Transport
for New South Wales

Pacific Highway Upgrade Woolgoolga to Ballina Sections 3-11

Threatened Gliders Monitoring Program, Year three operational (2023)

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Pacific Highway upgrade: Woolgoolga to Ballina (W2B)

Sections 3-11

Threatened Glider Operational Monitoring – Year Three Annual Report (2023)

SANDPIPER ECOLOGICAL SURVEYS

March 2025

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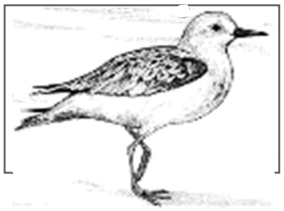

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Cover Photo: Squirrel glider (*Petaurus norfolcensis*) recorded during threatened glider population monitoring within the W2B upgrade.

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1 Introduction

1.1 Background

The Woolgoolga to Ballina (W2B) Pacific Highway Upgrade received state approval under Part 5.1 of the *Environmental Planning and Assessment Act 1979* (*EP&A* Act) on 24 June 2014 and federal approval under the *Environment Protection and Biodiversity Conservation Act 1999* (*EPBC* Act) on 14 August 2014. The Threatened Glider Management Plan (TGMP) (Roads and Maritime Services 2018) was developed to meet the requirements of State Ministerial Condition of Approval (MCoA) D8 and components of MCoA D2.

The Threatened Glider Management Plan (TGMP) addresses the potential impacts of the upgrade on two glider species, the squirrel glider (*Petaurus norfolcensis*) and the yellow-bellied glider (*Petaurus. australis*). These species, collectively referred to as "threatened gliders," are listed as vulnerable under the NSW Biodiversity Conservation Act 2016 (BC Act). They inhabit open forests and woodlands across the ranges and coastal areas of northeast NSW, although the yellow-bellied glider is notably absent from highly fragmented alluvial floodplains and coastal heathlands (RMS 2018). Numerous records of both species have been documented within 10 km of the W2B alignment (RMS 2018).

Following the extensive bushfires of 2019 and 2020, the yellow-bellied glider (*Petaurus australis)* was also listed as vulnerable under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), effective 2 March 2022. Additionally, the greater glider (*Petauroides volans*) was listed as endangered under the *EPBC Act* in July 2022

The TGMP details a comprehensive monitoring program. The components of the monitoring program include:

1. Glider population monitoring.
2. Arboreal crossing structures and widened medians monitoring.
3. Road mortality monitoring.
4. Nest box monitoring.
5. Habitat revegetation monitoring.

The following report addresses components 1 – 3 of the monitoring program.

1.2 Scope

Sandpiper Ecological was engaged by Jacobs in January 2017 to undertake the W2B threatened glider monitoring program. The following annual report addresses glider population monitoring, arboreal crossing structures/widened medians and road mortality monitoring in sections 3-11 during year three of the operational phase (Q4 2022 and Q1-Q3 2023). The report serves as the final for operational phase monitoring and builds on previous glider monitoring conducted in W2B sections 1 and 2 during the operational phase (Sandpiper Ecological 2018a, 2019, 2020a), and in sections 3-11 during year one and two of the operational phase (Sandpiper Ecological 2022, 2023). For information on earlier baseline and construction phase monitoring, refer to Sandpiper Ecological (2014, 2015, 2016).

1.3 Glider population monitoring

The TGMP states that the objective of glider population monitoring is:

> *"To establish if there is a difference in occupational abundance of threatened gliders or activity levels before, during and after the project."*

To achieve this objective, the TGMP directs that population monitoring will occur at:

- Impact sites: mitigated sites such as widened medians and crossing structures within 100m of the road edge.
- Control sites: unmitigated sites within 100m of the road edge.
- Reference sites: sites >300m from the project.

The TGMP details that glider population monitoring will occur before (i.e., pre-disturbance or pre-construction), during (i.e., during disturbance or construction) and after (i.e., post-disturbance or operation phase when mitigation is in place) construction, and that the occupation rates (i.e., presence/absence) will be compared between these periods for impact, control and reference sites.

To determine the effectiveness of mitigation measures, Table 8.1 of the TGMP describes performance indicators and corrective actions for threatened glider population monitoring. A single performance indicator is stated for the threatened glider population monitoring:

1. Decline in the after-construction occupancy rates of squirrel glider or yellow-bellied glider at impact sites over three consecutive monitoring sessions (years).

In the event of a decline in post-construction occupational abundance (i.e., rate), the following *Corrective Actions* are described:

a. Review monitoring methods, considering further monitoring and assessment should there be a decline in population abundance.
b. Consider potential for natural variation to be responsible for decline in population numbers /density.
c. Review location of arboreal crossing structures and consider adding new structures.
d. Investigate habitat adjoining the highway and consider improving habitat condition and connectivity.
e. Post three years of monitoring and implementation of corrective actions, if connectivity measures cannot be demonstrated to be effective at successfully mitigating the barrier and fragmentation impact to glider species, the residual impact to connectivity shall be offset. This is in accordance with MCoA D2.

1.4 Arboreal crossing structures and widened medians monitoring

The TGMP states that the objective of arboreal crossing structures and widened medians monitoring is:

> *"To establish the level of use of various crossing structures (i.e., glide poles, widened medians and rope bridges) by squirrel glider and yellow-bellied glider."*

Monitoring locations include connectivity structures targeted for threatened gliders listed in Table 8.4 of the TGMP and include rope bridges, glide poles and widened medians. As different sections of the W2B upgrade were constructed independently, crossing structure deployment occurred at different times. To streamline data collection monitoring of all arboreal crossing structures within sections 3-11 commenced at the same time (RMS 2018). This enables meaningful and robust data comparisons and reduces the potentially confounding effects of differing stages of construction.

To determine the effectiveness of crossing structures and widened medians, Table 8.2 of the TGMP outlines performance indicators and corrective actions. A single Performance Indicator is stated for crossing structures and widened medians monitoring:

1. No evidence of use of arboreal crossing structures and widened medians by threatened gliders post-construction.

In the event of no evidence of use, the following *Corrective Actions* are described:

a. *Review location and type of connectivity structures installed and implement provisional measures in consultation with EPA which may include but not limited to the installation of more glide poles or rope bridges, particularly where known mortality hotspots occur.*
b. *Consider more strategic planting of habitat or the installation of additional glide poles, informed by the long-term population monitoring data.*
c. *Post three years of monitoring and implementation of corrective actions, if connectivity measures cannot be demonstrated to be effective at successfully mitigating the barrier and fragmentation impact to glider species, the residual impact to connectivity shall be offset. This is in accordance with MCoA D2.*

1.5 Road mortality monitoring

Monitoring of threatened glider mortalities on the road will occur adjacent to all arboreal crossing structures and the widened medians in relevant project sections and at established control sites (RMS 2018). The monitoring program will measure correlations between connectivity structures and glider road mortalities. A higher mortality at impact sites compared to control sites may indicate that the mitigation measure is ineffective for road mortality prevention or reduction.

The stated objective of road mortality monitoring is:

> *"Record the incidence of glider-vehicle collisions at mitigated (impact) and unmitigated (control) sites, to establish if there is a positive effect (i.e., decrease in glider mortality) associated with crossing structures. This is to meet MCoA D8(g)."*

To determine the effectiveness of connectivity structures in preventing or reducing glider road mortality, Table 8.3 of the TGMP outlines Performance Indicators (1 & 2) and their respective *Corrective Actions (a, b, ... etc*.). They are as follows:

1. Higher mortality rate at impact sites or no significant difference in mortality rates for threatened gliders between impact and control sites.

    a. *Review reported usage level of crossing structure by threatened gliders.*
    b. *Corrective actions may include but not limited to the installation of more glide poles or rope bridges to known mortality hotspots.*
    c. *Crossing structures also serve as 'insurance' in the case of stochastic events such as fire or disease, which may occur at long time intervals. Further the cost of decommissioning and relocating a rope bridge or glide pole array is likely to be comparable to the cost of installing a new structure. Therefore, existing glide poles/rope bridges will be retained.*
    d. *Should roadkill data indicate a road-kill hot-spot for gliders where there is limited crossing structures RMS will investigate the feasibility of installing additional crossing structures*
    e. *Post three years of monitoring and implementation of corrective actions, if connectivity measures cannot be demonstrated to be effective at successfully mitigating the barrier and fragmentation impact to glider species, the residual impact to connectivity shall be offset. This is in accordance with MCoA D2.*

2. High number of incidental records of threatened glider mortality away from crossing structures.

    a. *Identify a hot spot.*
    b. *Review options for mitigation, i.e., crossing structure, signage, lowering speed limit.*

c. *Consider implementation of crossing structure at identified hot-spot or other methods to reduce mortality (e.g. signage, review design of structure in that locality, additional plantings to encourage gliders away from road and to crossing structure).*

2 Methods

2.1 Study area

The study area includes sections 3-11 of the W2B Pacific Highway upgrade, spanning from Glenugie to Wardell, as well as the habitat situated within a 1km radius of the project alignment (impact and control sites). Additionally, the study encompasses the surrounding habitat of reference sites that are up to 4km from the project alignment, as shown in Figures 1-5. The sample sites consist mainly of dry sclerophyll forest, with small pockets of swamp sclerophyll forest. The study area falls within the north coast bioregion and is characterised by a predominantly sub-tropical climate (NSW NPWS 2003).

In sections 3-11, glider population surveys were conducted at 48 sites – 20 impact, 18 control, 10 reference (Table 1). Impact sites adjoined crossing structures and vegetated medians. Control sites were positioned in forest habitat largely equivalent to impact sites and a minimum 500m but mostly >1000m from impact sites. Reference sites were in equivalent forest habitat >1-4km from either impact or control sites. Monitoring of aerial crossings was carried out at a total of 17 locations, consisting of eight rope bridges, eight glide poles or glide pole arrays (Table 2 and 3) and one vegetated median located in Section 7 at Tabbimoble.

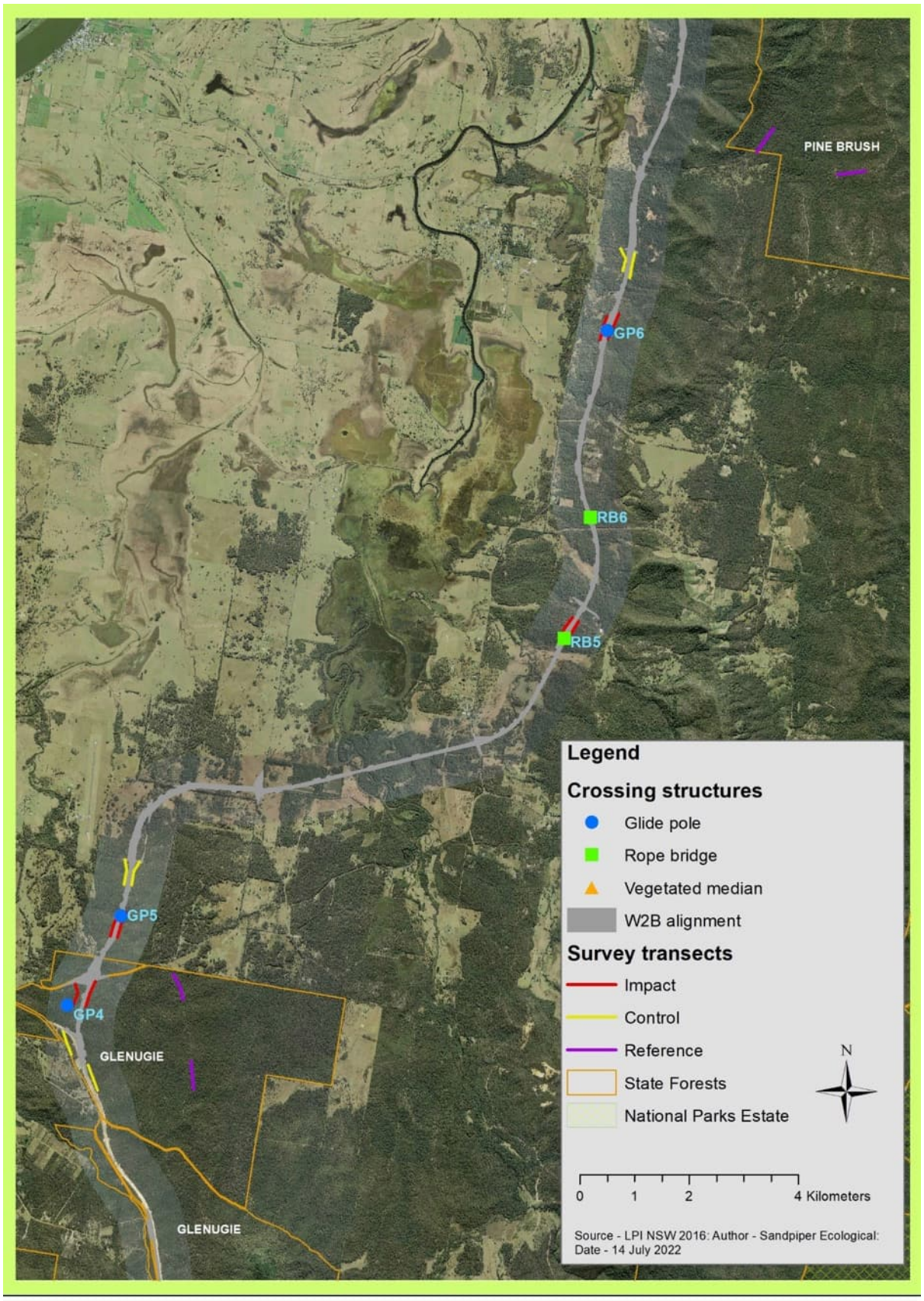


Figure 1: Threatened glider impact, control and reference sites and aerial crossing structures in section 3-11 of the W2B alignment.

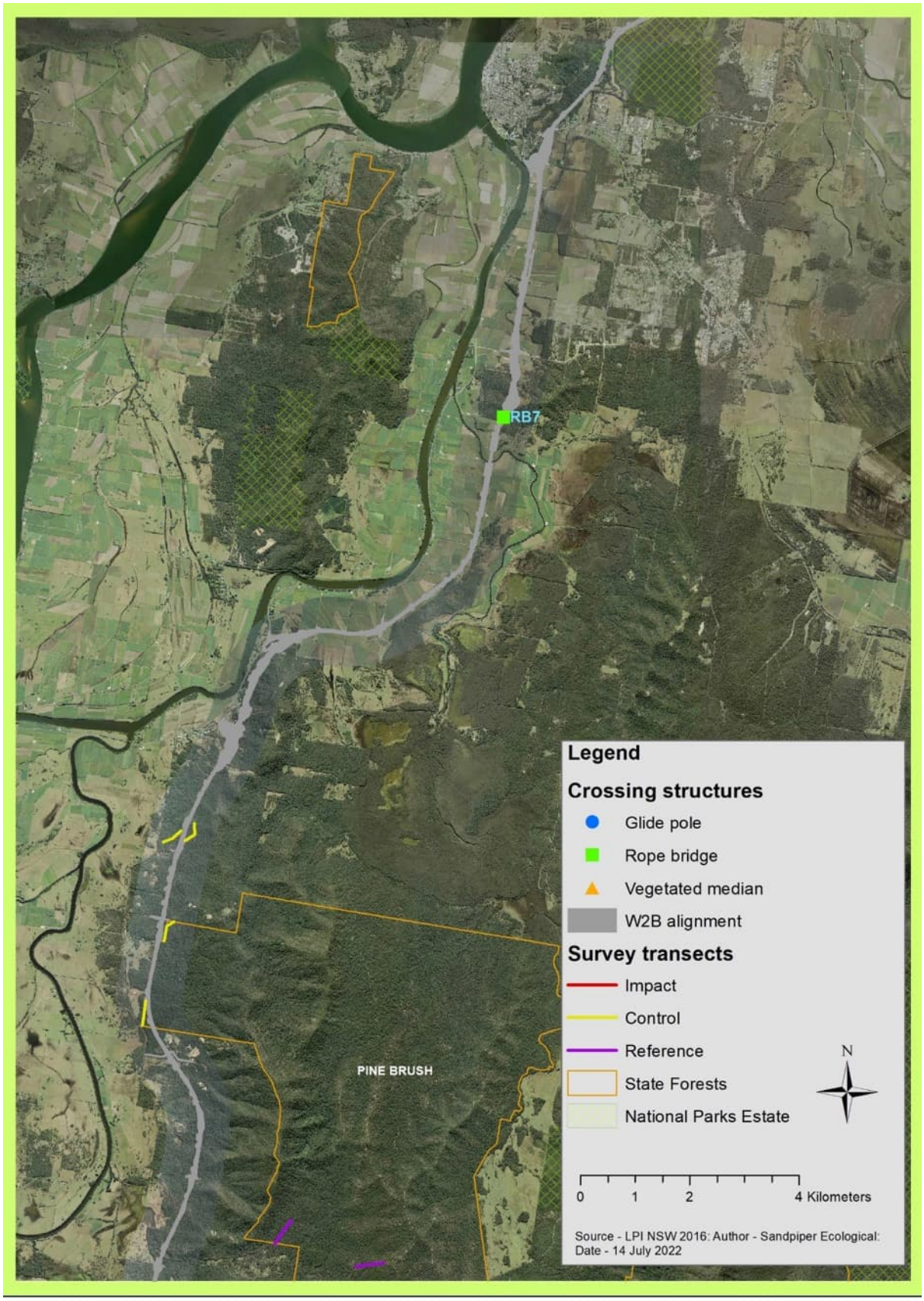


Figure 2: Threatened glider impact, control and reference sites, and aerial crossing structures in sections 3-11 of the W2B alignment.

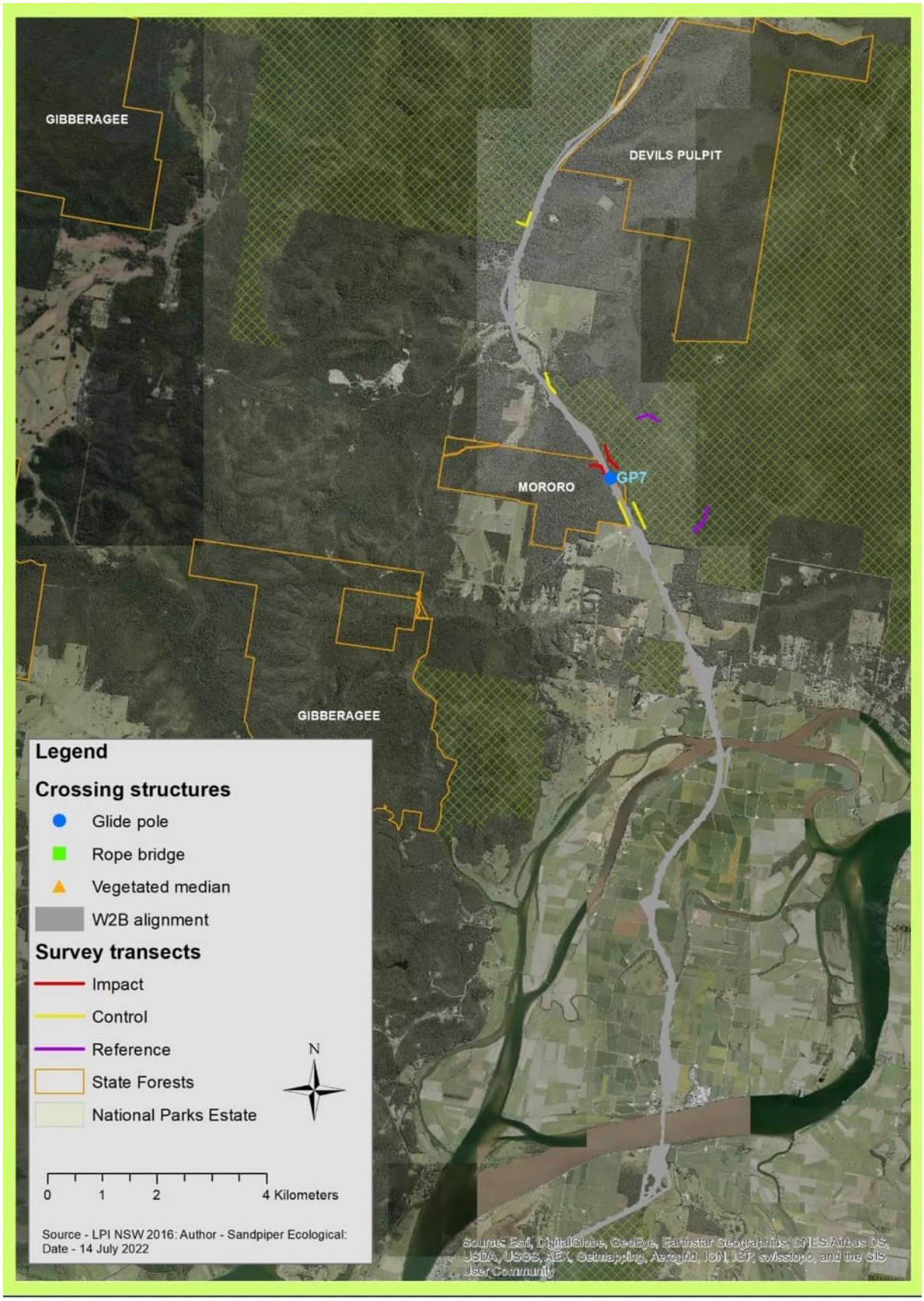


Figure 3: Threatened glider impact, control and reference sites, and aerial crossing structures in sections 3-11 of the W2B alignment.

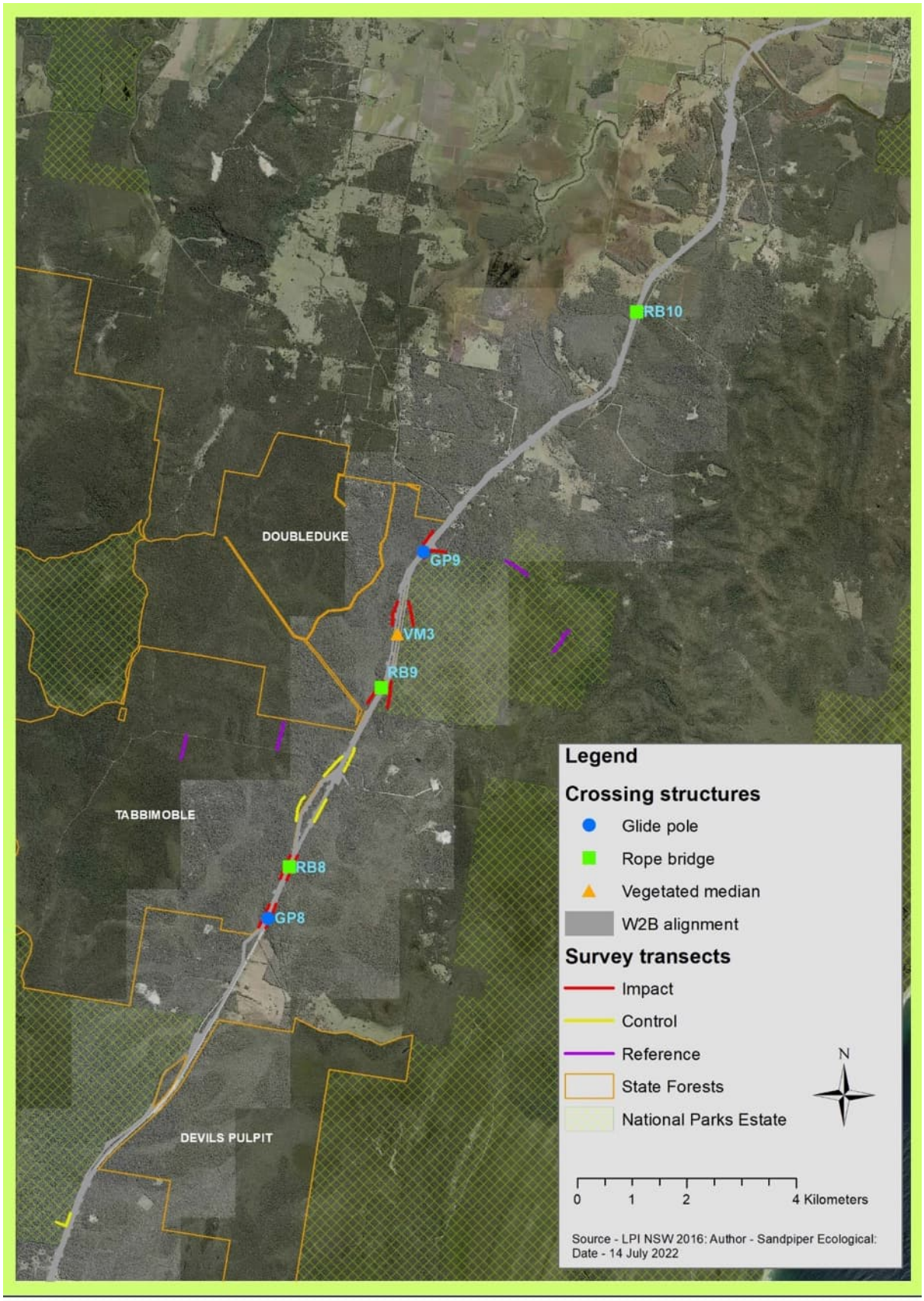


Figure 4: Threatened glider impact, control and reference sites, and aerial crossing structures in sections 3-11 of the W2B alignment.

