PROJECT UPDATE August 2021

by Martina Küsters, Dr Morgan Hauptfleisch, Dr Alex Sliwa & Shipala Ndele (Field Technician)

Black-footed Cat Research Project Namibia

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'Conserving black-footed cats in Namibia'

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Black-footed Cat Working Group • Namibia University of Science & Technology

The Black-footed Cat Research Project Namibia was initiated in 2012 to 1) collect more fine-scale distribution records of black-footed cats in Namibia; 2) educate & raise awareness for this little-known wild cat species; 3) investigate & identify threats and to establish its conservation status; 4) find strongholds for its conservation and 5) to study the distribution, biology and ecology of this species in Namibia. Large parts of the species' distribution range falls within private farmland, therefore landowner efforts and co-operation are important to conserve the species regionally, outside protected areas. We are very privileged to work with farmers in southern Namibia who support our research and are committed to the conservation of the species.

This rare species of wild cat should be seen as a flagship species of our unique arid southern Namibia. This project is a collaborative effort between the **Black-Footed Cat Working Group** (BFCWG), the **Namibia University of Science and Technology** (NUST) **Biodiversity Research Centre** (BRC) and the **Ministry of Environment, Forestry & Tourism**.

Some exciting NEWS

More than a year ago, the first ever black-footed cats (hereafter bfc) were captured, sampled and fitted with radio collars in southern Namibia. The four adult female bfcs are all well and we were able to replace the collars [due to battery life limitations of 18 months] and fit two additional adult females with collars in June 2021. Thanks to our dedicated field technician, Shipala Ndele, important data is collected, and all cats are monitored regularly. The best stories are told in pictures…so read on.

The development a logo was important to create awareness through a unique design that easily represents the project. Alex Maritz of AM Designs helped with the graphic design of the awareness material.

Re-capture of females to replace collars and capture of new study animals

The capture operation in June 2021 had been planned and co-ordinated long in advance, with Beryl Wilson coming in from South Africa and Dr Alex Sliwa from Germany, the rest of the members, Dr Axel Hartmann, Martina and Shipala from Namibia, the regional lock-down nearly compromised our capture operation. But luckily, we were eventually able to capture and replace the radio collars of the four females collared in 2020 and to conduct spotlight surveys to locate and capture new study animals. Dr Morgan Hauptfleisch could unfortunately not attend the captures.

The team successfully captured and collared two new adult female bfcs and replaced the collars of the four females, Prima, Kara, Lace and Auas. Two sub-adult females were captured as well, but only micro-chipped and hair samples taken, as they were too young and too light weight (≤ 800 g) to be fitted with a collar. No males were captured, however three sightings of possible male cats were observed by Shipala and Martina prior to arrival and after the departure of the capture team. The six cats were all in very good condition, with an increase in body weight of 26% (1.33 kg; n=6), compared to the lean weights of 1.05 kg (n=4) in March 2020. Good rains in 2020 have improved the productivity and an increase in prey availability.

The team was small, only five of us and we all had our duties:

Beryl Wilson: the fearless and so very able driver during the capture, assisting the project vet with her invaluable experience through many years of bfc capture and sampling; Dr Alex Sliwa: tracker, spotter, digger, mentor, photographer and advisor of capture activities gained through his 25+ years of experience with bfcs; Dr Axel Hartmann: his enthusiasm, always willing and helpful, and his professional conduct during immobilisation of the study animals; Shipala Ndele: his endless patience and dedication to the study animals throughout 2020-2021 has shown in the invaluable data collected on each animal since the first captures in March 2020, hard-working and always willing, during capture he was a digger, spotter, opened gates, set camera-traps, tracked and has always maintained a good relationship with the farmers in the area; Martina Küsters: co-ordinated the capture operation, liaison with the farmers, catcher, opened gates, set camera traps, project reporting and permit applications, tracked and drove the project vehicle during monitoring & photography.

