

Alcoa Targeted Significant Fauna Survey Memo

Willowdale Mine – Larego Region

Alcoa of Australia Ltd

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Revision Record

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01	16 October 2024	Datta Li	L. Geidans	S. Walker

Basis of Report

This report has been prepared by SLR Consulting Australia (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Alcoa of Australia Ltd (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

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1.0 Introduction

1.1 The Project

Alcoa of Australia Ltd (Alcoa) commissioned SLR Consulting Australia Pty Ltd (SLR) to undertake targeted surveys for significant fauna within the Willowdale/Larego Survey Area. This memorandum reflects the camera trapping effort and results, as well as opportunistic sighting of significant fauna within 87 individual polygons covering 845.65 ha within the Survey Area. The Survey Area is located approximately 15 km southeast of the Waroona townsite, in the Jarrah Forest bioregion of Western Australia.

1.2 Objective and Scope

The objective of this document (the Memo) is to provide to Alcoa:

- An outline of the methodology for the use of baited camera traps for the targeted significant fauna survey.
- Preliminary results of baited camera traps placed within the Survey Area.
- A table showing the locations of significant fauna recorded within the Survey Area.
- A map showing locations of baited camera traps within the Survey Area.

2.0 Methods

Motion sensitive camera traps are a simple method to passively document fauna during a field survey. A targeted fauna survey undertaken from 15th – 17th July 2024 where a total of 80 camera traps were installed in areas of suitable habitat that focused on targeting Chuditch, Quokka, and Woylie. In addition, two spotlighting trips were undertaken on the 16th and 30th of July. A thermal imaging drone was used for the second night to locate fauna, which were confirmed by personnel on the ground to identify species. Opportunistic sightings of fauna were also recorded during the field survey.

Cameras were baited with a combination of universal bait (rolled oats, peanut butter, and sardines) and apples. Universal bait has been selected over 'Chuditch bait' (meat meal and fish oil) because it has demonstrated efficacy for attracting both Woylies and Chuditch (Wayne et al., 2008), and along with the apples has also successfully been used for luring Quokka's (Hayward et al., 2005). Following the Survey Guidelines for Australia's Threatened Mammals (DSEWPaC, 2011), the cameras were left installed for a minimum duration of 14 nights, and were retrieved between the 31st July and 1st August. The locations of the deployed cameras are displayed in **Figure 1**.

3.0 Results

A total of 43 vertebrate fauna species were recorded within the Willowdale/Larego Survey Areas (**Table 1**). The fauna recorded comprised of 25 bird species, 16 mammals, and two species of reptiles.

Five significant fauna taxa were recorded within the Survey Area (**Table 2: Figure 2**):

- Western Ringtail Possum (*Pseudocheirus occidentalis*) – Critically Endangered (BC Act); Critically Endangered (EPBC Act)
- Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*) – Vulnerable (BC Act); Vulnerable (EPBC Act)
- Quokka (*Setonix brachyurus*) – Vulnerable (BC Act); Vulnerable (EPBC Act)



- Western Brush Wallaby (*Notamacropus irma*) – Priority 4 (DBCA)
- Rakali/Water Rat (*Hydromys chrysogaster*) – Priority 4 (DBCA).



