Monthly Report

October 2024

Leaf-nosed bat *(Hipposideros sp.)*

Contents

Parasites

By Niko Mantras, Research Assistant

From April to October, we have been carrying out a study for the International Livestock Research Institute (ILRI), based in Nairobi, Kenya. This project has been focused on bats and their parasites as potential disease vectors to humans. To collect these parasite samples, we have been conducting bat trappings surveys and collecting ectoparasites from the bats in the field. Survey details and protocols can be found in the July monthly edition.

During the ILRI project, 43 parasite samples have been collected across 45 surveys. Parasites were obtained from a total of 38 individual bats, representing 11 different species from 16 distinct sites (Figure 1).

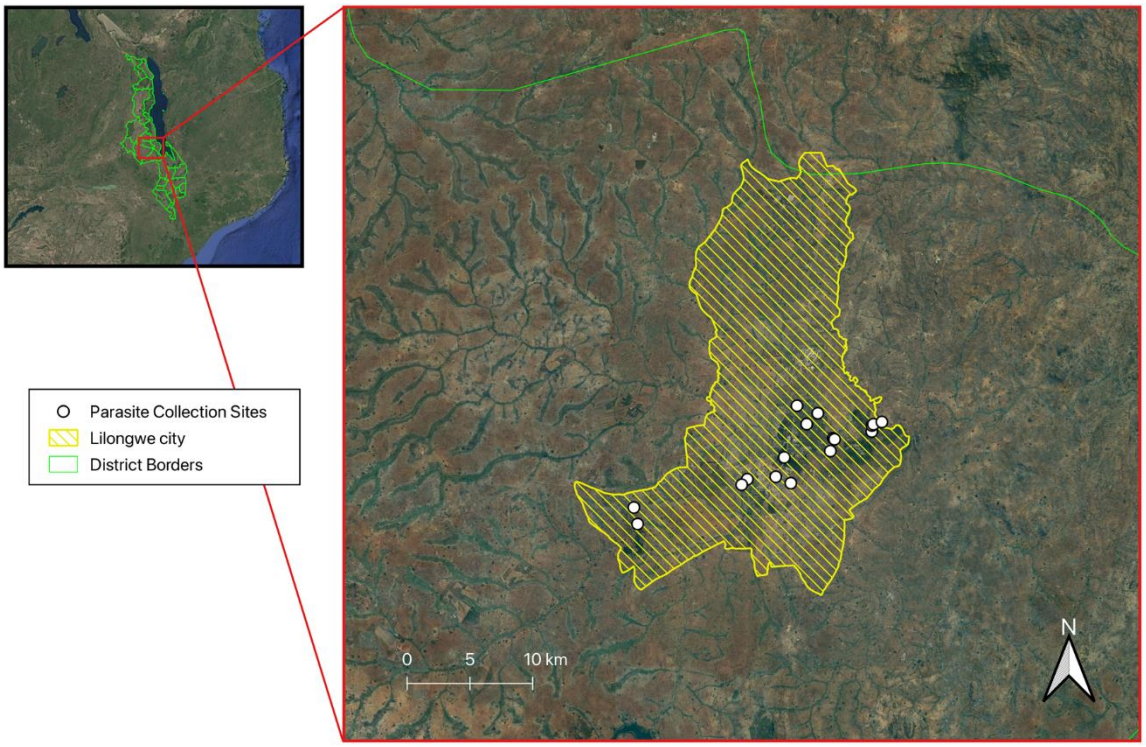

Figure 1. Aerial view of sites that produced parasite samples during ILRI surveys from April to September.

Bioacoustics

By Niko Mantras, Research Assistant

Over the course of the ILRI surveys, ABC has contributed to a long-term project aimed at developing an auto-identification app for bat species in Malawi. This project is intended to make species identification faster, more accurate, and accessible to researchers and conservationists in the field, thereby enhancing our understanding of bat diversity and ecology in Malawi. During trapping surveys, we collected call samples from echolocating bat species using the Wildlife Acoustics Echo-meter Touch 2 Pro™. Calls were recorded by standing approximately one metre from the release point and capturing a single call that included both hand-release and search-phase calls. Additionally, we recorded bat calls passively through a Wildlife Acoustics Song Meter 4 Bat™, allowing for continuous data collection and monitoring throughout the night. These passive recorders are strategically placed to capture bat activity across various habitats and landscapes, providing a broader picture of bat distribution and behaviour.

