of Trustees

Letter from the CEO



It is hard to believe The Cape Leopard Trust is celebrating its 10th anniversary this year. I have fond memories looking back at the history of the project - past experiences, support garnered and friends made over this time. I am also proud to see the Cape Leopard Trust as such a well-respected provider in its field today.

The project began in the Cederberg in 2003 as a self-funded initiative until the establishment of the Trust in 2004. For the next few years I was at the helm of pretty much a one-man show. Since then, the project has grown organically and has spread into key areas where mountain leopard research and mountain systems needed work. Studying leopards has always been difficult in this environment, and observing these incredibly elusive animals, even more so. In the early part of the study, 35mm film camera-traps were used to "capture" photographic evidence of these ghost-like creatures. Since then, we have moved on from film to digital camera, expanded the study area to include the Boland Mountains, Gouritz mountain region, and Namaqualand's Kamiesberg. Surveys were even conducted in Oorlogskloof Nature Reserve and the Tankwa Karoo National Park. Later, the collaring of leopards (& caracals) using GPS radio-collars made a significant difference in our understanding of the ecology and conservation concerns of the Cape's larger predators. In 2009, we began the Cape Leopard Trust Environmental Education Programme, developing into what is likely the most important component of our work. The one could not exist without the other, for our experiential learning programme is largely based on "real research".

Finally, it has been a very emotional time as I have announced my stepping down as head of the CLT. My family and I will be moving to the USA where I join the Snow Leopard Conservancy. I look forward to remaining involved with the CLT, contributing to my vision of connecting mountain cat conservation across the globe. I am also very pleased that I will be handing over the project to a very competent team and that the project has never been in such a good space with inspiring plans for the future. I hope that we remain humble and never lose sight of where we came from and what our vision is; and I wish to thank our Board of Trustees and all our supporters for what they have done to make the Cape Leopard Trust such a meaningful organisation.

Dr Quinton Martins
CEO
The Cape Leopard Trust

The Cape Leopard Trust Team

Board of Trustees

Johan van der Westhuizen (Chairman)
Dr William Horsnell
Peter Lloyd
Dr Ian McCallum
David Knott
Dr Quinton Martins

Staff

Anita Meyer
Boland Project Coordinator

Jeannie Hayward
Boland Project Researcher

Bogdan Cristescu
PEACE Project Coordinator

Kristine Teichman
PEACE Project Researcher

Laurel Serieys
Urban Caracal Project Coordinator

Annelie Veloen
Camp cleaner

Quinton Martins
CEO

Bryan Havemann
Programme Manager

Helen Turnbull
Communications & Project Support

Yvonne Kamp
Administrator

Elizabeth Martins
Education Project Coordinator

Hadley-John Lyners
Environmental Educator

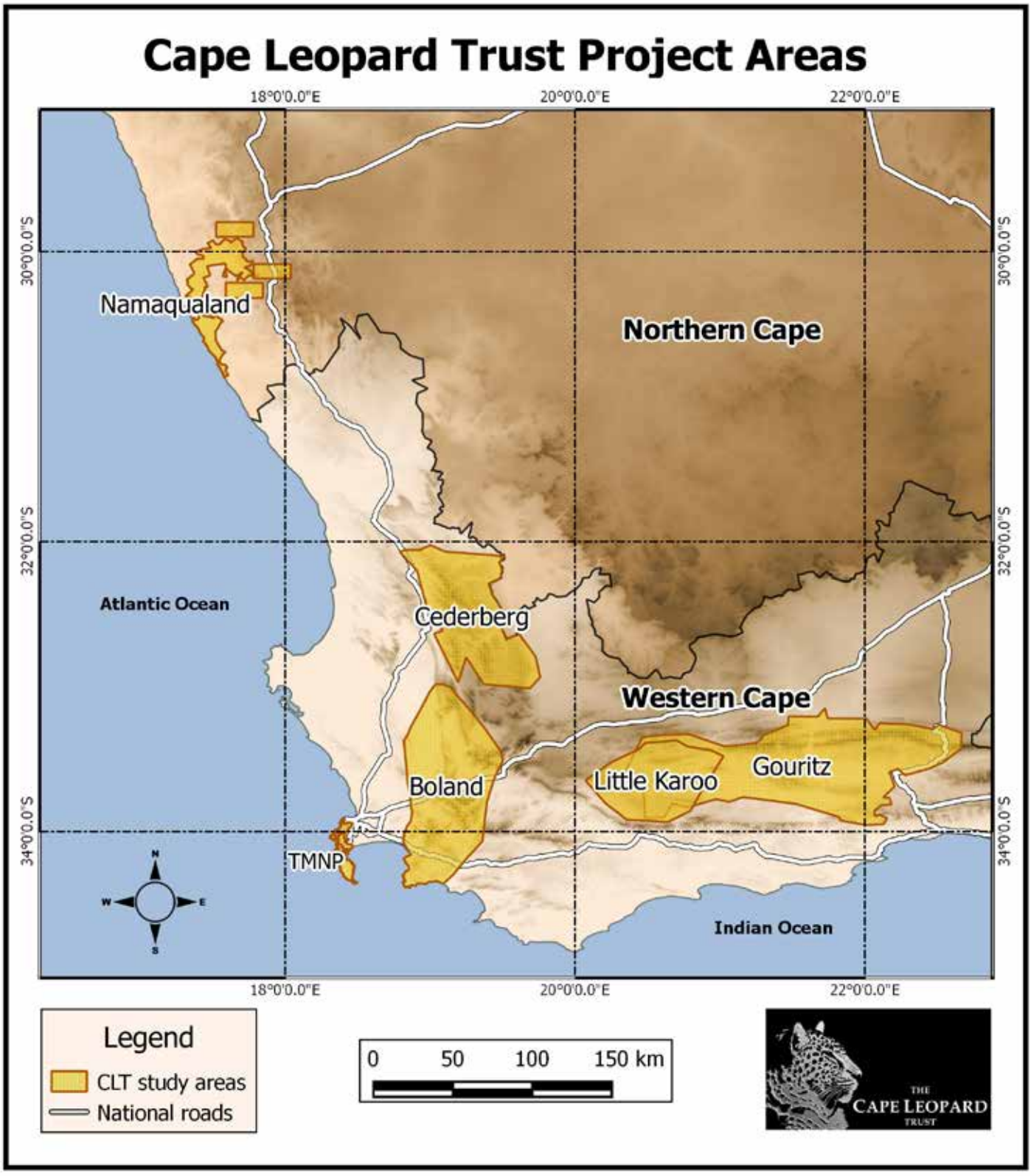
Jaclyn Stephenson
Environmental Educator
(till August)

Catherine Philips
Environmental Educator
(since October)

Students: Corlé Jansen; Riette Koortzen; Sarah Eichstadt; Megan Hudson; Maryna Odendaal; Elsa Bussière; Elani Steenkamp; Francois Retief

Interns: Nadine Sydow; Edenne Kapinga; Samuel Chevallier; Catherine Schutte

Project Locations



From the Programme Manager

Letter from Cape Leopard Trust Programme Manager

In life there are special defining moments where you reach a crossroad and the decision that is taken will have a huge impact on your future. I am so grateful that I have this past year been able to embark on an incredible journey with the Cape Leopard Trust at such a crossroad.

In these days of rampant development often with little regards for the environment, biodiversity loss is happening at unprecedented levels. It is so refreshing to have organisations like the Cape Leopard Trust that not only advocate for biodiversity conservation through sound research, related conservation practices and environmental education, but most importantly walk the talk and show through their activities how it should be done.

Being asked to lead the organisation is an immense privilege and I realise that it also comes with a huge responsibility to not only continue the good work of the past, but also to adapt and grow the organisation from the sound foundation that has been created over the last ten years. Dr Quinton Martins has built up a world class environmental NGO and handing over such a precious baby for someone else to run is never easy. The Cape Leopard Trust has a dynamic team and is poised to continue making inroads not only with various research projects, but through expanding the environmental education component as well.

The field and admin staff of the Cape Leopard Trust, often under harsh conditions, do such a good job on the various projects and this is highlighted in this annual report. Their dedication and commitment is evident in the great results that have been achieved this past year. The academic institutions have also played a key role and their ongoing support is not only essential, but highly valued. The diverse research projects that are being tackled, from rodents to hyenas, just shows the connectivity with everything in nature and most importantly the role that man can play in helping to maintain that essential balance. The Environmental Education component is particularly important where mind-sets can be changed to embrace a more sustainable future living in harmony with nature.

The Cape mountain leopard as the top predator in the Western Cape embodies everything that we stand for. Even though the current economic climate, political uncertainties and habitat destruction is challenging, just as the leopard has learnt to adapt through centuries of persecution, the Cape Leopard Trust will also become the best that we possibly can be despite adverse circumstances and through our work, have positive cascading benefits at many different levels.

I feel that joining the Cape Leopard Trust on its 10 year anniversary is very fitting and look forward to moving forward with the project, being guided by extremely capable trustees. Without the incredible support from our sponsors, donors and partners the Cape Leopard Trust would not be able to function and it is these fundamental relationships that I want to nurture and grow to make the organisation strong and sustainable in the future.

I am looking forward to engaging with all of you as we take hands and confidently move forward in a manner that will make a tangible, meaningful difference not only for broader biodiversity conservation, but also creating a better future for our children.

Bryan Havemann

News from the Den

Its a Decade - News from the Den

Helen Turnbull has been working for the Trust for almost two years now. She joined the project at a point in time when it had established itself, and had already gained a certain amount of momentum. All she had to do was grasp the baton and forge a way forward in a structured and organised manner. Here are her highlights of this year in the den:

This year has been particularly momentous. In March we engaged Yvonne Kamp and now have our own bookkeeper, which has been hugely beneficial to the Trust. Accounts challenges are now easier to address and we have successfully registered the Trust for VAT. Bryan Havemann joined us as Programme Manager in May. His contacts and experience in the conservation world are extremely valuable going forward as we look to create new partnerships for the organisation, and enhance collaborative conservation efforts. The environmental education project has finally been able to expand its programme into Cape Town and Catherine Philips has joined the team to build and consolidate relationships with schools and NGOs around the city, creating new opportunities for children to learn about the value of their natural environment. Our partner Avis has bolstered the education project with a branded Polo Vivo, which will go a long way to improve our visibility. Students Elani Steenkamp and Elsa Bussiere are conducting research projects on our behalf in Gamka and the Karoo. The Predator Ecology & Coexistence Experiment in Namaqualand has gathered momentum and is yielding good results for our funders Woolworths and Abax and our partners Conservation South Africa. Recently, and after much anticipation and planning, researcher Laurel Serieys arrived from California to begin a caracal study in the Table Mountain National Park. It has been heartening to see the positive response from conservation authorities to her proposed work, and her enthusiasm for the project is contagious.

We were pleased to hear that Quinton had been elected as a finalist in the prestigious 2014 Eco-Logic Awards Eco-Warrior Category. He attended the Eco-Awards ceremony held at the Craddle of Mankind, along with the most dedicated environmentalists and ‘Green’ businessmen in South Africa. The Cape Leopard Trust was accepted as a charity partner for the Pick ‘n Pay Momentum Cape Argus Cycle Tour and the ABSA Cape Epic, both of which brought in extra funds and raised awareness of the organisation. You will read more about the Epic later in this report.

This year is particularly notable. We are celebrating our tenth anniversary and to set the tone we hosted a memorable event in the Cederberg in May for loyal friends from different walks of life who have supported us through thick and thin over the years. The ‘Opskop’ weekend was a potjiekos of mass proportions and I will never forget the expansive shopping list I had to navigate to feed the anticipated 150 guests. Everyone gathered at Nuwerust for the weekend to enjoy the specially planned activities culminating with good food and wine in the evening around the fire on the Saturday evening to mark the occasion. A formal fundraiser event followed in August, hosted by Leopard’s Leap Family Vineyards. It was more structured than usual, complete with MC’s, celebrity chefs in the kitchen and music, but the atmosphere was festive and over 180 people attended. The auction was spectacular and the event raised a considerable amount for the Trust.

We learned a few months back that Quinton would soon be taking the next step in his life journey moving to California to work for the Snow Leopard Conservancy. It is now up to us to take his wonderful legacy forward, and I can already sense this process has begun in the structure that he has helped to create with a fantastic team of people that will continue to drive his vision to protect the Cape mountain leopard and its dwindling habitat.

