Monthly Report

July 2024

Ethiopian epauletted fruit bat *(Epomophorous labiatus)*

Contents

Newcomer in the Bat World

By Susanne Oelschig, Trainee Research Assistant

Figure 1. Susanne processing an Ethiopian epauletted fruit bat.

After working as a test engineer in the engine aircraft industry throughout my professional career, I was looking for a new challenge after my retirement. With great interest in wildlife and human-wildlife conflict, I decided to take part in a Professional Field Guide training course in South Africa, beginning in February 2024. The course includes a placement program to experience working with wildlife in Africa. I chose to join African Bat Conservation (ABC) in Lilongwe for five months as a Trainee Research Assistant.

As a newcomer to the bat world, I was curious about what I would experience with ABC. In Lilongwe, I met an international team of zoologists working on the project. They welcomed me and were very friendly. For July, a lot of fieldwork was planned around Lilongwe, including vegetation and bat trapping surveys. I had to learn how to use all the equipment and how to handle the bats (Figure 1).

I was supported by the whole team and eventually was able to handle the bats and take measurements using the scales and callipers. It has been wonderful to experience the diversity of bats in Malawi and see the bats up close. I am deeply impressed and happy to have several more months working for the project.

Preparing for World Challenge Group

By Niko Mantras, Research Assistant

At the end of July, from the 20th to the 24th, I had the privilege of assisting the carnivore team in preparing to host World Challenge, an organisation specialising in providing international education for UK students, at Kuti Wildlife Reserve near Lake Malawi. The main goal of the visit was to survey the reserve and find potential locations for camera traps, small mammal trapping sites, and a large mammal transect. To find and set up camera trap locations for the students to use later, we walked along the sand roads near the campsites to look for animal tracks. Once tracks were found, we would scope the area and look for game trails crossing the roads. After identifying game trails, we surveyed the trails to find a spot with the highest animal activity in the immediate area (Figure 2). Although I had previous experience in mammal tracking, I learned to identify several animal tracks, including hyena, civet, genet, bushbuck, duiker, sable antelope, and nyala (Figure 3). Once camera traps were set up, we checked them the following mornings to see which animals, if any, had been captured. This helped us determine whether it would be a suitable location to teach the students how to set up a camera trap.

Small mammal trapping followed a similar process. We walked through wooded areas and grasslands, searching for small mammal trails and droppings. Once a suitable site was found, 15 traps were placed in the area, using two types of bait: peanut butter and fruit/insects. Once the traps were placed, they were then checked the next day, unfortunately with no luck the time we were there.

Figure 3. CRM team checking a camera trap.

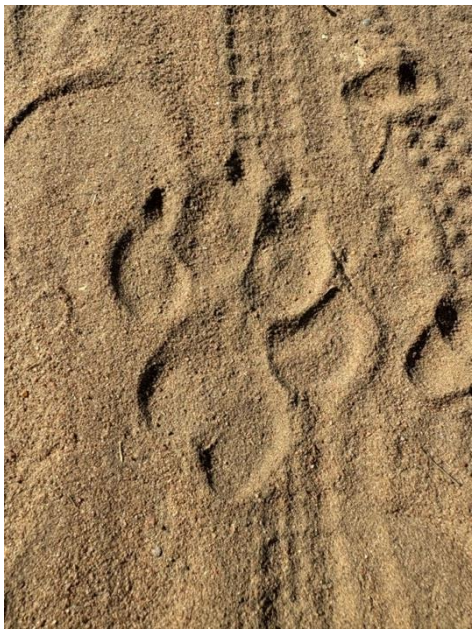

Figure 2. Hyena track.

World Challenge at Kuti Wildlife Reserve

By Amy Hutchison, Research Assistant

From the 29th of July to the 2nd of August, the CRA team was joined at Kuti Wildlife Reserve by 15 students from the UK as part of their World Challenge trip (**Error! Reference source not found.**). The students learnt about bats through a series of lectures given by ABC regarding bat biology and ecology, roosts, and human-bat conflict in Malawi. They also received hands on experience by participating in bat trapping surveys and roost monitoring.