In recent months, it has become clear that our bioacoustics monitoring protocol requires an update. Our acoustic data collection protocol had not been revised in over seven years, despite advancements in both technology and methodology. The equipment currently available to us, such as the Song Meter 4 Bat™, is more advanced than previous models, offering higher sensitivity and longer battery life. However, to leverage these advancements fully, our team has identified the need to refine our collection and analysis techniques. To address these needs, we have been working closely with our research partners at the University of Bath, coordinating updates to our protocols to align with the latest in acoustic monitoring technology. This collaboration has enabled us to review our data collection techniques and explore new methods for analysing bat calls. These updated protocols will improve data accuracy and ensure that the app we are developing integrates seamlessly with current acoustic technology, optimising it for field applications. Our goal is to finalise these protocol updates by mid-November, after which we plan to implement the new methods in our ongoing surveys. Once completed, these revised methods will significantly enhance our capacity for effective bat monitoring and conservation in Malawi, as well as contribute to a broader understanding of bat populations across Africa.

Ranger Workshop

By Niko Mantras, Research Assistant

On October 29th, ABC and Carnivore Research Malawi (CRM) partnered to deliver an engaging educational session for the staff and scouts at the Lilongwe Wildlife Sanctuary. The purpose of this workshop was to increase awareness and appreciation for Malawi's diverse bat and carnivore species, emphasizing both the ecological importance of these animals and the threats they face. ABC's presentation provided a detailed overview of bats, beginning with an introduction to bat biology and their unique adaptations, such as echolocation, nocturnal lifestyles, and remarkable wing structures, along with variation in feeding types and habits (Figure 2). The discussion highlighted the critical roles bats play in ecosystems, particularly in Malawi. From pest control to pollination, bats contribute immensely to local agriculture and biodiversity. ABC's team also shared specific insights into the bat species documented within the sanctuary, showcasing data gathered over years of dedicated fieldwork. The audience learned about the different species found in Malawi, including some rare and endemic bats that face threats from habitat loss, human-wildlife conflict, and misconceptions about bats, which can lead to their persecution.

Figure 2. Research Assistant, Niko Mantras, discussing with sanctuary scouts.

One of the main objectives of the presentation was to dispel myths and address common misconceptions about bats, which are often seen as dangerous or unclean. Another objective of this workshop was to equip the sanctuary scouts with the necessary information they need to garner attention to bats from the public within the tourism sector. ABC emphasised that bats are generally harmless and actually help regulate insect populations, benefiting local agriculture and human health. To foster a better understanding, ABC presented statistics on how much agricultural damage and disease vector control bats potentially prevent each year. The audience, particularly the sanctuary scouts, showed a high level of interest, asking questions and discussing the topics enthusiastically. Many of them were new to understanding the role of these species in conservation and were eager to learn more. By the end of the event, 19 informational leaflets had been taken by participants, reflecting the strong interest and eagerness to further explore the subject.

Bat Boxes

By Niko Mantras, Research Assistant

During the month of October, African Bat Conservation focused on completing four orders of bat boxes, a project that highlights the organisation's commitment to conservation and sustainable practices. These bat boxes play a crucial role in providing additional roosting habitat for bats in the Lilongwe area, where natural roosting sites are often lost due to urban development, deforestation, and other environmental changes. By offering safe spaces for bats to rest, reproduce, and raise their young, bat boxes contribute significantly to the preservation of local bat populations and the essential ecological services they provide. The construction of bat boxes is an altruistic initiative, as 100% of the proceeds from their sale are reinvested into purchasing materials to build more boxes. This self-sustaining model ensures that the project can continue to grow and provide ongoing benefits to bats and the ecosystems they support.

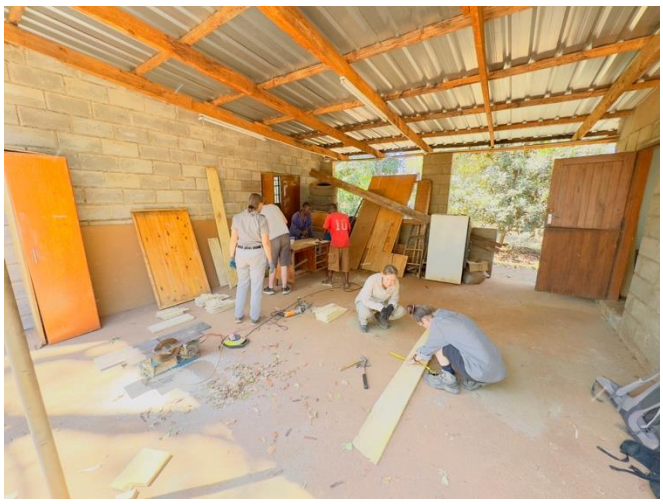

Figure 3. ABC team building bat boxes.