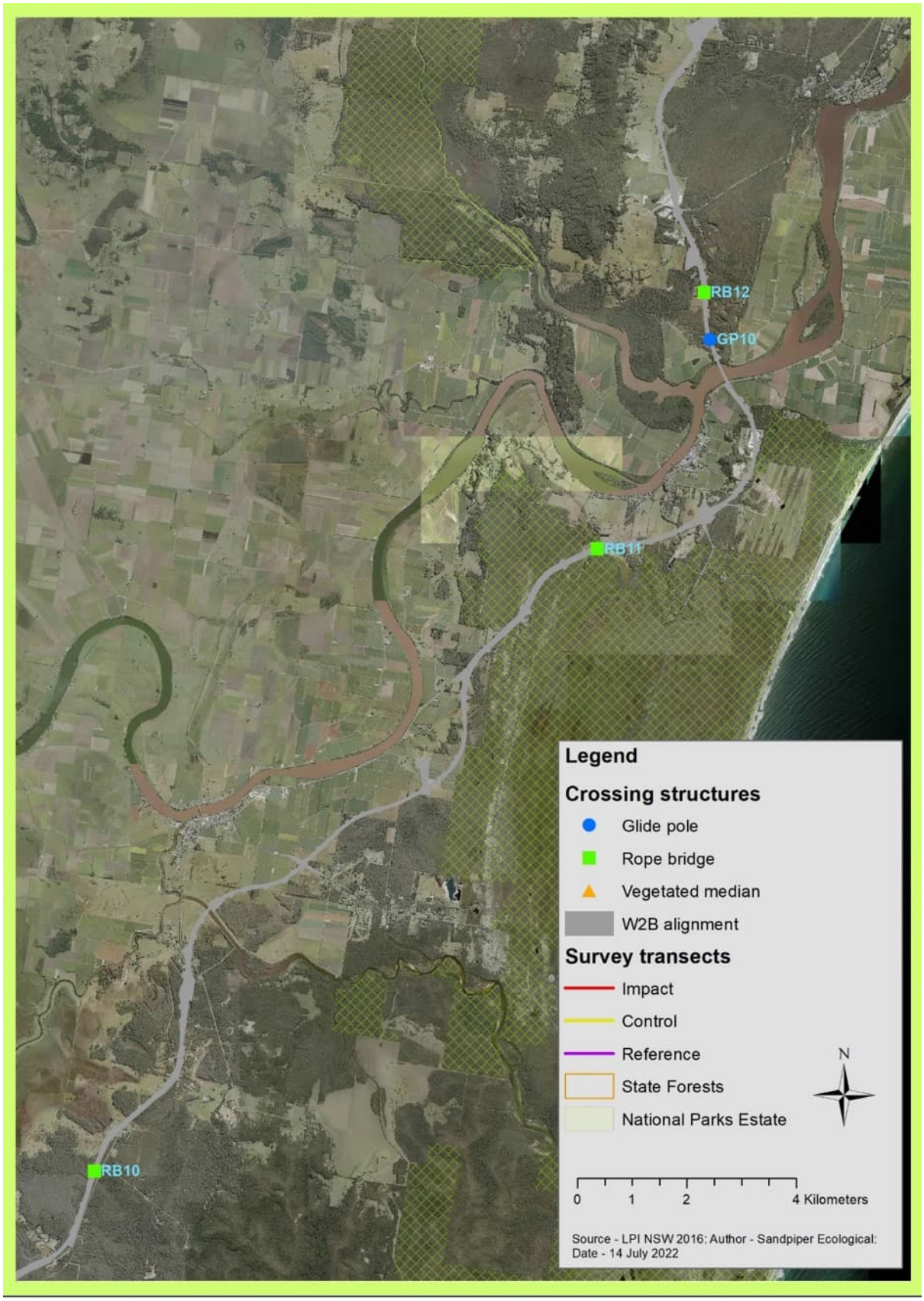


Figure 5: Location of aerial crossing structures within sections 3-11 of the W2B alignment.

Table 1: Location of impact, control and reference glider population monitoring sites positioned in sections 3-11 of the W2B Upgrade. RB = rope bridge; GP = glide pole; VM = vegetated median.

Section	Site Name (corresponding aerial crossing)	Transect ID	Approximate chainage at centre of transect		
			Impact	Control	Reference
3	Glenugie South (GP4)	GS-east	35700	34050	-
		GS-west	35700	34750	-
3	Glenugie North (GP5)	GN-east	37050	38000	-
		GN-west	37050	38000	-
3	Glenugie Reference	G-r-north	-	-	35800
		G-r-south	-	-	33950
3	Tucabia South (RB5)	TucS-east	48250	55250	-
		TucS-west	48250	55350	-
3	Tucabia Mid	TucM-east	-	63500	-
		TucM-west	-	61850	-
3	Tucabia North (GP6)	TucN-east	54050	65300	-
		TucN-west	54050	65100	-
3	Tucabia Reference	Tuc-r-north	-	-	57900
		Tuc-r-south	-	-	57200
6	Mororo (GP7)	Mor-east/north	99600	98500	100100
		Mor-west/south	99600	98600	98100
6 & 7	Tabbimoble South (GP8)	TabS-east	111350	101400	-
		TabS-west	111350	104550	-
7	Tabbimoble Mid (RB8)	TabM-east	112350	113550	-
		TabM-west	112350	113550	-
7	Tabbimoble North (RB9)	TabN-east	115950	114550	-
		TabN-west	115950	114550	-
7	Tabbimoble Veg Median	TabVM-east	117400	-	-
		TabVM-west	117400	-	-
7	Tabbimoble Land Bridge (GP9)	TabLB-east	118850	-	-
		TabLB-west	118850	-	-
7	Tabbimoble Nature Reserve Reference	TabNR-r-nth	-	-	118700
		TabNR-r-sth	-	-	117300
7	Tabbimoble Double Duke State Forest Reference	TabDD-r-north	-	-	114750
		TabDD-r-south	-	-	114300
Total Transects			20	18	10

2.2 Population monitoring

Glider population surveys were conducted at monitoring sites in S3-11 which were established during baseline surveys (Sandpiper 2015, 2016a; Table 1). Each site featured a 500m-long transect mostly positioned on existing tracks or management trails. Impact and control transects were parallel to and within 100m of the highway alignment, whereas reference transects were >1km from the highway alignment. Transects were located within dry open forest habitat or a combination of dry open forest and moist open forest or swamp forest.

Spotlight and call playback surveys were conducted at each site quarterly. Monitoring of the operational phase for sections 3-11 commenced in Q4 of 2020. Year one encompassed the Q4 of 2020 and Q1, Q2 and Q3 of

2021. Year two began in Q4 of 2021, with Q1, Q2 and Q3 of 2022 completing the survey period for that year. Year three (final) commenced in Q4 of 2022, with Q1, Q2 and Q3, of 2023 concluding the survey period for the final year. The relevant survey periods for this report are as follows: Q4 (15 December 2022 - 17 January 2023), Q1 (23 - 30 March 2023), Q2 (19 - 26 June 2023), and Q3 (19 September - 21 September 2023).

Each transect was surveyed on two non-consecutive nights during each survey period. Two to four experienced ecologists conducted the surveys concurrently on nearby transects (i.e., one observer/transect). The order and allocation of transects was changed each survey to avoid bias and to ensure each transect was surveyed during the early part of the evening at least once during the survey period.

Spotlight surveys were of 30 minutes' duration and were preceded by yellow-bellied glider call playback. Playback included a five-minute listening period, five minutes of playback followed by spotlighting with a hand-held 200+ lumen torch. Surveys began at least 30-45 minutes after sunset and were completed within eight hours. Where possible, surveys were conducted between the third quarter and first quarter moon phases to avoid the period around the full moon. Weather conditions were generally fine during surveys with occasions of moderate winds (i.e. moves large branches) and/or light showers. Surveys were postponed if strong wind or rain was forecast.

On occasions during surveys when an individual could not be confidently identified as either a squirrel glider or a sugar glider (*P. breviceps*), it was recorded as squirrel/sugar. To determine the likelihood of each of these records being a squirrel glider, all survey data for all periods (including pre-construction) for each of the subject transects was reviewed. If squirrel gliders only were detected on that transect on other occasions or on more occasions than sugar gliders, the record was scored as 'probable' squirrel glider and included as a 'presence' record. If squirrel gliders were not detected on that transect on other occasion(s) or if sugar gliders were previously detected on more occasions the record was scored as 'probable' sugar glider.

2.3 Arboreal crossing structures

2.3.1 Rope bridges

In sections 3-11 rope bridges were located at Tucabia (RB5 and RB6), Shark Creek (RB7), Tabbimobile (RB8 and RB9), New Italy (RB10), Broadwater (RB11) and Laws Point (RB12) (Table 2). Rope bridges were ladder mesh design and featured 10 mm diameter silver rope woven into a 100 mm wide grid pattern for a total width of 400 mm. The exception was RB12 which consisted of a 550 mm x 200 mm rope cage made from 10 mm diameter silver rope. The mesh design included single 30mm-thick ropes running the entire length (Plate 1).

Rope bridges were slung between 3 mm wire rope and supported by 10 mm wire rope. Bridge ends were at the height of mid-upper canopy of adjoining forest and situated 2-8m from the canopy. Lengths of 25mm diameter silver rope extended from the bulkhead to adjacent trees (Plate 1). Rope bridge monitoring entailed camera surveillance of the rope bridge surface at each end to determine use by arboreal fauna.

Table 2: Rope bridge locations, sections 3-11, of the W2B upgrade.

Site	Chainage (Section)	Location of cam/s	Location Name	Easting	Northing
RB5	48050 (3)	Roadside	Tucabia South (Mitchells Rd)	511684	6711127
RB6	50430 (3)	Roadside	Tucabia Mid	512165	6713339
RB7	75820 (4)	Roadside	Shark Ck	519398	6735146
RB8	112300 (7)	Roadside	Tabbimoble mid	524991	6767407
RB9	116000 (7)	Roadside	Tabbimoble north	526672	6770680
RB10	124610 (7)	Roadside	New Italy	531347	6777559
RB11	140600 (9)	Roadside	Edge of Broadwater NP	540545	6788936

RB12	147350 (10)	Roadside	Laws Pt Rope	542498	6793628

Plate 1: Rope bridges were suspended >10m above the road surface and supported by poles adjacent to the forest edge. A camera was fitted to the bulkhead at each end of the bridge.

An arborist installed wireless 4G Swift Enduro cameras on rope bridges in sections 3-11 between 26 May and 7 July 2021 (Plate 2). Wireless cameras were installed to minimise the number of aerial climbs required to

download and maintain cameras, thereby improving safety. Cameras were installed on brackets attached to the bulkhead at each end of the 12 rope bridges and were oriented along the bridge. A 1 m sheet of corflute was attached to the bottom of each bridge to reduce the incidence of false triggers. Wireless cameras were equipped with a 16 or 32GB SD card. A small solar panel with inbuilt battery was attached to each camera, and all cameras were fitted with 12 NiMh rechargeable batteries as a back-up during cloudy conditions. The cameras active period was set from 1900-0500hrs EST.

On rope bridges, cameras were initially set at medium sensitivity to reduce the incidence of false triggering caused by passing traffic. Sensitivity was reduced to low at a small number of sites where a high incidence of false triggers occurred (e.g. RB11) during year two monitoring (2022). Upon activation, each camera sent up to three photographs to a central email address, with no delay between triggers. The number of images sent was dependent on wireless signal strength with only one image sent if signal strength was low. Video was not used on wireless cameras due to concern about signal strength and battery capacity. Images from the previous night were reviewed daily, false triggers discarded immediately, and active images saved for further review. Consequently, the number of images taken was not recorded for cameras in S3-11 other than during maintenance inspections.

2.3.2 Glide poles

Glide poles were installed at various locations along the roadside and median of the highway at sections 3-11 including Glenugie South (GP4), Glenugie North (GP5), Mororo (GP7), Tabbimoble South (GP8) Tabbimoble North (GP9), and Laws Point (GP10) (Table 3). GP8 and GP6 consisted of a single median pole, whereas all other sites had multiple glide poles, including two poles one east and one west (GP10, GP7, GP4), or three poles which included a central median pole (GP9, GP5) (Table 3). Glide poles were made of CCA-treated hardwood timber, approximately 450mm in diameter at breast height and tapered to approximately 330mm near the top. Each pole was fitted with a 500mm diameter metal predator shield and a single arm made of 90 x 100 mm thick hardwood, mounted perpendicular to the highway 300mm from the top of the pole (Plate 2). Cameras were initially installed on the east and west glide poles at sites GP4, GP5, GP7, GP9, and GP10, and on median poles at GP5, GP6, GP8, and GP9.

During August 2022, it was decided that accessing the median without traffic control was hazardous to workers and subsequently the median cameras at GP5 and GP9 were replaced with cameras on the east and west roadside poles in October 2022. Median cameras at GP6 and 8 were replaced in August 2022 and were left insitu until the conclusion of year three monitoring. Cameras were mounted on a flat 600-900 mm long metal bar attached to the glide arm. In most cases cameras were positioned 100-200 mm beyond the end of the glide pole arm and offset to it, exceptions were GP5 and 9 which were positioned on the glide arm approximately 1m from the pole (Plate 2).

Table 3: Glide pole locations at W2B sections 3-11.

Label	No. Poles in Array	Chainage (Section)	Location of cameras	Location Name	Easting	Northing
GP 4	2	35420 (3)	Roadside	Glenugie South (8mile Lane)	502590	6704406
GP 5	3	37200 (3)	Median (2021), Roadside (2022 & 2023)	Glenugie North (Old 6mile Lane)	503569	6706040
GP 6	1	53920 (3)	Median	Tucabia North (Bostock Rd)	512478	6716758
GP 7	2	99320 (6)	Roadside	Mororo	522443	6756232
GP 8	1	111300 (7)	Median	Tabbimoble south	524605	6766463
GP 9	3	118620 (7)	Median (2021), Roadside (2022 & 2023)	Tabbimoble north (Minyamai Rd)	527449	6773170
GP 10	2	146480 (10)	Roadside	Laws Pt Poles (roadside poles)	542607	6792765

Plate 2: Location of camera attachment on glide poles in S3-11. Each structure contained a wireless 4G Enduro camera fitted to a steel arm and connected to a solar panel.

2.3.2 Maintenance and camera effort

During year three of operational monitoring, two camera maintenance inspections were conducted. The first inspection took place between February 13-16, 2023, during which all cameras were inspected. The inspection involved downloading SD cards, adjusting camera positions and sensitivity, changing batteries, and replacing damaged cameras (Appendix C, Table C1). The second inspection occurred on 7 September 2023 and focused on cameras at five rope bridge sites (RB12, RB11, RB10, RB8, and RB7) and one glide pole (GP5) which had recorded a high incidence of false triggers, lack of recent activation, or poor camera orientation. Full details of the maintenance inspections are found in Appendix C, Table C1.

In sections 3-11, the period of activity for year three of operational phase monitoring is based on the number of days active from January 1, 2023, to January 1, 2024 (Table 4). The total number of active days for cameras on monitoring structures increased over time. In 2023, cameras were active for 8,213 days, up from 7,603 days in 2022 and 6,672 days in 2021. Of the eight monitored rope bridges, seven had at least one camera active for the entire monitoring period. Comparatively, four of the seven glide poles had at least one camera active for the entire monitoring period. Monitoring effort was reduced by damage to cameras on four occasions (water

ingress or sensor damage from crows), battery fatigue on six occasions, memory card error on one occasion, and camera malfunction on one occasion (Table 4).

Table 4: Total number of active days for cameras installed on rope bridges (RB) and glide poles (GP) at sections 3-11 during operational monitoring in 2021, 2022, and 2023. F= battery fatigue. D = Damaged camera, M = malfunction and SE = card error. R = removed from survey

Structure	Site	Location	2021	2022	2023
Glide Pole	GP4	East	218	208	365
		West	218	365	356[F]
	GP5	East	0	81	298[F]
		Median	116	0	0
		West	0	81	273[F]
	GP6	Median	116	365	365
	GP7	East	218	365	365
		West	218	365	365
	GP8	Median	333	365	212[D]
	GP9	East	0	0	0[R]
		Median	333	0	0[R]
		West	0	81	168[D]
	GP10	East	334	365	365
		West	334	365	60[D]
Rope Bridge	RB5	East	116	270	365
		West	116	209	120[F]
	RB6	East	116	365	365
		West	116	151	365
	RB7	East	218	365	365
		West	218	365	321[M]
	RB8	East	333	151	365
		West	333	365	365
	RB9	East	333	365	365
		West	333	205	365
	RB10	East	333	173	365
		West	333	365	161[CE]
	RB11	East	334	365	262[D]
		West	334	153	238[F]
	RB12	East	334	365	238[F]
		West	334	365	365
Total active days/year			6672	7603	8213

2.3.3 Vegetated medians

One vegetated median at Tabbimoble was monitored in sections 3-11 of W2B during the operational phase (Figure 4). The vegetated median is located at the centre of the north and southbound carriageways, extends for approximately 1350 metres (Chainages 116200-117600) and consists of dry sclerophyll open forest. Carriageway corridor widths east and west of the median range between 30-60m, and roadside tree heights are approximately 20-30 m.

Four camera traps were installed in the Tabbimoble median to detect the presence of gliders (Table 5). Two camera traps (TVM1 and TVM2) were installed on 21 January 2021 as part of year one operational monitoring with two additional cameras installed on 27 September 2022 (TVM3) and 29 November 2022 (TVM4) to improve coverage of the median (Table 5). Camera traps were positioned at feasible glider crossing locations and featured a Swift Enduro camera, mounted to a 150 mm x 500 mm x 10 mm timber board, oriented towards a capped 250 mm x 100 mm diameter PVC pipe (Plate 3). The PVC pipe was perforated by numerous holes and filled with creamed honey and a sponge. The camera array was attached to a metal bracket and

mounted to subject trees approximately 6m above ground level (Plate 3). A dilute mixture of honey and water was sprayed up the tree trunk above the camera trap as an extra attractant.

During year three operational phase monitoring cameras were checked on 1 March and 26 May 2023 to refresh batteries, replenish bait chamber stores and download SD cards. All cameras and bait stations were retrieved on 2 March 2024. Monitoring effort was reduced at TVM1, TVM2 and TVM4 due to battery fatigue (Table 5). Cameras TVM3 was active for the entire 2023 monitoring period.

Table 5: Total number of active days for the Tabbimoble median cameras during the 2023 monitoring year in sections 3-11.

Cam ID	No. Active days	Comments
TVM1	288	Battery fatigue
TVM2	346	Battery fatigue
TVM3	365	Nil
TVM4	353	Battery fatigue

Plate 3: Camera trap set up with honey chamber and camera (left). Camera trap installed (Right)

2.4 Road mortality monitoring

Car-based road mortality surveys were conducted during each of the four quarters of year three (2023) operational monitoring at sections 3-11. Specifically, surveys were completed on 12 April (Q1), 29 June (Q2), 6 September (Q3) and 17 November (Q4) 2023. Car-based surveys entailed a driver and passenger (observer) travelling both the northbound and southbound of sections 3-11. The survey vehicle featured a 'Vehicle Frequently Stopping' sign on the tailgate, a flashing light and travelled at 80-90 km/h in the left-hand lane. Surveys involved the passenger scanning the road surface and road shoulder for animal carcasses. If any fauna was detected, the species or fauna group was recorded using the internal GPS of a smart device, and the waypoint was recorded in Australia topo maps android application. If a potential threatened glider was identified, the vehicle would pull over at the nearest safe location and the passenger would walk back to inspect the carcass behind the guard rail/wire rope. The location of each carcass was later recorded into an excel spreadsheet and referred to in subsequent surveys to avoid double-counting. Car-based surveys were substituted for walking-based surveys in 2020 due to safety concerns with walking along the edge of the highway (refer Sandpiper 2020a).

2.6 Data analysis

2.6.1 Population monitoring

For each survey quarter, data for the two samples were pooled to determine presence/absence of yellow-bellied glider and squirrel glider for each transect. The number of present or 'occupied' transects for each species for each survey period/quarter were then summed and expressed as a proportion of total sites (i.e., occupancy rate) for that treatment (i.e., impact, control, reference).

The occupancy rate of yellow-bellied glider, squirrel glider for each treatment and for each survey quarter was then tabulated according to phase of construction. A mean (± SD) of all samples (i.e., survey quarters) was calculated for each treatment type for the three construction phases and for each year: pre-construction, construction (Year 1—4) and operation (Year 1-3). The analysis was extended to include the greater glider.

To determine whether a significant difference occurred in squirrel glider occupancy between monitoring phases (pre-construction, construction, and operational) treatment types (control, impact reference) and road sides (east and west) a two-tailed Fisher's Exact Test was performed using R Studio (2024). Data from population monitoring was first converted to presence/absence data for each transect with "1" for present and "0" for absent. For each comparison (e.g., Pre-construction vs. Construction Year 1), 2x2 contingency tables were constructed. The null hypothesis was that there is no difference in the proportion of present/absent records between the phases and treatment types. Fisher's Exact Test was chosen for its accuracy with small sample sizes and categorical data (McDonald 2014). The significance level was set at 0.05, with p-values below this threshold indicating a significant difference between presence/absence data. The odds ratio was calculated to measure the strength and direction of each relationship, with 95% confidence intervals providing a range for the true odds ratio. An odds ratio greater than 1 indicates a higher odd of the outcome in the first group, while an odds ratio less than 1 indicated lower odds in the first group.

Glider population monitoring field data is provided in Appendix B.

2.6.2 Rope bridges and glide poles

Rope bridge and glide pole camera images were uploaded to a desktop computer and viewed using Windows Photo Viewer. Data recorded included: site, sample period, time of detection, species, crossing types, and the movement type for glide poles (i.e., explore arm, climb pole, no directional movement, launch east, launch west), where discernible. An ecologist reviewed all images, with reference to standard field guides (e.g., Menkhorst & Knight 2003; Pizzey & Knight 2007). A hierarchical approach was adopted for species identification, which included: species, genus or group.

For rope bridge pictures, the road crossing likelihood was also scored according to the following criteria:

- Complete crossing (CC) - animal moves past camera in either direction and does not return within 10 minutes.
- Incomplete crossing (IC) - animal either moves away from camera but returns within 10 minutes, or exhibits no directional movement along the bridge, or shows only exploratory movement, or glides from end of bridge after moving past camera.

According to these definitions, a 'complete crossing' does not require complementary evidence of the same crossing event from both cameras. Instead, it is inferred from the display of strong directional movement and no evidence of return movement, albeit this can be difficult to interpret for the feathertail glider (*Acrobates spp*.) due to their erratic and rapid movements. The absence of images at the other end of a rope bridge or the

opposite pole is presumed to be an instance of detection evasion and is consistent with other investigations of arboreal crossing structure use (see Goldingay *et al.* 2013; Soanes *et al.* 2015). Plate 4 shows an example of a complete crossing by a squirrel glider on a rope bridge.