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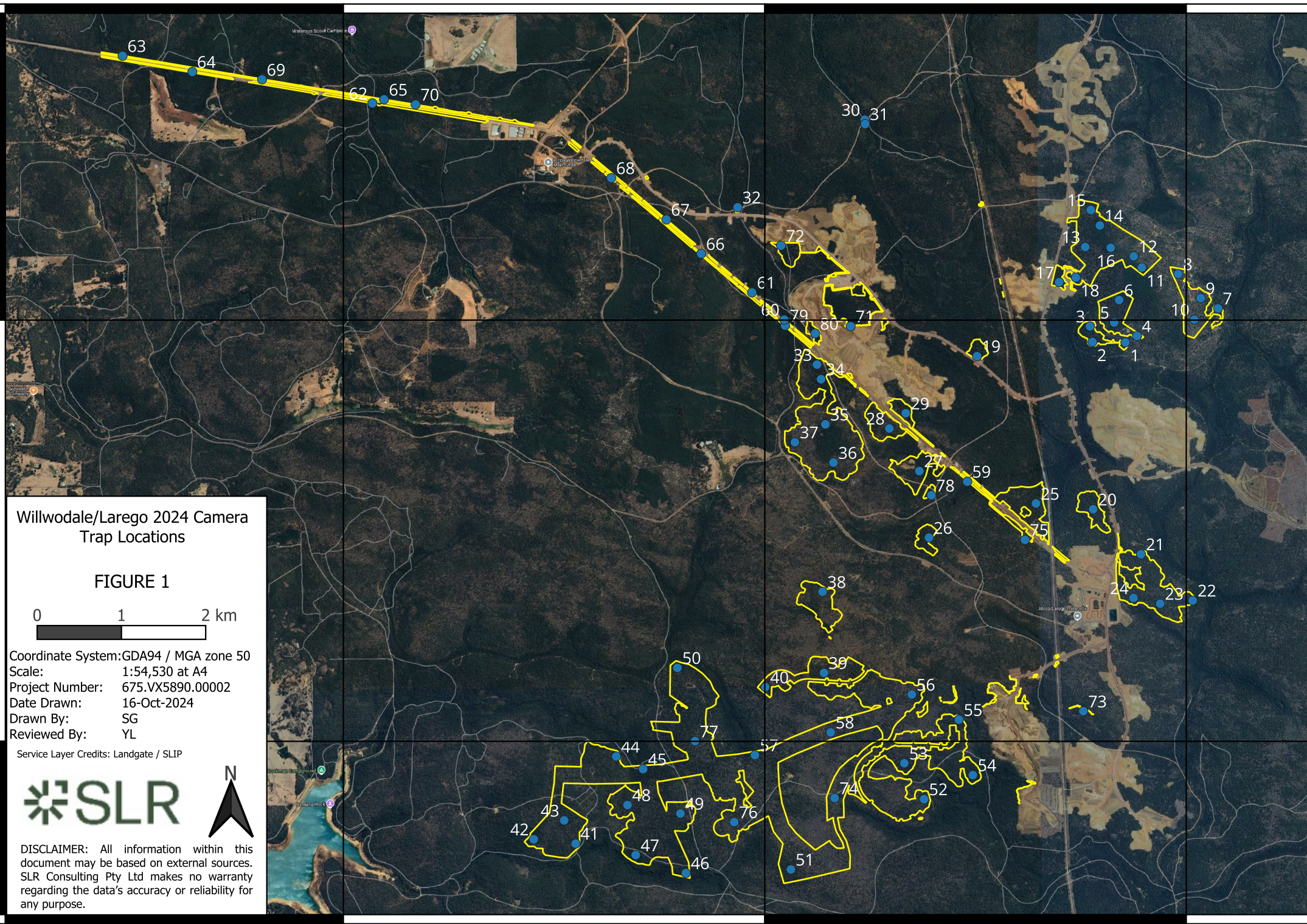
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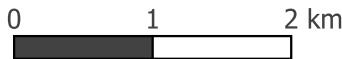
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Willwodale/Larego 2024 Camera Trap Locations

FIGURE 1



Coordinate System: GDA94 / MGA zone 50
 Scale: 1:54,530 at A4
 Project Number: 675.VX5890.00002
 Date Drawn: 16-Oct-2024
 Drawn By: SG
 Reviewed By: YL

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Table 1: Fauna taxa recorded within the Willowdale/Larego Survey Area