Cederberg Predator Research

The Cederberg study area had its fair share of excitement this year…

During an Education camp, the story of Titus, the leopard M12 named after Quinton's field assistant, Willem Titus, unfolded into a real-life drama. This territorial male leopard inhabiting a significant portion of the Red Cederberg east of our Matjiesriver base is also the leopard who walks through our Education campsite! Appearing over the last few years in our camera traps, Titus always looks entirely confident and massively powerful. However, he had eluded our capture traps until April this year. Quinton decided once more to attempt a capture and set his traps, not expecting success. It was only one day later, on Saturday evening, 12 April 2014, that this exquisite cat was finally caught. He weighed a healthy 42kg and an Iridium satellite GPS collar was fitted. Over 5 months of data were retrieved before the collar unfortunately ceased to work. It has been with great interest that we have followed Titus's movements since then. His collar was the first satellite collar we'd used successfully in the Cederberg, emailing us GPS points once a day. It was a strange feeling to really have a sense of where Titus was 'now'.

The oldest male Cape Leopard on record?

We had an email from a neighbouring lodge saying that they had a picture of Titus in one of their camera traps. On closer examination we were astonished to find that it was Oom Arrie (M2), whom we first recorded in October 2004. He was already an adult at that stage and when captured and collared in July 2007, we estimated his age to be at least 8-9 years old. The fact that he is still alive suggests he is at least 15 years old, possibly older. He had disappeared off our radar, but it seems that he had actually just shifted his territory, probably pressurized by the stronger leopard, and is still holding his own in the region to the south of Titus.

The world of National Geographic

Camera trapping for us has always been focussed on obtaining valuable data on animal populations. However, we all get overly excited when viewing our camera pics for the first time, never knowing what to expect. Sometimes we are fortunate to get a really great photograph, but due to the limiting quality of the equipment we use, it is low resolution and not easily publishable in top magazines. Steve Winter, a National Geographic Magazine photographer, one of the pioneers of camera trapping, was to take camera trapping to a new level with his snow leopard, tiger and jaguar work. Quinton met up with him in Los Angeles when he was doing his Nat Geo article on mountain lions. It was here that the two connected and came up with a plan to try get the quintessential Cape mountain leopard shot. Thus, in September this year, Steve came out and set up his first cameras with Quinton in the Cederberg. The set-up is fascinating and takes a whole day per camera with the result as good as a studio shoot! We are still waiting for the perfect photograph for next year's leopard article Steve is preparing for National Geographic. In the meantime, visitors on leopard research participation trips are taken to test the camera (photo above).

The Cederberg can be seen as the platform for new ideas to be tested and the education project to capitalize on the "friendly" environment it is located in. It has (i) unique and diverse habitat and biodiversity; (ii) long-term research in progress; (iii) support from communities; and (iv) a suitable tourism network to allow for participatory trips to be conducted in the area.
Our long-term goals include amongst others, wanting to:
- Understand the breeding behaviour and reproductive success of leopards in the Cederberg;
- Study the behaviour and movement of dispersal leopards in a bid to identify suitable conservation corridors and possible population bottlenecks;
- Complete the "Ecology of caracal in the Cederberg Mountains" study started by Quinton;
- Determine the extent of influence leopards as apex predators have on the behaviour and movement of caracals.

Klipspringer

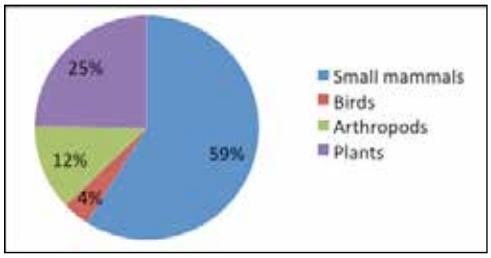
Sarah Eichstadt is currently finishing her Conservation Ecology degree at the University of Stellenbosch. Her final year research project focused on klipspringer densities in three regions of the Cederberg Mountains. The study of predator-prey relationships is an important component of ensuring holistic conservation. Klipspringer in the Cederberg Mountains, Western Cape, make up 44-57.7% of the Cape Leopard's diet in the area. Studying the various components of klipspringer populations, including population densities and home ranges, is therefore an important contribution to the overall aim of conserving the Cape Leopards, the last large wild mammal and apex predator in the Cape. This study used line transects in three areas of the Cederberg Mountains that covered both the Fynbos and Karoo biome types. Transects were sampled during the night using a spotlighting technique to pick up the ungulate's eyes. This was far more effective than day-time sightings. Densities for each sampled area of the Cederberg were calculated and compared. Comparisons were also made between the differences in the sampled klipspringer densities between the Fynbos and Karoo biome as well as between the summer and winter sampling months. Klipspringer densities were found to be higher in the Fynbos biome (2.425 per 100ha) than the Karoo (0.190 per 100ha). Summer sampling also yielded higher klipspringer densities (1.904 per 100ha) than winter sampling (0.712). This study potentially forms a baseline for future research on klipspringer in the Cederberg Mountains as more research is needed to determine reliable and robust density measures as well as other behavioural and territorial traits.

Rock Hyrax

Riëtte Koortzen has done her honours study on the basking behaviour in a colony of rock hyrax (Procavia capensis) during winter in Driehoek. Behaviour plays an important role in the physiological ecology of animals. Some mammals make use of certain behavioural responses when cold or hot environments are encountered. Rock hyrax, for example, are known to bask in the sun. Previous studies show that the role of basking in rock hyrax could be to conserve their core body temperature by using solar radiation during the day instead of creating energy endogenously. Basking can either be flat, with the body of the rock hyrax stretched across the rocks, or hunched, where its hind legs are tucked underneath its body and its front legs vertically erect in front of its body. The basking behaviour of a colony of rock hyrax was studied over an 8-day period during winter in the Driehoek area in the Cederberg Mountains. The colony had established itself on Rondheuwel, a relatively small hill, where rock hyrax favoured 3 sites for basking. Temperature-recording devices called iButtons were used to record the rock as well as air temperatures. This allowed for a comparison between the microclimate temperatures and the basking behaviour of rock hyrax. The data obtained from the iButtons showed rock and air temperatures to be very similar during early mornings (09:00-10:30). Rock temperatures were, however, higher during midday (11:30-13:00) and afternoon (15:00-16:30) observational sessions compared to air temperatures. Some of the main findings showed rock hyrax to bask hunched rather than flat during early mornings when rock and air temperatures were still low (Figure 1). Early mornings, the rock surfaces have not been exposed to large amounts of radiation from the sun and are still cool. Reducing the area of contact will therefore reduce heat exchange between rocks and the body of rock hyrax. This study is consistent with a similar study; however, more research has to be done in the Driehoek area to ensure findings are accurate.

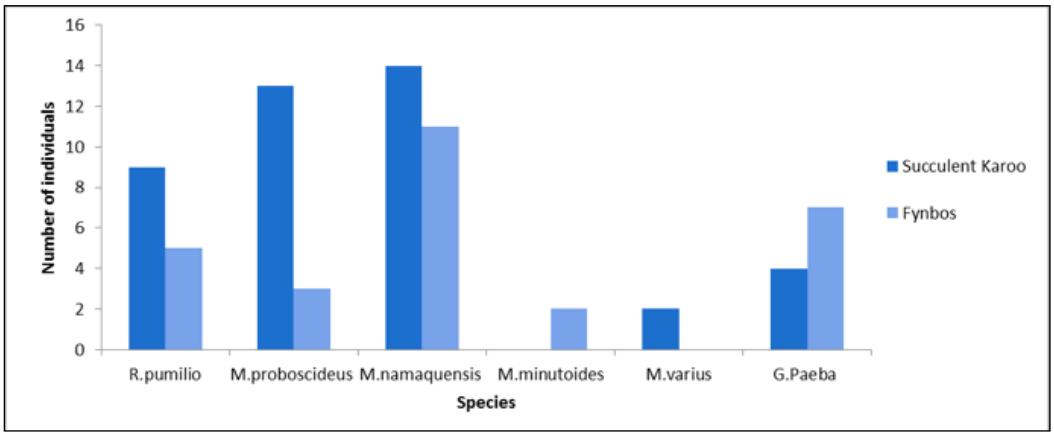
Spotted Eagle Owl

Megan Hudson's final year mini-thesis project analysed the diet of Spotted Eagle Owls (*Bubo africanus*) within certain regions of the Cederberg Mountain Range. This study took place in two primary areas of the Cederberg namely, the Karoo-vegetated Matjiesrivier Nature Reserve and the fynbos-vegetated surroundings of Driehoek. The owl's diet was analysed by dissecting pellets and identifying the prey remains within. From each pellet various components can be identified, making it possible to see what the owl has been eating, and whether there are any noteworthy patterns in their diet composition. There is a lot of truth in the saying "you are what you eat" when it comes to the analysis of owl diets. A variety of prey items were recovered from the owl pellets, with the predominant category being small mammals followed by plants, arthropods and lastly birds. Furthermore, the most abundant small mammal prey individuals found within the 30 pellets collected were the Common mole rat (*Cryptomys hottentotus*) and the Hairy-footed Gerbil (*Gerbillurus paeba*). In addition to this, seasonal variation in the diet was significant however no compositional difference between the fynbos and karoo sites was found. Many harmful factors impact these regal birds of prey including habitat encroachment, increasing road mortalities as well as a gross increase in agricultural pesticide use worldwide. Understanding the roles owls play in ecosystems by regulating rodent populations needs to be thoroughly communicated before these birds are driven towards sizeable population declines.



Rodents

Maryna Odendaal conducted a survey of the diversity of small mammals and associated ectoparasites in the fynbos and succulent Karoo vegetation types at Matjiesrivier Nature Reserve. The Western Cape is renowned for its high diversity in both fauna and flora, however few studies have been conducted on small mammal diversity associated with the Fynbos and Succulent Karoo. The project was carried out at Matjiesriver Nature Reserve in the Cederberg mountain range. The aims of the project were to compare small mammal diversity between the Fynbos and Succulent Karoo biomes and to record ectoparasite diversity and abundance on the most abundant small mammal species found in the area. The small mammal species composition did differ between the two vegetation types, but differences were not significant. A higher ectoparasite abundance was recorded on the small mammals trapped in the Succulent Karoo compared to the Fynbos. However the differences observed were not significant, mites (p= 0.551) lice (p= 0.287) ticks (P= 0.406) and fleas (p=0.622). The study provides baseline data for prospective studies on the small mammal and ectoparasite diversity in the Fynbos and Succulent Karoo biome.



The Boland Leopard Project

The Boland Leopard Project

The majestic Cape Fold Mountains, with their jutting peaks and deep valleys, represent a refugium for leopards in the Fynbos Biome. For the past four and a half years, Boland Project coordinators and researchers, Jeannie Hayward and Anita Meyer, have been focussing their research efforts on a ~2000 square kilometres area of this range – the Boland Mountains that tower over the towns surrounding Cape Town. This seemingly untamed mountain wilderness is surrounded by urban, semi-urban and agricultural land-use and infra-structure, but leopards have managed to persist here despite growing human pressure thanks to their adaptability and elusive nature. Previous research on leopards in the Boland was conducted 30 years ago on a substantially smaller geographical scale. The Boland Project's research data forms a fundamental baseline from where it is possible to monitor the leopard population and on which to build future projects.

Spatial and Behavioural Ecology of Leopards in the Boland

Informed conservation management decisions about leopards and any aspect of their ecology are impossible without scientific research. The initial phase of the Boland Project involved a 2-year camera trap survey estimating leopard density and distribution, combined with a mammal survey. This information led to Jeannie's investigation of the habitat use and movement patterns of leopards in the fragmented, human-modified environment of the Boland mountains using GPS collar data. The fieldwork and data collection phase of her PhD study with the University of Cape Town is now drawing to a close – with 9 adult leopards collared (8 males, 1 female), almost 15000 GPS points collected and over 100 leopard feeding sites documented.