Figure 1 ‘Kara’ in perfect condition and gravid with two kittens (photo: A.Sliwa)





Figures 2: The capture team working on an immobilised bfc. [top, left] Shipala & Martina with 'Zola' in the net, a new adult female bfc [top, right]. Dr Alex Sliwa fitting a VHF radio collar to 'Nama' (bottom, left). Body measurements, including the tiny foot pads, are taken and recorded by Shipala on the capture sheet (bottom, middle). Body weight of each captured bfc is also recorded (bottom, right).

Figures 3: Dr Axel Hartmann & Beryl Wilson taking blood samples (top, left). Beryl's extensive experience with bfc capture, has enabled her to draw blood with ease (top, middle-left). Dr Axel monitors breathing rate of 'Kara' during immobilisation (top, middle-right). Shipala with 'Lace' (top, right). The capture team with 'Nama' (bottom, left). The very small & fragile feet of 'Kara' (bottom, middle-left). Antidote is in & Beryl prepares the crate for the cat to recover (bottom, middle-right). Alex and Shipala releasing 'Auas' in a den after capture (bottom, right).

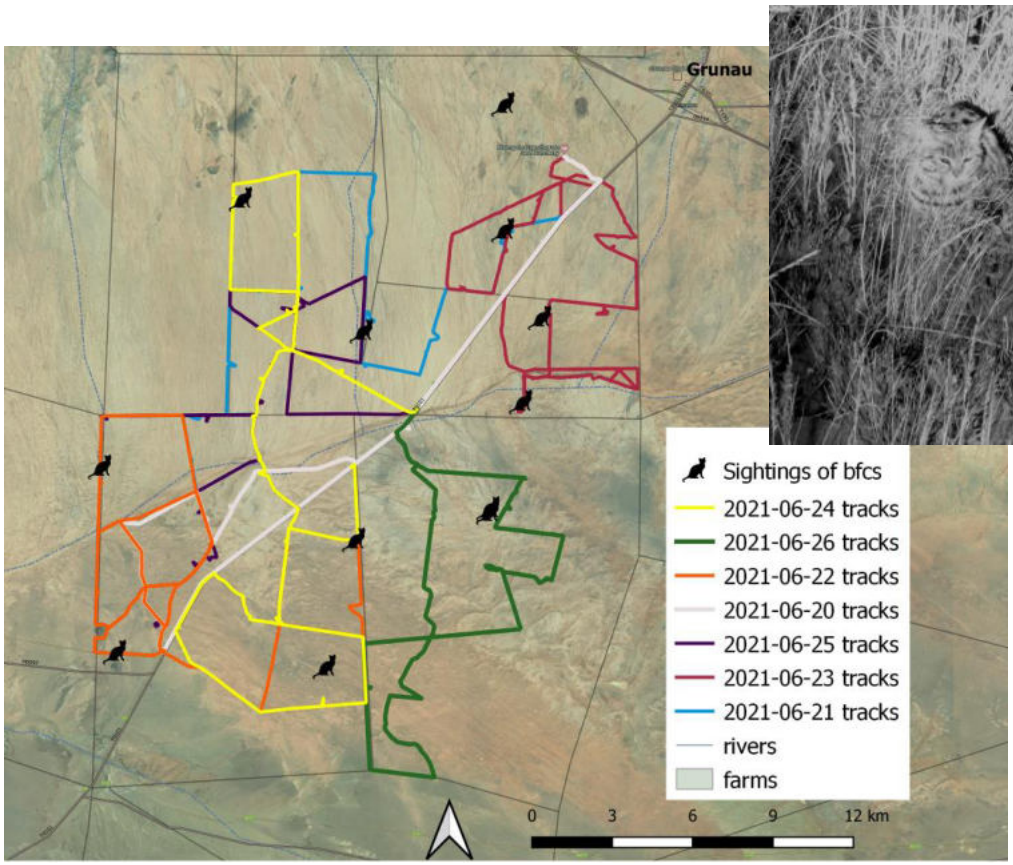

Figure 4: Map of search routes driven from 20-26 July 2021 (Source: Beryl Wilson) and locations of un-marked bfcs [confirmed and possible] seen throughout 2020-2021 (left). An un-marked male (top left in picture) seen with female 'Auas' (top right insert) on 18 June 2021 (photo: M. Küsters). Some of the sightings are most likely the same individuals seen several times.

