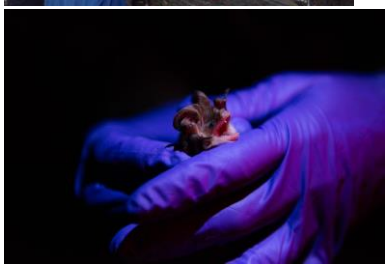
Environmental Monitoring at Balijup Tenterden, WA- Jan 2025 - Bat Survey



Balijup Citizen Science Bat Survey Report January 2025

WAEC Permit number: WAEC 23-10-60

Acknowledgements

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Bat trapping surveys at Balijup 17-19 January 2025

Kelly Sheldrick
Richard Thomas

Aims

The long-term aim of this project is to establish which bat species are present at Balijup, their location and roosting activity.

In the 2024 Balijup Eco Camp, citizen scientists were able to perform bat transect walks with handheld bat detectors provided by Kelly Sheldrick of CCWA. In addition, four passive acoustic detectors were placed in strategic locations for up to four nights. Analysis of the passive data suggested seven or eight species might be present as shown in Table 1 below.

Note the confidence level of the identification varies greatly. Indeed, the species cannot be definitively determined solely from the acoustic record. Furthermore, for the long-eared bats, *nyctophilus* genus, recordings are often insufficient to distinguish between species.

Species	**Confidence Level**
White Striped Freetail Bat	High
Gould's Wattled Bat	Medium
Chocolate Wattled Bat	Medium
*Long-eared bat species	Medium
Lesser Long-eared Bat	Low
Western Long-eared Bat	Low
Southwestern Freetail Bat	High
Southern Forest Bat	High

TABLE 1: Results from acoustic surveys in 2024. Note identifications are tentative

Setting up a harp trap (Basil Schur)

Accordingly another method is used to identify species unambiguously: trapping.

The aims of the work this year were:

- **identify and confirm species present**
- **obtain release calls**
- **test the effectiveness of acoustic lures.**

The acoustic lures emit artificial bat sounds in order to attract bats to the trap and thereby increase the number of bats trapped.

Trapped bats are removed from the trap and placed in a bag. They are later examined, often in red light to avoid frightening the bat, by a specialist wearing gloves, who has a current rabies vaccination and is trained to do this delicate work. Each bat is quickly released, and audio detectors record the echolocations used by the bat to navigate. Thus, a library of calls definitely associated with the species can be accumulated.

Summary of results

We managed to trap **53 bats** from **6 different species** in about **11 survey hours** – which is a fantastic result!

As you can see from the table below the Southern Forest bat was the most dominant species. More than half of these bats were juveniles, that along with the timing and abundance of bats in the same trap at the same time, suggests a maternity roost of southern forest bats is likely present in the area, and likely within the fenced area too (which marries up with what we suspected from our acoustic surveys from last year). Holt's long eared bats were also dominate in one section of the fenced area – all except one of these was juvenile, and again the trap time and knowing this group of species tend to be short ranged, suggests a maternity roost is within the area.

Results from these surveys also further support the effectiveness of the bat acoustic lures to increase capture rates with 44 of the bats being caught in traps with lures.

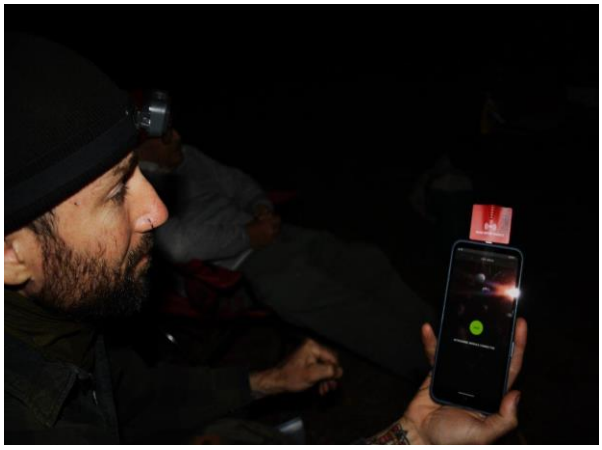
South-western free-tailed bat (Richard Thomas)

Western long-eared bat (Richard Thomas)

Species	**Number trapped**	Male		Female	Unknown
Gould's Wattled *(Chalinolobus gouldii)*	0	0		0	
Chocolate wattled *(Chalinolobus morio)*	5	3		2	
Western falsistrelle *(Falsistrellus mackenziei)*	0	0		0	
Lesser long-eared *(Nyctophilus geoffroyi)*	3	2		1	
Holt's long-eared bat *(Nyctophilus holtorum)*	13	6		6	
Western long-eared bat *(Nyctophilus major major)*	4	0		4	
South-western free-tailed *(Ozimops kitcheneri)*	2	1		1	
Southern forest bat *(Vespadelus regulus)*	26	11		14	1
White striped freetail bat *(Austronomous australis)*	0	0		0	
Grand Total	**53**	**23**		**28**	**1**
Total captured in traps with acoustic lures	44				

TABLE 2: RESULTS OF BATS TRAPPED AND IDENTIFIED. NOTE THAT THE SPECIES ARE SLIGHTLY DIFFERENT FROM THOSE IN TABLE 1.