The GPS data are now being analysed to construct a fine-scale habitat resource model quantifying leopard habitat use and preference, as well as investigating movement corridors and connectivity between neighbouring mountain ranges. Preliminary inspection of the data suggests that although leopards primarily utilise rocky mountain slopes, they also regularly move through, and hunt, on the low-lying foothills that

fringe the urban and rural landscape matrices. The variety, extent and effect of anthropogenic impact on mammals at the urban-wildlands interface within the Boland is a topic that will receive much needed attention in this thesis. This interface between transformed and natural habitat would generally be the zone of highest conflict for leopards and their prey, being susceptible to human-induced threats including wire snares, hunting dogs, road mortalities and direct persecution due to conflict with livestock farmers. GPS cluster analyses of leopard kills suggest that similar to findings in the Cederberg, leopards are selecting medium to large prey in accordance with availability.

A challenging and integral aspect of 2014's fieldwork has been the retrieval of leopard collars from the field. GPS collars should not remain in place on the study animals for the rest of their lives, and thanks to modern technology release mechanisms are now built into the collar belting which allows the collar to "drop off". This is ideal because it eliminates the need to recapture animals in order to remove collars, therefore keeping stress to a minimum. The downside of drop-offs is that the researcher has virtually no control over where it happens. It can be anywhere, adding a whole new meaning to finding a (very small, brown, inconspicuous) needle in a (very rocky, very steep, very mountainous) haystack… The Boland team undertook two sponsored helicopter tracking flights, spent countless hours driving around the study area and tracking in the mountains on foot, all the while following the constant beep, beep signal of a collar almost as elusive as the leopard itself. Thanks to good fortune 6 collars were successfully retrieved.

Jeannie successfully retrieves a collar high in the mountains

Leopard diet in the Boland

Studying the diet of an apex predator such as the Cape leopard is important to safeguard the species' continued survival. Data on leopard diet from the Fynbos Biome is sparse in comparison to available literature on studies from the Savanna Biome. One of the most commonly used methods to characterise carnivore diet is through faecal analysis. Leopards ingest the hair, bones and often hoofs, nails, and teeth of their prey. Since mammal hair has distinctive cross-sectional shapes and scale patterns, it is possible to identify a species from hair alone. This method is cost-effective, non-invasive, and ideal to investigate and monitor diet composition of leopards in the Fynbos, where leopard densities are comparatively low and the rugged terrain, dense vegetation and elusive, nocturnal nature of the study animal make direct observations and locating feeding sites nigh on impossible.

The Boland team gathered a substantial collection of scat samples during routine fieldwork, which were then processed and analysed by Anita Meyer. She has identified 212 individual prey items from the 173 analysed scats and recorded 15 mammal species as well as the remains of one (unidentified) bird species. The four prey species occurring most frequently in the leopard diet are rock hyrax, klipspringer, grysbok and porcupine. In terms of the biomass that each species represents, the most important prey species are klipspringer, grysbok, porcupine and baboon. Livestock (sheep) remains were only recorded in two faecal samples. A manuscript presenting the analyses, description and contextualisation of Boland leopard diet in terms of published data has been submitted to the peer reviewed scientific journal African Zoology.

This research represents the first analysis of leopard diet in the Boland region of the Fynbos Biome in 30 years. It was conducted over a substantially larger geographical area than previous studies in the region and is therefore considered to be a more representative record of contemporary leopard diet for the Boland. This accurate record has created a baseline for long-term monitoring and will serve to aid future conservation and management of leopard and its associated prey species in an ecosystem that is increasingly subject to habitat loss and fragmentation, indiscriminate utilisation and human-induced threats, especially on the urban-wildlands interface.

Public awareness and participation

The Boland mountain chain is a key geographical landmark in the Western Cape. Hundreds and thousands of people see it from a distance every day, while tens of thousands live and farm on its slopes, drive through it and use it as a recreational space. And yet one of the most important original inhabitants of these mountains remains unknown to the majority of people that live and visit here.

The Boland Project's proximity to Cape Town and surrounding towns makes it an ideal platform to reach a large and diverse public audience – both through direct communication and a variety of digital and print media pathways. Relevant and important messages about local biodiversity, ecosystem functioning,

threats and conservation concerns are conveyed by relating information about the leopards, their habitat needs, movement patterns and diet. It is vital to foster a keen knowledge, understanding and sense of stewardship within the broader community in order to help ensure the persistence not only of predators, but also the integrity of the entire ecosystem. Since 2010, the Boland team has given 110 public and private presentations reaching over 6000 people, and attended large festivals and public events. The Boland Project has been featured in a number of radio interviews, in over 70 published newspaper and magazine articles, including Africa Geographic, Franschhoek Style, Wineland, Bridgestone's Going Places magazine, Die Burger and Buiteburger, various local newspapers, as well as being featured in numerous website articles.

The Boland Project continually strives to motivate public participation in their research, including encouraging private landowners to purchase their own camera traps and submit their data to the project. These efforts have resulted in a network of 45 privately owned camera traps throughout the Boland study area. Camera traps present individuals, groups and clubs with a tangible and rewarding way of taking part in research and conservation activities. Individuals who have chosen to buy a camera without prior knowledge of the project are also increasingly sharing their photo data when they learn of the importance and relevance of these data, broadening the reach of the project and supporting predator conservation.

Conservation input

The value of the CLT Boland Project has been recognised and has been approached to collaborate on input, advice and data on several occasions by statutory conservation bodies within the study area and our data is making a tangible contribution to influencing a number of wildlife management decisions. Furthermore all CLT mammal distribution data contribute to MammalMAP as well as the Red List of SA Mammals that is currently being updated. Ultimately, through collaboration with national, provincial and private conservation bodies, the research findings will be incorporated into systematic biodiversity planning frameworks used toward conservation stewardship action (see also section on the Cape Leopard Conservation Area).

In the Boland, conflict between farmers and leopards is comparatively infrequent due to the prevalence of vineyards, orchards and other planted crops. There are a few areas where livestock is farmed on smaller scale and sadly leopards are frequently blamed for livestock losses without proper investigation. Real offenders often turn out to be feral dogs, caracal, livestock thieves or natural causes such as snakebite or illness. The Boland team was recently called upon by CapeNature to assist in a case where a leopard was caught in a cage by a private landowner targeting feral dogs. The young adult male leopard was sedated and released on location. This presented the Boland team with the opportunity to gather morphometric data and tissue samples, and to engage with the landowner as well as a valuble a chance to offer holistic management recommendations that the landowner has since undertaken by adopting better husbandry practices in an attempt to avoid future conflicts. Consolidating relationships and maintaining good communication channels are integral to conservation action at all levels.

PEACE Project

The Predator Ecology and Coexistence Experiment - Project Background

When thinking of Namaqualand, many picture vast open spaces interrupted only by wind mills scattered throughout the Karoo and colourful wintertime carpets of orange Namaqua daisies. This idyllic image of great flat plains where sandy and colourful earth meets the sky captures only a fraction of a complex succulent Karoo system. The Succulent Karoo is a globally recognized hotspot of botanical biodiversity, where vegetation grows on soils fragmented by impressive boulders and steep rugged slopes home to rock hyrax, klipspringer and other wildlife favouring rocky areas. The rugged terrain also provides habitat for charismatic wildlife such as the elusive Karoo leopard that persist at low densities and the agile caracal, a mesopredator more common to the area. Aside from the spectacular display of flowers that makes the Namaqualand famous, the region is challenging to live in, particularly for farmers.

Being one of the most arid parts of South Africa, the region receives a mere 150-300 mm of rainfall per year. Nonetheless, private land in Namaqualand is dominated by small livestock commercial farming because sheep and goats are able to effectively graze on succulent Karoo vegetation. To avoid extreme heat and dry summer conditions, many commercial farmers move their animals eastwards to the Bushmanland to follow summer rains. To compound the difficulty of living in this arid region, farmers and livestock also face other critical challenges that include disease, toxic plants, livestock theft and predators.

Caracal, black-backed jackal, and leopard found throughout the Namaqua region are considered the most notorious predators of local livestock. In an effort to limit livestock losses to predators, farm management typically includes a variety of methods of predator control, with some methods impacting species other than predators. Because eradication of predators is not ecologically desirable or logistically achievable, we are testing potential ecologically and economically viable solutions to minimize livestock losses to predators while simultaneously conserving biological diversity.

Project Overview

In an effort to develop wildlife-friendly solutions to livestock predation, we have established a fruitful and highly collaborative partnership between the Cape Leopard Trust, Conservation South Africa, SANParks, Woolworths, University of Cape Town, University of Stellenbosch and University of Victoria (Canada). With this strong foundation of support, the Wildlife-friendly Lamb Project (Predator Ecology and Coexistence Experiment) was initiated on commercial farmland near Namaqua National Park. Our primary objective is to test the effectiveness of Anatolian guardian dogs and EcoRangers at minimizing livestock losses to predators. To this end, however, we are taking a well-rounded and comprehensive approach to evaluate not only wildlife-friendly solutions, but also to understand the critical roles predators play in this biodiversity hotspot. Therefore, we are also investigating predator behavioural ecology, including diet assessments using both scat samples and GPS data information, movement patterns and habitat selection. To understand the role these predators play in ecosystem structure and function, we are also collecting data on mammal diversity and abundance as well as vegetation structure and composition. By collecting data across multiple levels of the food web we are able to investigate trophic interactions and identify whether changes in predator numbers impact lower trophic levels including small mammals and vegetation. Overall, we will gain an understanding of depredation risk by monitoring predator movement in relation to livestock, test the response of predators to EcoRangers and Anatolian dogs as well as investigate the links between predator abundance and biodiversity.

To be able to test whether specific methods of depredation mitigation are effective, we have developed a two-phase research approach. During phase one, we are collecting baseline data that include estimating livestock losses to predators. To meet this objective, we use advanced GPS radio-collars to monitor predator movement. These radio-collars send daily e-mails with predator locations. This way we are able to see nearly real-time movements of predators on farmlands. Using these data, we visit locations where predators spend ≥ 6 hours within a localized area. At these sites we identify domestic and wild prey items and carry out vegetation surveys to identify fine-scale predator habitat use. To supplement the GPS cluster data, we have

also been analyzing bone and hair from predator scat collected opportunistically, at GPS cluster locations and on predetermined transects. To date we have collected over 350 scat samples, 170 from caracal, 160 for jackal and 42 for leopard. While scat analysis will be able to tell us the proportion of different prey items in predator diet, it will not reveal the actual locations where the prey was eaten. We rely on GPS cluster visitation to identify which farms and where on farms sheep and goats are eaten as well as whether livestock is a larger proportion of predator diet compared to wild prey.

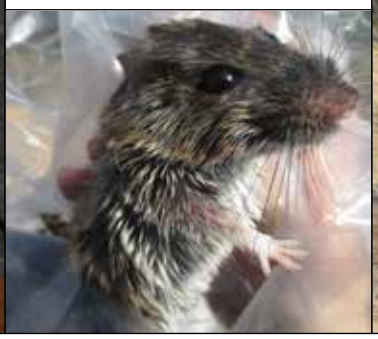
Eco-ranger and Anatolian goard dog - mitigation measures to be tested in 2015.

Our key project component revolves around wildlife-friendly methods to minimize predation on livestock. Data collected in the baseline period (current farm management practice) will be compared to data collected during the project's experimental period (EcoRanger/dog treatments). Next year EcoRangers and Anatolian guard dog combinations will be tested by accompanying specific sheep and goat flocks to protect them against predators. We will then be able to compare baseline data, collected during phase one, to the experimental, phase two data and assess whether the EcoRangers and guard dogs decrease livestock losses in our study area in Namaqualand.

In our efforts to understand the mechanism behind predation on livestock, we are estimating medium to large prey available to predators using camera traps set in an 810 km^2 grid system. The cameras take photos of wild animals as well as livestock. While they also take photos of predators enabling us to estimate large-scale occurrence patterns, they provide much coarser resolution data than the GPS collars. With GPS collars we are able to track specific animals for extended periods of time and study their movements and feeding on farms as well as in Namaqua National Park. With the camera photos we are unable to differentiate between individual predators except for leopards.