Figure 4. Riitta, one of our volunteers, building a bat box from scratch.

Beyond the ecological impact, the process of building bat boxes is a fantastic way for ABC volunteers to engage with conservation work in a tangible and meaningful way. It allows volunteers to actively contribute to a conservation project while learning about the vital role bats play in maintaining healthy ecosystems. The bat box project also serves as a platform for raising awareness about the challenges bats face and the importance of protecting them. By participating in these efforts, volunteers often develop a deeper appreciation for the intricacies of conservation and the small, practical steps that can lead to significant positive outcomes. Whether it's through the satisfaction of using their hands to build

something meaningful or the knowledge that their work will have a lasting impact on local biodiversity, volunteers leave with a heightened sense of purpose and inspiration to continue supporting conservation initiatives.

Summary of Work

Bat surveys carried out in October 2024

Date	Type	Site code	Location	Total bats caught	Species caught / encountered
10/10/2024	Opportunistic	LLWO06	Lilongwe	3	*Epomophorus labiatus*, *Scotophilus dinganii*
12/10/2024	Opportunistic	LLRIV02	Lilongwe	3	*Hipposideros* (A)
16/10/2024	Opportunistic	LLWO06	Lilongwe	6	*Epomophorus labiatus*, *Epomophorus wahlbergi*
18/10/2024	Opportunistic	LLWO10	Lilongwe	6	*Afronycteris nana*, *Epomophorus labiatus*, *Scotoecus hindei*, *Scotophilus dinganii*
23/10/2024	Opportunistic	LLWO38	Lilongwe	16	*Epomophorus labiatus*, *Epomophorus wahlbergi*, *Scotophilus dinganii*
24/10/2024	Opportunistic	LLWKU01	Lilongwe	11	*Afronycteris nana*, *Epomophorus labiatusi*, *Epomophorus wahlbergi*, *Hipposideros* (A), *Hipposideros caffer*
30/10/2024	Opportunistic	LLWO11	Lilongwe	10	*Epomophorus labiatus*, *Scotoecus hindei*, *Scotophilus dinganii*

Biosamples collected October 2024

Date	Survey type	Sample type	Site code	Location	No. samples	From which species
12/10/2024	Opportunistic	Parasite	LLRIV02	Lilongwe	6	*Hipposideros* (A)
12/10/2024	Opportunistic	Wing Punch	LLRIV02	Lilongwe	2	*Hipposideros* (A)
12/10/2024	Opportunistic	Faecal	LLRIV02	Lilongwe	4	*Hipposideros* (A)
16/10/2024	Opportunistic	Parasite	LLWO06	Lilongwe	1	*Epomophorus labiatus*
16/10/2024	Opportunistic	Faecal	LLWO06	Lilongwe	2	*Epomophorus labiatus*
18/10/2024	Opportunistic	Faecal	LLWO10	Lilongwe	1	*Afronycteris nana*
23/10/2024	Opportunistic	Faecal	LLWO38	Lilongwe	6	*Epomophorus wahlbergi*, *Scotophilus dinganii*, Vesper (A)
24/10/2024	Opportunistic	Faecal	LLWKU01	Lilongwe	2	*Epomophorus labiatus*, *Hipposideros* (A)
24/10/2024	Opportunistic	Parasite	LLWKU01	Lilongwe	3	*Epomophorus labiatus*, *Hipposideros* (A)
30/10/2024	Opportunistic	Parasite	LLWO11	Lilongwe	3	*Scotoecus hindei*

Acoustic samples collected October 2024

Date	Survey type	Site code	Location	Total no. recordings	Species caught / encountered
10/10/2024	Opportunistic	LLWO06	Lilongwe	1	*Scotophilus dinganii*
12/10/2024	Opportunistic	LLRIV02	Lilongwe	2	*Hipposideros* (A)
18/10/2024	Opportunistic	LLWO10	Lilongwe	3	*Afronycteris nanaI*, *Scotoecus hindei*
23/10/2024	Opportunistic	LLWO38	Lilongwe	4	*Scotophilus dinganii*, Vesper (A)
24/10/2024	Opportunistic	LLWKU01	Lilongwe	5	*Afronycteris nana*, *Hipposideros* (A), *Hipposideros caffer*
30/10/2024	Opportunistic	LLWO11	Lilongwe	7	*Scotoecus hindei*, *Scotophilus dinganii*