Figure 4. WCG students with the CRA team

During bat survey techniques sessions, the students learnt how to identify key features for selecting ideal trap locations, set up mist nets and harp traps, and use acoustic recorders. Each trapping session began with a vegetation survey in the afternoon, during which the students learned how to measure foliage density and use equipment such as the clinometer.

Bat trapping surveys were conducted across three nights with the student groups. Each group chose the location of the trapping equipment (two mist nets and two harp traps) within the sites pre-selected by the ABC team, using the knowledge they gained during the lectures and bat survey techniques sessions (Figure 5). The pre-selected sites included Sanga camp, the volunteer centre, and the wetland approximately 400 m north of the reception (Figure 6). The traps were opened each night at 17:30, a few minutes before sunset, to ensure that the first wave of bat activity was captured. The equipment was in place for 2.5 hours, with traps closed at 20:00, following a decline in bat activity for the night. All individuals caught were processed, with morphometric measurements taken to assist with species identification, as well as determining age, sex, and breeding status.

Figure 5. WCG students setting up bat trapping equipment.

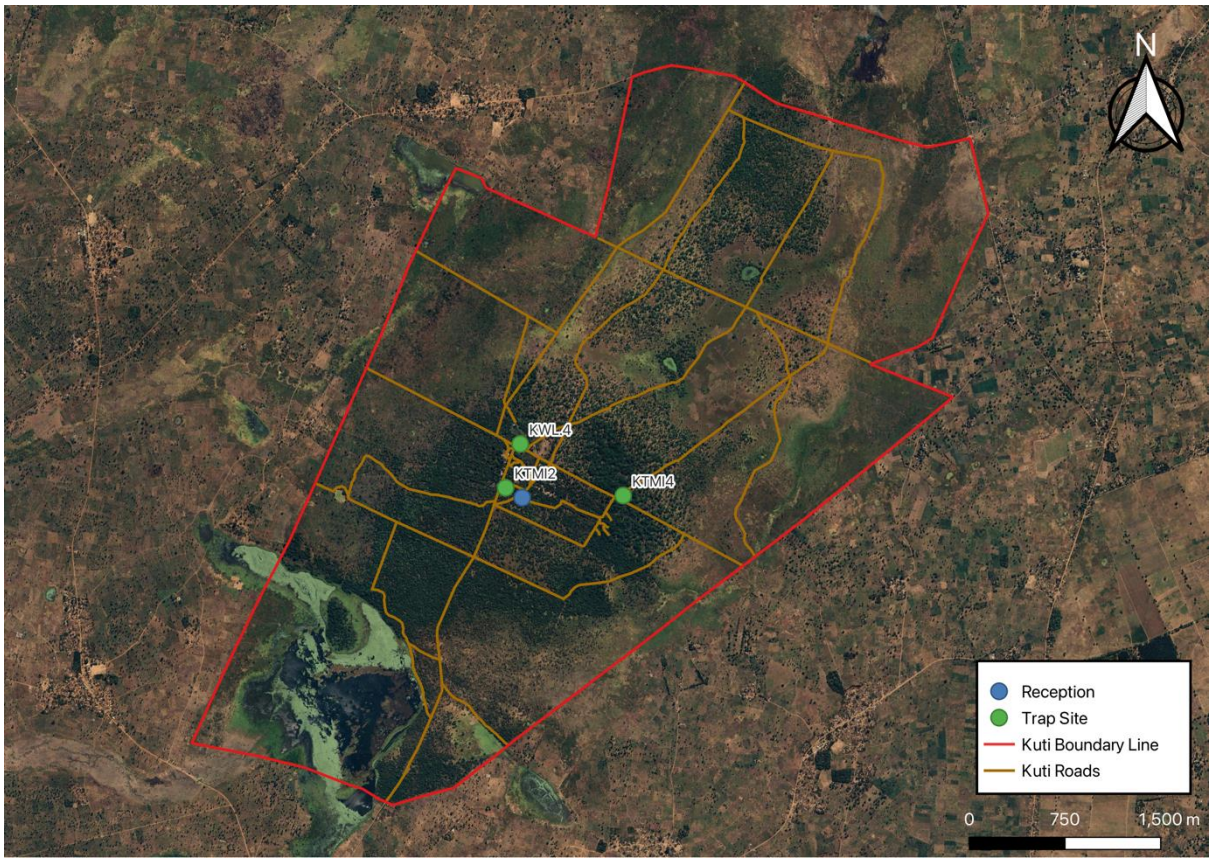

Figure 6. WCG bat trapping survey sites.

Four species were caught over the three surveys: Egyptian slit-faced bat (*Nycteris thebaica*), Ethiopian epauletted fruit bat (*Epomophorous labiatus*) (Figure 7), Yellow-bellied house bat (*Scotophilus dinganii*) (Figure 8), and Schlieffen's twilight bat (*Nycticeinops schlieffeni)*. Two bats were caught during the first survey, and three bats were trapped during both the second and third surveys. Two biosamples were collected over the three surveys: one faecal sample and one parasite sample.

Figure 7. Ethiopian epauletted fruit bat.

Figure 8. Yellow-bellied house bat.

It was a great experience to be able to introduce bats to the students, with many of them having never seen a bat up close before. We hope we have helped foster an enthusiasm for wildlife (especially bats) in the students and that they continue to be involved in conservation in the future.

ILRI Surveys

By Niko Mantras, Research Assistant

During the month of July, 13 bat surveys were conducted using a combination of harp traps and mist nets, with 11 surveys carried out at riverine sites within Lilongwe and two at Kuti wildlife reserve during the World Challenge Group's visit (Figure 9).

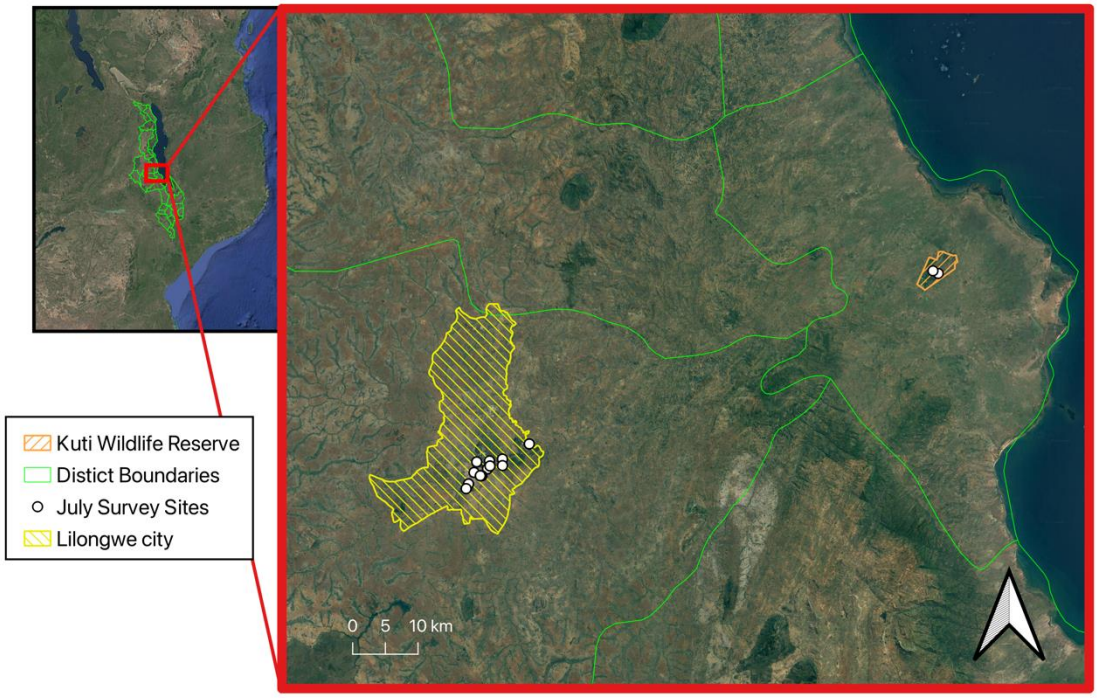

Figure 9. Survey sites across Lilongwe and Salima districts in July 2024.