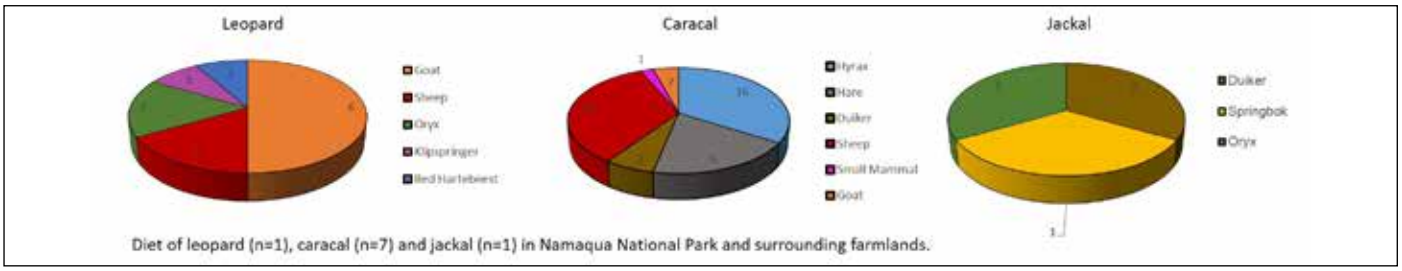
Corlé Jansen, Stellenbosch University student, is doing the research for her MSc thesis in Conservation Biology with us in Namaqualand. Her research will assess the diet of these predators and how their respective food habits vary between farmlands and protected areas, using scat and GPS cluster analysis.

Caracal (left); Namaqua Rock Mouse (below); and Corlé with collared caracal (right)



Project Developments and Preliminary Results

Our work to investigate predator diet in Namaqualand has been a welcome challenge. With the help of volunteer Research Assistants, we have visited over 300 GPS clusters. These investigations have required long hours of hiking off-trail in rugged terrain to locate kill (cluster) sites. Yet our methods have been rewarding. For example, the main wild prey consumed by caracal are rock hyrax and hares, whereas the primary domestic prey are lambs. While the jackal has been primarily eating small animals, the leopard has killed oryx, red hartebeest, klipspringer as well as adult goats and sheep. So far out of 298 GPS location clusters visited for caracal in 2014, we found 47 prey items including 62% wild prey and 38% domestic prey (sheep and goats). We visited 62 location clusters from our collared jackal and found only 3 large prey items, which suggests that jackal feed on small prey that we have a hard time finding with GPS location clusters. In addition, a specific jackal feeding behaviour (ingestion of food followed by regurgitation at a den site) makes it even more challenging to estimate their food habits from GPS location cluster visitation. Of the 24 clusters visited for the collared leopard, we found prey at 12 clusters, of which 4 were wild prey, 2 were goats and 6 were sheep. It will be interesting to see whether the proportion of wild and domestic prey change on our study farms when EcoRangers and Anatolian dogs are at work.



Diet of leopard (n=1), caracal (n=7) and jackal (n=1) in Namaqua National Park and surrounding farmlands.

Because caracal and jackal consume small mammals such as mice and rats, small mammal trapping and species identification are being undertaken to estimate the availability of small mammal prey. So far we have captured 6 species of small mammals including seed and insect eaters. In addition, with professional guidance from Dr. Heidi Hawkins, Director of Research for Conservation South Africa, we have carried out vegetation surveys which will allow us to assess the link between predator numbers, prey and vegetation condition. More than 70 sites have been surveyed in detail for vegetation characteristics and biodiversity.

In May 2014, a large litter of puppies was born at the SANParks Anatolian Dog Breeding Project, led by Elanza van Lente. The puppies were hosted by the Project during the critical first 7 weeks of life and then introduced to participating farms. They spent the following 2 months living with 5 sheep ewes and 5 lambs (or 5 goat ewes and 5 kids) in a kraal. Afterwards, the puppies started going into small camps where they had an opportunity to interact with an increasing number of livestock. Next year they will be confident and old enough to protect livestock and will spend the days and nights in the veld with designated flocks. In the case of flocks protected by EcoRangers and dogs, at night-time the dogs will remain with the flocks protecting them against predators, whereas EcoRangers will return to their homesteads. This will provide round-the-clock protection for livestock and, if successful, should prevent the need for other farming management practices for livestock protection. While the Anatolian puppies have received professional attention from SANParks Anatolian Dog Breeding Project, Conservation South Africa has skilfully supervised EcoRangers and will soon complete their full training to maximize their success on the project next year. An important final step is training EcoRangers on the use of PDA computers equipped with Cybertracker software which will enable them to collect ecological data during livestock patrols that is of use for farm management as well as monitoring ecosystem state. We look forward to wrapping up a productive phase one period and beginning phase two of this important project– a large-scale experimental testing for depredation mitigation.

Urban Caracal Project

Urban Carnivores Caracal Project

Urban biodiversity conservation is paramount because it leads to the protection of local and regional species and provides a platform for urban citizens to be exposed to, and understand, natural processes that steer global sustainability. A principal component to biodiversity conservation is to understand the challenges species face in an increasingly urbanizing landscape. Urbanization fragments habitat, impedes animal movement and isolates populations. With extreme, long-term population isolation, a loss of important genetic variation may occur with time, potentially reducing the ability of populations to respond to novel stressors (e.g. disease, climate change, etc.). Infrastructure such as roads introduce vehicular traffic that, along with human activity at the urban-wildland interface, can lead to behavioural modifications in wildlife as individuals shift their behaviour to avoid these stressors. If behavioural changes occur in species such as carnivores, that are important agents of ecosystem function, a consequent shift in community structure and ecosystem function may also occur. Finally, urbanization may also have cryptic consequences such as the effects of pesticides on wildlife populations. Pesticides are a leading cause of population decline for a variety of animal species worldwide and may directly threaten animal populations by causing direct mortalities, or indirectly through sublethal, chronic effects such as reproductive impairment or increased disease susceptibility. Because urbanization is proceeding at an unprecedented pace, the long-term primary research interests center on the investigation of how urbanization impacts wildlife populations with the aim to work with conservation agencies to develop scientifically-informed conservation and management guidelines. The Cape Leopard Trust is embarking on an exciting new project in the Cape Peninsula, studying carcal in this human-impacted landscape. Leading the project is American researcher, Dr Laurel Serieys.

Researcher background

Laurel's experience with this type of research began through an unpaid internship with the National Park Service (NPS; the SAN Parks equivalent in the US). She aided their studies examining the effects of urbanization

on local bobcat and mountain lion populations living in and around the Santa Monica Mountains, comprising of a collection of protected park areas near downtown Los Angeles in southern California, USA. Immediately, she knew she'd found her research niche, and continued her relationship with the NPS to develop a creative PhD dissertation project through the University of California, Los Angeles. Laurel continued to focus her studies on the well-studied population of bobcats in the Santa Monica Mountains. As with the larger Cape Town area, the southern California region is highly fragmented by urban infrastructure, major freeways, and agricultural development. Yet southern California is among the most species rich areas in the United States. Within California there are two wild cat species – bobcats, a smaller lynx-like cat, averaging 7-9 kilograms and approximately twice the size of a domestic cat. The second wild cat, the mountain lion (also known as puma, cougar, panther, and catamount), is considerably larger and averages 40-60 kilograms in weight. Given their large size and need for equally large land areas, mountain lions are more sensitive to habitat fragmentation and anthropogenic development than bobcats. In many ways, the dynamics between bobcats and mountain lions, and the ecosystem that they inhabit in southern California, parallels the dynamics between leopards and caracal, or rooikat, in the larger Cape Town area in South Africa.

From 2002-2005, NPS documented a notoedric mange outbreak to be the greatest source of mortality for bobcats in their study area. While most healthy animals are able to control and clear the infection, some develop severe cases that result in extreme emaciation and death if untreated. During the disease outbreak, the annual average survival rate for radio-collared bobcats fell by > 50% and in 2003, an alarming 51% of radio-collared bobcats died from the disease. Interestingly, severe mange cases in domestic animals are typically associated with an immune-compromised state. NPS biologists discovered from autopsies that the only consistent tie between all of the mangy bobcats was that they were exposed to anticoagulant rat poisons. Anticoagulant rat poisons are the most frequent method of chemical rodent control used globally, including within South Africa. The intended mode of action of the poisons is to interrupt the production of some blood clotting proteins, leading to death by internal bleeding. And while bobcats were being exposed to the poisons, no evidence of internal bleeding was observed. This discovery led NPS biologists to hypothesize that chronic

A) Healthy bobcat, B250; B) and C) same animal a year later, suffering from mange.

low level exposure (too low to cause internal bleeding) to the anticoagulant poisons somehow suppresses bobcat immune function, leading to increased susceptibility to terminal notoedric mange. To explore this connection and investigate whether she could detect a genetic signature of the decline, and whether the decline had negative genetic consequences for the population that remained, her research focused on three main objectives: 1) To characterized neutral and adaptively relevant immune gene diversity in bobcat populations across the Santa Monica Mountains in both urban, fragmented, and protected natural areas to evaluate the genetic health of the populations, particularly the population impacted by disease; 2) to assess the breadth of anticoagulant exposure in bobcats across the Los Angeles area, and investigate potential risk factors for exposure; and 3) to investigate the potential causal mechanism between anticoagulant exposure and the development of severe mange cases in bobcats.

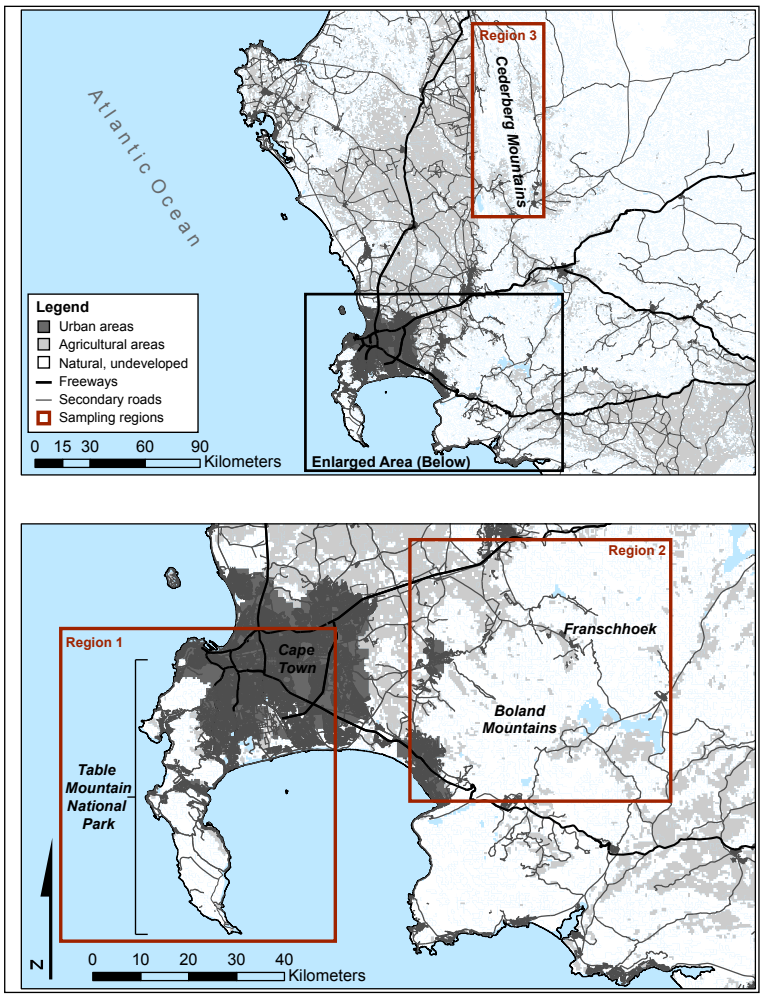
Laurel found that major freeways are significant barriers to the exchange of genetic material between bobcat populations, and that extreme population isolation has led to a decrease in genetic variation in at least one bobcat population. Further, the 3-year mange outbreak, associated with secondary anticoagulant rodenticide exposure, caused such a severe population decline that a genetic bottleneck occurred and led to decreases in genetic variation in the affected population. Furthermore, a significant genetic turnover, as a result of inbreeding and small population size occurred as a result of the disease outbreak. When Laurel measured the proportion of genetic differences between the pre- and post-disease populations, separated temporally by only 3-years, she found it was greater than that between populations separated by major freeways for more than 60 years. Prevalence of poisons detected in bobcat tissue were associated with human activities, particularly residential development, suggesting that this type of urban development is the greatest source of environmental contamination. Finally, using immune assays that Laurel developed for the first comprehensive and large-scale survey of wild cat immune function, she discovered that bobcats that were exposed to anticoagulants show multiple significantly elevated immune markers in their blood that are hallmarks of generalized systemic inflammation. The link between the poisons and disease was thus discovered. Overall, these data highlight that even for free-ranging animals that are considered relatively adaptable to urbanization, habitat fragmentation and toxicant exposure can have profound population level effects that threaten the long-term stability of wildlife populations in an increasingly urbanized landscape.