Helpline calls received October 2024

Date	Type	Location	Details
-	-	-	-

Total events / leaflets distributed October 2024

Date	Type	Location (incl. district)	Total people	Materials distributed	Outcomes
27/10/2024	Farmers Market	Lilongwe - Woodlands	-	8 Leaflets about bats, 1 bat box sold	We engaged with the local community at the Farmers Market, which takes place on the last Saturday of each month, to showcase ABC's research and conservation efforts focused on African bat species. We were also able to sell one bat box during the event.
29/10/2024	Workshop - Sanctuary rangers	Lilongwe Wildlife Sanctuary	-	19 leaflets about bats	-

ABC Project Species List

Latin Name	Common Name	Liwonde NP	Lilongwe City	Nyika NP	Vwaza Marsh	Kasungu NP	Kuti WR & Salima	Other
Chaerephon sp.	Free-tailed bats		X					
Chaerephon ansorgei	Ansorge's free-tailed bat	X						
Chaerephon pumilus	Little free-tailed bat	X	X		X	X	X	X
Eidolon helvum	Straw-coloured fruit bat		X					X
Epomophorus crypturus	Peters's epauletted fruit bat	X	X		X	X	X	X
Epomophorus labiatus	Little epauletted fruit bat	X	X		X	X	X	X
Epomophorus wahlbergi	Wahlberg's epauletted fruit bat	X	X		X		X	X
Epomops dobsonii	Dobson's epauletted fruit bat		X		X			
Eptesicus hottentotus	Long-tailed serotine	X						
Glauconycteris variegata	Variegated butterfly bat	X	X		X		X	
Hipposideros caffer	Sundevall's leaf-nosed bat	X	X		X	X	X	X
Hipposideros ruber	Noack's leaf-nosed bat	X						
Kerivoula lanosa	Lesser woolly bat				X			
Laephotis botswanae	Botswana long-eared bat	X	X		X	X		X
Lissonycteris goliath	Harrison's soft-furred fruit bat							X
Macronycteris gigas	Giant leaf-nosed bat	X	X					X
Macronycteris vittatus	Striped leaf-nosed bat							X
Mimetillus thomasi	Thomas's flat headed bat	X						
Miniopterus sp.	long-fingered bats	X						
Mops condylurus	Angolan free-tailed bat	X			X	X	X	X
Mops niveiventer	White-bellied free-tailed bat		X					X
Miniopterus inflatus		X						
Miniopterus natalensis		X						
Myopterus whilteyi		X						
Myotis bocagii	Rufous myotis	X	X		X			X
Myotis tricolor	Temminck's myotis	X			X			X
Myotis welwitschii	Welwitsch's myotis	X	X					
Neoromicia sp.*	Pipistrelles	X	X		X			X
Neoromicia nana	Banana bat	X	X	X	X		X	
Neoromicia capensis								

Neoromicia rendalli	Rendall's serotine	X			X			
Neoromicia zulensis								
Nycteris grandis	Large slit-faced bat	X						
Nycteris hispida	Hairy slit-faced bat				X		X	
Nycteris macrotis	Large-eared slit-faced bat	X	X				X	
Nycteris nana		X						
Nycteris thebaica	Egyptian slit faced bat	X	X		X		X	
Nycticeinops schlieffeni	Schlieffen's twighlight bat	X			X		X	
Pipistrellus sp.*	Pipistrelles	X	X	X	X			X
Pipistrellus grandidieri		X						X
Pipistrellus hesperidus		X						
Pipistrellus rueppellii	Ruppell's pipistrelle	X			X		X	
Rhinolophus sp.*	Horseshoes		X					
Rhinolophus clivosus	Geoffroy's horseshoe bat		X					
Rhinolophus fumigatus	Ruppell's horseshoe bat	X	X		X	X		
Rhinolophus hildebrandtii	Hildebrandt's horseshoe bat	X			X			
Rhinolophus lobatus	Lander's horseshoe bat						X	
Rousettus aegyptiacus	Egyptian rousette	X						
Rousettus lanosus	Hairy rousette			X				
Scotoecus hirundo	Dark-winged lesser house bat	X	X		X			X
Scotophilus dinganii	Yellow-bellied house bat		X		X	X	X	X
Scotophilus leucogaster	White-bellied house bat	X	X		X	X		X
Scotophilus viridis	Green house bat	X	X				X	
Scotophilus nigrita	Giant yellow house bat	X						
Tadarida aegyptica	Egyptian free-tailed bat	X						X
Tadarida ventralis	Giant free-tailed bat							X
Taphozous mauritianus	Mauritian tomb bat	X	X		X	X	X	
Triaenops afer	African trident bat	X						X

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