



Half-Yearly Report

June - December 2022





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Highlights



New additions to the urban clan

The second half of 2022 has been an exciting period for our research team and the urban hyaena clan in Lilongwe! While checking one of our camera traps in August 2022, we noticed two new little members of the clan at one of Lilongwe's active den sites (figure 1). After observing the behaviour and physical states of the members of the clan, it was clear that URBHY16 was the proud mother. URBHY16 is second to the alpha female (URBHY01) and has been the breeding female of the clan for the past 2 years.

The cubs were first discovered when they were a little over two months of age, a stage at which they spend most of their time in or around their den. It is therefore difficult to keep regular tabs on their health and wellbeing as they are very well concealed.



Figure 1. Camera trap photo of one of the two hyaena cubs of the urban clan outside a monitored den.

Two successful GPS collar deployments

GPS collars are some of our most valued assets, giving us access to a large amount of data with very little maintenance required after the initial deployment. We are happy to report

that we managed to tranquilise and collar two hyaenas (figure 2): one from the clan in Lilongwe (URBH22) and the other from the Bunda hill area near Lilongwe (BUNHY02).



Figure 2. CRM team conducting body measurements after deploying a GPS collar on URBHY22.

The two hyaenas that we chose for the GPS collars have a lot in common. They are both males and are between 2 and 3 years old. This was no coincidence as these hyaenas are at a pivotal moment of their lives and are of high scientific interest. At this age, males disperse from their natal clan, to embark on a long and arduous search for a new clan where they start at the very bottom of the social pyramid and eventually reproduce and pass on their genes. This is an interesting phenomenon in hyaena societies where the males feel an instinctual urge to leave behind their family to search for non-related females and diversify their genetic pool.

We have been gathering invaluable data on the movement of these two explorers as they circumnavigate the complex urban landscape of Lilongwe. This is also the hardest time for a male hyaena as they leave the comfort of their clan's territory to venture into inhospitable habitats and territories of other carnivores. Given the additional complications of navigating through busy roads and heavily populated cities and villages, only some lucky males survive this dispersal.

Unfortunately, since 25/09/2022, the collar on BUNHY02 (figure 3) stopped transmitting while he was crossing the M14 on his way back towards Lilongwe. We have not yet been able to locate him or the GPS collar. We continue to monitor the Bunda clan and keep our fingers crossed to perhaps, one day, catch a glimpse of BUNHY02 who travelled more than 400km in 20 days.