Long-term monitoring was crucial to these discoveries and furthermore, the findings helped inform new regulations recently implemented in California that restrict the availability of these poisons to private consumers that purchase the poisons for at-home use. These regulations are an important first step to reducing the ecological risk posed by these poisons, and would not have been implemented without key research by biologists monitoring the bobcat, and other wildlife populations. The conservation initiatives illustrate the importance of field research, particularly long-term studies, that focus on the ecology of elusive species that are top predators in ecosystems, such as have been implemented by CLT since 2004.

Plans for the Urban Caracal Project

Equipped with the training acquired through her research in the United States, Laurel is excited to embark upon her next urban carnivore project. In partnership with the University of Cape Town, we will evaluate the impact of urbanization on the behavioural ecology and genetic health caracal in the Cape peninsula. Within the Cape Town area, caracals inhabit patchy open space and the city itself is likely an absolute barrier to movement between populations, and thus a barrier to the exchange of genetic material between populations. To study how urbanization influences the behavioral ecology of the Cape Town caracals, we will use advanced GPS radio-collars to collect data on fine-scale movement patterns, habitat preference, and movement corridors. By comparing these behavioral data to that already collected by CLT in the Cederberg and in the Namaqualand, we will also be able to assess potential behavioural changes resulting from urban association and isolation by urbanization in Cape Town. We will assess genetic diversity in the Cape Peninsula population and measure gene flow between populations within and surrounding Cape Town. Due to long-term and extreme isolation and small population size, we predict that there may be a loss of important genetic diversity in the urban Cape Town population that has occurred with time. Sampling will also be done by the Namaqua Project to include in a Cape-wide genetic analysis of the caracal to develop a deeper understanding of how landscape fragmentation influences caracal movement between populations, as well as the genetic health of those caracal populations.

Beyond representing an exciting opportunity to study the effects of urbanization and extreme isolation on populations of a solitary and elusive carnivore, this project, and its proximity to a major South African city, provides unique opportunities for the implementation of educational initiatives with radio-collared charismatic caracal as the central focus. Public outreach and education is critical when promoting conservation initiatives and cultivating public interest in urban biodiversity. Laurel is therefore thrilled to have the opportunity to work with the education department of the Cape Leopard Trust to use this project as a foundation to implement a field-based learning program that will expose local school groups to research in action and generate interest in local wildlife. Groups, composed of South African youth from a range of socio-economic backgrounds, will participate in tracking radio-collared caracal and finding feeding sites from GPS radio-collar data. A crucial element of the education project is to expose participants to research in action, thus generating an interest in predators and an understanding of their crucial role in ecosystem function. A social media campaign and website tools are being developed to keep locals up-to-date with the urban caracal project, and to generate interest in protecting carnivores that play an important role in maintaining Cape Town biodiversity.



Gouritz Project

Gouritz Project

During the PhD study done in the Gouritz Area by Dr Gareth Mann he suggested that future research in the Little Karoo should empirically test the monitoring programme suggested in his study, while detailed testing of the efficacy of various livestock husbandry methods should also be a high priority. This would dovetail with the work currently being done in Namaqualand by the Cape Leopard Trust and could be duplicated in this region. The initiative would work with both conservation authorities and local landowners to ensure that future predator management is implemented in a holistic manner, with buy-in from private landowners seen as the most crucial element. It was with this in mind that Elani Steenkamp, Stellenbosch University MSc student, committed herself to continuing a camera trap survey as well as scat collection and analysis, both in the protected area and on private landowner's farms for her MSc. Her work focussed primarily on meso-predators i.e. caracal and black backed jackal, but the camera trap data also included leopards. Her MSc study will examine predator abundances, predator-prey interactions and the diet of mesopredators in and around the Gamka Mountain complex.

Elani has been assisted by CapeNature who have once again been very supportive, just as they were for the PhD study done recently completed by Gareth Mann. The incredible biodiversity of the area is highlighted by the abundance of both predator and prey species recorded on the camera traps, both in the protected area and on surrounding farms. Elani manages the often sensitive relationships with farmers, many of whom still believe that total eradication of predators is the only way for sustainable farming. During his field experience, Gareth had found that tolerance of leopards by the farmers is high, particularly in comparison to other wildlife, including other predators. However, communication between conservationists and farmers is key. If free ranging wildlife can benefit local communities by bringing in much needed income, these communities will be more willing to preserve it. There are alternative solutions and new technology that can help to mitigate human-wildlife-conflict incidents, which include limiting livestock births in the dry season, having predator-proof electrified fencing and bomas with fortified gates. Educating farmers about the importance

of having natural biodiversity on their farms to mitigate against livestock depredation is one of the ways to create a win-win scenario not only for the farmers, but especially for the predators' natural prey base.

Elani is hoping that through her diet analysis using scat and possibly stomach contents of the focal species, she will be able to provide the farmers with substantial evidence on the feeding behaviour of perceived problem animals and their habits, which will allow them to adopt new and more environmentally aware livestock management protocols.

Further study is planned for the Gouritz region where Gareth Mann felt that the leopard habitat model developed in his study could be further refined with additional data, and leopard habitat could potentially be investigated to determine whether these are genuine dispersal corridors. With a new environmental education camp planned for the area next year it will be ideal to continue with research that could feed into environmental education and continue the work that has already been established on the meso-predators and leopards.

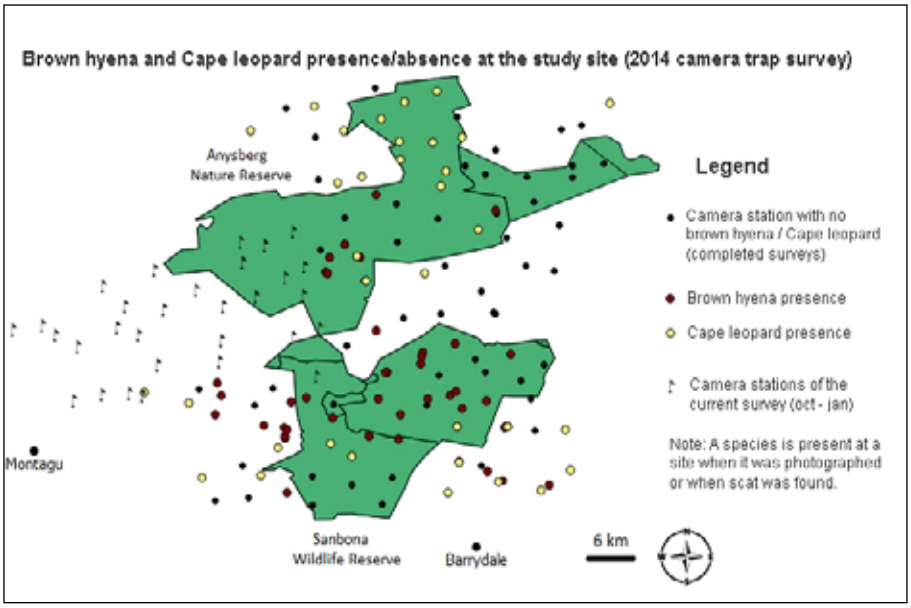
As both an umbrella and a flagship species for biodiversity conservation, long term monitoring of the leopard population should be a conservation priority for the Little Karoo and would be in line with CapeNature's goals for the area. The Little Karoo has one of the lowest densities of leopards ever recorded in South Africa. The low leopard population densities are likely to be due to low prey densities, which may in part be attributed to the loss of access to more productive low-lying land, much of which has been transformed for agricultural purposes. Elani has found that on these transformed landscapes she was not finding any evidence of caracal either from scats nor from camera trap data. Even when wildlife do access transformed low-lying areas, overstocking and poor stock management have resulted in significant habitat degradation, ultimately reducing the carrying capacity of this land for wild prey. The protected areas however show positive evidence of all predators. The Cape Leopard Trust is fully committed to its involvement in the Little Karoo, and once the new Environmental Education Camp is established, ongoing research possibilities will be explored further.

Associate Projects - Brown Hyena

The Cape Cryptic Carnivore Project

Some people think that brown hyenas have always inhabited the Karoo. Others are convinced that they were introduced. In any case, the Klein Karoo houses the last brown hyena population of the Western Cape (although a few individuals were released into the Karoo National Park in 2012). In Sanbona Wildlife Reserve, lions and cheetahs provide an important food source for scavengers, enabling brown hyenas to thrive.

UCT PhD student, Elsa Bussière, is conducting a study on this population. A camera trap survey was initiated in October 2013, and it will continue until June 2015 to explore a 3500km² area of rugged Karoo mountains which extends through Anysberg Nature Reserve, Sanbona Wildlife Reserve and surrounding farmland. The preliminary results show that brown hyenas are not only found on Sanbona, but also on Anysberg and private farms. Without lions and cheetahs in the vicinity, brown hyenas might find themselves highly dependent on the Cape leopards, caracals and jackals, to find food. But would there be enough large carcasses to feed these 40-45kg animals?



In the Kalahari, brown hyenas are primarily known as scavengers, but their hunting is also described as unspecialised and opportunistic.

One cannot exclude the possibility that brown hyenas would show different hunting habits in environments with new constraints, such as when carrion becomes a scarce food source. In the Klein Karoo, brown hyenas are considered to be a potential threat to livestock and the population survival is threatened by human-wildlife conflict. The risk that brown hyenas pose to livestock remains uncertain and thus misinforming farmers of these risks may go against conflict mitigation.

In 2015, we hope to deploy GPS Iridium collars on brown hyenas to get new insights into their spatial ecology and habitat preferences. These data will help us assess the importance of farmland for the long term conservation of the brown hyenas in the Klein Karoo.

Camera trap photos

Just like leopards, brown hyenas have unique fur patterns allowing individual indentifications. High quality photographs of these animals can be obtained using special camera traps, fitted with incandescent flashes. All camera trap stations are made of two camera traps facing each other, which enables us to build up a database of both flanks of each photographed animal, which will greatly improve the identification process.

This is the same brown hyena taken at two different locations in Anysberg Nature Reserve. Identifying brown hyenas is much more challenging than identifying leopards, as one can only make use of the thin striped legs, which can look fairly different depending on the angle of the photograph.

10 Years Developing The Cape Leopard Trust:

Farewell to Quinton Martins


www.capeleopard.org.za

Environmental Education

Overview

Our vision is to educate and empower people, particularly the youth, connecting them to nature and instilling an attitude of reverence and respect for the natural environment. This is achieved through hands-on experiences in nature leading to caring about the environment and ultimately young people as future nature custodians being self-motivated to make 'earth-friendly' choices.

Cape Town Education Programme

This year has seen the initiation of a permanent CLT Cape Town Education Programme, a new branch of our education project. The programme began in March with the employment of a new environmental educator to run outings, environmental clubs and presentations in and around Cape Town. This is an exciting step, allowing for more long-term engagement with children as well as a much broader reach for building awareness of Cape leopards, the environment and related issues.

CLT educator Jaclyn Stephenson cemented the Cape Town-based education programme by holding over 40 presentations on the Cape mountain leopards, other animals and the human-wildlife conflict issues at many schools. She also consolidated and established excellent mutually beneficial partnerships with both environmental organisations and social youth NGOs. These include South African National Parks; Cape Town Environmental Education Trust (CTEET); Wildlife and Environment Society of South Africa (WESSA) eco-schools; South African Education and Environment Project (SAEP); City of Cape Town; Iziko Museums; Biomimicry SA; Chrysallis Academy; Thrive Hout Bay; Surf Shack Outreach; I am Somebody!; GreenPOP; Ikamva Youth; Earthchild; Rock Girl Foundation; Jungle Theatre Company; and Zandvlei Trust. The Cape Leopard Trust values these partnerships, where ideas, expertise and resources can be shared to have a more significant impact on the lives of the people and welbeing of the environment that we are trying to improve and protect.