Family	Scientific Name	Common Name	Conservation Status		Method					
			State	Federal	Call	Sighting	Scat	Remains	Camera	Spotlighting
Aves										
Acanthizidae	<i>Acanthiza apicalis</i>	Inland Thornbill, Broad-tailed Thornbill	-	-					1	
	<i>Acanthiza inornata</i>	Western Thornbill	-	-					1	
	<i>Sericornis maculatus</i>	Spotted Scrubwren	-	-					28	
	<i>Smicromis brevirostris</i>	Weebill	-	-					1	
Aegothelidae	<i>Aegotheles cristatus</i>	Australian Owlet-nightjar	-	-		1			8	
Alcedinidae	<i>Dacelo novaeguineae</i>	Laughing Kookaburra	-	-					1	
Cacatuidae	<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black Cockatoo	VU	VU	1	25				
Casuariidae	<i>Dromaius novaehollandiae</i>	Emu	-	-		4				
Climacteridae	<i>Climacteris rufus</i>	Rufous Treecreeper	-	-					2	
Columbidae	<i>Phaps elegans</i>	Brush Bronzewing	-	-					1	
Corvidae	<i>Corvus coronoides</i>	Australian Raven	-	-					35	
Maluridae	<i>Malurus elegans</i>	Red-winged Fairywren	-	-					117	
	<i>Malurus splendens</i>	Splendid Fairywren	-	-					9	
Meliphagidae	<i>Acanthorhynchus superciliosus</i>	Western Spinebill	-	-					2	
Pachycephalidae	<i>Colluricincla harmonica</i>	Grey Shrikethrush	-	-					9	



Family	Scientific Name	Common Name	Conservation Status		Method						
			State	Federal	Call	Sighting	Scat	Remains	Camera	Spotlighting	
	<i>Pachycephala fuliginosa</i>	Western Whistler	-	-							
Petroicidae	<i>Eopsaltria griseogularis</i>	Western Yellow Robin	-	-					9		
	<i>Petroica boodang</i>	Scarlet Robin	-	-					9		
	<i>Quoyornis georgianus</i>	White-breasted Robin	-	-					49		
Podargidae	<i>Podargus strigoides</i>	Tawny Frogmouth	-	-					2		
Psittaculidae	<i>Platycercus icterotis</i>	Western Rosella	-	-					4		
	<i>Purpureicephalus spurius</i>	Red-capped Parrot	-	-					1		
Rhipiduridae	<i>Rhipidura albiscapa</i>	Grey Fantail	-	-					3		
Turnicidae	<i>Turnix varius</i>	Painted Button-quail	-	-					1		
Zosteropidae	<i>Zosterops lateralis</i>	Grey-breasted White-eye, Silvereye	-	-					4		
Mammalia											
Canidae	<i>Vulpes vulpes</i>	Red Fox	-	-					2		
Dasyuridae	<i>Antechinus flavipes leucogaster</i>	Yellow-footed Antechinus, Mardo	-	-					364		
	<i>Sminthopsis fuliginosa fuliginosa</i>	Grey-bellied Dunnart	-	-					15		
Felidae	<i>Felis catus</i>	Cat	-	-					15		
Leporidae	<i>Oryctolagus cuniculus</i>	Rabbit	-	-					4		
Macropodidae	<i>Macropus fuliginosus melanops</i>	Western Grey Kangaroo	-	-		2			13		
	<i>Notamacropus irma</i>	Western Brush Wallaby	P4	-		1			34		



Family	Scientific Name	Common Name	Conservation Status		Method					
			State	Federal	Call	Sighting	Scat	Remains	Camera	Spotlighting
	<i>Setonix brachyurus</i>	Quokka	VU	VU			3		6	
Muridae	<i>Hydromys chrysogaster</i>	Rakali/Water Rat	P4	-					4	
	<i>Mus musculus</i>	House Mouse	-	-					29	
	<i>Rattus fuscipes fuscipes</i>	Western Bush Rat	-	-					100	
	<i>Rattus rattus</i>	Black Rat	-	-					57	
Phalangeridae	<i>Trichosurus vulpecula hypoleucus</i>	Common Brushtail Possum, Koomal	-	-				1	7	
Pseudocheiridae	<i>Pseudocheirus occidentalis</i>	Western Ringtail Possum	CR	CR						2
Suidae	<i>Sus scrofa</i>	Pig	-	-					17	
Tachyglossidae	<i>Tachyglossus aculeatus acanthion</i>	Short-beaked Echidna	-	-		1		1	15	
Reptilia										
Elapidae	<i>Suta nigriceps</i>	Mallee black-backed snake	-	-		1				
Scincidae	<i>Hemiergis initialis initialis</i>	South-Western Earless skink	-	-		1				