The spotlight search effort to locate bfcs at night for capture was recorded by the track log of Beryl Wilson's Garmin GPS unit in the vehicle. All available roads were driven to cover the larger study area (≈ 55 000 ha) as best as possible (Figure 4). The map also indicates the locations of opportunistic sightings of un-marked (uncollared) bfcs during 2020 to 2021 (Figure 4). Total distance searched was 521.8 km (average 74.5 km/ night) and the total time spent searching was 25 hrs 19 min, over six nights.

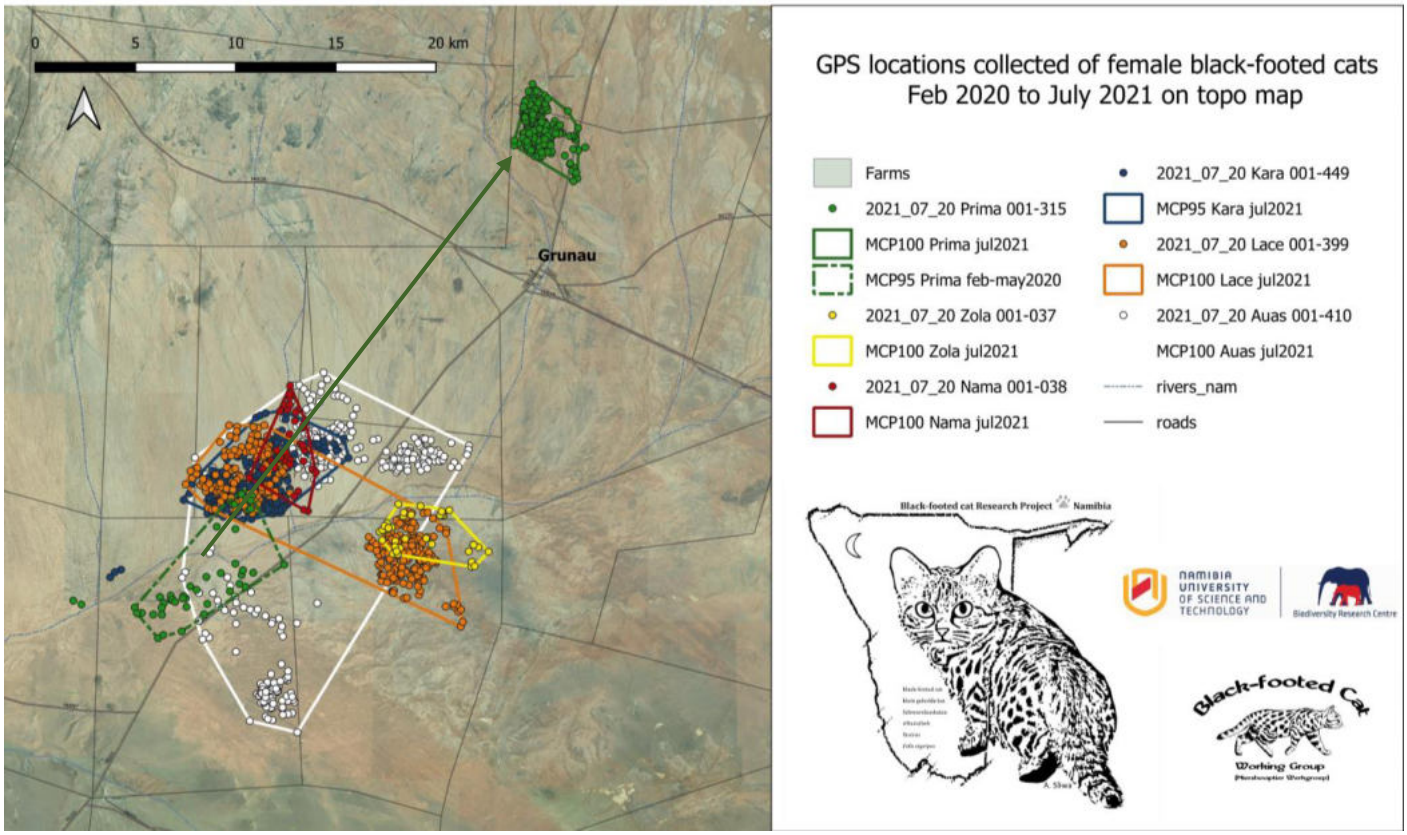

Figure 5 Extent of home range use (Minimum Convex Polygon) of six adult female bfcs and location data collected by Shipala Ndele (n= 1 624) in the study area from 2020 to July 2021. 'Prima' [green] dispersed 32 km north-east and survived.