One such notable partnership has been Western Leopard Toad Programme. The endangered Western leopard toad (*Amietophrynus pantherinus*) is an iconic species in the Cape Flats. It is commonly found breeding in many rivers, wetlands and vleis in the southern suburbs of Cape Town. However, this species is increasingly under threat due invasive alien plants and animals, artificial barriers (walls, pavements and roads) as well as drained wetlands. Environmental education is a critical step to saving this endangered species and The City of Cape Town in collaboration with the Zandvlei Trust, Jungle Theatre Company and Cape Leopard Trust created a special program to educate local children from the areas surrounding the vleilands on this incredible animal in a fun, engaging and educational manner.

Eco-Clubs

Cape Leopard Trust Eco-clubs are run as extra-murals at schools once a week for a term. These are experiential, primarily consisting in outings to surrounding natural areas, and are themed (eg biodiversity; hiking/exploring; biomimicry; by subject, linked to the curriculum; environmental issues and practical action; conservation research). We partner with other NGO's with the eco-clubs to complement their activities or to provide the schools with a more comprehensive package. For example, we provide the focus on biodiversity to the schools working with the sustainability NGO, Thrive; we have partnered with GreenPop to include their tree-planting as an option in our eco-clubs activities; and we are supporting WESSA's eco-schools to attain their 'green goals'.

Prince George Primary School in Lavender Hill was 'adopted' by Hadley, through our partnership with Earthchild, and he has taken grade 6 learners into the mountains for environmental education experiences that are positively impacting their outlook on life. Learners from the school together with their teacher, Ms Jamie Durell, have explored and learned about different ecosystems at the Kirstenbosch Gardens, Leopard's Gorge at the Harold Porter National Botanical Gardens in Betty's Bay, the Tygerberg Hill Nature Reserve, Elsie's Peak above Fish Hoek, Admiral Falls above Simonstown and visits to the waterfall in the Silvermine

Education



area. The programme is on-going and learners are still anticipating a visit to the Boomslang caves in Kalk Bay. Other groups that have participated in our eco-clubs this year are children from the Surf Shack aftercare programme, 8 different schools in Hout Bay through Thrive, and Herschel Girls School. The programmes with Thrive's schools have been particularly interesting as they combined children from four schools at a time, with children from all the diverse communities of Hout Bay. The socialising and learning about each other was therefore as important as the learning about biodiversity.

Participants could explore, discover and learn about fynbos, afro-montane forests, sand dunes, wetlands, trees and their importance, recycling issues, heritage and cultural issues, fauna and flora, issues of baboon monitoring, water and river health and a myriad of other things.

To whom it may concern,

I have worked in partnership with the Cape Leopard Trust since 2011, and fully endorse the organisation for their amazing work within the most under-served communities of the Western Cape. The Cape Leopard Trust not only provides children with the opportunity to experience South Africa's most phenomenal natural spaces, the Trust educates children around environmental issues in an experiential way, which connects children to nature and fosters sustainable changes in thinking and behaviour. As a community mental health practioner and psychologist, I have experienced a massive need for children to connect peacefully with nature as a pivotal component for their healthy psychosocial development. The Cape Leopard Trust provides this opportunity for children who, due to contextual circumstances of poverty and community violence, would not have otherwise had this opportunity. Through this peaceful connection with nature, I have witnessed substantial changes in the participants behaviour and their ability to cope positively with stressful life events. The staff and directors of the programme are additionally great contributors to the child participants positive outcomes. Their passion for the local children and for education around South Africa's challenges regarding nature and animal conservation have inspired the children to become more socially and environmentally conscious citizens. The genuine care of the Cape Leopard Trust team has additionally contributed to positive influences on the way children think about themselves in connection to nature and to others. The children who have participated in the programmes through the Cape Leopard Trust are left with positive childhood memories which will stay with them for life.

Yours Sincerely,
Elizabeth Benninger
SurfShack Outreach Children's Program Coordinator
www.surfshack.co.za

Our growing partnership with The Rock Girl Foundation has seen groups from Mannenberg join us for presentations, outings and an upcoming camp. We were also invited to be part of an exhibition, where they displayed photographs of learners with their families to help create a sense of community.

Every year during the mid-year school vacation members of the public have the opportunity to send their children on an adventure with us. This year our theme was ecosystems and looking at fynbos, forest, dune and wetland ecosystems in particular. Within 2 hours of advertising, India Baird, from Rock Girl booked up all the seats available for 14 young girls and 4 boys, aged 11-15 years old and their 2 supervisors from Mannenberg. Mannenberg is plagued by gang violence in the on-going turf wars. Rock Girl started their involvement with Red River Primary 4 years ago. When asked, the children said that they wanted a safe space. It was at this school where the first Rock Girl bench was built. The benches symbolise creating real safe spaces in some of the most dangerous, challenged communities in Cape Town. On day 2 Hadley had to drive past a murder scene en route to pick up the participants. Every morning he would hear about shootings. Besides this tragedy, the suburb has litter strewn everywhere. This is a visual story of their journey with us.

From vleis to forests, coast to mountains, Rock Girl group explores the Cape environment with the CLT

Thanks to everyone from Rock Girl for making this adventure possible, and especially the acting deputy of Red River Primary, Mr Sydney Hendricks and his devoted wife and teacher, Cheryl. During a time when most teachers are resting during their holidays, these two showed up every day to lend support and love to the participants. They demonstrated what dedication and commitment truly means.

Education

Exhibitions and Workshops

Jaclyn and Hadley attended the WESSA Eco-Schools 'Fill your Green Tank' workshop where they learned from the valuable contributions that were made there by other environmental educators. They also shared the work being done by The Cape Leopard Trust. All educators also attended an inspiring biomimcry workshop which will be incorporated into new educational activities. In August, we were fortunate to have an opportunity from Eunice Jurgens, Harold Porter National Botanical Garden, to present on leopards and human-wildlife issues in the Caledon area at the biodiversity and conservation careers education exhibition. Hadley showcased the leopard research being done and gave visitors some insights about the work that the researchers do, the qualities that are needed as well as which subjects to focus on at school which would allow for entry to further studies.

Cape Town Youth Art Competition: Nature Matters

This year we decided to hold a public awareness drive through a Youth Art Competition culminating in an exhibition and fundraiser for the Cape Leopard Trust's Cape Town Education Programme, bringing focus to Cape Town's natural environment and building the youth's connection to it. The final event will be held in November, unfortunately too late to be included in this annual report. We have had fantastic support for the competition, and must thank Bridgestone SA, K-Way, City of Cape Town, Canal Walk, Belmond Mount Nelson Hotel, The Table Bay Hotel, Cascade County Manor, and Olive Glen Mountain Farm for their generous sponsorship.

Cederberg Camps

The wonderful thing about camps in the Cederberg is that no two camps are the same! Different groups from various backgrounds bring their own contexts and so our environmental educator uses the Forest Gump analogy of 'life is like a box of chocolates, you never know what you're going to get'.

Total camps	27
Sponsored camps	17
Number of camp days	107
Participants	453
Supervisors	98
Primary school groups	18
High school groups	5
Adult groups	4
Returning institutions	17
Camps arranged by NGOs	15

Central to the camp seasons are the wonderful interns with their amazing support for the activities in the Cederberg and maintenance around camp. The first intern for this year, Nadine Sydow from Germany, a snake expert, grew into her role with ease and was a great hit with groups. Her free spirit was contagious and she threw herself into every experience while sharing her vast knowledge with others.
The second season had the privilege of having two interns Edenne Kapinga, a UNISA student and Sam Chevellier, a recently qualified game ranger and biomimicry enthusiast. Both of them too settled into their roles very quickly and have been the source of much fun and learning amongst camp participants, especially the younger ones with whom they connect easily.
Camp activities throughout have ranged from poetry, drawing, games, moulding plaster casts of animal tracks, clay modelling of animals, investigations into river health, use of microscopes, map reading, use of compasses, guided walks, campfire story-telling, bridge building, animal tracking, finding fossils, learning about the stars and the universe, scorpion searches, bird identification, etc. The environmental education possibilities are endless as the Cederberg offers so much.

We were very fortunate to have a local farmer and his wife, Dawie and Lizette Burger, open their farm for a visit to see how they employ different methods to control predators in a way that does not kill them, and they promote the conservation of those predators. What an inspiration to know there are farmers who make the effort to think one step ahead of the curious cats. Such efforts go a long way to help conserve our natural resources and allows for predators to do their work as 'conservation managers' in nature.

One of the other great things about our time in the Cederberg is that participants can become involved in the actual scientific research that is being done and so they get to be a scientist for a day. Through this we may inspire youngsters to consider opportunities in careers linked to exploring and caring for the natural world. When participants explore the Cederberg, it allows them to connect with their heritage as South Africans and in so doing learn to appreciate the beauty that nature has to offer even more. Understanding one's heritage as humans is central to having a sense of ownership and pride in our country and the broader world's natural heritage. Whether it is the physical or spiritual experience that leaves its mark on the young people in our care, nature of the Cederberg has a positive legacy that touches everyone.




New Sponsors and Plans for the future

We have had some wonderful new sponsors come on board in support of the education project this year – The Lomas Wildlife Protection Trust, the Rolf Stephan Nussbaum Foundation, and The Joan St Leger Lindbergh Charitable Trust - as well as fantastic continued support from Deutsche Bank SA, AVIS and Bridgestone SA. Most recently is the dedication of funds for 2015 from SA Mint (see more on page 43). We would like to extend our sincere gratitude to all of them for making this work possible.

The CLT Education Project's proposal to set up a new environmental education (EE) Camp and Centre on Gamkaberg Nature Reserve, in partnership with CapeNature (CN) has met with the keen interest of CapeNature area mangers and enthusiasm from WESSA who emphasise how much it is needed in the region. The CLT has a longstanding and excellent partnership with CN in the Gouritz, with CLT leopard research having been conducted there since 2007. Having conducted a careful site visit we have proposed the development of two complimentary sites – transforming the existing Groenefontein house into a dormitory with a neighbouring EE workspace/centre; and extending an existing fisherman's camp at Vaalhoek for a truly remote camping wild experience.

We will continue with our Cederberg camp and keep building the new Cape Town Programme. Catherine Philips, the new Cape Town-based environmental educator who has taken over from Jaclyn, is set to continue with the work that has already been started. Besides the activities described above, she will focus next year on linking the programme to the school curriculum and creating a calendar of workshops aligned with the subject matter being covered in schools. Elizabeth Martins, who set up and runs the CLT Education Project, will continue to coordinate the Education Project even though she and Quinton will be moving to America next year.

Cape Leopard Conservation Area

Cape Leopard Conservation Area

An exciting development as part of the Boland team's efforts during 2014 is the initiation of a long-term project aimed at instituting an effective, tangible conservation area for leopards that encompasses not only the existing formally protected areas, but also the surrounding mountain catchment and private land within the Boland study area. The Cape Leopard Conservation Area (CLCA) project, formerly referred to as the Boland Leopard Sanctuary, is in essence a voluntary conservation and responsible management initiative facilitated by The Cape Leopard Trust, in partnership with conservation bodies and private landowners. Through the CLCA project the CLT aims to complement, expand and link existing physical conservation areas as well as statutory and activate public conservation actions.

A significant proportion of South Africa's biodiversity resides in the hands of private landowners. Private mountain catchment land surrounding core protected areas in the Boland are fundamentally important in terms of leopard movement and habitat use, and private landowners will play an integral role in the long-term persistence of leopards in the area. The conservation of this peripheral habitat, the promotion of sustainable land-use and harvesting practices, and instilling a consciousness and appreciation for biodiversity among landowners, farm workers and the general public all play a key role in the long-term survival of leopards and their prey, ensuring overall habitat integrity.

As a first phase the CLT Boland Project has designed and implemented informative educational signage boards highlighting terrestrial mammal diversity in the region. Apart from baboon and whale information boards, there is virtually no signage along roads and at tourist sites about the mammal fauna living in the Cape. The CLT's interpretive leopard ecology signage boards address this void and are placed at 20 locations throughout the Boland study area. The signs serve to inform and educate the general public as well as local and international tourists about the leopard as part of South Africa's natural history, heritage and its role as apex/top predator in the Cape Floristic Kingdom.