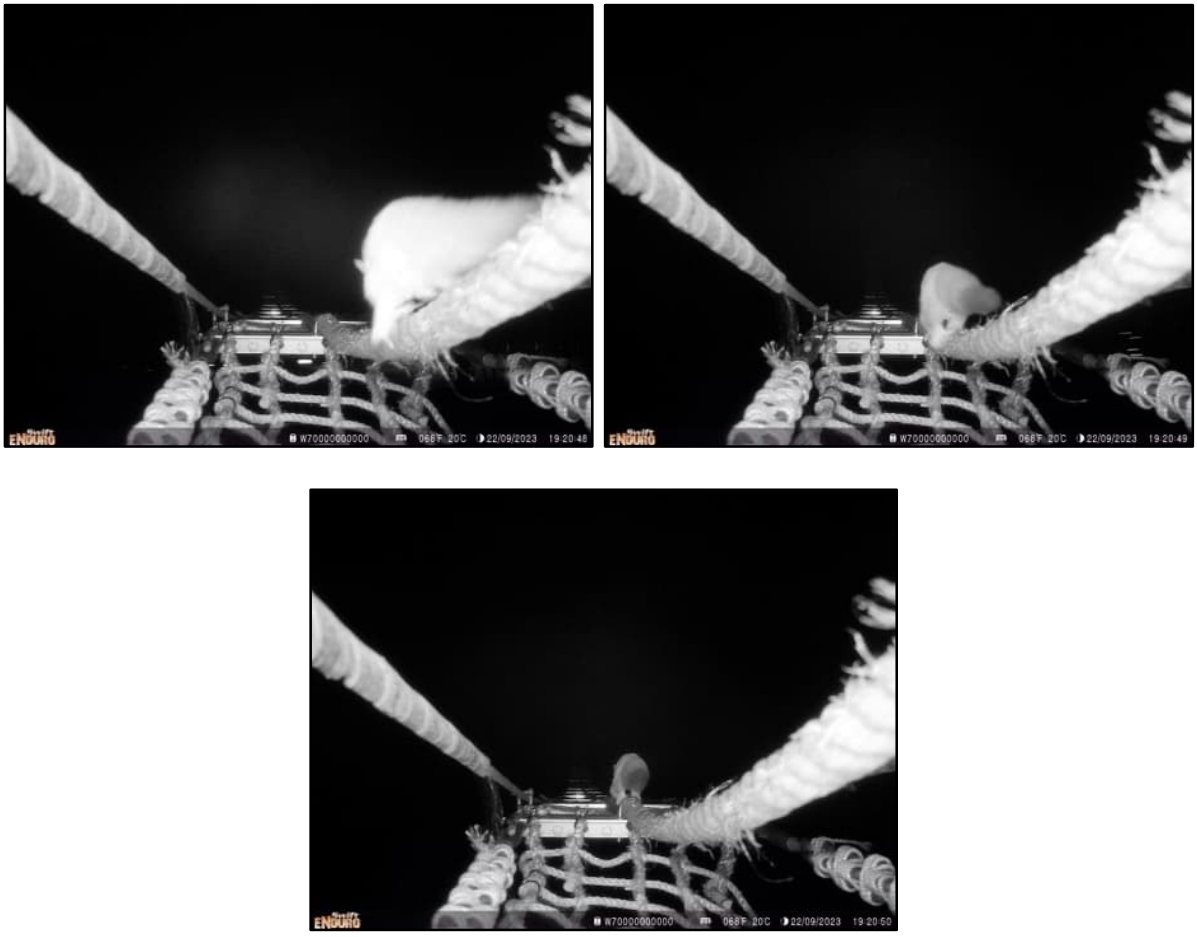


Plate 4: Example of a complete crossing image sequence for a squirrel glider on a rope bridge installed as part of the W2B Pacific Highway Upgrade.

For glide pole footage, any animal detected on median-positioned glide poles was scored as a highway crossing this was based on the reasoning that while an individual may glide to the central pole and return to the same side, it likely represents a very small proportion of detections. There is no habitat in the centre of the carriageway where median poles occur (i.e. GP5, GP6, GP8 and GP9) and, therefore, no apparent reason for gliders to repeatedly access the median pole without completing a crossing. This is consistent with analyses of glide pole records from the Hume Highway, which were supported by radio-tracking data (see Soanes *et al.* 2015) and previous glide pole monitoring for the Sapphire to Woolgoolga Pacific Highway upgrade and sections 1 and 2 of W2B (Sandpiper Ecological 2018b, 2021). GP8 and GP6 were the only sites where median poles were monitored for the entire survey period.

Complete and incomplete crossings are collectively referred to as visits. Determining glides from still images is more difficult than video and complete crossings on glide poles were mostly inferred based on movement direction and the lack of subsequent images. In contrast, determining complete crossings on rope bridges is more straightforward as movement along the bridge can be clearly seen in an image sequence (see Plate 4). There is sufficient error in the inference of a complete crossing on a glide pole to warrant a precautionary approach to data analysis. Whilst the number of “visits” to edge poles is not proof of a road crossing (see Goldingay *et al.* 2019) in this case it seems like a more equitable way of comparing between rope bridges and glide poles.

To determine the level of use for each aerial structure and make site comparisons, the number of visits to each structure was used, which included the combined total of complete and incomplete crossings. This approach was chosen to ensure accurate comparisons, given the uncertainty in defining a complete crossing, as previously discussed. Sites such as GP4 (combining poles east and west) and RB1 (east and west) were treated as replicates. Data were aggregated by summing the number of visits and then dividing by the total number of active camera days. Results were presented in relation to specific monitoring periods (e.g., Year 1 versus Year 2) or taxa (feathertail glider versus sugar glider). Camera data collected for each aerial crossing is presented in Appendix C.

2.7 Vegetated median

The camera trap videos were uploaded to a desktop computer and reviewed by an ecologist using Windows viewer. Data collected from the videos included the site, date, time, and number of detections for each species recorded. A detection was scored when an individual species was initially observed on video. A new detection was only scored after a 10-minute interval between videos of the same species or the appearance of a new species. This approach increased the likelihood of detecting a new individual and reduced counting the same individual multiple times. An ecologist reviewed all images to identify the species, using standard field guides (e.g., Menkhorst & Knight 2003; Pizzey & Knight 2007) as references.

To assess the extent of vegetated median use and enable comparisons with other monitoring programs, the number of detection per week was used as the standard measure for glider use of the medians. Data was pooled by combining the number of visits and dividing them by camera effort (number of active weeks) and presented in relation to specific monitoring periods (Year 1 versus Year 2), and taxa (feathertail glider or squirrel glider). Camera data collected from the Tabbimoble vegetated median is presented in Appendix D.

2.8 Survey limitations and constraints

Environmental conditions, such as a severe drought in 2019 and an extended La-Nina event from 2020 to 2022, have influenced the population monitoring program at sections 3-11. Additionally, severe bushfires occurred in late 2019, impacting sections 6 (Mororo) and 7 (Tabbimoble) of the study area. Local flooding also occurred in 2020 and 2022, restricting access to survey sites and vegetated median cameras. Moreover, the frequent occurrence of cloudy days in 2022 may have restricted the solar charging of aerial cameras at some sites, and the high proportion of rainy nights in 2022 may have affected glider activity. Persistent, heavy rain also contributed to internal water damage of several aerial crossing cameras. These issues were partially overcome by installing higher capacity solar panels and improving the waterproofing of cameras. High-gain antennae were installed at sites with poor internet connectivity.

Ensuring cameras are appropriately set on aerial crossings is often challenging. Camera setup on glide poles is typically straightforward as the glide arm provides a stable and level surface to attach cameras. Rope bridges pose more challenges particularly when the bridge slopes steeply from the pole as occurred at several sites on W2B. Orienting cameras along the angle of a sloping bridge often results in false triggers from passing traffic, whilst setting the camera perpendicular to the pole reduces fauna detection time. The height of the rope bridge in relation to the pavement is another factor that influences set-up. The incidence of false triggers from traffic was reduced at most sites by installing coreflute beneath the rope bridge and carefully aligning cameras to minimise detection of traffic. Slight (unintended) adjustments in camera position during maintenance was found to substantially affected false triggers at some sites.

Limited internet connectivity throughout the study area meant that only still images could be sent rather than video. Video provides a better medium to identify glider behaviour and confirm glides, particularly on glide poles. The number of confirmed glide crossings in sections 3-11 of W2B is regarded as a conservative estimate for the monitoring period.

Distinguishing between squirrel glider and sugar glider is often challenging, particularly during spotlight surveys, when animals can be high in the canopy, obscured by foliage or quickly move out of sight. Animals on aerial crossings also pose challenges when images are partial, out of focus, or the animal is moving, or at an odd angle to the camera. The potential for misidentification is partly overcome by assigning unidentified individuals to the *Petaurus* spp. group. Nonetheless, some misidentification is likely to have occurred. Features used to distinguish between squirrel and sugar gliders are divided into primary (easy to observe and generally obvious) and secondary (difficult to observe, requires longer observation). Features used to distinguish between the two species are summarised in Table 6 and a visual comparison is provided in Plates 4 and 5.

Table 6: Features used to identify squirrel and sugar gliders.

Group	Feature	Squirrel glider	Sugar glider
Primary	Tail	Long and tapered; wide at rump, terminal 1/3 to 1/2 is black.	Narrow, not tapered, terminal 1/4 is black, occasional white tip
	Body size	190 to 330gr	90 to 150gr
Secondary	Ears	Long and pointed	Short and rounded
	Head	Short snub-nosed	Pointed nose
	Markings	Black dorsal strip from crown to rump, black around ears and black border to glide membrane, underparts are often white	Pale grey or cream underparts, face markings are less distinct

Plate 5: A sugar glider (*Petaurus breviceps*) recorded at GP4.

Plate 6: A squirrel glider (*Petaurus norfolcensis*) recorded at GP4.

3 Results

3.1 Climate and rainfall patterns

Rainfall in the study area has fluctuated considerably over time (Figure 6). Annual rainfall totals have ranged from a minimum of 397.2 mm in 2019 to a maximum of 1826.2 mm in 2022, compared to the average annual rainfall of 1025.5 mm (Figure 6). In the 12 years since 2013 rainfall totals have been above average in six years (2013, 2015, 2017, 2020, 2021, and 2022) and below the average in six years (2014, 2016, 2018, 2019 and 2023) (Figure 6). The most notable drop occurred from 2018 to 2019, when it decreased by more than half (from 855.2 mm to 397.2 mm) and was the lowest recorded annual rainfall on record for the Brushgrove station (Figure 6). The most notable increase occurred from 2019 to 2020, when it almost quadrupled (from 397.2 mm to 1575 mm).

The study area experienced a recovery from the severe drought and wildfires that occurred in 2019, as La Nina conditions prevailed during 2020-22 monitoring (Figure 6 and 7). The annual rainfall in 2022 (year two operation phase) was 78% above the average of 1025.5 mm (Figure 6 and 7). However, the latest data from 2023 indicated a return to drought conditions, with rainfall dropping to 41% below the average (Figure 6). The 2023 event represented a snap drought with rainfall returning to normal in December.

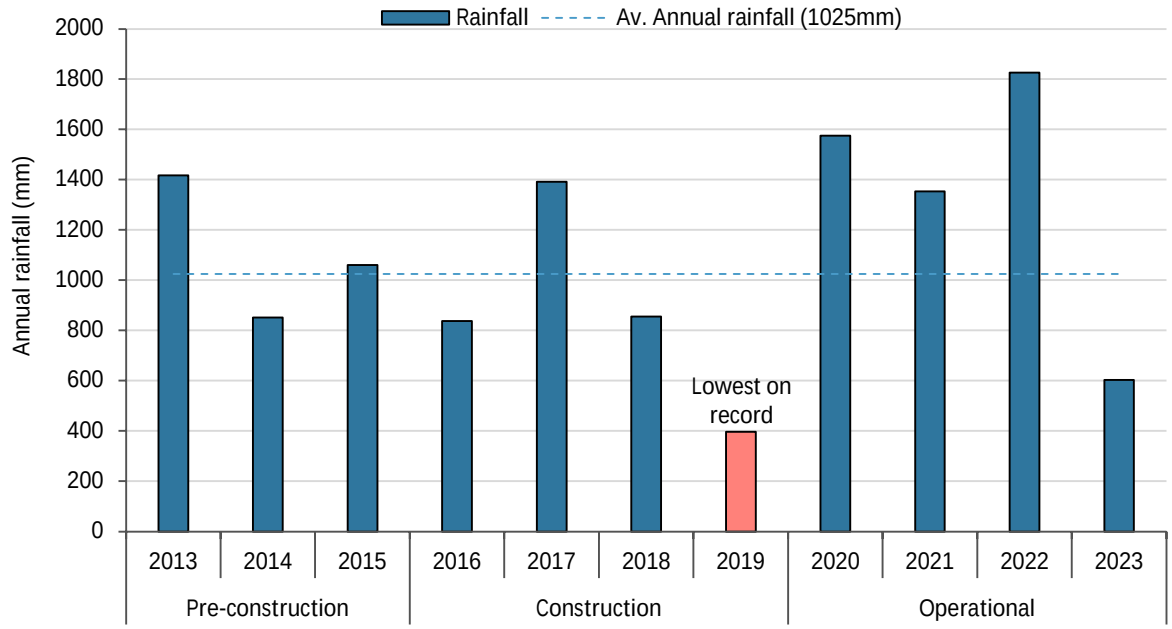
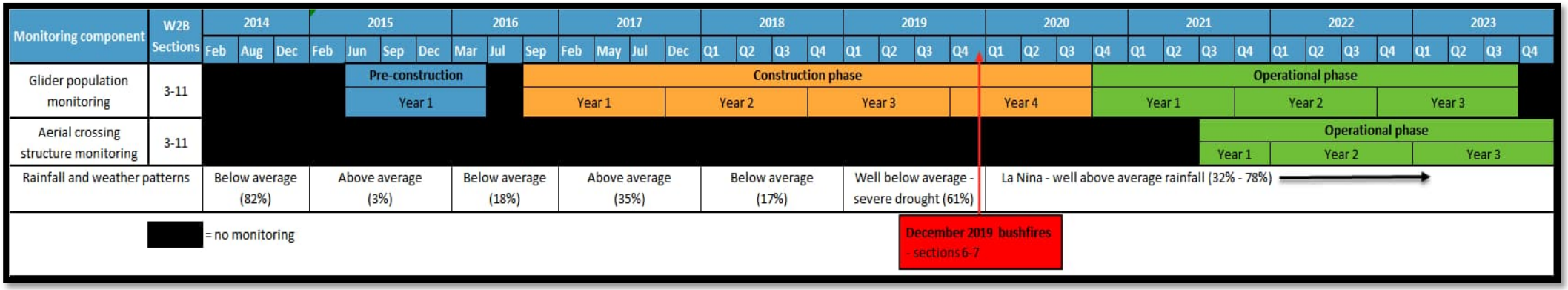


Figure 6: Total annual rainfall in the study area from 2012 to 2023. Data source: Brushgrove (BoM, station no. 58006).

Figure 7: Timing of monitoring components at W2B 3-11 in relation to rainfall patterns and bushfire. Rainfall expressed as deviation (%) from the mean annual rainfall (1025.5 mm) for Brushgrove station (BoM station no. 58006).



3.2 Population monitoring

3.2.1 Yellow-bellied glider

Yellow-bellied glider occupancy rates declined over time, reaching 0% occupancy during year two and three of the operational phase. (Figure 8 and 9). During pre-construction, mean occupancy was highest, with impact sites at 11%, reference sites 10%, and control sites 4% (Figure 8). In the construction phase, a decline in occupancy was recorded, with impact sites decreasing from 13% in year one (2016/17) to 1% in year four (2019/20) (Figure 9). Similarly, control sites demonstrated a consistent reduction from 7% in year one to no detectable occupancy (0%) in the final two years of construction (Figure 9). Reference sites remained relatively stable during the first three years of construction, peaking at 9% in year three before dropping to 3% in year four (Figure 9). A further substantial decline was recorded during the operational phase (Figure 8), with occupancy rates at impact sites falling to below 1% and no gliders detected at reference sites, while control sites exhibited a slight temporary increase to 3% in the first year of operation before also decreasing to no detectable occupancy in year two and three of operational monitoring (Figure 9). The decline recorded across all sites during year four of construction (Q4 2019-Q3 2020) coincided with severe drought and bushfires in late 2019 (Figure 7).

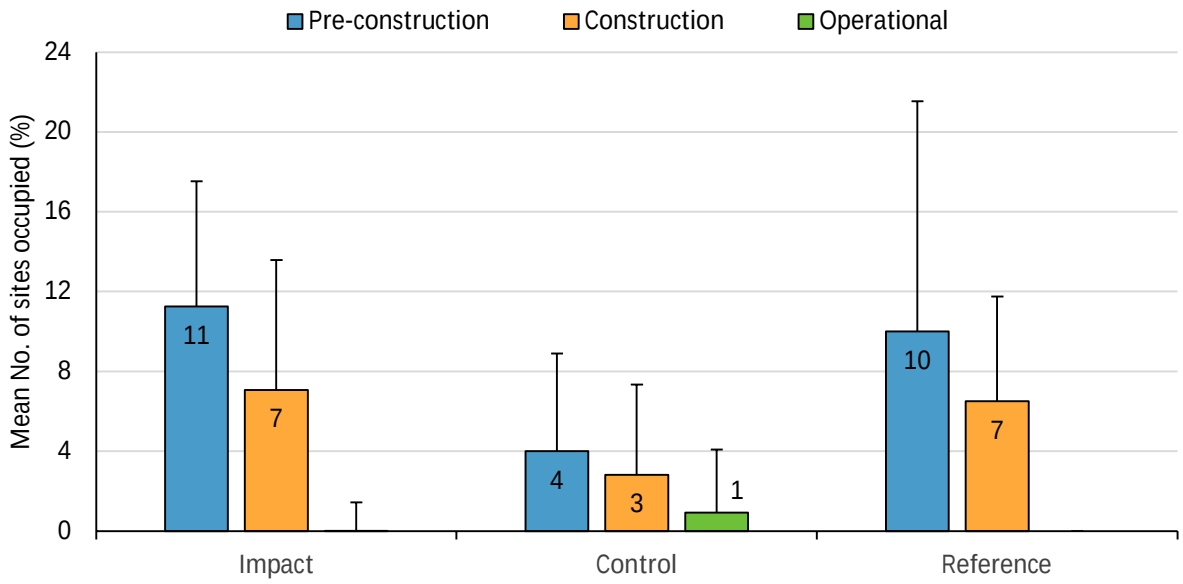


Figure 8: Mean number of transects occupied (+ SD) by yellow-bellied glider at impact, control, and reference sites in sections 3-11 of W2B during the pre-construction (n=4), construction (n=16), and operational (n=12) phases.

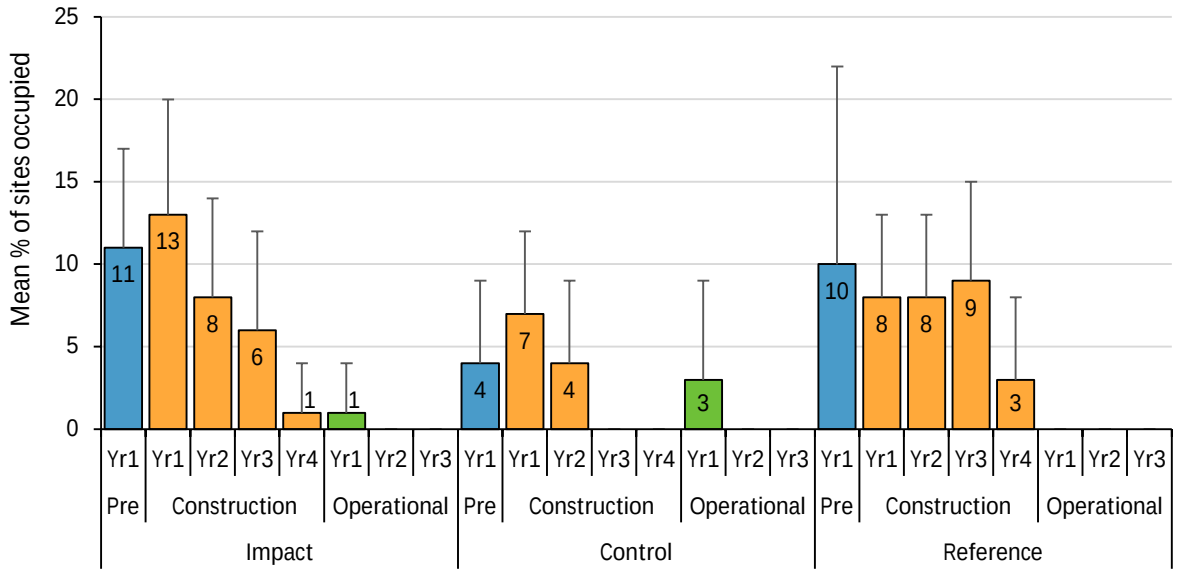


Figure 9: Mean number of transects occupied (+ SD) by yellow-bellied glider at impact, control, and reference sites in sections 3-11 of W2B during each monitoring year (n=4) of the pre-construction, construction, and operational phases. Pre = pre=construction.

3.2.2 Squirrel glider

Squirrel glider occupancy rates showed a rapid population decline during the late construction phase and the first year of operational monitoring, followed by a subsequent population recovery in year two and year three of operation (Figures 10 and 11).

The highest mean occupancy for squirrel glider was recorded during the pre-construction phase with 28% at reference sites, 19% at impact sites, and 17% at control sites (Figure 10). During the construction phase, occupancy rates at impact and reference sites generally remained stable or increased, while those at control sites were comparable to or slightly lower (Figure 10, Figure 11). Notably, a decline in occupancy rates was observed at both impact and control sites during years three to four of the construction phase, decreasing from 33% to 18% and from 15% to 7%, respectively (Figure 11). In contrast, occupancy rates at reference sites increased over the same period from 23% to 33% (Figure 11). The Fisher exact test identified a significant difference between reference and impact and control sites in years 1, 2 and 4 of the construction phase ($P<0.05$), with occupancy being significantly higher at reference sites. No significant difference occurred between treatments during the pre-construction phase (Appendix D).

During the first year of operational monitoring, a notable decline in occupancy rates occurred across all treatment types, dropping to 1% at impact sites, 3% at control sites, and 10% at reference sites (Figure 11). This trend is supported by the Fisher exact test which indicated that reference sites had significantly higher occupancy than impact and control sites in year 1 of operation ($P<0.05$). Analysis of occupancy data within treatments also identified a significant difference within the impact and control treatments between pre-construction and year 1 of operation.

The second year of operation marked a substantial recovery, with occupancy rates reaching 26% at impact sites, 17% at control sites, and 14% at reference sites (Figure 11). In the third year, occupancy rates continued to increase at reference and control sites to 26% and 14%, respectively, and decreased to 14% at impact sites (Figure 11). During the second and third years of operation, occupancy rates at impact and control sites were comparable to or slightly higher than those recorded during the construction and pre-construction phases (Figure 11). In contrast, occupancy rates at reference sites were slightly lower than during the construction phase but comparable to pre-construction levels (Figure 11).

Another interesting result from the Fisher exact test was a significant difference in occupancy of impact sites east and west of the alignment during construction, with impact sites east of the alignment having higher occupancy than those west of the alignment. Many of the monitoring sites west of the alignment in the southern half of the study area occur in smaller remnants created by the highway. In contrast, sites east of the alignment were in large contiguous areas of forest. The result suggests that squirrel gliders isolated in small remnants experienced population decline during construction with occupancy increasing after construction when aerial crossings became functional.

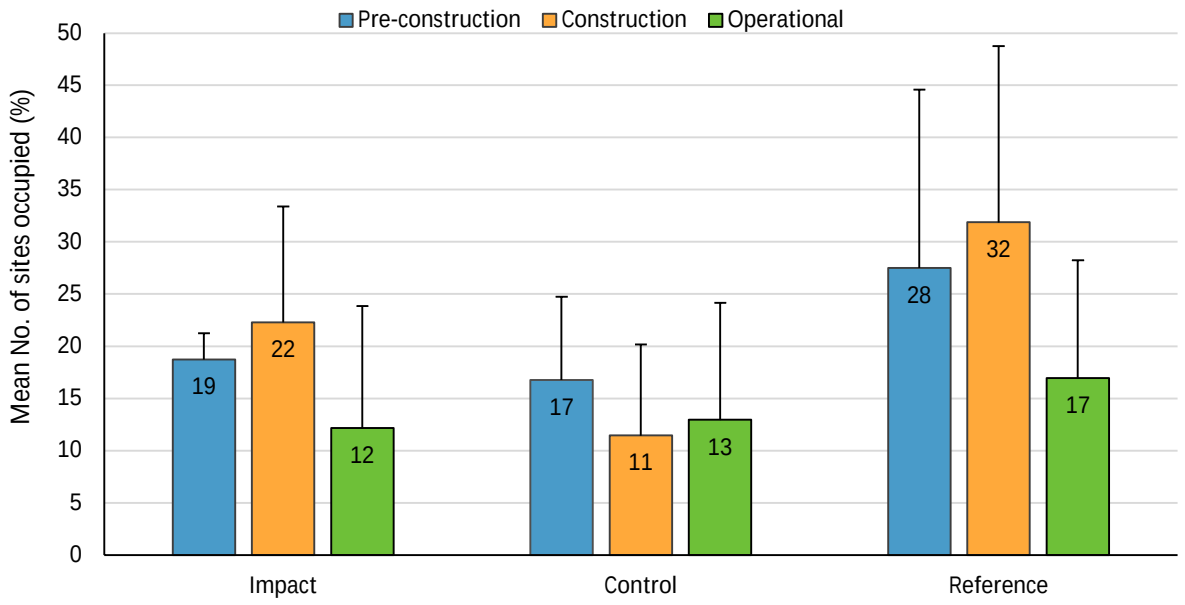


Figure 10: Mean number of transects occupied (+ SD) by squirrel glider at impact, control, and reference sites in sections 3-11 of W2B during the pre-construction (n=4), construction (n=16), and operational (n=12) phases.