Figure 6 Shipala locating the VHF signal of new female ‘Zola’ (left). The landscape and grassy habitat in the southern part of the study area, at higher elevation than the northern part (right).


Figure 7 Shipala locating the den location of a study animal (left), and a camera trap is set-up to record behaviour, kittens and time of emergence from the den (right) (A. Sliwa).

Monitoring: Home ranges, reproduction & camera traps

Regular monitoring (telemetry tracking and visual observations) of collared bfcs is the responsibility of Shipala to collect GPS location data (Figures 6 & 7), behaviour, diet and to verify their health status. Thus far, Shipala has collected over 1 600 locations of all the study animals between March 2020 and July 2021. These data are needed to estimate home range (HR) size and spatial requirements for survival. Preliminary results indicate that there is considerable variation in HR stability and size, between individuals and some cats have dramatic seasonal shifts in home range use (Figure 5). Home range analysis using the Minimum Convex Polygon method [encompassing all locations], indicates that the home range sizes are much larger than those recorded in South Africa (Sliwa 2004; Sliwa et al. 2019; Küsters in prep), suggesting that bfcs need larger areas to survive in more arid environments.

Long-term monitoring through visual observations of study animals allows us to document accurate life history data, such as health status and onset of disease or deteriorating health, behaviours associated with social status, hunting, courting and interactions with other animals and may explain patterns in movement and home range use. It also allows us to document events rarely recorded for a small carnivore, such as one young adult female dispersing 32 km from where she was captured to the north-east in May 2020 and survived. This information is vital to understand movement patterns of the meta-population, dispersal corridors, survival and distribution of bfcs in the larger landscape.

Shipala also sets up camera traps at the dens to document behaviour, time of emergence and monitor litter size and kitten survival. This footage is often used as educational and awareness material. Study animals habituate well to the presence of the cameras.

Reproduction was recorded in five of the six female cats in June 2021. Kittens and sub-adults are most vulnerable and survival rate is considered low, but individuals of these ages are difficult to monitor and accurate survival rates are unknown (Wilson et. al. 2016). It is unusual for female bfcs to have kittens in the colder months of the year, with litters usually born from October to March (Küsters in prep.), but births have been recorded until May (Sliwa et al. 2010).

Camera trap footage revealed that ‘Auas’ had two kittens on 1 June 2021, estimated at 2-2.5 months old (Figure 8, left). By 18 June, only one kitten [possibly male], estimated at 3-4 months old, had survived. It was rarely seen with ‘Auas’ afterwards (Figure 8, right), probably hunting independently but still within her home range.

‘Nama’ (Figure 9, left) had a single kitten, estimated not older than 2 months at the end of June 2021 (Figure 9, right). The kitten was regularly seen at the den and with ‘Nama’ at night. As the kittens get older, female and kitten often do not sleep in the same den, so capturing them on camera traps is challenging.

To our surprise and absolute amazement, three kittens were recorded on a camera trap set at ‘Lace’s den on 11 June 2021 (Figures 10, top left & right), estimated at 2-3 weeks old. Two kittens had been lost due to unknown causes by 19 June. Kittens are left unattended at the den while the female hunts and are vulnerable to predation. As they get older, they explore further from the den, increasing the risk of predation. The one surviving male kitten, estimated at 2-2.5 months old, was seen often at the den and following ‘Lace’ at night, (Figure 10, bottom). By September, it would have reached the age of independence.

‘Prima’ and ‘Kara’ were highly gravid [pregnant] in June 2021. ‘Prima’ gave birth to two kittens between 22-26 June 2021 and ‘Kara’ gave birth between 23-27 June. Disturbance at the maternal den is kept to the minimum when kittens are less than 2 weeks old. Shipala confirmed that one kitten of ‘Prima’ had survived, estimated to be about 82 days old, on 12 September.

