

Update from the field: Black-footed Cat Working Group, South Africa



January 2025, Michelle Swanepoel, field technician

These are notes from the field by the Black-footed Cat Working Group (BFCWG) technician at the Benfontein Game Farm study site near Kimberley, South Africa. Black-footed cats (*Felis nigripes*) are fitted with radio collars and monitored as part of a long-term study on the ecology and demography of this elusive little felid.



Special thanks to Hannes Mans and DeBeers Consolidated Mines for study site access and long-term support of the BFCWG at Benfontein Game Farm.

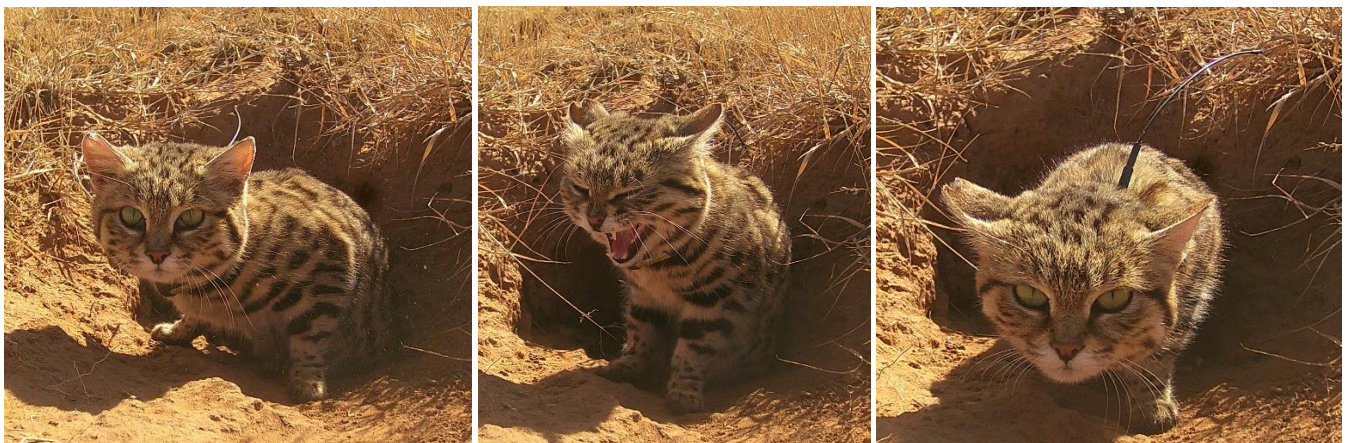


Figure 1 – “Shongo” waking up and leaving his den

Ranging and survival of Black-footed cats in 2024:

In 2024, we monitored a total of four black-footed cats on Benfontein Nature Reserve. Unfortunately, three of them died, resulting in an adult survival rate of only 25%. Of the three fatalities, two were attributed to predation by caracals (*Caracal caracal*), while one was presumably killed by a black-backed jackal (*Lupulella mesomelas*). Below is a detailed account of each individual's fate:

Female Kazi: Kazi was one of our longest-tracked individuals, first radio-collared in November 2018. On March 20, 2024, I located her, but her collar's antenna was flattened against the ground, which had severely hindered our ability to detect her signal. Initially, there were no visible signs of predation. However, a necropsy revealed that she had been killed by a caracal. Kazi's death marked the end of an extensive monitoring period, as she had provided us with over five years of valuable data on black-footed cat behaviour and ecology.



Figure 2 – Kazi's body found after being killed by a caracal



Figure 3 – Fibo's remains and radio-collar located in the veld.

Male Fibo: Fibo was radio-collared on June 2, 2024. Tragically, just over three months later, on September 16, I discovered only remnants of him—his collar, some fur, and his teeth. Based on the evidence and surrounding context, we believe he fell victim to a black-backed jackal.

Male Shongo:

Shongo had been part of our study from November 2022. On September 22, 2024, I located his remains. His injuries strongly suggested that he had been mauled, most likely by a caracal. Shongo's death was another stark reminder of the challenges faced by black-footed cats in environments shared with larger carnivores.



Figure 4 – Shongo's body found after being mauled by a caracal

Male Ultro:

Ultro was radio-collared during the final moments of our June 2024 capture sessions, earning him his name, which signifies "the ultimate cat." As of now, Ultro is the last remaining radio-collared black-footed cat on Benfontein Nature Reserve. His survival serves as a beacon of hope, and we continue to monitor him closely to gain further insights into the species' behaviour and habitat use.

Carnivore surveys:

After the third cat, Shongo, passed away, we decided to begin searching for uncollared black-footed cats on Benfontein Game Farm. With the help of a friend, we aimed to conduct these searches ideally once a week, weather permitting. The primary objective was to conduct driving transects on the reserve, focusing on locating black-footed cats whilst simultaneously conducting a broader carnivore census to monitor population dynamics and species distribution within the area. So far, we have indication that there are at least three uncollared black-footed cats on Benfontein Game Farm. We will continue with the search until our next captures hopefully in March 2025.

Future Research:

The black-footed cat, Africa's smallest, rarest, and least-studied wild cat, depends on the burrows of other mammals for shelter rather than digging its own. These dens provide refuge from extreme temperatures and diurnal predators. However, there is still limited understanding of the species' den usage. Harold Brindley recently conducted the first study on this topic in Namibia, examining den-use patterns of females and identifying which burrowing species black-footed cats rely on for survival. His research, which included 50 den entrances used by five radio-collared females over a four-week period, also utilized LiDAR technology to gather detailed data. This study shed light on how such limiting factors may impact their conservation.

Leveraging LiDAR technology available on Apple devices offers a revolutionary opportunity to further study black-footed cat dens. The high-resolution, 3D mapping capabilities of LiDAR provide a cost-effective and precise method for collecting actionable data on den sites. This innovative approach addresses significant gaps in the ecological understanding of the species.

On Benfontein Game Farm, where both male and female black-footed cats are typically radio-collared, we have the opportunity to expand on Brindley's work. We plan to conduct a similar study over a longer time frame, including both sexes, to gain deeper insights into their denning behaviour. Our objectives include investigating how climate influences den usage, differences in den preferences between males and females, variations in den selection by females with and without kittens, and seasonal shifts in den usage between winter and summer.

By continuing to study how black-footed cats utilise the burrows of other mammal species, we aim to bridge critical knowledge gaps and assess how this possibly-limiting resource affects their survival and conservation efforts.

Vehicle Maintenance:

Given the critical role that the vehicle plays in our fieldwork, without it, conducting our intensive research becomes nearly impossible. While the vehicle has performed admirably so far this year, it currently has over 270,000 hard-field type kilometres on the odometer. When combined with the demands of off-road driving, this naturally leads to occasional mechanical issues. During the past year we have spent R73 167 collectively on vehicle maintenance:

Cost:	Maintenance:
R 5890	New back tyres
R 1600	Towing company
R 7640	Shocks replacement (control arms, tie rods, stabaliser links)
R 3300	Renewed right engine mounting
R 28400	New steering rack, ABS sensor, glow plugs
R 3228	New back tyre
R 6910	New door hinge & vehicle service
R3199	New Front Tyre
R13000	New aircon pump & reverse light switch
Total:	R73 167

On top of vehicle maintenance, we also have running costs of approximately R50 000 on fuel in 2024.

Sailing on waves of gratitude:

As we embark on our quest for new discoveries, your support and sponsorship have been the wind in our sails. We are thankful for your continued support, helping us make significant breakthroughs.



Best regards from the veld,

Michelle Swanepoel