Each survey started at around 5:30 pm and concluded by 9:00 pm, resulting in a total of 182 trapping hours across four traps. During the surveys, 99 individual bats were caught, representing 14 different species and genus classifications, of which four bats were recaptures. While nine of the 14 species caught were verifiable specimens, the remaining five species could not be definitively classified in the field due to complications in identifying certain features on-site. Key identifying features for these species typically include dentition, bat call frequency (kHz), ridge patterns on the hard palate in the mouth, and pelage colour/variation. The first three methods, respectively, either require time that we did not have in the field, as biosampling and releasing the bats quickly and efficiently are of the utmost importance, or rely on technology that was not readily available. Pelage patterns and colours are highly variable, making them one of the least reliable methods of species identification. Despite these challenges, the data we collected remain essential for understanding species distribution and activity patterns.

Summary of Work

Bat surveys carried out in July 2024

Date	Type	Site code	Location	Total bats caught	Species caught / encountered
04/07/2024	ILRI	LLRIV02	Lilongwe	7	*Epomophorus labiatus*, *Epomophorus wahlbergi*, *Hipposideros* (A)
05/07/2024	ILRI	LLRIV06	Lilongwe	11	*Epomophorus labiatus*, *Epomophorus wahlbergi*, *Nycteris* (A), *Rhinolophus* sp., *Scotoecus hindei*
09/07/2024	ILRI	LLRIV16	Lilongwe	17	*Afronycteris nana*, *Epomophorus labiatus*, *Epomophorus wahlbergi*, *Glauconycteris variegata*, *Nycteris* (A), *Rhinolophus* sp., Vesper (A)
10/07/2024	ILRI	LLRIV05	Lilongwe	4	*Epomophorus labiatus, Epomophorus wahlbergi, Nycteris* (A)
11/07/2024	ILRI	LLRIV15	Lilongwe	1	*Epomophorus labiatus*
12/07/2024	ILRI	LLRIV13	Lilongwe	7	*Epomophorus labiatus*, *Epomophorus wahlbergi*
16/07/2024	ILRI	LLRIV03	Lilongwe	11	*Afronycteris nana*, *Epomophorus labiatus, Scotophilus dinganii*, Vesper (A)
18/07/2024	ILRI	LLRIV09	Lilongwe	2	*Afronycteris nana,* Vesper (A)
19/07/2024	ILRI	LLRIV11	Lilongwe	5	*Epomophorus labiatus*, *Mops* (A), *Nycteris thebaica*
23/07/2024	ILRI	LLRIV21	Lilongwe	7	*Afronycteris nana*, *Epomophorus labiatus*, *Epomophorus wahlbergi*, *Nycteris thebaica*
24/07/2024	ILRI	LLRIV22	Lilongwe	20	*Afronycteris nana*, *Hipposideros* (A), *Nycteris thebaica*, *Rhinolophus fumigatus*

26/07/2024	ILRI	LLRIV23	Lilongwe	2	*Epomophorus labiatus*
30/07/2024	Opportunistic	KTMI4	Kuti	2	*Epomophorus labiatus*, *Nycteris thebaica*
31/07/2024	Opportunistic	KWL.4	Kuti	3	*Epomophorus labiatus*, *Nycteris thebaica*