Table 2: Sites which recorded significant fauna taxa within the Willowdale/Larego Survey Area

Site Number ID	Latitude	Longitude	Scientific Name	Common Name	Conservation Status		Preliminary Habitat	Record Type
					State	Common wealth		
23	-32.9703061	116.0870908	<i>Notamacropus irma</i>	Western Brush Wallaby	P4	-	Jarraah-Marri Forest	Camera Trap
46	-32.9986967	116.0265699	<i>Setonix brachyurus</i>	Quokka	VU	VU	Drainage Line	Camera Trap
53	-32.9871436	116.0544308	<i>Notamacropus irma</i>	Western Brush Wallaby	P4	-	Jarraah-Marri Forest	Camera Trap
30	-32.9182163	116.0501465	<i>Hydromys chrysogaster</i>	Rakali/Water Rat	P4	-	Drainage Line	Camera Trap
24	-32.9696648	116.08371	<i>Notamacropus irma</i>	Western Brush Wallaby	P4	-	Jarraah-Marri Forest	Camera Trap
35	-32.9507955	116.0447979	<i>Notamacropus irma</i>	Western Brush Wallaby	P4	-	Jarraah-Marri Forest	Camera Trap
44	-32.9861356	116.0178631	<i>Notamacropus irma</i>	Western Brush Wallaby	P4	-	Jarraah-Marri Forest	Camera Trap
26	-32.9630167	116.057815	<i>Notamacropus irma</i>	Western Brush Wallaby	P4	-	Jarraah-Marri Forest	Camera Trap
38	-32.9687083	116.0442417	<i>Notamacropus irma</i>	Western Brush Wallaby	P4	-	Jarraah-Marri Forest	Camera Trap
68	-32.9242098	116.0179252	<i>Notamacropus irma</i>	Western Brush Wallaby	P4	-	Jarraah-Marri Forest	Camera Trap
60	-32.93954869	116.0396936	<i>Hydromys chrysogaster</i>	Rakali/Water Rat	P4	-	Drainage Line	Camera Trap
02	-32.942225	116.0787767	<i>Notamacropus irma</i>	Western Brush Wallaby	P4	-	Jarraah-Marri Forest	Camera Trap
19	-32.951295	116.0529117	<i>Notamacropus irma</i>	Western Brush Wallaby	P4	-	Jarraah-Marri Forest	Camera Trap



Site Number ID	Latitude	Longitude	Scientific Name	Common Name	Conservation Status		Preliminary Habitat	Record Type
					State	Common wealth		
72	-32.9186749	116.0501891	<i>Setonix brachyurus</i>	Quokka	VU	VU	Drainage Line	Camera Trap/Scat
07	-32.9387467	116.0947583	<i>Notamacropus irma</i>	Western Brush Wallaby	P4	-	Jarraah-Marri Forest	Camera Trap
40	-32.9788571	116.0368656	<i>Notamacropus irma</i>	Western Brush Wallaby	P4	-	Jarraah-Marri Forest	Camera Trap
11	-32.9343026	116.0851307	<i>Notamacropus irma</i>	Western Brush Wallaby	P4	-	Jarraah-Marri Forest	Camera Trap
10	-32.939927	116.0917254	<i>Notamacropus irma</i>	Western Brush Wallaby	P4	-	Jarraah-Marri Forest	Camera Trap
09	-32.9376324	116.0925677	<i>Notamacropus irma</i>	Western Brush Wallaby	P4	-	Jarraah-Marri Forest	Camera Trap
12	-32.9330935	116.0841199	<i>Notamacropus irma</i>	Western Brush Wallaby	P4	-	Jarraah-Marri Forest	Camera Trap
17	-32.9357972	116.0746191	<i>Notamacropus irma</i>	Western Brush Wallaby	P4	-	Jarraah-Marri Forest	Camera Trap
Opportunistic	-32.9374699	116.0817594	<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black Cockatoo	VU	VU	Jarraah-Marri Forest	Sighting
Opportunistic	-32.9417817	116.0429617	<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black Cockatoo	VU	VU	Jarraah-Marri Forest	Call
Opportunistic	-32.9558079	116.0566411	<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black Cockatoo	VU	VU	Jarraah-Marri Forest	Sighting
Opportunistic	-32.9535571	116.0412389	<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black Cockatoo	VU	VU	Jarraah-Marri Forest	Sighting
Opportunistic	-32.9475183	116.0679233	<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black Cockatoo	VU	VU	Jarraah-Marri Forest	Sighting