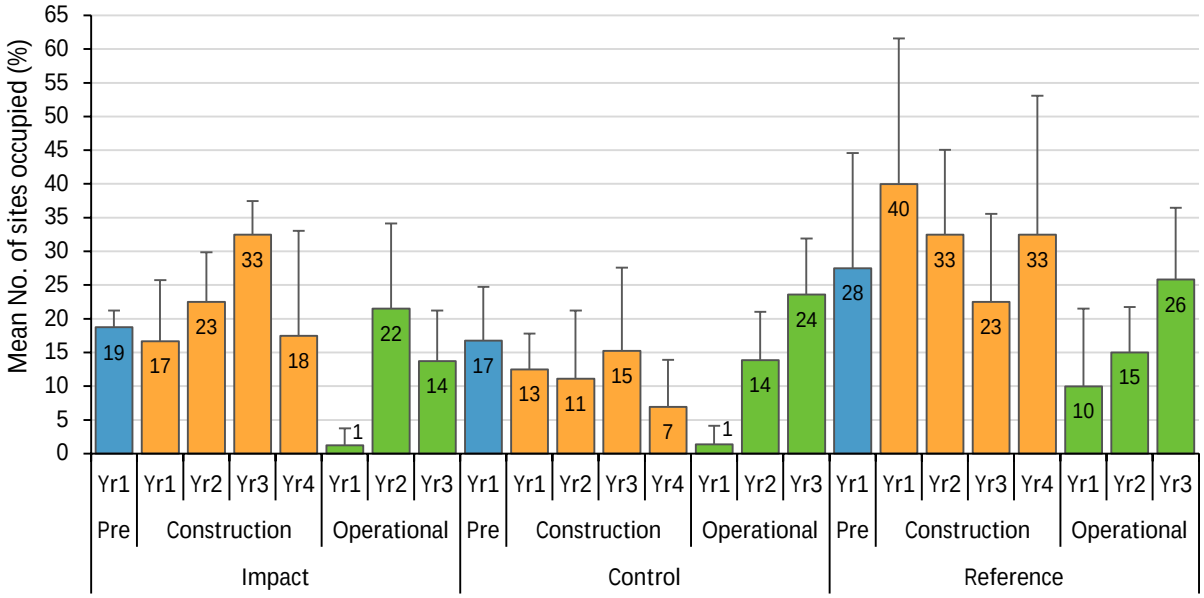


Figure 11: Mean number of transects occupied (+ SD) by squirrel glider at impact, control, and reference sites in sections 3-11 of W2B during each monitoring year (number of samples = 4) of the pre-construction, construction, and operational phases. Pre = pre=construction.

3.2.3 Greater glider

Greater glider occupancy rates declined over time, irrespective of the treatment type (Figure 12). Mean occupancy was highest during the pre-construction phase, with rates of 29% at impact sites, and 20% and 17% at control sites, respectively (Figure 12). Occupancy rates progressively decreased during the construction phase, dropping from 29% to 20% at impact sites, from 17% to 9% at control sites, and from 20% to 12% at reference sites (Figure 12). A further decline was reported in the operational phase, falling to 9% at impact sites, 4% at reference sites, and 2% at control sites (Figure 12). This represents an overall decline in mean occupancy rates of 88% at control sites, 80% at reference sites, and 69% at impact sites from pre-construction to operation. During the construction phase, trends in occupancy at control sites tended to mirror those at reference sites, with a decline in the first year, an increase in the second year, and further slight declines in the third and fourth years (Figure 13).

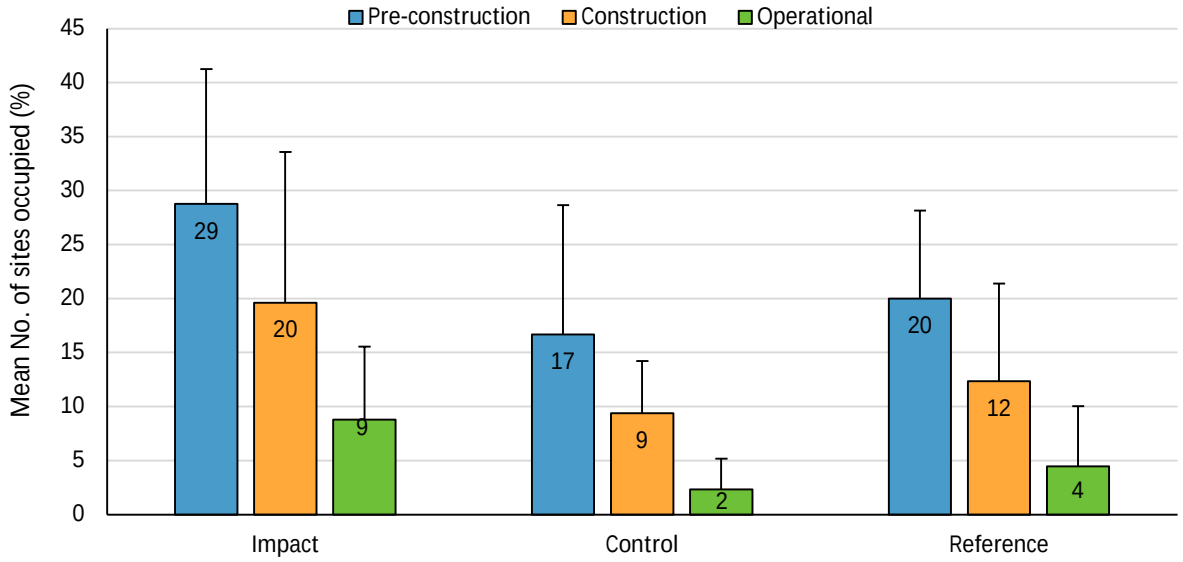


Figure 12: Mean number of transects occupied (+ SD) by greater glider at impact, control, and reference sites in sections 3-11 of W2B during the pre-construction (n=4), construction (n=16), and operational (n=12) phases.

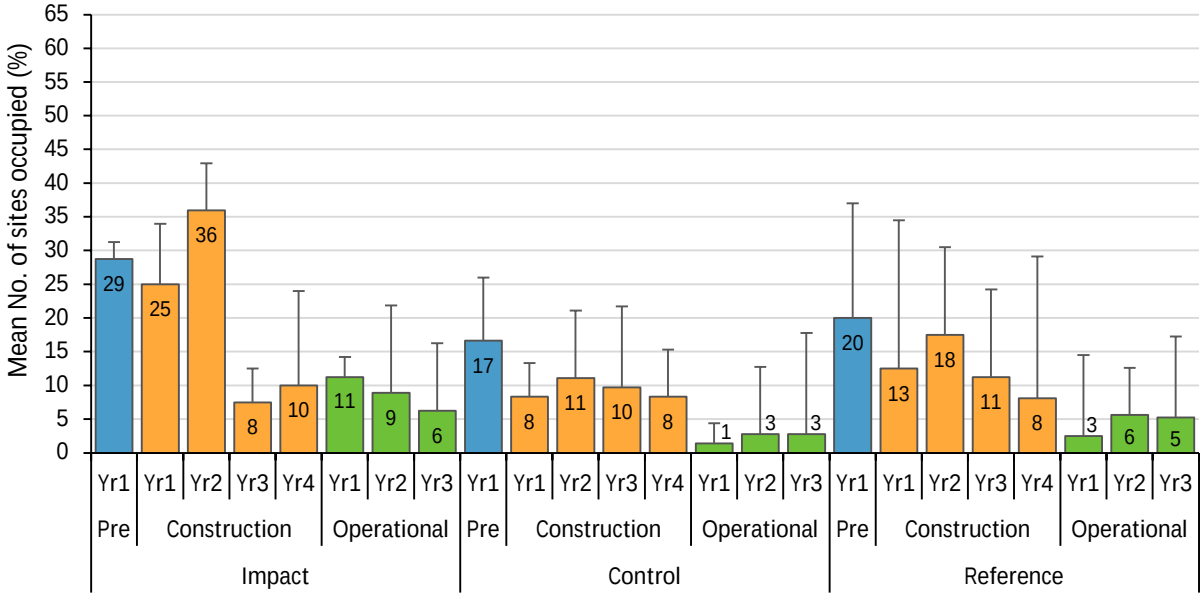


Figure 13: Mean number of transects occupied (+ SD) by greater glider at impact, control, and reference sites in sections 3-11 of W2B during each monitoring year (number of samples = 4) of the pre-construction, construction, and operational phases. Pre = pre=construction.

3.3 Arboreal crossing structures

3.3.1 Rope bridges and glide poles

During operational monitoring at sections 3-11, fauna was recorded visiting crossing structures on 1,119 occasions (see Appendix C, Table C1). Of these visits, 735 (66%) were considered incomplete crossings or inconclusive (IC), and 384 (34%) complete crossings (CC) of the alignment. Most records (92%) were glider species including the feathertail glider (721 visits), squirrel glider (140 visits), *Petaurus* spp. – sugar or squirrel (132 visits) and sugar glider (38 visits). Based on the proportion of confirmed sugar and squirrel glider visits it is likely that most *Petaurus* spp. were squirrel gliders. Other species included common ringtail possum (13 visits), brush-tailed phascogale (4 visits), and short-eared brushtail possum (2 visits). Unidentified mammal (i.e. an image of fur only) was recorded on 64 occasions and are most likely to be *Petaurus* spp. No complete crossings, or evidence of visitation, was recorded for the yellow-bellied glider or greater glider. (Appendix C, Table C1).

Complete crossings were recorded where a species was inferred to be crossing the alignment (see methods 2.6.2). Overall, squirrel glider was recorded making complete crossings on the highest number of structures with crossings recorded at 13 of 15 structures (or 87%) (Table 7). The highest crossing rate for squirrel glider was recorded at GP6 (0.04 cc/week), RB9 (0.04 cc/week), and GP4 (0.02 cc/week). Feathertail glider was recorded making complete crossings at 11 (or 73%) structures, with the highest crossing rates at RB9 (0.39 cc/week), GP10 (0.32 cc/week), and RB10 (0.12 cc/week). *Petaurus* spp. was recorded making complete crossings at 11 structures (73%), with the highest rates at GP8 (0.04 cc/week), RB10 (0.02 cc/week), and RB9 (0.02 cc/week). Unidentified mammals made complete crossings at six structures (40%), with the highest rate at RB5 (0.03 cc/week) (See Appendix C, Table C1). Sugar glider was confirmed crossing at six structures (40%), with the highest crossing rate at GP10 (0.02 cc/week) (Table 7). Common ringtail possums made complete crossings at one structure (RB7), with a rate of 0.04 cc/week. Both brush-tailed phascogales and short-eared brushtail possums made complete crossings at one structure each, RB5 and RB7 respectively, at a rate of 0.01 cc/week. *Antechinus* spp. made zero complete crossings across all structures although was recorded at GP4, 5 and 7 (See Appendix C, Table C1).

Table 7: Rates of visitation and total counts of complete crossings (CC) and incomplete crossings (IC) by glider species on each aerial structure in section 3-11 W2B during years 1, 2, and 3 of operational monitoring. Crossing rates are provided first, with the corresponding number of crossings or visits shown in parentheses. The data includes only glider species.

ID	Feathertail glider			Squirrel glider			Petaurus spp.			Sugar glider			Total
	Visits	CC	IC	Visits	CC	IC	Visits	CC	IC	Visits	CC	IC	
GP4	0.13 (31)	0.02 (4)	0.11 (27)	0.10 (24)	0.02 (6)	0.07 (18)	0.03 (8)	0.00 (0)	0.03 (8)	0.02 (4)	0.004 (1)	0.01 (3)	0.28 (67)
GP5	0.07 (8)	0.01 (1)	0.06 (7)	0.03 (4)	0.00 (0)	0.03 (4)	0.01 (1)	0.00 (0)	0.01 (1)	0.00 (0)	0.00 (0)	0.00 (0)	0.11 (13)
GP6	0.05 (6)	0.03 (4)	0.02 (2)	0.07 (9)	0.04 (5)	0.03 (4)	0.05 (6)	0.02 (2)	0.03 (4)	0.00 (0)	0.00 (0)	0.00 (0)	0.17 (21)
GP7	0.18 (50)	0.05 (15)	0.13 (35)	0.08 (21)	0.01 (2)	0.07 (19)	0.14 (39)	0.01 (4)	0.13 (35)	0.05 (15)	0.00 (0)	0.05 (15)	0.45 (125)
GP8	0.11 (14)	0.02 (3)	0.08 (11)	0.06 (8)	0.01 (1)	0.05 (7)	0.18 (23)	0.04 (5)	0.14 (18)	0.02 (3)	0.00 (0)	0.02 (3)	0.37 (48)
GP9	0.46 (38)	0.10 (8)	0.36 (30)	0.05 (4)	0.04 (3)	0.01 (1)	0.00 (0)	0.00 (0)	0.00 (0)	0.01 (1)	0.01 (1)	0.00 (0)	0.52 (43)
GP10	1.42 (369)	0.32 (83)	1.10 (286)	0.02 (5)	0.00 (0)	0.02 (5)	0.01 (3)	0.01 (2)	0.004 (1)	0.03 (9)	0.02 (5)	0.02 (4)	1.48 (386)
RB5	0.04 (6)	0.04 (6)	0.00 (0)	0.02 (3)	0.01 (2)	0.01 (1)	0.03 (5)	0.02 (3)	0.01 (2)	0.00 (0)	0.00 (0)	0.00 (0)	0.09 (14)
RB6	0.02 (4)	0.01 (3)	0.004 (1)	0.01 (2)	0.01 (2)	0.00 (0)	0.02 (6)	0.01 (2)	0.02 (4)	0.00 (0)	0.00 (0)	0.00 (0)	0.05 (12)
RB7	0.01 (2)	0.00 (0)	0.01 (2)	0.01 (3)	0.01 (2)	0.004 (1)	0.04 (10)	0.01 (3)	0.03 (7)	0.00 (0)	0.00 (0)	0.00 (0)	0.06 (15)
RB8	0.00 (0)	0.00 (0)	0.00 (0)	0.02 (6)	0.01 (2)	0.01 (4)	0.01 (4)	0.004 (1)	0.01 (3)	0.01 (2)	0.01 (2)	0.00 (0)	0.04 (12)

ID	Feathertail glider			Squirrel glider			Petaurus spp.			Sugar glider			Total
	Visits	CC	IC	Visits	CC	IC	Visits	CC	IC	Visits	CC	IC	
RB9	0.55 (154)	0.39 (109)	0.16 (45)	0.12 (33)	0.04 (12)	0.07 (21)	0.04 (12)	0.01 (4)	0.03 (8)	0.00 (0)	0.00 (0)	0.00 (0)	0.71 (199)
RB10	0.15 (38)	0.12 (30)	0.03 (8)	0.06 (14)	0.03 (8)	0.02 (6)	0.04 (11)	0.02 (5)	0.02 (6)	0.004 (1)	0.004 (1)	0.00 (0)	0.25 (64)
RB11	0.004 (1)	0.00 (0)	0.004 (1)	0.01 (2)	0.004 (1)	0.004 (1)	0.02 (4)	0.01 (3)	0.004 (1)	0.004 (1)	0.004 (1)	0.00 (0)	0.03 (8)
RB12	0.00 (0)	0.00 (0)	0.00 (0)	0.01 (2)	0.01 (2)	0.00 (0)	0.00 (0)	0.00 (0)	0.00 (0)	0.01 (2)	0.00 (0)	0.01 (2)	0.02 (4)
Total	3.19 (721)	1.11 (266)	2.06 (455)	0.67 (140)	0.24 (48)	0.39 (92)	0.62 (132)	0.16 (34)	0.46 (98)	0.15 (38)	0.04 (11)	0.11 (27)	4.63 (1031)

Visitation rates (combined CC and IC/week) were used to compare trends between glider species, structures, and sites (See methods 2.6.2). Feathertail gliders recorded high visitation rates at several structures, such as GP9 (0.46 visits/week) and GP10 (1.42 visits/week) (Table 7). Overall, visits by feathertail gliders accounted for 70% (721 of 1031 visits) of all glider visits, and the small number of visits by other species makes it difficult to identify trends. The following analysis focusses on squirrel glider, *Petaurus* spp. (sugar or squirrel), and sugar gliders (*Petauroides* species).

Visitation rates by (small) *Petaurus* species varied across the three-year monitoring period (2021–2023), with differences observed both between and among structure types (Figure 14). Rope bridges showed a pattern of increasing visitation over time, with most structures (other than RB5) recording the highest number of visits/week in 2023 (Figure 14). Whilst this may indicate a temporal increase in use it could also be due to improvements in camera set-up over time. In contrast, visitation to glide poles varied between years, partly due to changes in the number of poles monitored within an array (Table 4). For example, median poles were monitored at GP5, and 9 in 2021 with cameras switched to edge poles in 2022 and 2023 due to safety concerns associated with accessing the median.

In 2021, visitation rates for glide poles ranged from 0 at GP5 to 0.21 visits/week at GP8 (Figure 14). Visitation peaked in 2022 at GP8, GP7, and GP5 with the highest rate of 0.47 visits/week recorded at GP7. By 2023, visitation increased substantially to 0.21 visits/week at GP6, while the highest visitation rate (for 2023) of 0.23 visits/week was recorded at GP8. Overall, GP7 and GP8 had the highest visitation rates among the glide pole sites over the three-years of survey. GP7 ranged from 0.14 visits/week in 2021 to a peak of 0.47 visits/week in 2022, while GP8 ranged from 0.21 visits/week in 2021 to 0.33 visits/week in 2022, and maintained 0.23 visits/week in 2023, making it the most frequently visited site overall.

A temporal increase in visitation was recorded at most rope bridge sites with some sites recording few or no visits in 2021 and 2022 (Figure 14). In 2021, visitation rates ranged from 0 at sites RB6, RB8, RB10, RB11, and RB12 to 0.06 visits/week at RB7. By 2022, the number of visits/week increased, particularly at RB9, where 0.07 visits/week was recorded. This trend continued in 2023, with RB9 peaking at 0.36 visits/week, and RB10 at 0.32 visits/week. The first visits to RB11 and RB12 were recorded in 2023 with 0.1 visits/week and 0.05/visits/week respectively.

Across the three-year monitoring period, certain structures were predominantly used by specific species, as indicated by the proportion of visits recorded at each site (Figure 15). Squirrel gliders accounted for most visits at GP5 (80%), GP9 (80%), and RB9 (73%). *Petaurus* spp. recorded the highest proportion of visits at RB7 (77%)

and RB6 (75%). Sugar glider was less common overall and was most frequently recorded at GP10 and RB12, where they accounted for 53% and 50% of the visits, respectively.

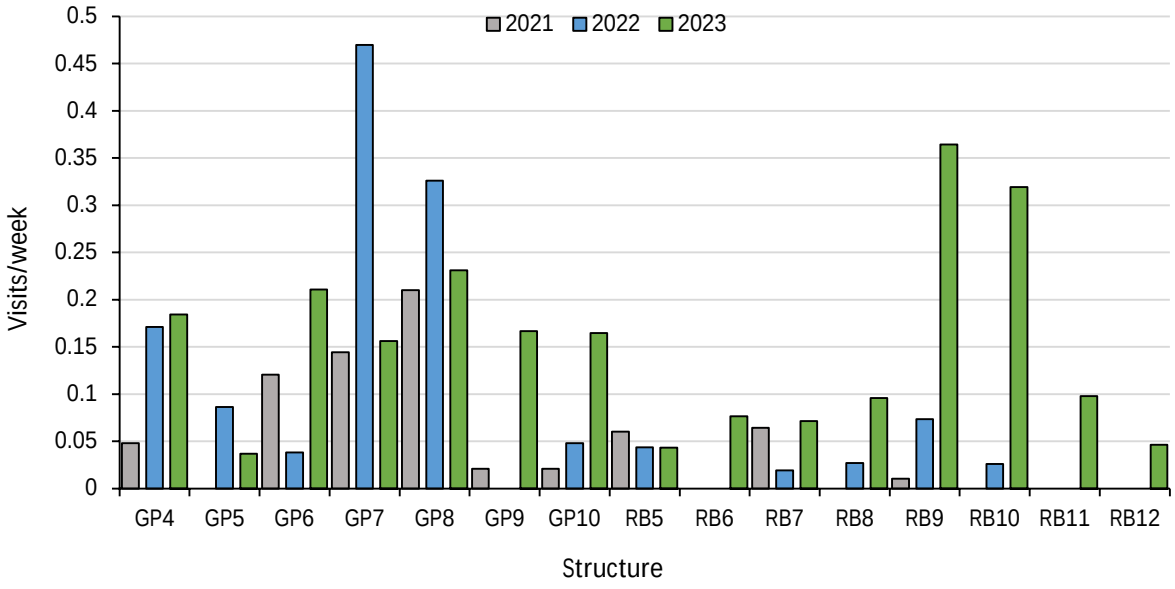


Figure 14: The number of visits/week recorded on crossing structures by *Petaurus* species (squirrel glider, sugar glider and *Petaurus* spp) during each year of operational monitoring at W2B, sections 3-11.

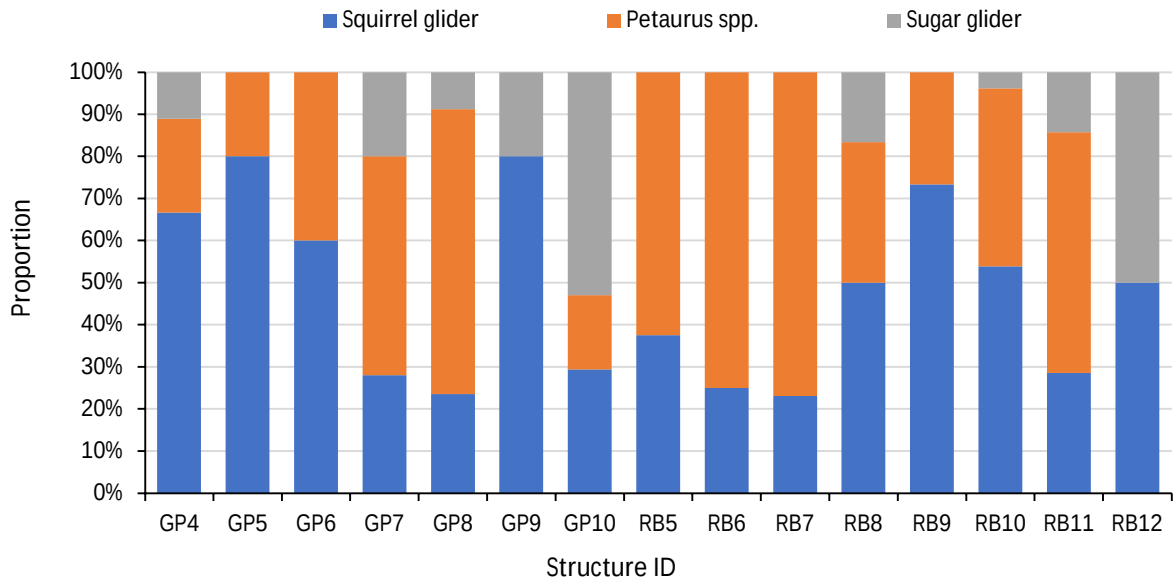


Figure 15: The overall proportion of visits (combined 2021-2023) recorded on crossing structures by *Petaurus* species (squirrel glider, sugar glider and *Petaurus* spp) at W2B, sections 3-11.

The use of glide poles and rope bridges by squirrel glider, *Petaurus* spp., and sugar glider varied over time, with distinct trends recorded between the two structures (Figure 16). Higher visitation rates for all species were generally recorded at glide poles, except in 2023 when squirrel glider recorded higher use of rope bridges, with 0.082 visits/week (±0.096) compared to 0.061 visits/week (±0.048) on glide poles (Figure 16).

The lowest visitation rates for both squirrel glider and *Petaurus* spp. on glide poles was recorded in 2021 with 0.040 visits/week (±0.029) and 0.037 visits/week (±0.055), respectively (Figure 16). Sugar gliders visitation was

also low in 2021 with 0.005 visits/week (±0.008) on glide poles and no visits recorded at rope bridges. In 2021, *Petaurus spp*., was the only species detected at rope bridges with 0.017 visits/week (±0.028) recorded.