The second phase of the CLCA initiative planned for 2015 will entail a pilot investigation into the drivers of illegal hunting and to estimate the prevalence of the bushmeat trade using wire snares in the Boland area. Illegal snaring and hunting for bushmeat appears to be a very common and widespread practice throughout the Boland study area, but as yet there is no factual knowledge documented and little is known of the true extent of the problem. Leopards can get caught in the snares, but the main concern is the impact on natural prey that is needed to sustain a healthy predator population, considering that grysbok, porcupine and duiker seem to be the main targets for the bushmeat hunters. The study will focus on a core sample area within the greater Boland area.

The holistic roll-out of the CLCA initiative will involve several phases during the course of 2015 and into 2016.

Sterilization Drive

Pets in the Wild

Newly sterilised pets at Nuwe Plaas, Cederberg

Sometimes The Cape Leopard Trust gets a request for assistance from other worthwhile projects, and this one really appealed to us. When vet Annelize Roos of CVC contacted us to say she and a team of helpers were heading out to the Cederberg on a mass domestic animal sterilization drive in the communities around Wupperthal we immediately committed our support. Pets make a positive difference to people living in difficult conditions, but if these animals are left to breed freely where people can't afford vet care, we know that animal welfare will be compromised and our wild animal populations will also be impacted.

At the end of May 2014, the EnviroVet CVC team, headed to Wupperthal, to discover hearts of gold, homemade bread, and dogs that all have names. The desire to conduct a mass sterilization campaign in this tiny, remote Cederberg village, and the even smaller settlements around it had been incubating for a long time. Because of its isolation, the area gets little attention, except from adventurous tourists. But like many communities throughout South Africa, it has cats and dogs that breed virtually unchecked. The misery this causes in urban areas is bad enough, but in a place like Wupperthal, situated in mountains where wildlife roams past your front door, the problem is compounded. Domestic cats, for example, breed with the African wild cat and dilute the wild species' gene pool. Dogs hunt the dassies and small antelope that predators like the Cape leopard depend on.

Because Wupperthal is an isolated community, the effectiveness of a mass sterilisation programme is easy to measure, which helps with the planning of future programmes elsewhere. Curious children queued up after school, hungry to learn, and some even got involved with the project by monitoring the recovering dogs and cats after their medical procedures, as well as leading vets to the hiding places of feral cats. The positive response and cooperation by all community members was overwhelming. Humane education was provided through individual consultation with all pet owners, as well as community leaders and school children.
It was common to find people administering Depo-Provera to their animals – a human contraceptive. As a result, nearly all these female dogs had developed a condition called Pyometra, a severe uterine infection, so many cases of Pyometra had to be dealt with. The vets did their best to demonstrate the negative long-term effects of the drug on the animals. One woman had castrated her male cat herself with a "skaap rekkie" and a sharp knife. The same had been done to some male dogs. This is a sad reality in this area and underlines the need for proper veterinary intervention. Some animals were suffering severe mange, but most were in good general condition.

A total of 190 animals (119 dogs and 71 cats) all received primary health care examinations (sterilisation, vaccination, deworming and external parasite control) over the five days of the assignment. In addition, a number of feral cats were captured temporarily and sterilized before being released.
This was the first time we had supported a mass animal sterilization initiative, but judging by its success it is something we plan to participate in again. We will continue our support with an upcoming drive to take place before the end of the year, which will also include sterilizing donkeys.

International Exposure

Azerbaijan & USA

Our scientific research and international exposure led to Dr Quinton Martins' invitation to attend and present at the Caucasus Cat Summit in Azerbaijan in May this year, in an effort to find ways of conserving the critically endangered Persian or Caucasian leopard. His talk, "The Cape Leopard Trust – Experience from Africa" was well received at the Summit in Baku, with over 700 participants coming from all over the world for this 2-day event. Persian leopards are now considered by the IUCN Cat Specialist Group as Critically Endangered with numbers in some countries possibly only running in single figures. These large, pale leopards, inhabit rugged mountain areas such as Iran, Azerbaijan, Russia and Armenia. Quinton is hoping to draw a strong thread through connecting mountain cat projects – these mountain ecosystems are extremely important for a multitude of reasons notwithstanding ecosystem services to lower communities. Conservation of these apex mountain predators will inevitably lead to broader ecosystem conservation of that area, hence the focus on these cats.

Similarly, Quinton also attended the 11th Mountain Lion Conference in Utah, USA soon after Baku this year. The conference was fascinating. It is quite something to see the level of research on mountain lions in the USA. One study in Washington State has managed to collar well over 400 mountain lions, retrieving over half-a-million GPS locations for their study animals. This phenomenal dataset has allowed researchers to rigorously test hypotheses, avoiding the age-old issues many of us have with poor sample size and descriptive analyses. The conference also allowed Quinton to catch up with Californian NPS mountain lion biologist and colleague Jeff Sikich. Jeff continues to do ground-breaking mountain lion work in the Santa Monica Mountains around Los Angeles.

Our invitation to host top-class international students has resulted in additional scientific publications, positive exposure for our project as well as students sourcing funding from abroad to conduct their research, thus contributing to the project's success.

Leyla Aliyeva, the president of Azerbaijan's daughter and a high-profile conservationist, organised the conference. Here she welcomes delegates from around the world to Baku to help solve their Causcasian leopard crisis

Ten Year Celebration

10-Year Anniversary Celebrations in the Cederberg

In May, as the intense Cederberg heat began to wane and the beauty of autumn arrived, we celebrated the 10-year anniversary of the Cape Leopard Trust by welcoming over 150 special friends and supporters of the trust to Nuwerust Farm for a casual weekend of festivities. The day started early with a choice of conservation-based outings guided by the CLT education staff, including fossil finding and a Karoo plant meander, a rock art recce, a hike to the spectacular Wolfberg Arch or a leopard research experience and the rare opportunity to be guided by the experts themselves. This was followed by an afternoon of socializing over snacks kindly provided by Woolworths, activities for the children, and a sumptuous potjie while Leopard's Leap wine and conversation flowed. Quinton gave an entertaining and heartfelt presentation taking a personal look back over his ten years with the project and shared stories of the incredible support afforded to the organization, which has allowed it to expand organically along the way. Trust Chairman and co-founder, Johan van der Westhuizen spoke of the important partnerships that had been created with the Cederberg Conservancy and CapeNature in the area. The convivial evening ended with the cutting of a special leopard birthday cake, lively music and dancing late into the night.

The staff of The Cape Leopard Trust felt overwhelmed by the warmth, generosity, interest and genuine delight of the guests who had travelled so far (including from Jo'burg and England) to raise a glass to ten years of dedication to predator research, conservation and education.

Ten Year Fundraiser

10 Year Fundraiser at Leopard's Leap

Friends old and new gathered on a glorious August afternoon to celebrate a decade of The Cape Leopard Trust. Leopard's Leap Family Vineyards and Cape Town event organisers, Opulent Living, hosted a spectacular luncheon sponsored by Mercedes Benz Sandown Motors, FNB and Cennergi.

Local chefs Pieter de Jager, Neil Jewell and Vanessa Marx prepared a delectable three-course lunch for over 180 guests embracing fresh, seasonal ingredients paired with world-class Leopard's Leap wines. The chefs were assisted in the kitchen by celebrities Liezel van der Westhuizen, Braam Malherbe and Laura Santoni, adding a sense of theatre to the proceedings, while MC's Ian Bredenkamp and Elana Africa presented a dynamic programme which included an interview with conservationist, Braam Malherbe, and an opportunity for Dr Quinton Martins to reflect on the last ten years of leopard conservation with the Trust.

Enjoyable musical entertainment was provided by local songwriter trio, Blackbyrd, and a lively auction was the highlight of the afternoon. International auctioneer, Philip Powell, had an incredible array of lots on offer, which included a Luxury Safari Experience with Wilderness Safaris, a photo art print by Adrian Steirn, and a Leopard Cycle, which had been specially flown in from its home in California for the event. Leopard cycle frames are currently not available in South Africa, which made it a truly unique auction item.

The afternoon successfully raised R592 000, a very welcome financial boost for the Trust. It was a valuable opportunity to appreciate the incredible achievement over the last ten years, thanks to the support of trustees, partners and sponsors who have believed in the cause and made it possible.












ABSA Cape Epic

A Leopard Partnership with ABSA Cape Epic

One of the things on our wish list has been to try and link the Trust with the ABSA Cape Epic, and this year we managed to do just that. After a successful and persuasive meeting with the organisers we were given the go-ahead to apply as an affiliated charity partner, and we were thrilled when we were selected for the 2014 race.

It was a pleasure working with the extremely professional organisers. Initially it was a real learning experience navigating the needs of the cycling community and understanding the gravitas of the ABSA Cape Epic in global cycling circles. We sold our two entries for the race with relative ease, one to a local entrant and the second to an international applicant as we had hoped. The first was allocated to Shaun Peschl of Peschl Racing, KZN. He was pleased to have the opportunity to offer places to two novice riders from Kargo Cycling so that they could gain mountain biking experience. Both Siyabonga Njiva and Xolani Mthetwa completed the gruelling race without mishap. The second entry went to a couple from Alberta, Canada, Darrell and Alison Jones. Sadly they did not complete the race as Alison picked up a knee injury mid-way through the event. Helen went to meet them just before they left South Africa to thank them in person, and presented each of them with Cape leopard trust t-shirts as a memento to take home. In addition to the entry donations, one of our existing sponsors, Hansgrohe, made an independent and very welcome donation of R30,000.00, which was presented to the Trust at the gala dinner, which Helen attended.

The Canadian Jones' (above) and Siyabonga & Xolani (below)

Helen and Yvonne packed up some banners and headed to Elgin to attend the final race day, securing a good spot on the field next to Avis. As vehicle sponsors it was an ideal opportunity to add value to their stand. We certainly created a bit of interest as the riders came to collect their hire cars – some to begin a very long journey home to other parts of the world. A leopard 'hide and seek' competition was set up for the family day trail run and vineyard cycle race. A toy leopard was hidden on each of the routes and it was amazing to see just how much people enjoyed and embraced this challenge.

Immediately after the race finished we were approached by riders enquiring if we had entries available for the 2015 race. As a result of this we applied for associate charity status for next year, and though this is generally allocated on rotation, it seems the ABSA Cape Epic recognised the value of working with The Cape Leopard Trust and we have been permitted another race season. One entry sold within days to a local Capetonian, and the second entry will announce the establishment of a formal 'leopard team'. This is a new concept which we will be offering to our sponsors going forward as the two cyclists committed to 'team leopard' are both semi-professionals and well known in Epic circles.

Our belief is that the Cape mountain leopard should become the animal ambassador of the ABSA Cape Epic. It is a fantastic way to raise environmental awareness and motivate a respect for biodiversity conservation as well as adding value to the race itself, which traverses the very landscapes that our wild leopards call home.
We are looking forward to the 2015 ABSA Cape Epic; more confident this time around and looking for opportunities to establish a long-term association with the race in the future.

SA Mint Leopard Coin

The 'Natura Series: Nocturnal hunters'

As South Africa celebrates its twenty years of democracy, SA Mint has paralleled this remarkable journey by documenting the most significant milestones of the country's cultural and natural heritage through the circulation of legal tender coins, as well as the timeless craftmanship of collectible gold coins that are highly sought after commemorative and investment pieces. Now in its twenty-first year, the 'Natura Series' introduces its latest collection entitled 'Nocturnal Hunters' with the debut of 'The Leopard Coin Collection'.

Over the years, a portion of the proceeds generated from each collection of the Natura Series has been ploughed back into conservation and made a significant contribution to the preservation of endangered species. With the launch of the latest coin in the 'Natura Series', SA Mint has partnered with the Cape Leopard Trust, who have been instrumental in preserving the leopard's last stronghold in the Western Cape. SA Mint has undertaken to donate 3.5% from the sale of the first 600 Limited Edition coins to the Cape Leopard Trust as well as the total amount earned through the Online Auction sale of coin '001'.

To mark the partnership between SA Mint and Cape Leopard Trust, the 600 limited edition legal tender coins were overstruck at Bakkrans in the Red Cederberg. This remote location that forms part of the Cederberg Conservancy is renowned for its high biodiversity of endemic fauna and flora and is one of the last protected habitats of the Cape Mountain Leopard. The overstriking of the mint mark took place in an ancient Sandstone Cave overlooking the rugged Cederberg and Tankwa Karoo valley where evidence of the Khoi and San people has been preserved through rock paintings dating back thousands of years.