Site Number ID	Latitude	Longitude	Scientific Name	Common Name	Conservation Status		Preliminary Habitat	Record Type
					State	Commonwealth		
Opportunistic	-32.9455999	116.0684272	<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black Cockatoo	VU	VU	Jarraah-Marri Forest	Sighting
Opportunistic	-32.9607483	116.0594467	<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black Cockatoo	VU	VU	Jarraah-Marri Forest	Sighting
Opportunistic	-32.9572853	116.0572466	<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black Cockatoo	VU	VU	Jarraah-Marri Forest	Sighting
Opportunistic	-32.9889851	116.0473642	<i>Notamacropus Irma</i>	Western Brush Wallaby	P4	-	Jarraah-Marri Forest	Sighting
Opportunistic	-32.9163251	115.9879426	<i>Pseudocheirus occidentalis</i>	Western Ringtail Possum	CR	CR	Drainage Line	Thermal Imaging with Spotlighting
Opportunistic	-32.91584026	115.9882794	<i>Pseudocheirus occidentalis</i>	Western Ringtail Possum	CR	CR	Drainage Line	Spotlighting



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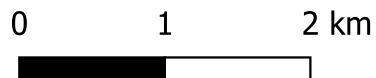
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Larego 2024 Significant Fauna Records

- Western Ringtail Possum (CR)
- Forest Red-tailed Black Cockatoo (VU)
- Quokka (VU)
- Rakali/Water Rat (P4)
- Western Brush Wallaby (P4)
- Survey Area