In 2022 and 2023, visitation by all species increased, although the high standard deviations among the structures highlights variability between sites (Figure 16). Squirrel glider visitation on glide poles decreased from 0.069 visits/week (±0.065) in 2022 to 0.061 visits/week (±0.048) in 2023, while rope bridge use increased substantially from 0.008 visits/week (±0.017) to 0.082 visits/week (±0.096). *Petaurus* spp. exhibited similar trends, with glide pole use decreasing from 0.072 visits/week (±0.102) in 2022 to 0.065 visits/week (±0.056) in 2023, and rope bridge use increasing from 0.014 visits/week (±0.017) to 0.050 visits/week (±0.041). The sugar glider gradually increased its use of glide poles from 0.022 visits/week (±0.039) in 2022 to 0.038 visits/week (±0.036) in 2023, along with an increase in rope bridge use from 0.002 visits/week (±0.005) to 0.008 visits/week (±0.009).

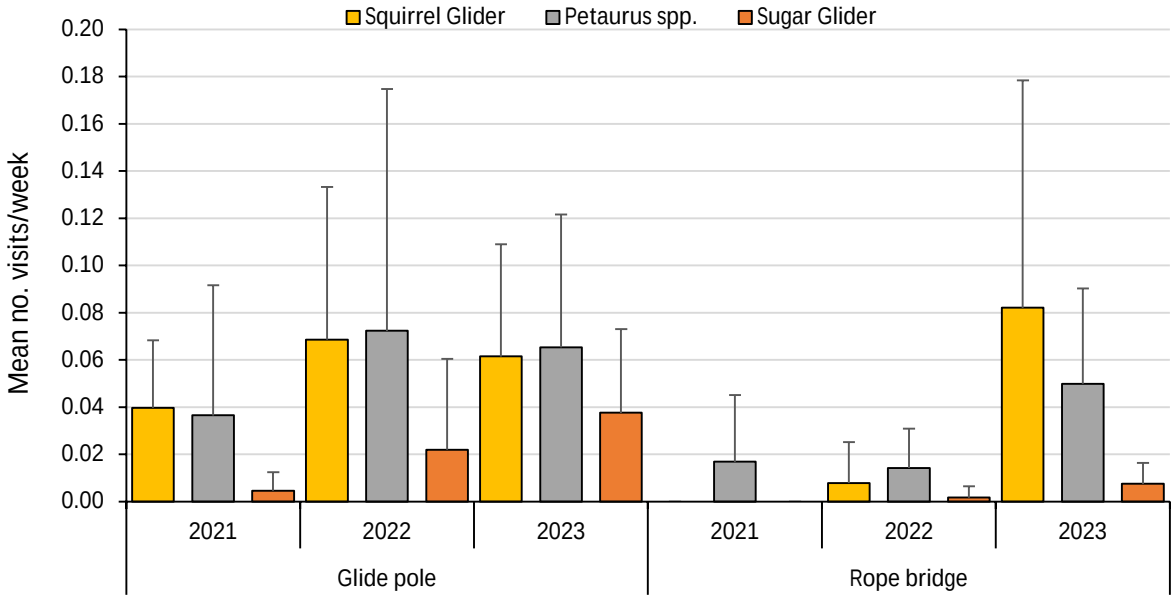


Figure 16: Mean number of visits per week (+ SD) recorded on crossing structures by *Petauroides* species (squirrel glider, sugar glider, and *Petaurus* spp.) during the three-year monitoring period (2021-2023) at W2B, Sections 3-11.

3.3.3 Vegetated medians

During year three of operational phase monitoring, vegetated median camera traps recorded arboreal mammals on 205 occasions (Table 7). The most frequently recorded species was the feathertail glider (*Acrobates* spp., with 56 records) followed by *Antechinus* spp. (47 records), squirrel glider (36 records), sugar glider (34 records), small petaurid (28 records), and black rat (4 records) (Table 7). Notably, the yellow-bellied glider or greater glider was not detected.

Between years two and three, the detection rates of all glider species generally decreased, except for sugar glider, which showed an increase (Figure 15). Squirrel gliders marginally decreased from 0.25 ± 0.22 SD in year two to 0.17 ± 0.20 SD in year three. Similarly, the detection rates for feathertail gliders and small petaurids declined from 0.41 ± 0.46 SD and 0.19 ± 0.21 SD in year two to 0.23 ± 0.12 SD and 0.14 ± 0.15 SD in year three, respectively (Figure 15). In contrast, the detection rate for sugar gliders increased from 0.05 ± 0.02 SD in year two to 0.15 ± 0.15 SD in year three. Notably, the squirrel glider has been recorded in all monitoring years, although the detection rate has consistently decreased throughout the operational monitoring period.

Table 8: Vegetated median camera detections at Tabbimoble during yar three operational phase monitoring. Tab VM1 = most southern camera, Tab VM 4 = most northern median. Tab = Tabbimoble median.

Camera location	No. Active days	Squirrel glider	Feathertail glider	Sugar glider	Small petaurid	Antechinus spp.	Total per cam
Tab VM1	198	20	11	3	2	1	37
Tab VM2	236	17	23	4	2	2	48
Tab VM3	96	7	5		2	1	15
Tab VM4	33	0	0	0	0	0	0
Totals	563	44	39	7	6	4	100

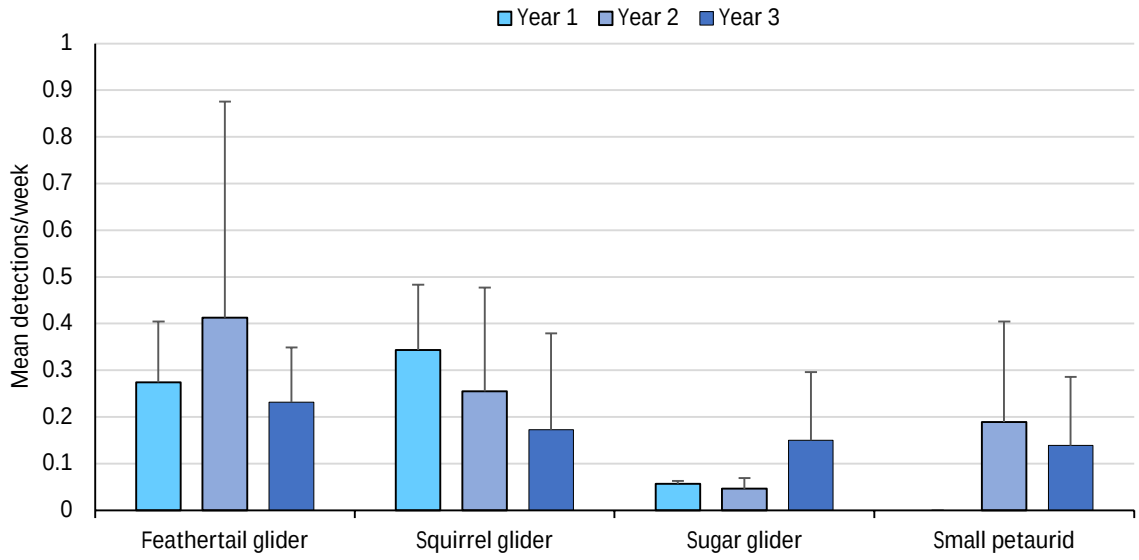


Figure 17: Comparison of mean ± SD fauna detections for 2021 (year one), 2022 (year two) and 2023 (year three) camera trap monitoring at the Tabbimoble vegetated median, W2B. Note only species of glider are included.

3.4 Threatened glider records - operational phase

Complete crossings by squirrel glider were recorded at 13 out of the 15 aerial structure sites, including all rope bridges (Table 7, Figures 16-23). No complete crossings were recorded on GP10 and GP5, resulting in 87% of the aerial structures being used by squirrel glider to cross the alignment (Figures 16 and 23). Squirrel gliders were observed making incomplete crossings at GP5 on the east and west poles on two separate occasions during operational monitoring (Appendix B, Table B1). Similarly, squirrel glider was recorded at GP10, with three instances of incomplete crossings on the western pole and two on the eastern pole (Appendix B, Table B1). These findings indicate that squirrel gliders were present on both side of the alignment where aerial crossing structures were installed during operational monitoring. At sites where no complete crossings were recorded (GP10 and GP5), squirrel glider were likely using the poles to traverse roadside vegetation rather than crossing the alignment.

During operational phase population monitoring squirrel gliders were generally recorded on both sides of the highway at sites GP5-9, RB5, RB8, RB9, and the vegetated median. However, at GP7 (Mororo) and GP9 (Tabbimoble), no squirrel gliders were recorded at nearby impact transects during operational monitoring, despite glide pole records, suggesting individuals went undetected in those areas during population monitoring.

GP5 was the only crossing structure that was in proximity to squirrel glider records on transects but did not record any complete crossings. Squirrel gliders were recorded on the east side of the alignment, with no records on the west side during population monitoring. Incomplete crossings were recorded twice on the western pole at GP5 during year three of operational monitoring, indicating a population remains on both sides of the alignment.

Notably, the yellow-bellied glider was only recorded twice during operational phase monitoring at both control and impact sites. One record was at the control site Tabscw, and the second was at the impact site Tucsie near RB5. No records of incomplete or complete crossing were detected on crossing structures.

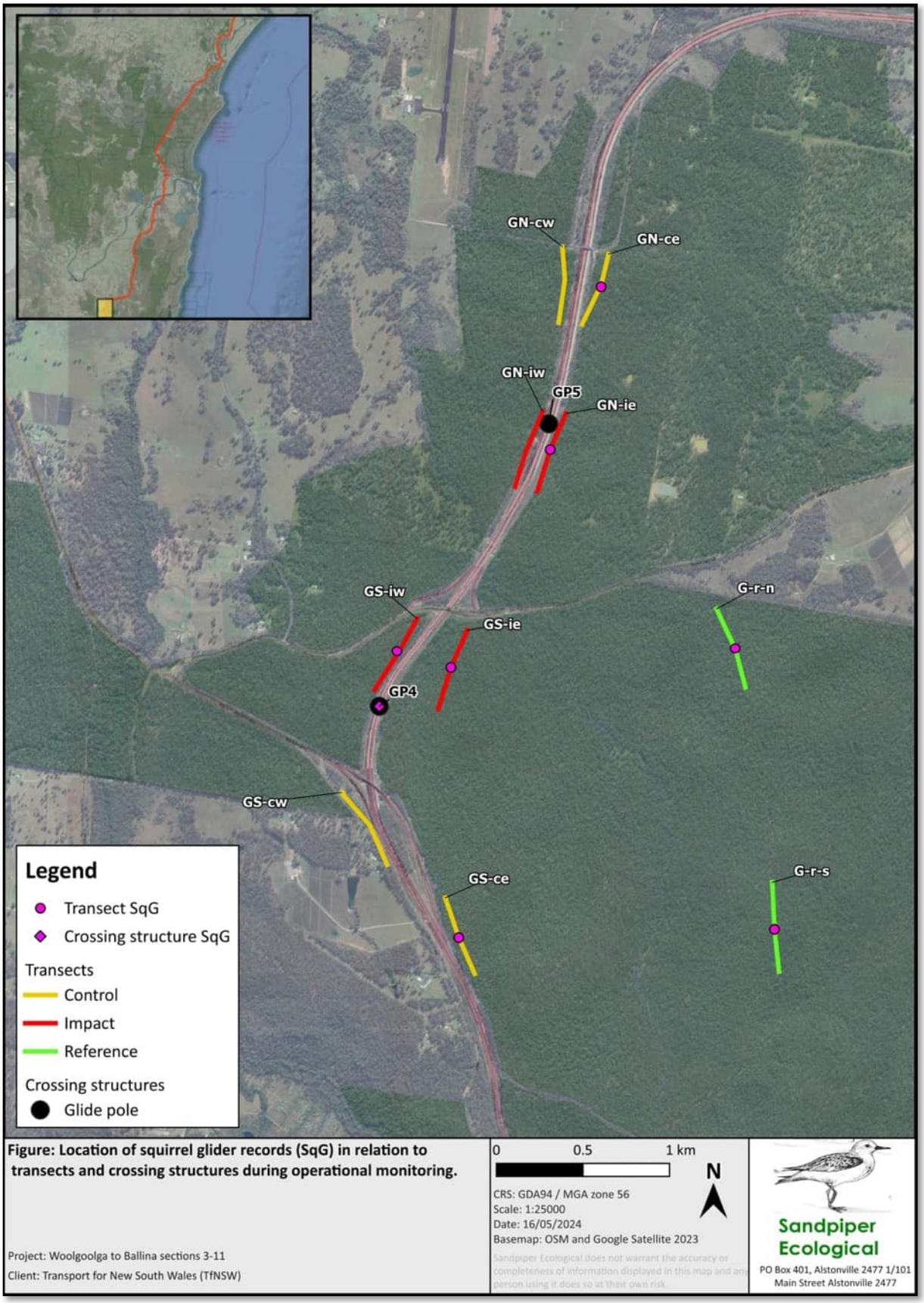


Figure 18: Location of squirrel glider transect records and complete crossings on aerial structures (presence/absence) at sections 3, W2B 2023.

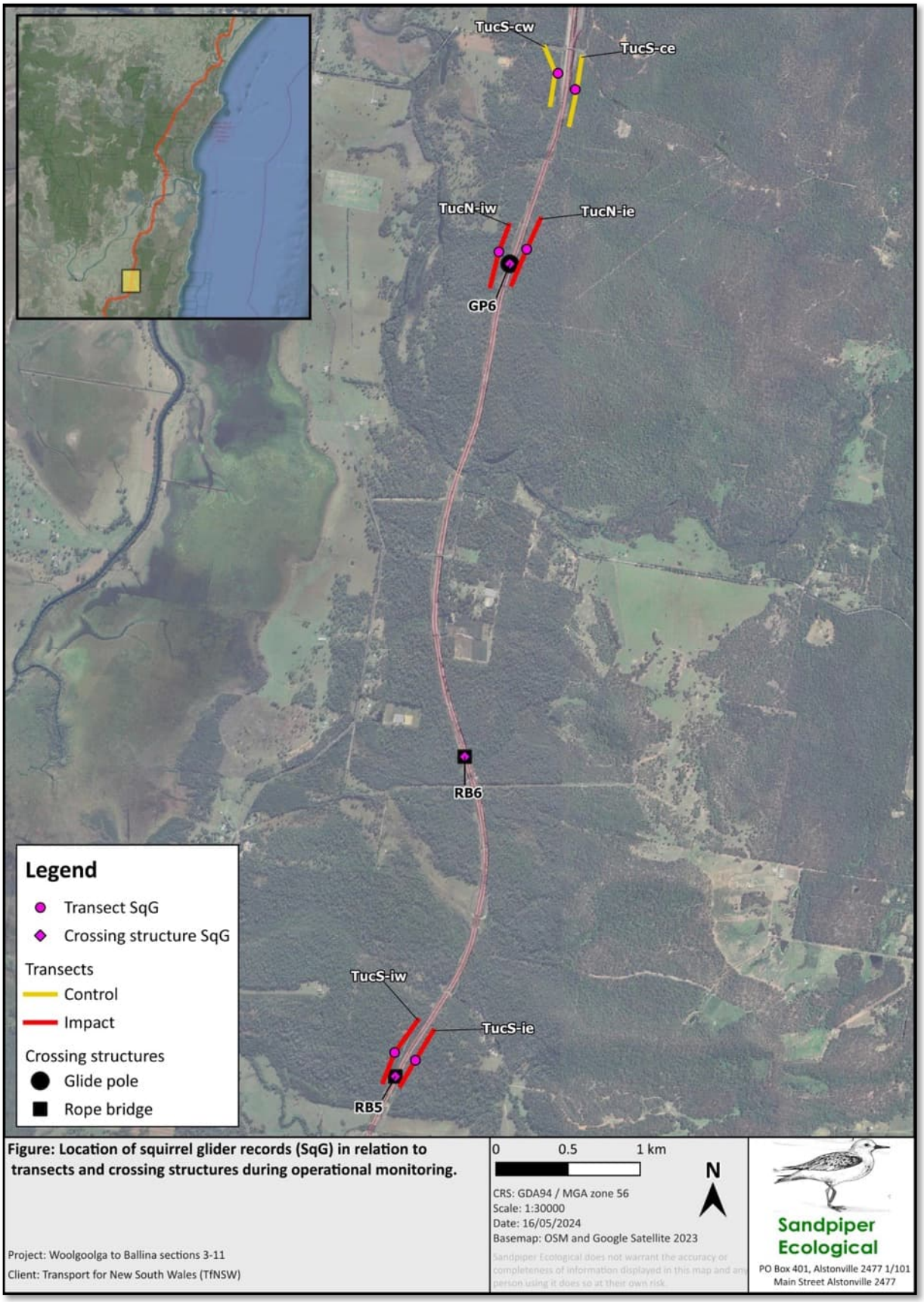


Figure 19: Location of squirrel glider transect records and complete crossings on aerial structures (presence/absence) at sections 3, W2B 2023.

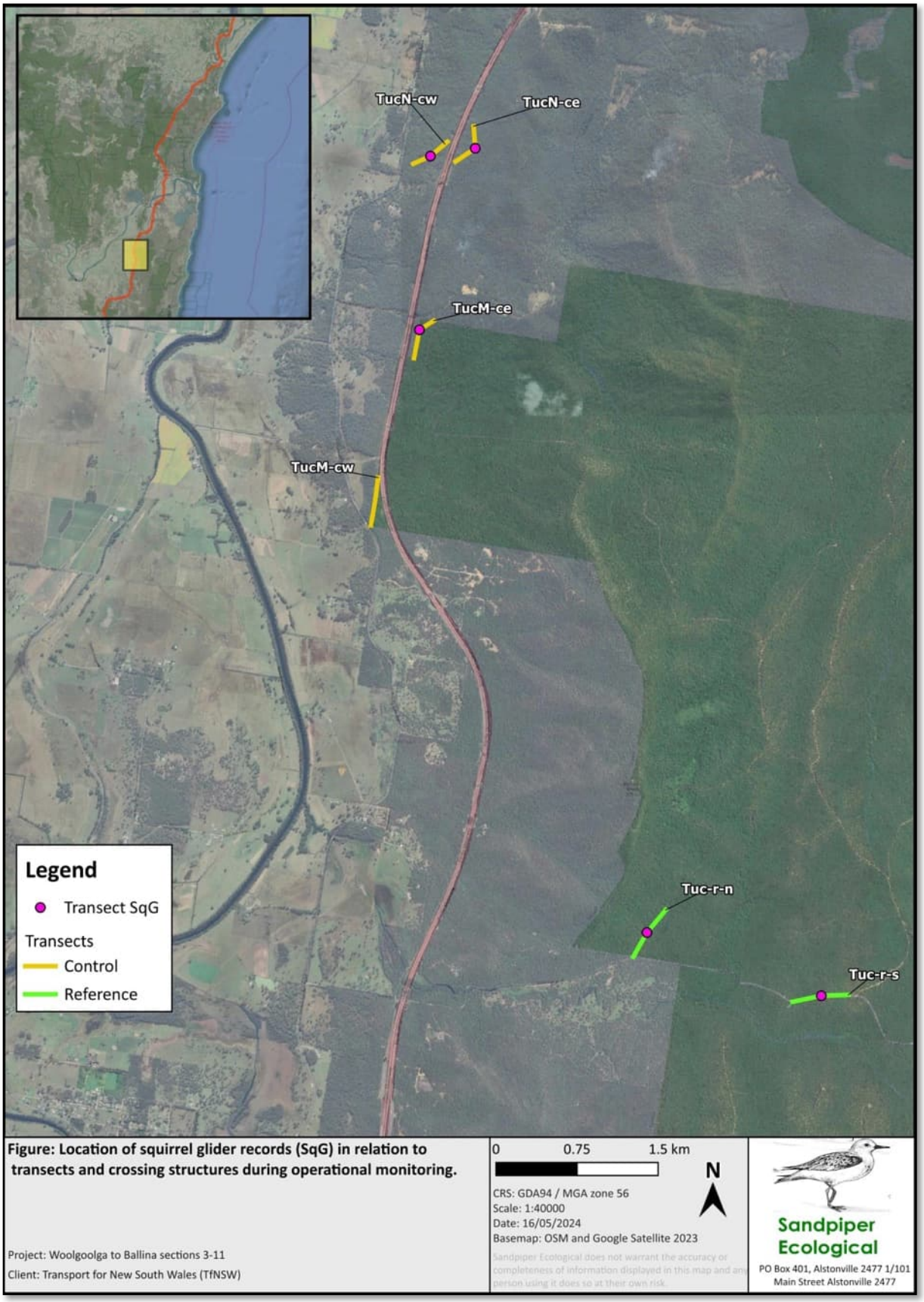


Figure 20: Location of squirrel glider transect records and complete crossings on aerial structures (presence/absence) at sections 3, W2B 2023.

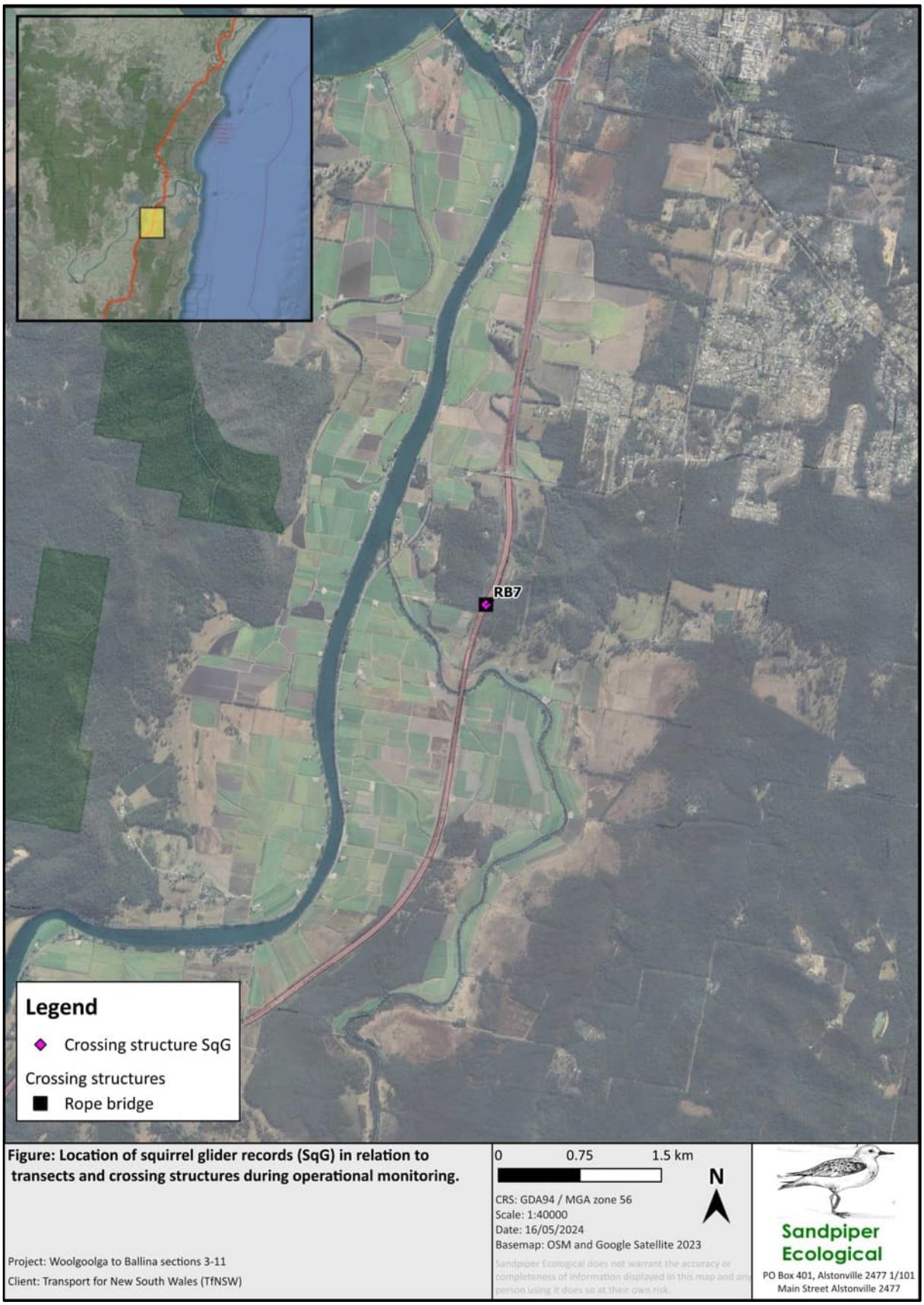


Figure 21: Location of squirrel glider transect records and complete crossings on aerial structures (presence/absence) at sections 4, W2B 2023.