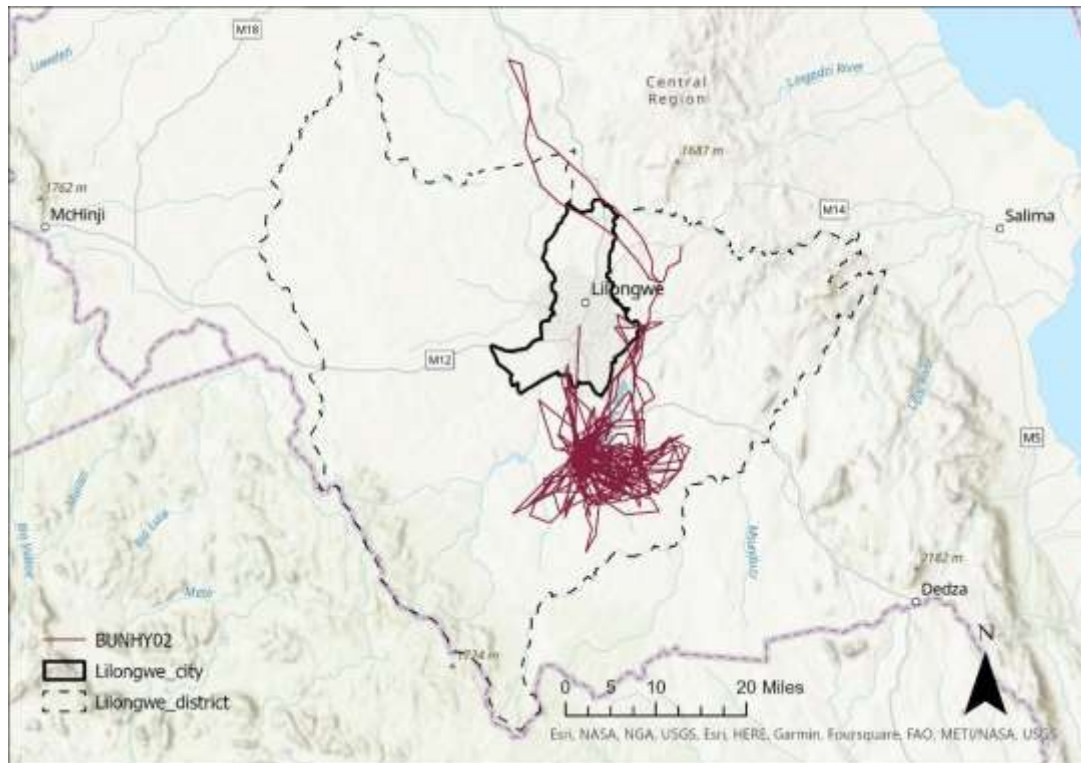


Figure 3. Movement tracks derived from the GPS data of BUNHY02.

Two new males join the urban clan

Just like the young males from our study clans disperse to other areas, those from other clans outside our study area also find their way into the urban clan. During one of our habituation exercises, we noticed a new male near the bait station. This new male, URBHY28, kept his distance from the other members of the clan and took every opportunity to feed when the others were not around. He was clearly low ranking as we saw him being chased away by URBHY25 a young adolescent member of the clan, who was a year old at the time and half the size of this new male! It was interesting and almost entertaining to see a young hyaena dominate a physically superior counterpart simply due to his social rank.

Soon after, another new male was spotted on one of our camera traps (figure 4). This one, however, was not as lucky as URBHY28. Only a few days after being discovered, he died in a road accident. This is often the unfortunate fate of many of the hyaenas living in urban environments especially for the younger, low-ranking animals that lack experience. The younger low-ranking males have to work even harder to feed themselves as they are often not allowed to feed with the clan and are therefore forced to take risks that the others would not.

URBHY28 is now a well-integrated member of the urban clan and can be seen feeding next to his new family at baiting stations during our surveys.



Figure 4. Camera trap photo of urban clan's newest member, URBHY28.

Two new dens and a latrine

One of the many ways we use data from our GPS collars is by analysing cluster points to identify areas where the hyaenas spend a significant portion of their time. These areas are very likely to be key areas of interest (AOIs) and are thereafter explored by the research team. Thanks to the collar data from URBHY22 and BUNHY02 in the last 6 months we found two new dens in both Lilongwe and Bunda! We have now placed new camera traps at these locations and will further expand our coverage area to piece together a full picture of these hyaena clans. We are already seeing results! The first bi-monthly check of the camera trap in Bunda hill revealed at least two new individuals in the Bunda clan, BUNHY06 and BUNHY07 (figure 5).

Spotted hyaenas have a special way of marking their territories by creating latrines, a kind of communal toilet where the members of a clan defecate. These locations are very important for a hyaena clan as these are the grounds for many social interactions and reaffirmations of hierarchies. Hyaena latrines are very difficult to come by in urban environments, as dogs and other urban predators like jackals consume these nutrient-rich scats or droppings.

We were excited and surprised to find a large latrine in Lilongwe for the first time in years (figure 6). We placed a camera trap at this latrine and will now be able to monitor clan hierarchies in a more informative way. This goes to show how valuable GPS collars can be for wildlife research particularly in anthropogenic landscapes where camera trapping across large areas of landscape is not feasible.



Figure 5. Camera trap photo of BUNHY06 from our new camera trap location.



Figure 6. New hyaena latrine located from the cluster points of URBHY22.

Artificial hyaena den in Kumbali

Kumbali Country Lodge has always been a refuge for Lilongwe's wildlife and now even more so with it being designated as a game reserve. The urban clan has been increasing its presence in the area as their whoops (vocalisations) are heard almost every night by the inhabitants of Kumbali.

Kumbali will soon be home to a fenced game reserve and this upscaled protection status from comes at an opportune time as the urban sprawl in Lilongwe has dramatically increased in the past year with ambitious road development projects being undertaken. The habitat of the hyaena clan is ever more fragmented and they are at higher risk of road collisions. To relieve some of the pressure on the limited denning sites within the city, we assisted the management at Kumbali's to construct a one of its kind artificial hyaena den (figure 7). Our hope is to provide the urban clan a refuge in a relatively safer environment to raise its young and maintain its role in the ecosystem.

We monitor the area regularly by the use of our non-invasive camera traps and document the interactions of the clan with the site.



Figure 7. Kumbali's artificial hyaena den in construction.