Figure 2

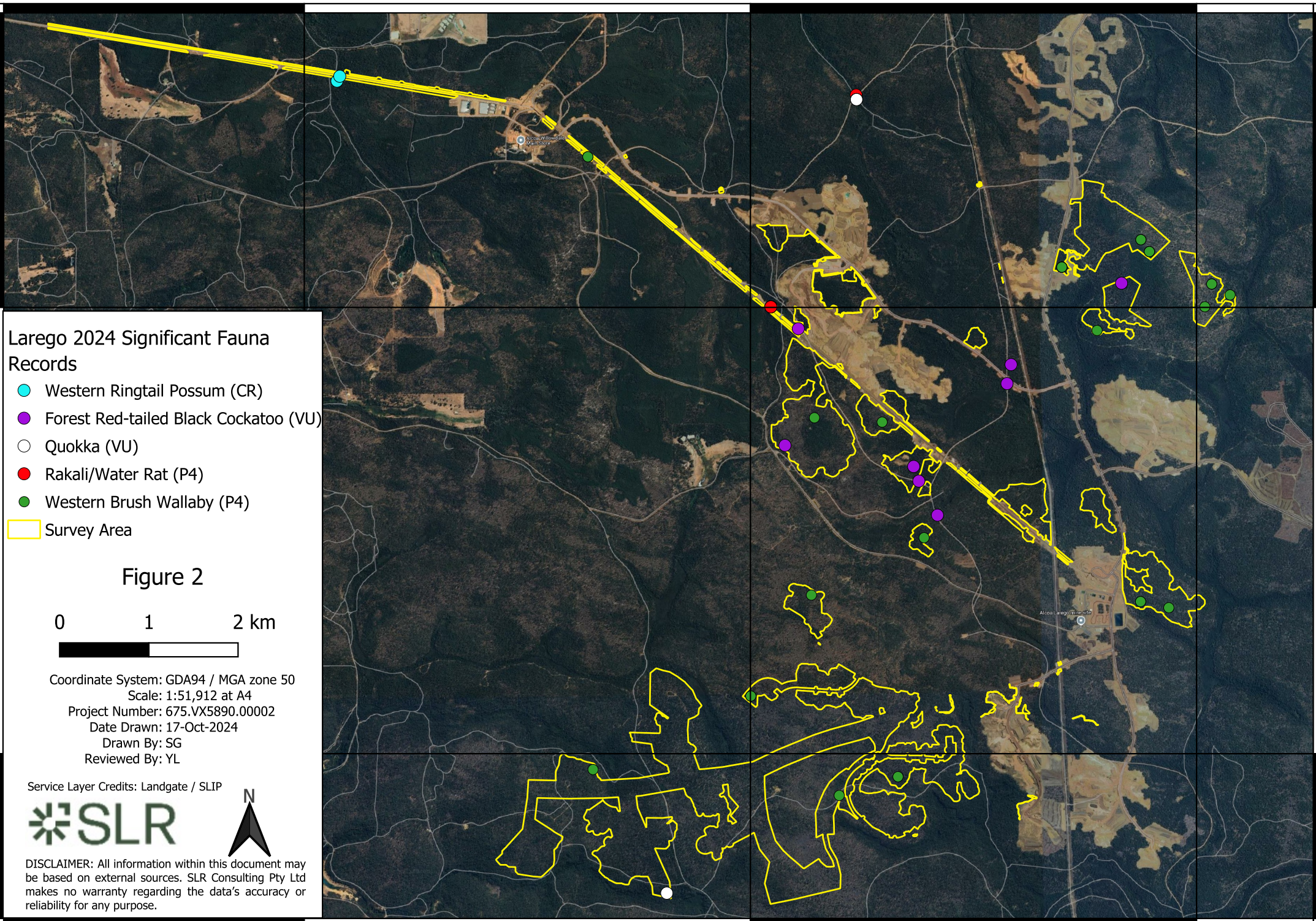


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4.0 Conclusion

The habitat within the Survey Area is predominantly Jarrah Forest/Woodland which is preferred by the Forest Red-tailed Black Cockatoo and the Western Brush Wallaby, whereas the Western Ringtail Possum, Quokka, and the Rakali/Water Rat preferred the riparian vegetation along the Drainage Line habitat.

Five significant taxa were recorded within the Survey Area (**Table 2**):

- Western Ringtail Possum (*Pseudocheirus occidentalis*) – CR (BC Act); CR (EPBC Act) was recorded twice within the Survey Area
- Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*) – VU (BC Act); VU (EPBC Act) was recorded eight times within the Survey Area
- Quokka (*Setonix brachyurus*) – VU (BC Act); VU (EPBC Act), was recorded twice within the Survey Area
- Western Brush Wallaby (*Notamacropus irma*) – P4 (DBCA), was recorded 18 times within the Survey Area
- Rakali/Water Rat (*Hydromys chrysogaster*) – P4 (DBCA) was recorded twice within the Survey Area

The most effective method for surveying Quokka is by deploying baited camera traps along the Drainage Line habitat, and thermal imaging combined with spotlighting is proven to be an effective method for surveying the Western Ringtail Possum.



5.0 References

DSEWPac (2011) *Survey guidelines for Australia's threatened mammals: Guidelines for detecting mammals listed as threatened under the Environment Protection and Biodiversity Conservation Act 1999*. Canberra, Australia. Available at: <https://www.dcceew.gov.au>.

Hayward, M.W. *et al.* (2005) "Mortality and survivorship of the quokka (*Setonix brachyurus*)(Macropodidae: Marsupialia) in the northern jarrah forest of Western Australia," *Wildlife Research*, 32(8), pp. 715–722.

Wayne, A.F. *et al.* (2008) "Improved bait and trapping techniques for chuditch (*Dasyurus geoffroii*): overcoming reduced trap availability due to increased densities of other native fauna," *Conservation Science W. Aust.*, 7(1), pp. 49–56.