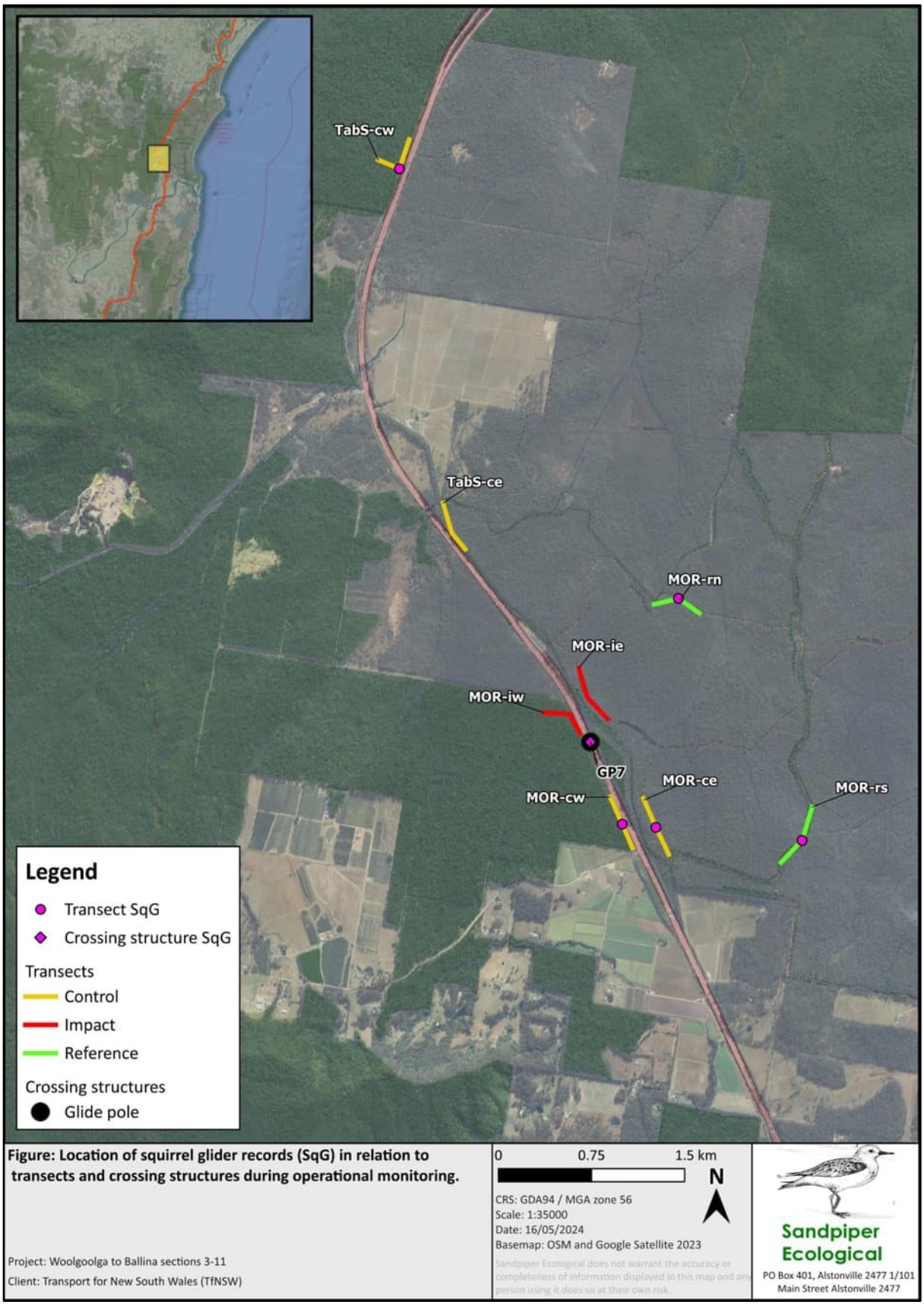


Figure 22: Location of squirrel glider transect records and complete crossings on aerial structures (presence/absence) at sections 6, W2B 2023.

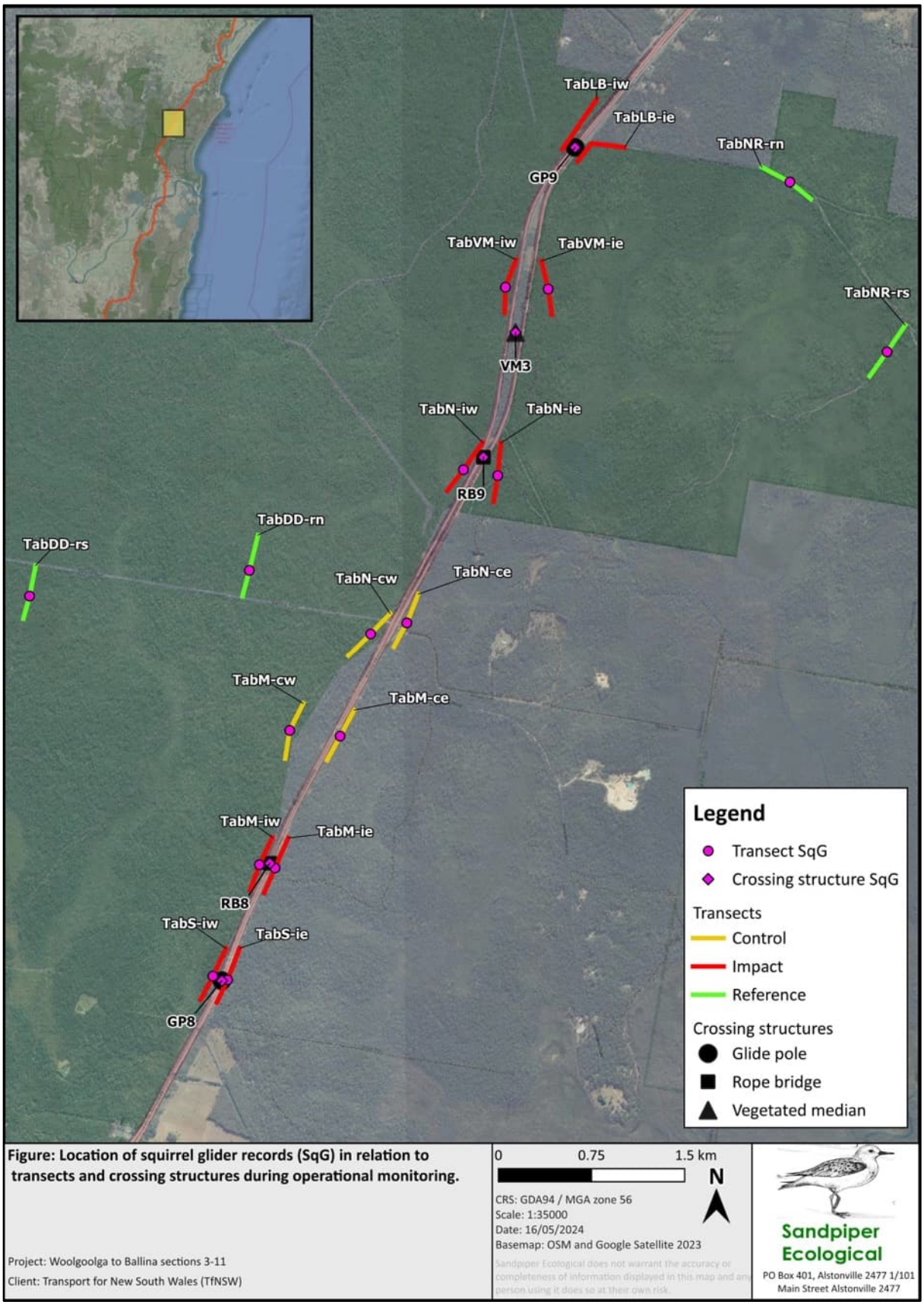


Figure: Location of squirrel glider records (SqG) in relation to transects and crossing structures during operational monitoring.

Figure 23: Location of squirrel glider transect records and complete crossings on aerial structures (presence/absence) at sections 7, W2B 2023.

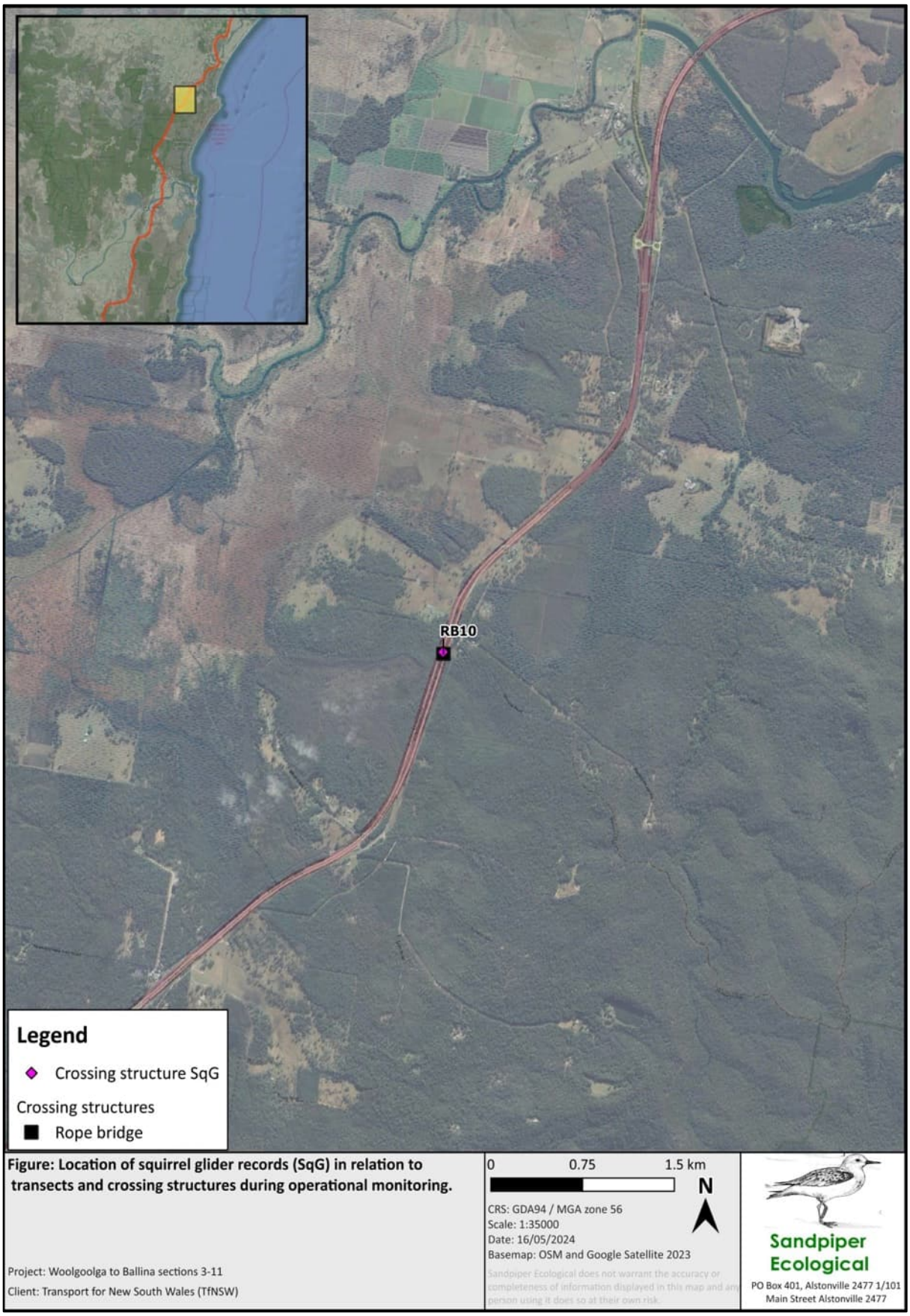


Figure 24: Location of squirrel glider transect records and complete crossings on aerial structures (presence/absence) at sections 7 and 8, W2B 2023.

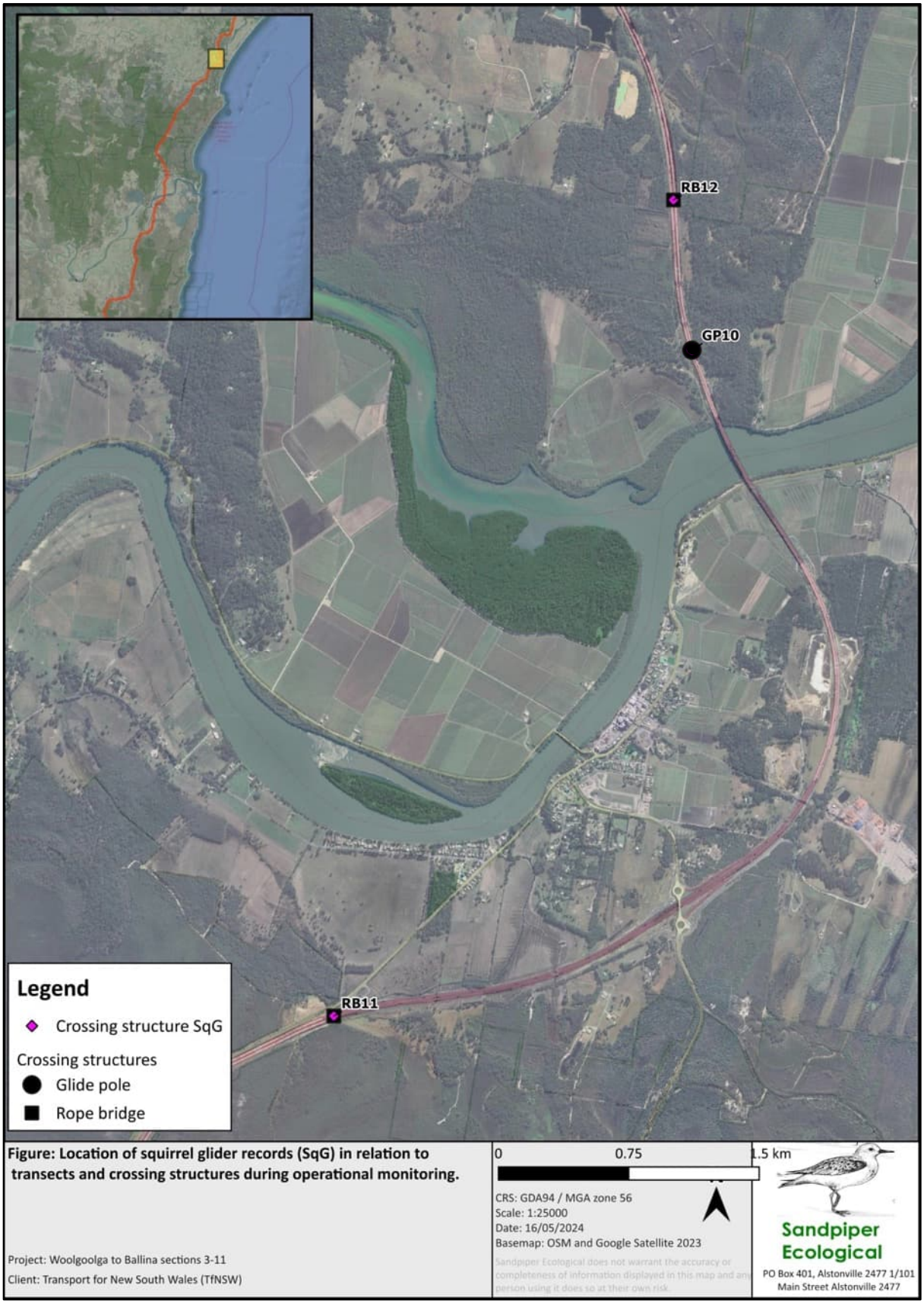


Figure 25: Location of squirrel glider transect records and complete crossings on aerial structures (presence/absence) at sections 9 and 10, W2B 2023.

3.5 Road mortality

No threatened gliders or other glider species were recorded during road mortality surveys in 2023. Data collected during road mortality surveys is presented in Appendix F.

4 Discussion

Results of the monitoring at sections 3-11 are discussed with reference to the objectives and performance indicators described in the TGMP.

4.1 Population monitoring

4.1.1 No decline in the after-construction occupancy rates of squirrel glider or yellow-bellied glider at impact sites over three consecutive monitoring sessions

Yellow bellied glider

Population monitoring results for year three (2023) confirm a post-construction decline in occupancy of yellow-bellied gliders over three consecutive monitoring periods at impact sites. In year three the mean occupancy rate in sections 3-11 was zero (i.e. no gliders recorded) and represents a substantial decline from pre-construction when mean occupancy ranged from 4-11 across the three treatments. The year three result was consistent with year two and is a continuation of the decline first recorded during year 3 of the construction phase. Notably, the decline in occupancy across all treatments suggests that the highway upgrade is not the sole cause of the decline.

The yellow-bellied glider is vulnerable to habitat loss and fragmentation due to their low and variable breeding rate, large and exclusive home ranges, variable social system, and short life-span (Goldingay & Kavanagh 1991, 1993; Goldingay 1992). Possible construction impacts contributing to population decline in S3-11 include reduced availability and quality of foraging and denning habitat, increased population isolation, and noise disturbance (Sandpiper Ecological 2023). Whilst some localised impact of construction was likely, the section 3-11 alignment primarily adjoined the existing highway corridor and/or was situated along the edge of forest and cleared land. Results from the fourth year of construction phase monitoring showed that the population decline was not restricted to the immediate vicinity of the alignment (i.e., impact and control sites), with declines occurring at reference sites 3-5km away. The decline at reference sites continued into the operational phase. The findings suggest that while construction may have had a localised impact on yellow-bellied glider occupancy near the alignment, broader landscape and environmental issues have been contributing factors towards the end of construction and into the operational phase.

Extreme drought and extended periods of low rainfall can negatively affect yellow-bellied glider populations by reducing the availability of plant and insect exudates, leading to food scarcity and a subsequent decline in abundance (Goldingay 1992; DAWE 2022; Goldingay et al. 2023). The pronounced decline in occupancy across sections 3-11 of the W2B upgrade is likely attributed to the severe drought that affected much of New South Wales from late 2018 to the end of 2019, coinciding with year three of the construction phase. Similar declines were observed in other lowland areas of the NSW north coast, with 80-100% reductions in occupancy recorded between Port Macquarie and Kempsey (Niche 2023), Devils Pulpit (Geolink 2023), and Warrell Creek to Nambucca Heads (Sandpiper Ecological 2024).

Although previous studies indicate that droughts do not have lasting effects on yellow-bellied glider populations in eastern Australia (Henry 1986), the intensity of the 2018/19 drought, combined with hotter nighttime temperatures may have exacerbated impacts on glider populations (Lunney 1987; Bilney et al. 2022;

DAWE 2022). DAWE (2022) highlight the effect of climate change and higher nighttime temperatures on greater gliders and suggest that yellow-bellied glider may be similarly affected. For instance, the local abundance of yellow-bellied gliders decreased by 43% following the same drought at a site in Richmond Range NP (Goldingay et al. 2023). Interestingly, gliders in the Richmond Range showed a delayed and less severe population response to the drought compared to lowland coastal areas adjacent to the Pacific Highway, where the impact was almost immediate (Geolink 2023; Niche 2023; Sandpiper Ecological 2023a). This suggests that higher elevation forests, with steeper slopes and deep gullies, may buffer the effects of drought by capturing more moisture and maintaining cooler nighttime temperatures.

The December 2019 wildfire further compounded the impact of drought and heat, affecting 20 of 48 transects in sections 6-7, with several sites experiencing complete canopy loss. These severe fires likely intensified the decline by causing immediate food scarcity, disrupting habitat connectivity (Collins et al. 2021), and reducing the number of hollow-bearing trees critical for denning (Smith 1982; Eyre et al. 2010; Legge et al. 2021; Goldingay 2021). Goldingay (2024) found that wildfires in southeastern New South Wales between 2019-2020 contributed to a 15-66% decline in yellow-bellied glider occupancy, with the severity of the decline dependent on fire severity and the availability of large hollow-bearing trees.

The latest monitoring data showed no improvement in yellow-bellied glider occupancy rates despite favourable La Nina conditions in years one and two of operation. The absence of a positive population-level response in 2021, 2022 and 2023 suggests that the yellow-bellied glider population is at such a low level that it will take considerable time to recover, and recovery may depend on emigration. The apparent decline in population numbers across all three treatments following drought and fire strongly suggests that the highway upgrade is not the primary cause, though it may have had a localised effect on population fitness through habitat removal and fragmentation, isolation of family groups and disruption of communication within social groups.

Greater glider

Greater glider occupancy declined at a similar rate and timescale to yellow-bellied gliders. Studies have shown that greater glider populations are also highly sensitive to disturbances such as drought, wildfire, and clearing/logging (McLean et al. 2018; Smith & Smith 2022). The same widespread 2019-2020 drought and fires that impacted the study site led to a 61% decline in the greater glider population in the Greater Blue Mountains, with severe fire eliminating gliders from heavily burnt areas (Smith & Smith 2022). This finding is consistent with lower glider densities in areas affected by high-severity fires in south-eastern New South Wales (May-Stubbles et al. 2022). Historical data indicate that logging, fire, and drought reduce greater glider populations, with unlogged gullies serving as crucial refuges (Lunney 1987). Notably, during operational monitoring, areas that did not record any fire during 2019/2020, such as Tucabia and Glenugie, continued to support greater gliders in year two and three.

Squirrel glider

Monitoring suggests that the combined effects of construction, drought, and wildfire have had limited medium-term impact on squirrel and sugar gliders. Squirrel glider occupancy declined across all treatments towards the end of the construction phase, with a more substantial decline in the first year of operation (2021) following drought and bushfires. Squirrel glider populations in the study area were likely impacted by similar mechanisms to those discussed for yellow-bellied and greater gliders. However, their higher fecundity and greater availability of den sites has likely enabled populations to recover more quickly. The substantial decline in occupancy recorded in the first year of operation is attributed to the combined effects of drought and bushfire on food availability (Sharpe 2004).

Results from years two and three of the operational phase indicate a recovery in the squirrel glider population, with occupancy rates surpassing pre-construction levels across all treatment types. This recovery is attributed to favourable La Niña weather conditions, which resulted in increased flowering events that likely improved foraging conditions (Sharpe & Goldingay, 1998). Previous studies on the north coast of New South Wales have shown that successive years of abundant flowering can increase the mean reproductive output of squirrel gliders from 1.8 to 2.7 individuals per year (Sharpe & Goldingay, 2010). An increase in reproductive output aligns with the La Niña that began immediately post-fire in 2020 and continued through 2022. Additionally, the use of aerial crossing structures by squirrel gliders increased continually from year one to year three, aiding population recovery on both sides of the alignment. This is substantiated by previous studies demonstrating the positive impact of crossing structures on gene flow in squirrel gliders (Soanes et al., 2018). Furthermore, the average dispersal age of squirrel gliders in eastern Australia of 10-12 months (Quin, 1995), supports the relationship between glider occupancy, favourable environmental conditions, and the timing of La Niña.

The data indicates that there was no discernible impact of the project on squirrel glider populations in sections 3-11, with trends at impact and control sites closely resembling those at reference sites. In contrast to the yellow-bellied glider, the occupancy rates of squirrel gliders at control sites remained relatively stable, and even increased at impact sites during the third year of construction phase monitoring (Figure 8). These results suggest that the decline in squirrel glider populations during early operational monitoring was mainly due to the drought and bushfire that occurred in 2018/19.

4.2 Use of rope bridges, glide poles and vegetated median

4.2.1 No evidence of use of arboreal crossing structures and widened medians by threatened gliders post-construction

Aerial crossings

During operational monitoring, complete crossings by squirrel gliders were recorded at 13 out of the 15 (87%) aerial structure sites in sections 3-11, including all rope bridges. The two sites with no confirmed complete crossings were GP5 and GP10. The percentage of structures used is likely conservative, as squirrel gliders were recorded at both sites, and several small petaurids were recorded making complete crossings at GP10. The absence of confirmed crossings is attributed to a combination of camera failure and repeated damage by corvids (Sandpiper Ecological 2023). Both structures represent viable crossing points for small petaurids. An analysis of glide angles at GP5 recorded landing heights of between 4.5m and 9.5m.

The proportion of aerial crossings used is slightly lower than what was recorded in sections 1-2, where 100% of the structures recorded evidence of a complete crossing by squirrel gliders (Sandpiper Ecological 2020a, 2021). Nonetheless, the proportion of aerial structures used by squirrel glider in sections 3-11 has increased from 40% in 2021 (Year 1), to 53% in 2022 (Year 2) and to 87% in year three (Sandpiper Ecological 2022 and 2023).