Biosamples collected July 2024

Date	Survey type	Sample type	Site code	Location	No. samples	From which species
04/07/2024	ILRI	Wing Punch	LLRIV02	Lilongwe	5	*Epomophorus labiatus*, *Epomophorus wahlbergi*, *Hipposideros* (A)
04/07/2024	ILRI	Hair	LLRIV02	Lilongwe	5	*Epomophorus labiatus*, *Epomophorus wahlbergi*, *Hipposideros* (A)
04/07/2024	ILRI	Faecal	LLRIV02	Lilongwe	3	*Epomophorus labiatus*, *Hipposideros* (A)
05/07/2024	ILRI	Wing Punch	LLRIV06	Lilongwe	9	*Epomophorus labiatus*, *Epomophorus wahlbergi*, *Hipposideros* (Hildebrandtii complex), *Nycteris* (A), *Scotoecus hindei*
05/07/2024	ILRI	Hair	LLRIV06	Lilongwe	9	*Epomophorus labiatus*, *Epomophorus wahlbergi*, *Hipposideros* (Hildebrandtii complex), *Nycteris* (A), *Scotoecus hindei*
05/07/2024	ILRI	Faecal	LLRIV06	Lilongwe	4	*Epomophorus labiatus*, *Epomophorus wahlbergi*, *Hipposideros* (Hildebrandtii complex)
09/07/2024	ILRI	Wing Punch	LLRIV16	Lilongwe	16	*Afronycteris nana*, *Epomophorus labiatus*, *Epomophorus wahlbergi*, *Glauconycteris variegata*, *Nycteris* (A),

						Rhinolophus sp., Vesper (A)
09/07/2024	ILRI	Hair	LLRIV16	Lilongwe	16	*Afronycteris nana*, *Epomophorus labiatus*, *Epomophorus wahlbergi*, *Glauconycteris variegata*, *Nycteris* (A), *Rhinolophus* sp., Vesper (A)
09/07/2024	ILRI	Faecal	LLRIV16	Lilongwe	8	*Afronycteris nana*, *Epomophorus labiatus*, *Epomophorus wahlbergi*, *Nycteris* (A), *Rhinolophus* sp.
09/07/2024	ILRI	Parasite	LLRIV16	Lilongwe	4	*Afronycteris nana*, *Epomophorus labiatus*
09/07/2024	ILRI	Faecal	LLWO06	Lilongwe	6	Unknown (from feeding perch)
10/07/2024	ILRI	Wing Punch	LLRIV05	Lilongwe	4	*Epomophorus labiatus*, *Epomophorus wahlbergi*, *Nycteris* (A)
10/07/2024	ILRI	Hair	LLRIV05	Lilongwe	4	*Epomophorus labiatus*, *Epomophorus wahlbergi*, *Nycteris* (A)
10/07/2024	ILRI	Faecal	LLRIV05	Lilongwe	1	*Nycteris* (A)
11/07/2024	ILRI	Wing Punch	LLRIV15	Lilongwe	1	*Epomophorus labiatus*
11/07/2024	ILRI	Hair	LLRIV15	Lilongwe	1	*Epomophorus labiatus*
12/07/2024	ILRI	Wing Punch	LLRIV13	Lilongwe	7	*Epomophorus labiatus*, *Epomophorus wahlbergi*
12/07/2024	ILRI	Hair	LLRIV13	Lilongwe	7	*Epomophorus labiatus*, *Epomophorus wahlbergi*
12/07/2024	ILRI	Faecal	LLRIV13	Lilongwe	2	*Epomophorus labiatus*, *Epomophorus wahlbergi*
16/07/2024	ILRI	Wing Punch	LLRIV03	Lilongwe	8	*Afronycteris nana*, *Scotophilus dinganii*, Vesper (A)