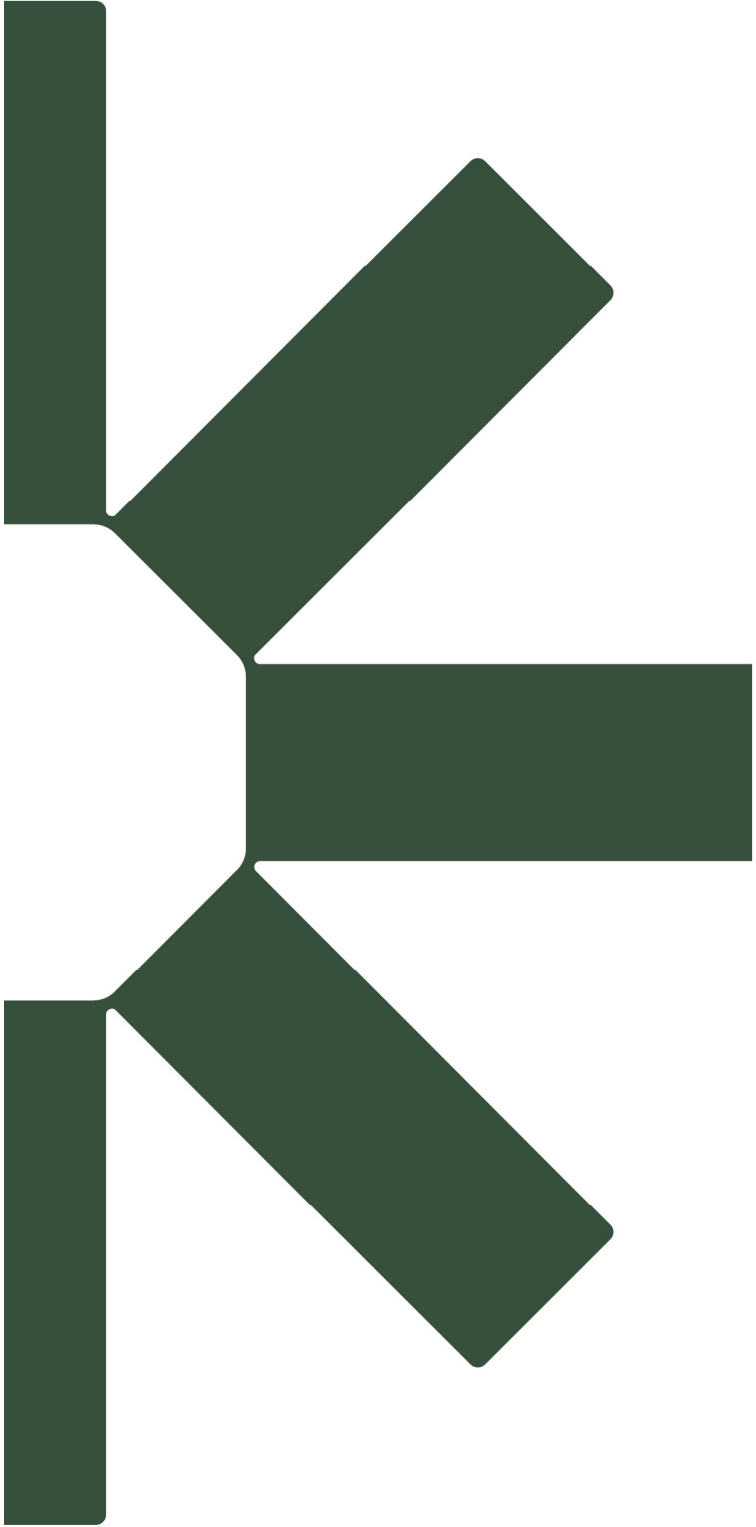


6.0 Feedback

At SLR, we are committed to delivering professional quality service to our clients. We are constantly looking for ways to improve the quality of our deliverables and our service to our clients. Client feedback is a valuable tool in helping us prioritise services and resources according to our client needs.

To achieve this, your feedback on the team's performance, deliverables and service are valuable and SLR welcome all feedback via <https://www.slrconsulting.com/en/feedback>. We recognise the value of your time, and we will make a \$10 donation to our 2023 Charity Partner - Lifeline, for every completed form.





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