Notably, no complete or incomplete crossings by yellow-bellied gliders were recorded, consistent with their historically low usage or detection on aerial structures (Sandpiper Ecological, 2023). To date, only one glide pole near Halfway Creek in sections 1 and 2 has provided definitive evidence of yellow-bellied gliders using glide poles to cross a highway corridor (Taylor & Rohweder, 2020). Furthermore, population monitoring data align with these findings. Only one yellow-bellied glider was detected during operational monitoring at an impact site (Tucsie) in year one, with no detections in years two or three. This record occurred near a rope bridge, a crossing type that has not been used by yellow-bellied gliders. There are no confirmed records of yellow-bellied gliders using rope bridges on the Pacific Highway, with the only interaction being a single incomplete crossing at Devils Pulpit in 2018 (Geolink 2019). The absence of yellow-bellied gliders using aerial

crossings is most likely due to the absence of gliders and does not indicate a deficiency in structure design or location.

Use of aerial crossings by all glider species increased from year one to year three of the operational phase. This increase is likely due to improvements in camera setup, increased abundance of small petaurid gliders and feathertail gliders associated with good environmental conditions leading to high juvenile recruitment and dispersal of individuals, and habituation to the structures. The lower occupancy rate of squirrel gliders in year one of operation likely contributed to lower-than-expected crossings. As occupancy increased in year two and three detections at aerial crossings also increased, a result attributed to the time required for juveniles to become independent and disperse, which may be at 12-18 months old (NSW Scientific Committee 2008).

The mean weekly crossing rate by squirrel gliders in sections 3-11 in 2023 was 0.023cc/week on glide poles and 0.022cc/week on rope bridges, which is lower than the rates recorded in sections 1 and 2 in 2020 and 2021 (0.08 and 0.06, respectively) (Sandpiper Ecological 2021). Furthermore, this rate is considerably lower than the rates reported for squirrel gliders on the Hume Highway (2.6 crossings/week, Soanes *et al.* 2015) and the Sapphire to Woolgoolga (S2W) Pacific Highway upgrade (0.23 crossings/week, Sandpiper Ecological 2018b). Previous studies at S2W and the Hume highway may have recorded a complete crossing based on detections on roadside poles, which may not necessarily indicate road crossings but rather movements along the forest edge (Goldingay *et al.* 2019) and exploration of habitat. In addition, video was used in sections 1 and 2 of W2B, whilst pictures were used in sections 3-11. It is easier to confirm crossings on glide poles using video than pictures and this likely contributed to the lower crossing rates recorded in sections 3-11 for glide poles. Taking these factors into consideration the results from sections 3-11 are a conservative estimate of glider crossings. Furthermore, differences in habitat use may explain differences in the frequency of use between the Hume and Pacific highways. Along the Hume highway, gliders rely on roadside vegetation and cross the highway as part of nightly home range movement. This contrasts with the Pacific highway which passes through large areas of forest, where crossings are likely to be dispersal or breeding related.

Vegetated medians

The Tabbimoble vegetated median continued to be used by squirrel glider, sugar glider, feathertail glider, and *Antechinus* spp. Results are consistent with previous studies on squirrel glider and sugar glider use of vegetated highway medians (Taylor & Rohweder 2013; Sandpiper Ecological 2018b; van der Ree et al. 2010) and squirrel gliders using land-bridges with glide poles to cross a dual carriageway (Taylor & Goldingay 2012). Despite several previous studies confirming complete crossings at vegetated medians Geolink (2021) found that radio-tracked squirrel gliders frequently accessed a vegetated median at Devils Pulpit across one carriageway only with no radio-tracked individuals making a complete crossing of both carriageways. While there are several possible explanations for this outcome, it indicates that the mere presence of gliders in the median does not confirm a complete highway crossing.

The vegetated median at Tabbimoble covers a forested area of 10.38ha and has the potential to support resident squirrel and sugar gliders, which typically have home ranges of about 6ha on the NSW north coast (Sharpe & Goldingay 2007). Squirrel gliders were observed making two complete crossings at RB9, which intersects and connects with the Tabbimoble median. A second (unmonitored) rope bridge, divided into two sections, is located 100m north of RB9 with a central pole in the median. This bridge is likely to also facilitate crossing opportunities for squirrel gliders from the roadside or within the median across the alignment. The available data indicates that the median at a minimum is serving as a stepping-stone for individual gliders.

Median detection rates for squirrel gliders have generally declined over time, in contrast to population monitoring and aerial structure monitoring. This trend is likely attributed to a reduction in the frequency of replenishing bait chambers. Additionally, data indicates that detection rates typically surged shortly after the chambers were replenished, suggesting that bait freshness impacts detection rates.

4.3 Road mortality

No target species of glider were recorded during road mortality surveys or as incidental records in sections 3-11 of W2B during 2023.

4.4 Lessons learnt

Monitoring of aerial crossings for the W2B upgrade has identified several lessons that are relevant for future projects that involve the installation of rope bridges, glide poles and vegetated medians. Some of the lessons learnt on W2B are consistent with previous studies (e.g. Sandpiper Ecological 2017) and support prior advice on aerial crossing design (Sandpiper Ecological 2014). There are instances where upon further consideration previously recommended design features are no longer supported. The following section is based on the authors general observations and is not supported by detailed analysis of the data.

Planning

1. Assessment of glide angles at vegetated medians should consider revegetation of batters as rapid growth of leafy shrubs on batters can obscure landing sites (i.e. tree trunks) and affect connectivity.
2. Calculations of glide angles for different glider species may represent conservative estimates of true capability as most studies have not controlled for the effect of gap width (i.e. distance from launch to landing) and studies assume that all glides are equal regardless of gap width. Assessment of glide angles for yellow-bellied glider at the Parker Road vegetated median indicated that the crossing was unviable, yet an adult and juvenile were recorded in the median on more than one occasion.
3. The feasibility of glide crossings at vegetated medians needs to be assessed during the planning phase to ensure that the extra cost required to include medians is warranted and to avoid retrospective installation of rope bridges or glide poles. Such assessments should consider, glide angle of target species, preferred launch and landing sites, batter widths, batter revegetation, height of pavement in relation to adjoining forest and clearance over heavy vehicles.
4. Glide poles and rope bridges should be installed at the narrowest viable location – cut/fill lines and drainage lines are preferrable if suitable habitat for the target species is present. Whilst squirrel glider was recorded using a 105m long rope bridge near Broadwater (i.e., RB11) visitation was low.
5. Over the three years of monitoring squirrel and sugar gliders visited glide poles more frequently than rope bridges, although there were notable differences in visitation between sites and years. For example, in year three squirrel glider visitation to rope bridges increased substantially and exceeded visitation to glide poles. The results suggest that visitation may be influenced by individuals (or family groups) and seasonal conditions.
6. Annual variation in visitation highlights the importance of monitoring structures over several years and temporal changes in the use of structure type highlights the value of installing both glide poles and rope bridges.
7. Ropes provide connectivity for more species, such as brush-tailed phascogale, *Antechinus* spp., common brushtail, short-eared and ringtail possums, and goannas and therefore have a role to play in a balanced connectivity program.
8. Rope bridges also provide connectivity across large gaps where additional glide poles are unfeasible.
9. Rope bridges, glide poles and vegetated medians all have a role to play in providing connectivity over large highways.

Design features

1. Rope bridge poles and glide poles should be placed within 5-10m of adjoining vegetation.
2. As a minimum, the rope ladder or launch point on a glide pole should be situated at mid to upper canopy height as long as satisfactory clearance above traffic and glide angle is achieved. Ensuring that poles are at canopy height and close to the forest edge will likely increase early visitation by gliders.
3. Glide pole arrays consisting of edge poles and median poles are effective.
4. As a minimum, glide poles should have one launch arm extending parallel to the roadway.

5. Rope bridges should be as taut as possible and include a thicker central rope and wire rope to support the bridge. Monitoring on W2B provides further support for the hypothesis that arboreal mammals preferentially use wire rope and thicker rope over the rope ladder.
6. The box design rope bridge at RB12 was used infrequently. This is likely due to bridge placement rather than a deficiency in the design.
7. On many of the W2B rope bridges the thick central rope was tied off on the support pole which hindered camera placement and orientation. Ideally the thick central rope should terminate at the end of the rope ladder.
8. Whilst no evidence of predation was recorded on glide poles predator shields are a worthwhile design feature.

Monitoring

1. The use of short (10 second) videos provided more useful data on glides and movement direction than still images.
2. Within our study area, wireless connectivity was insufficient to enable videos to be sent via email and connectivity should be carefully assessed prior to using wireless cameras.
3. Wireless cameras required more maintenance and had more technical issues than non-wireless cameras. Inspection and maintenance of wireless cameras occurred at about 6-monthly intervals which was double the 3-month downloads required for non-wireless cameras. Nonetheless, some data were likely lost during the longer inspection periods.
4. Crows (*Corvus orru*) repeatedly damaged camera sensors rendering cameras inoperable at several sites. Bird damage could be reduced by attaching plastic bird spikes (available at hardware stores) above and below the infra-red sensor.
5. The cameras used in sections 3-11 had a higher failure rate than those used on previous projects, with water damage being the primary cause of the failure. It is unclear if water damage reflects changes in build quality or was due to the deterioration of rubber seals by sunlight and high rainfall. Leaks were managed by placing duct tape over the door seal between the two camera sections.
6. Visitation by gliders was not uniform across the W2B study area. Variation in use of structures is attributed to habitat distribution and age, and home range orientation and highlights the need for multiple structures distributed throughout suitable habitat.

5 Conclusion and recommendations

Based on the findings of year three operational monitoring, the substantial temporal (i.e. yr 1-3) decline in yellow-bellied glider occupancy rates in sections 3-11 underscores a 100% decline from pre-construction levels and meets criteria for corrective action. The TGMP states "*Decline in the after-construction occupancy rates of squirrel glider or yellow-bellied glider at impact sites over three consecutive monitoring sessions (years)".* However, the decline was observed at both impact and reference sites and the nature and timing of the decline suggests that natural factors, including severe drought and wildfire, affected yellow-bellied glider populations and masked a possible construction effect. There is considerable evidence to show that clearing (& logging) can negatively impact yellow-bellied glider populations and some impact was likely from the W2B upgrade.

The absence of yellow-bellied gliders from impact sites during monitoring of aerial crossings explains why the species was not recorded on crossing structures. Glide poles within sections 3-11 of W2B are equivalent to those used by yellow-bellied glider at Halfway Creek and it is reasonable to expect gliders to use the structures if present. Based on the available evidence it is concluded that no corrective actions are warranted.

In contrast, despite a decline in year 1 of operation the squirrel glider population recovered in years two and three, due to favourable La Niña conditions, higher fecundity, and effective use of aerial crossing structures. Analysis of occupancy data suggests that construction had a negative impact on squirrel gliders however, populations recovered during the operational phase.

The contrasting outcomes for yellow-bellied and squirrel gliders highlight the different responses of glider species to environmental changes and the importance of targeted management strategies and long -term monitoring that encompass climatic variability. Aerial crossings have proven to be effective in reducing barrier effects on small gliders and this has been the case for the Woolgoolga to Ballina project. The only aerial crossing not proven to be used by squirrel glider (i.e., GP5) is considered functional and the absence of confirmed records is attributed to camera malfunction and regular damage by birds.

Based on the threatened glider monitoring program results further monitoring, and/or corrective actions are not required. The W2B threatened glider monitoring program has highlighted a broader issue of concern for the long-term viability of yellow-bellied glider and greater glider populations in lowland forests on the north coast of NSW. The decline of these species cannot be attributed to a single event but rather the cumulative effect of multiple events and historical forest management. The W2B threatened glider monitoring program has achieved its objectives and it is recommended that the monitoring program be concluded (Table 9).

Table 9: Recommendations of the year three operational phase monitoring report for sections 3-11.

Number	Recommendation	TfNSW response
1	Conclude the monitoring program	Agreed

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Appendix A – Effort and maintenance inspections on aerial crossing structures

Table A1: Effort and maintenance inspections on aerial crossing structures at sections 3-11 W2B during year three operational monitoring. EST = Eastern Standard Time.

Site	Camera #	13-16 February 2023	7 September 2023	Retrieve 5 February 2024	2023 active period
GP10	East 701 (prev W02)	1899 pics; 100% battery, faulty SIM; EST 1800-0500		W701, 525 images, 100% battery	1 Jan 23 - 4 Feb 24
	West 1	100% battery; off, D, off; EST 1800-0500		W1, no images, 100% battery, damaged sensor	Malfunction - 1 active image between August 22 and Sept 23. Cam still works but sensor likely damaged in early 2023. Active period unknown.
RB12	East 6	60% battery, 9 pics; off, D, off; EST 1800-0500, increased sensitivity	Battery flat, panel unplugged, 9 pics, on,D, on, active 2000-0500	W6, 18 pics, 100% battery; no flip line rope	1 Jan 23 - 30 May 23 & 7 Sept 23 - 4 Feb 24
	West 5	100% battery, 3 pics, SD cycle was on; EST 1800-0500; off, D, off; increased sensitivity		W5, 18pics, 100%,	1 Jan 23 - 4 Feb 24
RB11	East 3	Cam malfunction - keeps turning off; 100% battery; installed new cam; EST 1800-0500; on, D, off		Flat, moisture in cam; all 3 connecting ropes on the ground.	13 Feb 23 - 1 Nov 23
	West 4; 27	Battery flat, 4399 pics; added extra coreflute to reduce false triggers; EST 1800-0500; on, D, on, changed number of pics to 3	5283 pics, battery flat, reduced sensitivity to low, on, D, on	12 pics; 100% battery,1 rope down	13 Feb 23 - 13 June 23 & 7 Sept 23 - 4 Feb 24
RB10	East 7	100% battery, 471 pics, EST 1800-0500; on, D, on; added coreflute		W7, 234 pics, 100% battery	1 Jan 23 - 4 Feb 24
	West 8	17 pics; 100% battery, off, D, off, EST 1800-0500; increased sensitivity; held on with strap; gliders may be able to glide from forest edge to median bypassing the pole.	Card error, 100% battery, swapped camera, none wireless	W8, 52pics, 80% battery	1 Jan 23 - 14 Feb 23 & 7 Sept 23 - 4 Feb 24
RB9	East 9	26pics, 80% battery, off, D, off; EST 1800-0500, increased sensitivity, setup is ok		W9, 18 pics, battery died on opening	1 Jan 23 - 4 Feb 24
	West 13	100% battery, 309 pics, EST, 1800-0500; on, D, on.		W13, 384pics, 80% battery	1 Jan 23 - 4 Feb 24
RB8	East 10	100% battery, 9 pics; moved 30mm lower; off, D, off; EST 1800-0500		W10, 33 pics, 100% battery	1 Jan 23 - 4 Feb 24
	West 12	100% battery, 13999 pics, EST, off, D, off; moved cam 50mm higher & fixed orientation	80% battery, 12000 images, slightly out of alignment, off, D, off, adjusted angle, changed active period to 2000-0500	W12, pic 10,000+, sensor damaged, 100% battery	Active for entire year - unsure about timing of sensor damage.
GP9	median 14				Not installed

Site	Camera #	13-16 February 2023	7 September 2023	Retrieve 5 February 2024	2023 active period
	West	west cam - 1899 pics, cam dead - crow damage, solar panel unplugged, changed camera; EST 1800-0500; off, D, off.		sensor damaged, malfunction, flat, 15 pics	Active 14 Feb 23 - ~31 July 2023
	East	East cam flat, sensor damaged, replaced with non-wireless enduro, EST, 1800-0500		sensor damaged	Nil - suspect immediate crow damage
GP8	median 11	Not inspected		Sensor damaged, battery flat, last pic 13 sept 2023, ~25000 pics	1 Jan - 31 Jul 23
GP7	East 15	Need to replace/repair installed line & bolts; card error, EST, 1800-0500, on,D,on; 70% battery, no pics		W15, low battery; 105 pics, lower flip line connection dislodged - screw inserted for temp fix	1 Jan 23 - 4 Feb 24 - may have suffered from low battery at times
	West 16	106 pics; 100% battery, EST, 1800-0500, off, D, off; upper flip line bolt rusty		W16, 207pics, 80% battery; sensor damaged; centre flip line rope (in median) is loose	1 Jan 23 - 31 Jan 24
RB7	East 17	100% battery, 6 pics, mms off, smtp D, ftp off; 1800-0500 EST,		W17, 75 pics, 80% battery; 1 rope down	1 Jan 23 - 4 Feb 24
	West 18	Card error, 100% battery, EST 1800-005, mms off, smtp D, ftp off	3 pics, 100% battery, 4g, changed to on, D, off, swapped SD	W18, 36pics, 100% battery; 1 rope down	15 Feb 23 - 5 feb 24
RB6	East 24	Battery 100%; 4933 pics; false triggers;; no signal; moved camera down 50mm & removed angle.		W24, 100% battery, 30pics	1 Jan 23 - 4 Feb 24
	West 25	100% battery; 99 pics; moved cam 10mm higher; mms off; smpt default, ftp off; EST, 1800-0500		W25; 216 pics, 100% battery	1 Jan 23 - 4 Feb 24
GP6	Median 26	Not inspected		903 pics 100% battery	1 Jan 23 - 5 Feb 24
RB5	East 23	100% battery; 12 pics; EST, 1800-0500; mms off, smpt D, ftp off		W23, 102pics, 100% battery	1 Jan 23 - 4 Feb 24
	West 22	100% battery; 24 pic; EST, 1800-0600; on,D, on		W22, battery flat, 3 pics	1 Jan - 30 Apr 23
GP4	East 19	100% battery; 354 pics; time EST		W19 249 pics; 100% battery	1 Jan 23 - 4 Feb 24
	West 20	Camera unplugged, 486 pics, cam active - died on inspection; swapped batteries; set time EST		W20, 100% battery, 270 pics	16 Feb 23 - 5 Feb 24
GP5	Median 21	Not inspected		W21, 289 pics 100% battery	
	West non wireless	S000; non wireless; 100% battery; 21 pics; battery & SD swapped;	45 images, 100% battery, replaced cam & batteries	W31, flat, sensor damaged, white screen	1 Jan - 30 Sept 23
	East C31	W31; 80% battery; 3pics; setup looks ok; sensitivity high; 1800-0500 EST	Battery died on opening, 324 images, 2g reception, replaced battery & SD card	W31, 100% battery, 90pics	1 Jan - 30 June ; 7 Sept 23 - 5 Feb 24

Appendix B – Glider population survey effort, weather and fauna detections

Table B1: Survey effort, weather conditions and fauna detections during year three threatened glider population monitoring. Msb = wind moves small branches; MLB = wind moves large branches. Ns = not surveyed. SqG = squirrel glider; SuG = sugar glider; YbG = yellow-bellied glider; GG = greater glider; FtG = feathertail glider; BtPhas = brush-tailed phascogale; CBtP = common brushtail possum; SeBtP = short-eared brushtail possum; CRP = common ringtail possum; TF = tawny frogmouth; PO = powerful owl; SO = sooty owl; MO = masked owl; BbO = boobook owl; ON = owlet nightjar; WtN = white-throated nightjar; GhFF = grey-headed flying fox; LRFF = little red flying fox. HM = heard movement, HC = heard call; HL = heard glide-land on tree; SE = saw eyeshine; SG = saw glide; SM = saw movement.

Transect	Date	Order	Staff	Temp	Humidity	Cloud	Wind	Rain	Moon	Start	Finish	Fauna	Comments	Flowering
GN-ce	15/12/2022	4	FM	18	58	7/8	Nil	Nil	53.9	2302	2332	Nil	GG incidental SE 100 south of transect	Spotted gum
GN-ce	19/12/2022	6	FM	17.2	78	4/8	MSB	Nil	20	2351	0021	GHFF		Spotted gum
GN-ce	23/03/2023	7	FM	20.5	71	0/8	Nil	Nil	4.4	0030	0101	Masked Owl HC		
GN-ce	28/03/2023	4	LA	22.2	94	8/8	Nil	Light showers	43	2152	2222	Nil	Nil	Nil
GN-ce	15/06/2023	8	LA	13.8	55	0/8	Nil	Nil	10.6	2301	2331	SqG/Sug 419s0wSE	Nil	Nil
GN-ce	21/06/2023	4	LA	12.4	61	1/8	Nil	Nil	8.6%	2007	2037	Nil	Nil	Nil
GN-ce	19/09/2023	7	LA	12.5	90	0/8	Nil	Nil		2252	2322	SM ftg	Nil	Nil
GN-ce	21/09/2023	5	FM	18.6	59	8/8	RL	Nil		2138	2218	Se SqG SE GG 250s30E, SuG SE	Nil	Nil
GN-cw	15/12/2022	4	LA	18	58	7/8	Nil	Nil	53.9	2302	2332	Nil	Nil	Spotted gum
GN-cw	19/12/2022	6	LA	17.2	78	4/8	MSB	Nil	20	2351	0021	HC, SE GHFF. SE CbtP		Ironbark and spotted gum
GN-cw	23/03/2023	3	LA	23.7	71	8/8	Nil	Nil	4.4	2109	2149	Ftg SM		
GN-cw	28/03/2023	4	FM	22.2	94	8/8	Nil	Light showers	43	2152	2222	Nil	Nil	Nil
GN-cw	15/06/2023	4	AE	13.8	55	0/8	Nil	Nil	10.6	2000	2030	2 x CBTP	Nil	Nil
GN-cw	21/06/2023	5	LA	12.4	61	1/8	Nil	Nil	8.6%	2045	2115	Se CBTP	Nil	Nil
GN-cw	19/09/2023	3	FM	18.4	67	0/8	RL	Nil		1944	2014	3 x btp	Nil	Nil
GN-cw	21/09/2023	6	LA	18.6	59	8/8	RL	Nil		2224	2254	2 x BtP SE, SM ftg	Nil	Nil
GN-ie	15/12/2022	5	FM	18	58	7/8	Nil	Nil	53.9	2344	0014	Nil	Nil	Spotted gum
GN-ie	19/12/2022	4	FM	18	61	0/8	MSB	Nil	20	2222	2252	HC, SE GHFF		Spotted gum
GN-ie	23/03/2023	7	LA	20.5	71	0/8	Nil	Nil	4.4	0030	0101	SqG SE 200ms10me, FtG SM		
GN-ie	30/03/2023	2	FM	21.6	64	0/8	Nil	Nil	61	1957	2023	Nil	Nil	Nil
GN-ie	15/06/2023	8	Ae	13.8	55	0/8	Nil	Nil	10.6	2301	2331	Nil	Nil	Nil
GN-ie	21/06/2023	4	AE	12.4	61	1/8	Nil	Nil	8.6%	2007	2037	Small petaurid spp. SE, SE BtP	Nil	Nil
GN-ie	19/09/2023	8	LA	12.5	90	0/8	Nil	Nil		2231	0001	Nil	Nil	Nil
GN-ie	21/09/2023	6	FM	18.6	59	8/8	RL	Nil		2224	2254		Nil	Nil
GN-iw	15/12/2022	5	LA	18	58	7/8	Nil	Nil	53.9	2344	0014	GHFF	Nil	Spotted gum