Highlights include confirming presence of all 3 long-eared *Nyctophilus* bat species. You might recall that these bats can't be easily identified from bat calls alone, so this is really valuable information, particularly as two of these species are endemic to the southwest. And of course, trapping two *Ozimops* South-western free-tailed bats was certainly a highlight as these bats are difficult to trap with harp traps, are from a completely different family to the other bat species we trapped, endemic to the southwest, and are just the cutest and most chilled bats to handle.



Recording a release call with an EMT detector (Photo Schur)

Measuring a bat (Photo by Angus Dempster)

Lesser long-eared bat (Photo by Angus Dempster)

Appendix 1 Results of Acoustic Bat Survey at Balijup

From: Kelly Sheldrick <Kelly.Sheldrick@ccwa.org.au>
Sent: Thursday, 20 February 2025 4:24 PM
To: Basil Schur <bschur@greenskills.org.au>; Richard (home) <richdenwa@proton.me>
Subject: FW: Balijup Bats – Summary of Bat Acoustics Survey at Balijup

Notes of Acoustic surveys from our bat trapping in January,

An update on the results from our bat surveys. The results from the acoustic surveys are below along with the final list of bat species confirmed present at Balijup this year.

Acoustic surveys 17/01/2024 – 19/01/2024	**Number of bat passes**
White striped freetailed bat (Austronomous australis)	38
Gould's Wattled(Chalinolobus gouldii)	120
Chocolate wattled (Chalinolobus morio)	94
Western falsistrelle (Falsistrellus mackenziei)	0
Long-eared bats (Nyctophilus spp)	64
South-western free-tailed (Ozimops kitcheneri)	238
Southern forest bat (Vespadelus regulus)	754
Bat spp.	162
Number of bat species	**6**

Gould's Wattled(Chalinolobus gouldii)

Chocolate wattled (Chalinolobus morio)

Lesser long-eared (Nyctophilus geoffroyi)

Holt's long-eared bat (Nyctophilus holtorum)

Western long-eared bat (Nyctophilus major major)

South-western free-tailed (Ozimops kitcheneri)

Southern forest bat (Vespadelus regulus)

White striped freetailed bat (Austronomous australis)

Total bat species 8

We noticed some interesting behavioural differences between the southern forest bat population around the Lowlands to Mouth Barker/ Cranbrook area, compared to the same species further north from Perth to Margaret River. Definitely something for us to note for future

Appendix 2 Management and Conservation of Bats

In terms of bat management and conservation, here are a few suggestions (I'm sure you're already aware of most of this):

- I don't recall seeing any (but it was a few weeks ago now) - if you can **avoid** the use of **barbed wire** around the property that will help wildlife. Lots of wildlife including bats can get entangled, killed and injured by barbed wire.
- **Plant native plants** that attract evening insects such as moths (to help with food source) and **keep old mature trees/ dead trees** with features like hollows and lots of lifting bark (to help with roosting habitat).
- **Freshwater** is particularly important to bats (as well as other wildlife), so ensuring access to existing water could help some species (which I don't foresee being an issue at your place with the dam and stream).
- **Preserve or Plant Riparian Vegetation:** maintaining or planting native riparian vegetation (vegetation along watercourses) can provide a natural corridor for bats. This vegetation can offer cover and reduce light exposure, which is important for bat movement.
- **Turn external lights off** at night where possible.
- **Minimise Pesticide Use:** Pesticides can reduce the availability of insects that bats feed on. If possible, avoid or limit the use of pesticides on the property. Natural insect management techniques, such as encouraging predatory insects (like bats, birds, and beetles), can help with pest control.
- In case you **find an injured bat**, you can call Bat Rescue WA on 0499 900 630 – they should be able to let you know where your closest bat carer is and offer immediate advice on what to do.
- And of course, anything you can do to **promote public awareness and appreciation of bats** to help dispel some of the negative perception of bats, whether that might be a bat community walk or talk, or further citizen science surveys .

Conservation Council of WA

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