A dedicated launch event was held at the Hemelhuijs restaurant in Cape Town with a leopard inspired menu by chef Jacques Erasmus drawing on locally sourced produce indigenous to the Cederberg and the terroir of the Cape mountain leopard.

The funds generated will be dedicted to the Cape Leopard Trust's Education Project, with a particular focus on supporting environmental camps, which connect people to the leopards and their environment.

Collaborators

CLT Collaborators

Dr Alison Leslie, from the Department of Conservation Ecology & Entomology at Stellenbosch University, is collaborating with the CLT on a number of exciting leopard and other carnivore projects both in South Africa (Gouritz and Northern Cape leopard projects as well as the Urban Caracal Project) and in Malawi. Quinton Martins joined her department as a research fellow at the beginning of 2014.

Majete Wildlife Reserve is an absolute gem and one of Malawi's greatest success stories. Under the management of African Parks Ltd, (www.africanparks.org) and in the short timeframe of 10 years, Majete has been rehabilitated and turned into Malawi's only "Big 5" reserve. Over an 8-year period 2554 animals of 14 species were reintroduced to the reserve and that is where Alison and her team including the CLT come into the picture.

Six leopards and 3 lions were re-introduced to the park from South Africa in 2011 and 2012 respectively. The leopard population has since increased to 10 individuals and the lion pride now stands at 5. Over and above these predators, Francois Retief, a student conducting a hyena ecology project supervised by Alison and Quinton, has discovered over 30 individual hyena in the reserve – many more than was initially estimated and this past year a number of dens with pups were located. Exciting news! The team is looking at clan home ranges, diet and overall population structure. As demonstrated by the CLT in many previous studies, scat analysis and GPS cluster analysis are very useful tools for determining predator diet. With the reintroduction of both lions and leopards and the discovery of many more hyena than initially thought, it is essential that the research team determine the prey preferences of the various predators in Majete in order to gain a better understanding of the predator-prey dynamics in the reserve. Predator and herbivore carrying capacities are vital when managing a medium sized enclosed reserve. The camera traps deployed throughout the park have also photographed meso-predators such as caracal, African civets and cervals – no doubt the surviving remnants of once thriving populations before poaching decimated most of the wildlife in the 1980's and 90's. It is hoped that these species will also be studied in the near future. The research team, with assistance from the CLT, plan to collar a number of hyena in the near future and they are currently replacing the existing lion collars. The initial collars have been removed from the leopards; however, these will only be replaced when additional funding becomes available. Alison and her team have established a beautiful research camp within the reserve and over the next few years will be studying the ecology of some of the other reintroduced species including elephants, black rhino, buffalo, eland and kudu, to name a few. The Earthwatch Institute (USA) is providing some funding for the project and provides useful support. View: www.earthwatch.org ("Animals of Malawi project") for more.

Alison has a PhD and MSc in vertebrate ecology & physiology from Drexel University in the USA and a BSc in Zoology & Botany from the University of Stellenbosch. Her MSc focused on the nesting ecology of leatherback sea turtles in Central America and her PhD on the ecology of Nile crocodiles in the then named Greater St. Lucia Wetland Park. Alison's research interests are broad but lie primarily in the field of wildlife management. She is currently a senior lecturer in wildlife management in the department and has worked extensively in Costa Rica, Botswana, Zambia, Malawi and Burundi. Alison has published numerous peer-reviewed papers and is continuously presenting her work at national and international conferences. She has also participated in 20 television documentaries, produced by National Geographic, Animal Planet, the Discovery Channel and the BBC, to mention a few.

Going Forward

Looking to the Future

The Cape Leopard Trust has become a well-known and respected brand and will continue to operate responsibly and with integrity to ensure it remains current and relevant. The CLT is looking forward and seeking to build on this incredible foundation that has been laid, aligning with likeminded organisations and institutions. Some of the proposed initiatives include:

The CLT wants to facilitate the formation of a scientific advisory panel to assist with student placement and help to guide and develop the most appropriate research projects. This panel will include top experts in their field. The CLT was instrumental in starting MammalMap with the Animal Demography Unit (ADU) at UCT and this historical link will be re-kindled and a partnership formed for mutual benefit.

The Boland team will continue with the establishment, development and eventual formal proclamation of a Cape Leopard Conservation Area (CLCA). Furthermore, a study into illegal wire snaring for bush-meat, a new camera trapping survey, and a population and conservation genetics project will be initiated. In addition, plans are underway to conduct further in-depth research into Cape leopard ecology, including reproductive biology and breeding behaviour; habitat use and requirements of females; the movement patterns of dispersing and non-territorial individuals; and interactions between the apex- (leopard) and meso-predators (mainly caracal).

With Quinton leaving the Cederberg a new research project is proposed looking at leopard population information, breeding and dispersal behaviour. This will be used to identify suitable conservation corridors and possible population bottlenecks. The CLT will also establish a formal Cederberg Community Leopard Programme, a new caracal ecology project, and an exciting birds of prey project looking at testing the efficacy of birds of prey in locating predators. The sterilization programme of dogs, cats and donkeys in the Cederberg will receive ongoing support.

Biodiversity corridors will be mapped out in and around all the CLT project areas, highlighting key threats. The Gouritz region has been identified for continued CLT involvement for continued leopard and meso-predator research. The link to the Cape Cryptic Carnivore project in the little Karoo will be explored with the possibility to also include some work on the Cape leopards through additional camera traps and other scientific research options.

The current project in Namaqualand will be rolled out to completion, and will continue to help mitigate the predator/stock farming conflicts with further research. The work of Dr Laurel Serieys will continue in the Table Mountain National Park to evaluate the effects of urbanization on caracal behavioural ecology.

The CLT Environmental Education project is proposing two new environmental Camps, firstly in the Gouritz Region then later in the Boland. Other proposed initiatives are a long-term public exhibition on local biology science and the people behind the work and increasing capacity through an ‘Emerging Environmental Educators’ program for graduate students from disadvantaged backgrounds.

Without supporters, sponsors, partners, friends and a dedicated, fully committed CLT Team, none of this work can be done. The Cape Leopard Trust deeply values your ongoing support into the future.

Conferences & Publications

Conferences 2014

2014 - Martins, Q. The Cape Leopard Trust - Experience from Africa. Caucasus Cat Summit. Baku, Azerbaijan 7-8 May

2014 - Teichman, K., Cristescu, B., Hawkins, H., O'Riain, J., Darimont, C. Mitigation of livestock predation while conserving biological diversity in the succulent Karoo. Southern Africa Wildlife Management Association Symposium. Durban, South Africa 31 Aug- 3 Sept

Scientific Publications

Mann, G. (2014). Aspects of the Ecology of Leopards (Panthera pardus) in the Little Karoo, South Africa. PhD Thesis, Rhodes University.

Swanepoel, L.H., Somers, M.J., Hoven, v.W., Schiess-Meier, M., Owen, C., Snyman, A., Martins, Q., Senekal, C., Camacho, G., Boshoff, W., Dalerum, F., (2014). Survival rates and causes of mortality of leopards (Panthera pardus) in southern Africa Oryx Pp 1-9.

Martins, Q. & Harris, S. (2013). Movement, activity and hunting behaviour of leopards in the Cederberg mountains, South Africa. African Journal of Ecology, pp. 1- 9.

Fröhlich, M., Berger, A., Kramer-Schadt, S., Heckmann, I. & Martins, Q. (2012). Complementing GPS cluster analysis with activity data for studies of leopard (Panthera pardus) diet. South African Journal of Wildlife Research 42 (2).

Martins, Q. (2011). The ecology of the leopard Panthera pardus in the Cederberg Mountains. PhD Thesis, University of Bristol.

Martins, Q., Horsnell, W.G.C., Titus, W., Rautenbach, T. & Harris, S. (2010). Diet determination of the Cape Mountain leopards using global positioning system location clusters and scat analysis. Journal of Zoology 283, 81-87.

Fröhlich, M. (2011). Studying the foraging ecology of leopards (Panthera pardus) using activity and location data: an exploratory attempt. Masters Thesis.

Rautenbach, T. (2009) Assessing the diet of the Cape leopard (Panthera pardus) in the Cederberg and Gamka Mountains, South Africa. Master's Thesis, Nelson Mandela Metropolitan University, South Africa (Scholarship provided by the Cape Leopard Trust).

Lindsay, P. (2008) A spatio-temporal analysis of the habitat use of leopards (Panthera pardus) in the Karoo biome of the Cederberg Mountains, South Africa. Honours Thesis, University of Cape Town, South Africa (in collaboration with the Cape Leopard Trust).

Parsons, S., Smith, S.G.D., Martins, Q., Horsnell, W.G.C, Gouse, T.A., Streichera, E.M., Warrena, R.M., van Helden, P.D. & van Pittiusa, N.C.G. (2008) Pulmonary infection due to the dassie bacillus (Mycobacterium tuberculosis complex sp.) in a free-living dassie (rock hyrax—Procavia capensis) from South Africa. Tuberculosis 88, 80-83.

Martins, N. (2006) Conservation genetics of Panthera pardus in South Africa: Phylogeography of mitochondrial lineages. Master's Thesis, University of Bergen, Norway (Scholarship provided by the Cape Leopard Trust).

Martins, Q. & Martins, N. (2006) Leopards of the Cape: Conservation and Conservation concerns. International Journal of Environmental Studies, 63(5), 579-585.

Our Thanks

Main Sponsors

Special thanks must go to the following donors making a significant contribution to our project over the past year.

Donors

We wish to thank all donors to the project no matter how big or small the contribution. All contributions are recognised on our website. Your support is greatly appreciated.

Partners

We would also like to acknowledge our various partners and associates. It is heartwarming to work with other like-minded organisations towards the same goals. Specifically we would like to thank Conservation SA, CapeNature, SANParks, Cederberg Conservancy, University of Cape Town and University of Stellenbosch for their support.

The Cape Leopard Trust
Registration Number IT2720/2004
Annual Financial Statements for the year ended 28 February 2014

STATEMENT OF COMPREHENSIVE INCOME		2014		2013
REVENUE	R	3 426 694,00	R	2 297 122,00
OTHER INCOME			R	-
OPERATING EXPENSES	R	2 589 460,00	R	2 570 995,00
OPERATING SURPLUS/DEFICIT	R	837 234,00	R	-273 873,00
INVESTMENT REVENUE	R	21 344,00	R	13 219,00
SURPLUS/DEFICIT FOR THE YEAR	**R**	**858 578,00**	**R**	**-260 654,00**
ASSETS				
NON-CURRENT ASSETS (PROPERTY, EQUIPMENT)	R	850 162,00	R	647 403,00
CURRENT ASSETS (TRADE & OTHER RECEIVABLES)	R	26 474,00	R	-
CURRENT ASSETS (CASH AND CASH EQUIVALENTS)	R	1 705 701,00	R	1 076 291,00
TOTAL ASSETS	**R**	**2 582 337,00**	**R**	**1 723 694,00**
EQUITY				
TRUST CAPITAL	R	200,00	R	200,00
ACCUMULATED SURPLUS	R	2 568 823,00	R	1 710 245,00
LIABILITIES				
CURRENT LIABILITIES (TRADE & OTHER PAYMENTS)	R	13 314,00	R	13 249,00
TOTAL EQUITY & LIABILITIES	**R**	**2 582 337,00**	**R**	**1 723 694,00**
BALANCE AT 01 MARCH 2013			R	1 710 445,00
BALANCE AT 01 MARCH 2014	R	2 569 023,00		
CASH FLOW 2013/2014				
CASH AT BEGINNING OF YEAR	R	1 076 291,00	R	1 221 263,00
CASH AT END OF YEAR	R	1 705 701,00	R	1 076 291,00
DONATIONS OF R100,000 & ABOVE	**R**	**2 698 514,00**	**R**	**1 513 302,00**

Audited Financials Compiled by CAP Chartered Accountants

Creatures Worth Conserving

The Cape Leopard Trust
P.O. Box 31139, Tokai, 7966
e-mail: contact@capeleopard.org.za
web: www.capeleopard.org.za

Printing sponsored by
CTP printers
CAPE TOWN