Human-hyaena coexistence in Mchinji

While it is rare to find spotted hyaenas in a completely urbanised environment such as that of Lilongwe, many of Malawi's rural communities have existed in close proximity to hyaena clans for several years. They have all had varied levels of interactions with their giggling neighbours. The increasing cost of living in Malawi increases the pressure on the natural resources around community lands. As forest cover is reduced and the natural prey base of the hyaena harvested, these communities have experienced an increase in negative interactions with hyaenas.

We have been working closely with the inhabitants of Chipatala one such village in Mchinji to assist in resolving human hyaena conflict. Our team along with representatives from the DNPW have conducted site visits and interviewed livestock owners to gauge a better understand of the drivers of conflict (figure 8). We continue our efforts to engage with the community to co-create best practices for mitigating the conflict by conducting workshops on hyaena ecology and behaviour, livestock enclosure improvement and reforestation. You can find out more about our wildlife conflict work and download many advice and resources from our webpage www.carnivoreresearchmalawi.org/human-wildlife-contact



Figure 8. Interactions with livestock owners in Chipatala, Mchinji.

Industrial attachment students from Bunda University

Every year, we welcome a small group of students from Bunda University to supervise their industrial attachment. During this time, the students gain first hand experience in the day-to-day activities of CRM. Three students successfully completed their industrial attachment with us during their mid-semester break and learnt several useful skills such as radio tracking with VHF receivers (figure 9), maintenance of camera traps and scat analysis.



Figure 9. Students from Bunda University practicing radio tracking using a VHF receiver.

First international volunteer since Covid-19

We reopened our international volunteer program and welcomed our first volunteer since Covid for a 2.5-week program in. Our volunteer, Melanie Szameitat, assisted us with setting up and maintaining camera traps, processing scat samples for analysis with the setup and execution of 2 hyaena habituations and 1 immobilisation attempt. She spent her time in Lilongwe and Kuti Wildlife Reserve, where she could practice skills such as camera trapping and setting up baiting stations in a wildlife reserve.



Figure 10. Melanie (bottom left) after a successful camera trap deployment at the Statehouse.

260 scat samples sent to the UK for analysis

As we approach the end of the data collection phase of the urban hyaena study, we have been processing data to prepare it for analysis (figure 11). For the diet component of our study, our research team, volunteers and students have been hard at work processing several samples of scat. 260 out of the 300 samples have been processed at the research base and have been sent to the UK to be analysed at the the University of Bath.



Figure 11. Front left to right: scat collection, sorting and hair samples extracted from scat.

Kickstarted Conservation Chats at L&L

In October 2022, our team presented the urban hyaena research at the first Conservation Chats event organised by Land and Lakes Safaris (figure 12). These events serve as an open space to allow conversationists, wildlife enthusiasts and everyone else to connect over local and international projects, research and findings regarding wildlife and natural habitats.



Figure 12: The invitation for CRM's talk at Conservation Chats at Land and Lakes Safaris.

Camera traps

Number of CTs: Nine

Total number of pictures taken: **5006**

Survey effort (hrs): 13,896

Number of species observed: 15

Camera trap	Total number of pictures	Species observed
Sanctuary Den 1	820	- Spotted Hyaena - Side-striped Jackal - South African Porcupine - Common Duiker - African Civet - Vervet Monkey
Sanctuary Den 2	493	- Spotted Hyaena - Serval - Side-striped Jackal - African Civet - South African Porcupine - Common Duiker - Bushbuck - Pouch Rat - Helmeted Guineafowl
Sanctuary Den 3B	89	- Spotted Hyaena - Side-striped Jackal - South African Porcupine - Common Duiker
Sanctuary Den 3C	1699	- Spotted Hyaena - Serval - Side-striped Jackal - South African Porcupine - Common Duiker - Vervet Monkey - Helmeted Guineafowl
Artificial Den Kumbali	336	- Spotted Hyaena - South African Porcupine - Bushbuck - Domestic Cow
Statehouse Den 1	862	- Spotted Hyaena - South African Porcupine - Bushbuck
Statehouse Den 2	440	- Spotted Hyaena - Serval - Side-striped Jackal - Water Mongoose - Large-spotted Genet - African Civet - Bushpig - South African Porcupine - Common Duiker - Bushbuck - Pouch Rat - Helmeted Guineafowl - Dog
Statehouse Den 3	42	- Spotted Hyaena - Bushbuck
Bunda Hill 5	225	- Spotted Hyaena - Large-spotted Genet - South African Porcupine

June to December in photos



With Thanks to Our Partners