16/07/2024	ILRI	Hair	LLRIV03	Lilongwe	8	*Afronycteris nana*, *Scotophilus dinganii*, Vesper (A)
16/07/2024	ILRI	Faecal	LLRIV03	Lilongwe	4	*Afronycteris nana*, *Scotophilus dinganii*
18/07/2024	ILRI	Wing Punch	LLRIV09	Lilongwe	2	*Afronycteris nana*, Vesper (A)
18/07/2024	ILRI	Hair	LLRIV09	Lilongwe	2	*Afronycteris nana*, Vesper (A)
18/07/2024	ILRI	Faecal	LLRIV09	Lilongwe	1	*Afronycteris nana*
18/07/2024	ILRI	Parasite	LLRIV09	Lilongwe	1	Vesper (A)
19/07/2024	ILRI	Wing Punch	LLRIV11	Lilongwe	5	*Epomophorus labiatus*, Mops (A), *Nycteris thebaica*
19/07/2024	ILRI	Hair	LLRIV11	Lilongwe	5	*Epomophorus labiatus*, Mops (A), *Nycteris thebaica*
19/07/2024	ILRI	Faecal	LLRIV11	Lilongwe	2	*Nycteris thebaica*, Mops (A)
19/07/2024	ILRI	Parasite	LLRIV11	Lilongwe	2	*Nycteris thebaica*, Mops (A)
23/07/2024	ILRI	Wing Punch	LLRIV21	Lilongwe	5	*Afronycteris nana*, *Epomophorus labiatus*, *Epomophorus wahlbergi*, *Nycteris thebaica*
23/07/2024	ILRI	Hair	LLRIV21	Lilongwe	5	*Afronycteris nana*, *Epomophorus labiatus*, *Epomophorus wahlbergi*, *Nycteris thebaica*
24/07/2024	ILRI	Wing Punch	LLRIV22	Lilongwe	18	*Afronycteris nana*, *Hipposideros* (A), *Nycteris thebaica*, *Rhinolophus fumigatus*
24/07/2024	ILRI	Hair	LLRIV22	Lilongwe	18	*Afronycteris nana*, *Hipposideros* (A), *Nycteris thebaica*, *Rhinolophus fumigatus*

24/07/2024	ILRI	Faecal	LLRIV22	Lilongwe	14	*Afronycteris nana*, *Hipposideros* (A), *Nycteris thebaica*, *Rhinolophus fumigatus*
24/07/2024	ILRI	Parasite	LLRIV22	Lilongwe	6	*Afronycteris nana*, *Hipposideros* (A), *Rhinolophus fumigatus*
26/07/2024	ILRI	Wing Punch	LLRIV23	Lilongwe	1	*Epomophorus labiatus*
26/07/2024	ILRI	Hair	LLRIV23	Lilongwe	1	*Epomophorus labiatus*
30/07/2024	ILRI	Faecal	KTMI4	Kuti	1	*Nycteris thebaica*

Acoustic samples collected July 2024

Date	Survey type	Site code	Location	Total no. recordings	Species caught / encountered
04/07/2024	ILRI	LLRIV02	Lilongwe	1	*Hipposideros* (A)
05/07/2024	ILRI	LLRIV06	Lilongwe	5	*Nycteris* (A), *Rhinolophus* sp., *Scotoecus hindei*
09/07/2024	ILRI	LLRIV16	Lilongwe	5	*Afronycteris nana*, *Glauconycteris variegata*, *Nycteris* (A), *Rhinolophus* sp.
10/07/2024	ILRI	LLRIV05	Lilongwe	1	*Nycteris* (A)
16/07/2024	ILRI	LLRIV03	Lilongwe	7	*Afronycteris nana*, *Scotophilus dinganii*
18/07/2024	ILRI	LLRIV09	Lilongwe	2	*Afronycteris nana*, Vesper (A)
19/07/2024	ILRI	LLRIV11	Lilongwe	1	*Nycteris thebaica*

23/07/2024	ILRI	LLRIV21	Lilongwe	2	*Afronycteris nana*, *Nycteris thebaica*
24/07/2024	ILRI	LLRIV22	Lilongwe	17	*Afronycteris nana*, *Hipposideros* (A), *Nycteris thebaica*, *Rhinolophus fumigatus*
30/07/2024	Opportunistic	KTMI4	Kuti	1	*Nycteris thebaica*
31/07/2024	Opportunistic	KWL.4	Kuti	1	*Nycteris thebaica*

Helpline calls received July 2024

Date	Type	Location	Details
-	-	-	-

Total events / leaflets distributed August 2024

Date	Type	Location (incl. district)	Total people	Materials distributed	Outcomes
-	-	-	-	-	-

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
Triaenops afer	African trident bat	X						X

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