‘Kara’s kittens have not been seen in September. We fear they may have not survived. They are especially vulnerable when they are less than one month old.

Figures 8 ‘Auas’ with two kittens on 1 June 2021, estimated at 2-2.5 months old (left). Only one very energetic kitten had survived by 18 June 2021. This male kitten was close to independence and was only seen a few times afterwards.

Figures 9 A snapshot of a camera trap video of ‘Nama’ leaving her den (left), a new female captured and collared in June 2021 (BFCWG 2021). The camera trap revealed that she had a kitten, estimated at 2 months of age (right), seen with her until July.

Figures 10 Lace’ with three kittens on 11 June 2021 (top, left & right). Unfortunately, only one kitten had survived by 19 June 2021. The single kitten was healthy and strong on 6 July 2021 (bottom), regularly seen with ‘Lace’ at night by Shipala, until end of July. It was not seen again, but by September it would have reached age of independence.

‘Custodian of black-footed cats’ [Bewaarder van miershooptiere] programme

This programme aims to recognise landowners/ farmers throughout Namibia who voluntarily strive and commit to conserving the bfc and its habitat; support active research and who practice selective species-specific methods of predator control measures. This may promote overall biodiversity conservation and raise awareness within the farming community and the public. Interested farmers can contact the project co-ordinator at bfootedcat@gmail.com.

Members of the Black-footed Cat Working Group Dr Alex Sliwa, Beryl Wilson and Martina Küsters hand over ‘Black-footed cat Custodian’ signboards to the landowners, Kobus & Johandre van der Merwe with Philippus Fourie (above), who actively support and are involved in the research, to acknowledge their contribution to the conservation of black-footed cats in southern Namibia (self-release: A. Sliwa).

Shipala Ndele acknowledging another farmer, Barend Matheus Swartz (left), for his support of and commitment to the research and for being a custodian of black-footed cats. Martina hands over a custodian signboard to Dolf (Jnr) de Wet (right), who is also a ‘bewaarder van miershooptiere’ and got involved in the research when ‘Prima’ dispersed and settled on his farm north of Grünau in May 2020.

Without the support of the landowners in the study, the Custodians of black-footed cats, this project would not be possible, so THANK YOU!

More exciting news!!

We are very privileged and proud to have received funding from a local Namibian organisation, the Namibian Chamber of Environment (NCE). We want to thank the **NCE, B2Gold Namibia** and **TOTAL** for the financial support and by providing a vehicle for temporary use until we can get a new project vehicle.

Naples Zoo at Caribbean Gardens continues its generous support of black-footed cats in Namibia, through providing the project with more funds for 2021-2022. A special thank you goes to **Tim Tetzlaff, Director of Conservation** for his dedication towards research and conservation of black-footed cats in Namibia.

We sincerely thank **Philippus** and **Gerard Tromp** of **Nictus Holdings Ltd.** and **Gerhard Vermeulen,** COO of **AUAS MOTORS** for the significant sponsorship to the **NUST BRC** and to the project of an **Isuzu D-Max** 4x4 bakkie and maintenance thereof. Additional extras to the bakkie sponsored by Auas Motors included railings and a platform for standing, connections for lighting system and a Lightforce spotlight.
Tren Tyre Namibia is also thanked their support, providing a new set of tyres during the sponsorship.

'Your support and commitment from 2019 to 2021 has made an invaluable contribution towards gaining more information about the rare black-footed cat and its conservation in Namibia'.

The **Black-footed Cat Working Group**, in specific **Dr Alex Sliwa** & **Beryl Wilson** are thanked for all their involvement, assistance and financial support. Also, for all the donated equipment:

Garmin GPS 60cs
SecaCam trail camera
2x 3-element antennas
R1000 Receiver

The **NUST BRC & Dr Morgan Hauptfleisch** are thanked for providing a short-term stipend for Shipala, two camera traps and logistical support throughout 2020-2021.

We wish to thank all our collaborators, supporters, funders and all farmers for contributing to the research and conservation on the unique black-footed cat!!