Transect	Date	Order	Staff	Temp	Humidity	Cloud	Wind	Rain	Moon	Start	Finish	Fauna	Comments	Flowering
GN-iw	19/12/2022	4	LA	18	61	0/8	MSB	Nil	20	2224	2254	HC GHFF		Ironbark and spotted gum
GN-iw	23/03/2023	3	FM	23.7	71	8/8	Nil	Nil	4.4	2109	2149	Btphasc	503456, 6705901	Nil
GN-iw	30/03/2023	1	FM	21.6	64	0/8	Nil	Nil	61	1917	1947	Nil	Nil	Nil
GN-iw	15/06/2023	4	LA	13.8	55	0/8	Nil	Nil	10.6	2045	2115	Nil	Nil	Nil
GN-iw	21/06/2023	5	AE	12.4	61	1/8	Nil	Nil	8.6%	2045	2115	Nil	Nil	Nil
GN-iw	19/09/2023	3	LA	18.4	67	0/8	RL	Nil		1944	2014	Nil	Nil	Nil
GN-iw	21/09/2023	5	LA	18.6	59	8/8	RL	Nil		2138	2218	NIL	Nil	Nil
G-r-n	15/12/2022	6	FM	18	58	7/8	Nil	Nil	53.9	0029	0059	Nil	Nil	Nil
G-r-n	19/12/2022	2	LA	18	61	0/8	MLB	Nil	20	2104	2134	SE SuG, HC GHFF	Nil	Ironbark and spotted gum
G-r-n	23/03/2023	1	FM	23.7	71	8/8	Nil	Nil	4.4	1945	2015	SqG SE 350s20e	Nil	Nil
G-r-n	28/03/2023	5	LA	22.2	94	8/8	Nil	Light showers	43	2235	2305	Nil	Rufous bettong	Nil
G-r-n	15/06/2023	2	AE	13.8	55	0/8	Nil	Nil	10.6	1823	1853	Onj	Nil	Nil
G-r-n	21/06/2023	6	AE	12.4	61	1/8	Nil	Nil	8.6%	2143	2213	HC SuG	Nil	Nil
G-r-n	19/09/2023	1	FM	18.4	67	0/8	RL	Nil		1819	1849	Cbtp SE	Nil	Nil
G-r-n	21/09/2023	7	LA	18.6	59	8/8	RL	Nil		2307	2337	Nil	Nil	Nil
G-r-s	15/12/2022	6	LA	18	58	7/8	Nil	Nil	53.9	0033	0103	Nil	Nil	Nil
G-r-s	19/12/2022	2	FM	18	61	0/8	MLB	Nil	20	2107	2136	SE SuG		Spotted gum
G-r-s	23/03/2023	1	LA	23.7	71	8/8	Nil	Nil	4.4	1945	2015	Nil	Nil	Nil
G-r-s	28/03/2023	5	FM	22.2	94	8/8	Nil	Light showers	43	2235	2305	Nil	Nil	Nil
G-r-s	15/06/2023	2	LA	13.8	55	0/8	Nil	Nil	10.6	1823	1853	1xSqG SM 30s10w, 2x FtG HM, 1x SeBtP Se.	Nil	Nil
G-r-s	21/06/2023	6	LA	12.4	61	1/8	Nil	Nil	8.6%	2143	2213	SE SqG 80s20w	Nil	Nil
G-r-s	19/09/2023	2	FM	18.4	67	0/8	RL	Nil		1854	1924	Nil	Nil	Nil
G-r-s	21/09/2023	8	LA	18.6	59	8/8	RL	Nil		2341	0021	Nil	Nil	Nil
GS-ce	15/12/2022	8	FM	18	58	7/8	Nil	Nil	53.9	0149	0219	Nil	Nil	Nil
GS-ce	19/12/2022	1	FM	18	61	0/8	MLB	Nil	20	2025	2055	Nil		Nil
GS-ce	23/03/2023	8	FM	23.7	71	8/8	Nil	Nil	4.4	0112	0142	Nil		
GS-ce	30/03/2023	6	FM	21.6	64	0/8	Nil	Nil	61	2311	2341	Btphasc HM 250s10e, Cbtp SE	Nil	Nil
GS-ce	15/06/2023	1	LA	13.8	55	0/8	Nil	Nil	10.6	1734	1804	Nil	Nil	Nil
GS-ce	21/06/2023	8	LA	12.4	61	1/8	Nil	Nil	8.6%	2310	2340	Small pet SE	Nil	Nil
GS-ce	19/09/2023	7	FM	12.5	90	0/8	Nil	Nil		2255	2325	Nil	Nil	Nil
GS-ce	21/09/2023	1	FM	18.6	67	0/8	MLB	Nil		1832	1902	Nil	Nil	Nil
GS-cw	15/12/2022	8	FM	18	58	7/8	Nil	Nil	53.9	0149	0219	GHFF		Nil
GS-cw	19/12/2022	1	LA	18	61	0/8	MLB	Nil	20	2025	2055	SE Cbtp	Nil	Ironbark and spotted gum
GS-cw	23/03/2023	8	LA	23.7	71	8/8	Nil	Nil	4.4	0112	0142	Nil		

Transect	Date	Order	Staff	Temp	Humidity	Cloud	Wind	Rain	Moon	Start	Finish	Fauna	Comments	Flowering
GS-cw	30/03/2023	5	FM	21.6	64	0/8	Nil	Nil	61	2202	2232	Btphasc HM 250s10e, Cbtp SE	Nil	Nil
GS-cw	15/06/2023	1	AE	13.8	55	0/8	Nil	Nil	10.6	1733	1803	3 x Sebtp SE	Nil	Nil
GS-cw	21/06/2023	8	AE	12.4	61	1/8	Nil	Nil	8.6%	2310	2340	Nil	Nil	Nil
GS-cw	18/09/2023	5	LA	18	77	0/8	MSB	Nil		2109	2139	Nil	Nil	Nil
GS-cw	21/09/2023	1	LA	18.6	67	0/8	MLB	Nil		1832	1902	Nil	Nil	Nil
GS-ie	15/12/2022	7	FM	18	58	7/8	Nil	Nil	53.9	0111	0141	Cbtp SE	Nil	Ironbark and spotted gum
GS-ie	19/12/2022	3	FM	18	61	0/8	MSB	Nil	20	2145	2215	Nil		Ironbark and spotted gum
GS-ie	23/03/2023	2	FM	23.7	71	8/8	Nil	Nil	4.4	2023	2053	SqG SE, SuG SE, Btphasc HM	SqG 502904 6704788, BtPhas 502908 6704766	Nil
GS-ie	30/03/2023	3	FM	21.6	64	0/8	Nil	Nil	61	2038	2118	Nil	Nil	Nil
GS-ie	15/06/2023	3	AE	13.8	55	0/8	Nil	Nil	10.6	1914	1944	ONil	Nil	Nil
GS-ie	21/06/2023	7	AE	12.4	61	1/8	Nil	Nil	8.6%	2227	2257	Nil	Nil	Nil
GS-ie	19/09/2023	1	LA	18.4	67	0/8	RL	Nil		1819	1849	TF	Nil	Nil
GS-ie	21/09/2023	7	FM	18.6	59	8/8	RL	Nil		2307	2337	Nil	Nil	Nil
GS-iw	15/12/2022	7	LA	18	58	7/8	Nil	Nil	53.9	0111	0141	Cbtp SE	Nil	Ironbark and spotted gum
GS-iw	19/12/2022	3	LA	18	61	0/8	MSB	Nil	20	2145	2215	HC GHFF		Ironbark and spotted gum
GS-iw	23/03/2023	2	LA	23.7	71	8/8	Nil	Nil	4.4	2024	2054	SuG SE	Nil	Nil
GS-iw	30/03/2023	4	FM	21.6	64	0/8	Nil	Nil	61	2109	2149	Nil	Nil	Nil
GS-iw	15/06/2023	3	LA	13.8	55	0/8	Nil	Nil	10.6	1914	1944	2x Cbtp SE	Nil	Nil
GS-iw	21/06/2023	7	LA	12.4	61	1/8	Nil	Nil	8.6%	2227	2257	CBTP SE	Nil	Nil
GS-iw	19/09/2023	2	LA	18.4	67	0/8	RL	Nil		1854	1924	Nil	Nil	Nil
GS-iw	21/09/2023	8	FM	18.6	59	8/8	RL	Nil		2307	2337	Nil	Nil	Nil
MOR-ce	18/12/2022	4	DR	18	68	8/8	MSB	Nil	Nil	2247	2317	SqG, se, 300m, 50m east		
MOR-ce	20/12/2022	6	DR	16	77	0/8	RL	Nil	Nil	2433	0107		ONJ	
MOR-ce	30/03/2023	3	AE	21	60	0/8	RL	nil	25	2110	2148	Petaurus spp (se)		
MOR-ce	30/03/2023											Not sampled		
MOR-ce	14/06/2023	4	DR	12	57	Nil	MSB	Nil	Nil	2010	2040	GG, se, 100 m, 5east		
MOR-ce	20/06/2023	5	DR	11	50	2/8	Nil	Nil	Nil	1950	2020	FtG, sg, 500m, 0mq		
MOR-ce	18/09/2023	3	DR	18	76	Nil	Nil	Nil	10	2003	2033	GHFF		
MOR-ce	20/09/2023	2	NM	20.3	85	Nil	RI	Nil	26	1904	1934	GhFF		Tallowwood
MOR-cw	18/12/2022	5	DR	17	76	8/8	RL	Drizzle	Nil	2337	0005	Nil		Mahogany
MOR-cw	20/12/2022	2	DR	18	64	4/8	RL	Nil	Nil	2107	2135	Nil		Mahogany
MOR-cw	27/03/2023	1	DR	24	82	2/8	nil	nil	25	1940	2007	nil		Blackbutt, bloodwood
MOR-cw	30/03/2023	1	AE	23	60	0/8	nil	nil	25	1921	1948	nil		
MOR-cw	14/06/2023	5	DR	12	58	Nil	Nil	Nil	Nil	2054	2120	Nil		

Transect	Date	Order	Staff	Temp	Humidity	Cloud	Wind	Rain	Moon	Start	Finish	Fauna	Comments	Flowering
MOR-cw	20/06/2023	2	DR	14	52	1/8	Nil	Nil	Nil	1805	1830	Koala, se, 0m, 20m W		
MOR-cw	18/09/2023	1	NM	19.5	78	Nil	Rl	Nil	11	1820	1850	Nil		
MOR-cw	20/09/2023	2	DR	20	69	Nil	Nil	Nil	15	1932	2002	Nil		Nil
MOR-ie	18/12/2022	1	DR	18	68	6/8	Nil	Nil	Nil	2034	2104	Nil		Mahogany
MOR-ie	13/01/2023	1	DR	19	74	2/8	RL	Nil	Nil	2030	2100	FtG (sm), CBTP (se)		
MOR-ie	30/03/2023	3	DR	21	60	0/8	RL	nil	25	2109	2144	FtG (sm,40,5mW), FtG (sm,150,10mE)		bloodwood
MOR-ie	30/03/2023											Not sampled		
MOR-ie	14/06/2023	3	DR	13	56	0	Nil	Nil	Nil	1928	1958	Nil		
MOR-ie	20/06/2023	6	DR	14	58	Nil	Nil	Nil	Nil	2034	2104	CBTP, sm, 300m, 25m E; FtG x 3, sm, 350m, 2m E		
MOR-ie	18/09/2023	4	DR	18	76	Nil	MSB	Nil	Nil	2047	2118	FtG x 2, SG, 100m & 450m; OnJ		Nil
MOR-ie	20/09/2023	3	NM	20.3	85	Nil	Rl	Nil	26	1940	2010	FtG SM 500n5w		Blackbutt
MOR-iw	18/12/2022	6	DR	17	76	0/8	MSB	Nil	Nil	0013	0040	Nil		
MOR-iw	20/12/2022	1	DR	18	64	4/8	MSB	Nil	Nil	2030	2100	Nil		
MOR-iw	27/03/2023	2	DR	24	82	6/8	msb	nil	25	2012	2040	Tawny frogmouth		blackbutt
MOR-iw	30/03/2023	2	DR	23	60	0/8	nil	nil	25	2020	2048	ONJ hc, bandy bandy		blackbutt
MOR-iw	14/06/2023	6	DR	12	58	Nil	Nil	Nil	Nil	2124	2152	RtP, sm		
MOR-iw	20/06/2023	1	DR	14	52	2/8	Nil	Nil	Nil	1735	1800	Nil		
MOR-iw	18/09/2023	1	NM	19.5	78	Nil	Rl	Nil	11	1820	1850	Nil		Blackbutt, tallowwood, mahogany
MOR-iw	20/09/2023	5	DR	19	76	Nil	Nil		15	2140	2200	Nil		
MOR-rn	18/12/2022	2	DR	18	68	8/8	MSB	Nil	Nil	2120	2150	Nil	ONJ	
MOR-rn	13/01/2023	2	DR	19	74	2/8	RL	Nil	Nil	2115	2147	SuG (hc)		
MOR-rn	30/03/2023	4	AE	21	60	0/8	nil	nil	25	2211	2248	SuG (hc, 500m), OnJ (hc)		
MOR-rn	30/03/2023											Not sampled		
MOR-rn	14/06/2023	2	DR	13	56	Nil	Nil	Nil	Nil	1847	1919	FtG, sg		
MOR-rn	20/06/2023	7	DR	11	52	Nil	Nil	Nil	Nil	2119	2148	SuG, hc, 500m, 50N		
MOR-rn	18/09/2023	5	DR, NM	17	78	Nil	RL	Nil	Nil	2135	2150	Nil		Nil
MOR-rn	20/09/2023	4	NM	19.4	91	Nil	Nil	Nil	26	2018	2048	Small pet SE 5n1e		Stringybark?
MOR-rs	18/12/2022	3	DR	18	68	8/8	MLB	Nil	Nil	2205	2235	SqG, se, 380m, east 30m		
MOR-rs	20/12/2022	5	DR	17	69	0/8	RL	Nil	Nil	2337	2411	CBTP (se)		
MOR-rs	30/03/2023	4	DR	21	60	0/8	nil	nil	25	2213	2243	SuG (hc,0,50mE)		
MOR-rs	30/03/2023											Not sampled		
MOR-rs	14/06/2023	1	DR	15	56	Nil	Nil	Nil	Nil	1800	1835	Nil		
MOR-rs	20/06/2023	8	DR	11	52	Nil	Nil	Nil	Nil	2155	2226	GG, se, 50m, 30m W; SqG, se, 350m, 30m E		

Transect	Date	Order	Staff	Temp	Humidity	Cloud	Wind	Rain	Moon	Start	Finish	Fauna	Comments	Flowering
MOR-rs	18/09/2023	5	NM	19.2	78	Nil	RI	Nil	11	2059	2129	FtG HM 410n1w, GhFF		Blackbutt
MOR-rs	20/09/2023	1	NM	20.3	85	Nil	RI	Nil	26	1830	1900	GhFF		Blackbutt
TabDD-rn	18/12/2022	3	GR	19	68	7/8	MSB	Nil	29	2205	2235	Possible HC YBG 10n50e, cbtp SE	Not likely	
TabDD-rn	20/12/2022	8	LA	18.2	74	0/8	RL	Nil	12	0151	0219	GG SE 260N40E, SqG 310N20E	Nil	Nil
TabDD-rn	23/03/2023	3	GR	23	77	1/8	nil	nil	nil	2110	2143	nil		
TabDD-rn	28/03/2023	2	GR	25	81	1/8	RL	nil	25	2021	2055	nil		Bloodwood
TabDD-rn	19/06/2023	3	LA	12.8	63	3/8	Nil	Nil	1%	1857	1927	Nil	Nil	Nil
TabDD-rn	22/06/2023	3	LA	11	95	8/8	Nil	Light showers	14.8%	1903	1933	Nil	Nil	Nil
TabDD-rn	19/09/2023	3	NM	18.3	68	Nil	Msb	Nil	18	1952	2022	Nil		
TabDD-rn	21/09/2023	7	NM	18.9	77	7	RI	Nil	36	2224	2254	Nil		
TabDD-rs	18/12/2022											Not sampled	Campers	
TabDD-rs	20/12/2022											Not sampled	Same camper	
TabDD-rs	23/03/2023	3	DR	23	77	1/8	nil	nil	nil	2105	2140	nil		Melaleuca
TabDD-rs	28/03/2023	2	DR	25	89	8/8	nil	nil	nil	2020	2050	SqG (se, 75m 30mE), FtG (sm, 200m, 10mE)		Bloodwood
TabDD-rs	19/06/2023	3	DR	12	66	1/8	RL	Nil	Nil	1902	1932	SqG x1, se, 10m, 15m W		
TabDD-rs	22/06/2023	4	LA	11	95	8/8	Nil	Light showers	14.8%	1940	2010	Nil	Nil	Nil
TabDD-rs	Not sampled											Not sampled	Camper on transect	
TabDD-rs	Not sampled											Not sampled	Camper on transect	
TabLB-ie	18/12/2022	4	GR	19	82	8/8	RL	Nil	29	2306	2336	Nil		
TabLB-ie	20/12/2022	3	GR	21.2	69	5/8	MSB	Nil	12	2202	2232	HC Sug, ONJ	Nil	Nil
TabLB-ie	23/03/2023	5	GR	22	80	0/8	RL	nil	nil	2240	2312	nil		Melaleuca
TabLB-ie	28/03/2023	4	GR	23	91	8/8	nil	nil	nil	2150	2220	nil		
TabLB-ie	19/06/2023	7	LA	11.4	64	0/8	Nil	Nil	1%	2135	2205	Nil	Nil	Nil
TabLB-ie	22/06/2023	3	DR	16	74	8/8	Nil	Light	Nil	1845	1915	SuG, sm, 400m, 0m		Stringybark
TabLB-ie	19/09/2023	4	DR	17	74	Nil	RL	Nil	Nil	2048	2117	CBTP 1, se, 150m, 30m S; TF 1		
TabLB-ie	21/09/2023	2	DR	20	75	4/8	MSB	Nil	30	1907	1937	SuG 1, sg, 450m, 10m S		Nil
TabLB-iw	20/12/2022	1	LA	21.2	69	5/8	MSB	Nil	12	2037	2107	Nil	Nil	Nil
TabLB-iw	17/01/2023	2	DR	19	79	1/8	RL	Nil	Nil	2117	2150	Nil	Log over road	
TabLB-iw	23/03/2023	5	DR	22	80	0/8	RL	nil	nil	2253	2323	FtG (SM, 250,25mW)		Pink bloodwood, banksia
TabLB-iw	28/03/2023	4	DR	23	91	8/8	nil	nil	nil	2200	2232	SuG (sm,300m,25mW), Tfrog	active, small H-B, thick tail, bright whiote tip	
TabLB-iw	19/06/2023	5	DR	10	62	Nil	Nil	Nil	Nil	2040	2110	Nil		Stringybark
TabLB-iw	22/06/2023	6	DR	14	78	8/8	Nil	Nil	Nil	2102	2132	Nil		Stringybark

Transect	Date	Order	Staff	Temp	Humidity	Cloud	Wind	Rain	Moon	Start	Finish	Fauna	Comments	Flowering
TabLB-iw	19/09/2023	5	NM	17.1	74	Nil	RI	Nil	18	2120	2150	Nil		
TabLB-iw	21/09/2023	9	NM	19.2	73	7	Msb	Nil	36	2357	0017	Nil		
TabM-ce	18/12/2022	8	LA	18.4	82	8/8	RL	Nil	29	0131	0201	Nil		
TabM-ce	20/12/2022	6	GR	18.2	74	0/8	RL	Nil	12	2355	0025	Nil	Nil	Nil
TabM-ce	23/03/2023	8	GR	20	83	0/8	nil	nil	nil	0130	0200	nil		Melaleuca
TabM-ce	28/03/2023	8	DR	22	92	8/8	nil	light	nil	0103	0135	nil		
TabM-ce	19/06/2023	9	LA/DR	11.4	64	0/8	Nil	Nil	1%	2319	2349	Small pet spp. 150n30e	Nil	Nil
TabM-ce	22/06/2023	7	LA	11	95	8/8	Nil	Nil	14.8%	2136	2206	1 x FtG Se	Nil	Melaleuca
TabM-ce	19/09/2023	9	NM	14.2	84	Nil	Nil	Nil	18	2355	2425	FtG SM 282n5w		Stringybark
TabM-ce	21/09/2023	4	DR			2/8	MSB	Nil	30	2230	2257	SqG 1, se, 400m, 0m		
TabM-cw	18/12/2022	2	LA	19	68	7/8	MSB	Nil	29	2113	2143	FtG Se, Sug SE		
TabM-cw	20/12/2022	7	LA	18.2	74	0/8	RL	Nil	12	0116	0146	Nil	Incidental SqG near gate on highway	Nil
TabM-cw	23/03/2023	2	GR	23	77	1/8	nil	nil	nil	2030	2101	nil		Banksia
TabM-cw	28/03/2023	1	DR	23	89	8/8	nil	nil	nil	1926	2000	nil		Bloodwood
TabM-cw	19/06/2023	2	LA	12.8	63	3/8	Nil	Nil	1%	1815	1845	Small petaurid spp. 350s20e		
TabM-cw	22/06/2023	2	AE	11	95	8/8	Nil	Light showers	14.8%	1823	1853	Nil	Nil	Nil
TabM-cw	19/09/2023	2	DR	19	70	Nil	MLB	Nil	15	1917	1937	Nil		
TabM-cw	21/09/2023	6	NM	18.9	77	7	RI	Nil	36	2142	2212	Prob SqG se 189s10w		
TabM-ie	18/12/2022	7	LA	18.4	82	8/8	RL	Nil	29	0055	0125	Nil		
TabM-ie	20/12/2022	7	GR	18.2	74	0/8	RL	Nil	12	0037	0107	FTG SE	Nil	Nil
TabM-ie	23/03/2023	9	GR	20	83	0/8	nil	nil	nil	0212	0234	FtG, SG; ONJ, hc; Green-thighed frog,		
TabM-ie	28/03/2023	7	DR	22	92	8/8	nil	light	nil	2430	2450	Nil		
TabM-ie	19/06/2023	8	DR	10	56	Nil	RL	Nil	Nil	2310	2335	Nil		Paperbark
TabM-ie	22/06/2023	6	LA	11	95	8/8	Nil	Nil	14.8%	2056	2126	2 x FtG SE	Incidental SqG 200m N	Mahogany spp.
TabM-ie	19/09/2023	8	NM	14.2	84	Nil	Nil	Nil	18	2319	2349	FtG SG 5s10e, OnJ hc		Mahogany
TabM-ie	21/09/2023	4	NM	19.5	76	2	Msb	Nil	36	2020	2050	OnJ SI		Mahogany
TabM-iw	18/12/2022	1	LA	19	68	7/8	MSB	Nil	29	2030	2100	Nil		
TabM-iw	20/12/2022	6	LA	18.2	74	0/8	RL	Nil	12	0036	0106	CbtP	Nil	Nil
TabM-iw	23/03/2023	1	DR	23	77	1/8	nil	nil	nil	1930	2000	nil		
TabM-iw	27/03/2023	5	DR	25	81	1/8	RL	nil	25	2240	2312	nil		
TabM-iw	19/06/2023	1	LA	12.8	63	3/8	Nil	Nil	1%	1736	1804	FtG SG	Nil	Nil
TabM-iw	22/06/2023	2	LA	11	95	8/8	Nil	Light showers	14.8%	1822	1852	Nil	Nil	Nil
TabM-iw	19/09/2023	1	NM	18.3	68	Nil	Msb	Nil	18	1830	1900	Nil		Mahogany

Transect	Date	Order	Staff	Temp	Humidity	Cloud	Wind	Rain	Moon	Start	Finish	Fauna	Comments	Flowering
TabM-iw	21/09/2023	6	DR			5/8	RL	Nil	30	2155	2226	SqG 1, se, 0m; Pet spp 1, sm, 400m, 30m W	Both individuals blossom feeding	Stringybark, spotted gum
TabN-ce	18/12/2022	7	GR	18.4	82	8/8	RL	Nil	29	*0125*	0155	Nil		
TabN-ce	20/12/2022	5	GR	18.2	74	0/8	RL	Nil	12	2317	2347	Nil	Nil	Nil
TabN-ce	23/03/2023	8	DR	20	83	0/8	nil	nil	nil	*2451*	0125	nil		Melaleuca
TabN-ce	28/03/2023	7	GR	22	92	8/8	nil	light	nil	2430	0100	nil		
TabN-ce	19/06/2023	8	LA	11.4	64	0/8	Nil	Nil	1%	2214	2244	SqG 250n10w	Nil	Nil
TabN-ce	22/06/2023	4	AE	11	95	8/8	Nil	Light showers	14.8%	1951	2021	1 x SqG SE 375n10e	Nil	Nil
TabN-ce	19/09/2023	7	NM	17.1	74	Nil	Rl	Nil	18	2205	2235	Small pet SE 33n1w		Ironbark
TabN-ce	21/09/2023	3	NM	19.5	76	2	Msb	Nil	36	1942	2012	Small pet SE 33n1w	Same tree as last survey, high in blossom	Ironbark
TabN-cw	18/12/2022	2	GR	19	68	7/8	MSB	Nil	29	2115	2145	Nil		
TabN-cw	20/12/2022	8	GR	18.2	74	0/8	RL	Nil	12	0141	0211	Nil	Nil	Nil
TabN-cw	23/03/2023	2	DR	23	77	1/8	nil	nil	nil	2020	2050	CBtP, HC		Spotted gum
TabN-cw	28/03/2023	1	GR	25	81	1/8	RL	nil	25	1935	2010	Nil		Bloodwood, Melaleuca
TabN-cw	19/06/2023	2	DR	12	66	2/8	Nil	Nil	Nil	1817	1847	SqG x 1, se, 500m, 30m E; FtG x 3, sg, se, 100m, 5m W		Paperbark
TabN-cw	22/06/2023	5	LA	11	95	8/8	Nil	Nil	14.8%	2016	2046	2 x FtG Se and SM, 1 x SuG SE, 1 x SqG 270s25w	Nil	Stringy bark
TabN-cw	19/09/2023	2	NM	18.3	68	Nil	Msb	Nil	18	1906	1936	FtG SM 245s2w		Mahogany
TabN-cw	21/09/2023	7	DR	18	77	6/8	MSB	Nil	30	2235	2305	Nil		
TabN-ie	18/12/2022	6	LA	18.4	82	8/8	RL	Nil	29	0009	0039	CRTP		
TabN-ie	20/12/2022	3	LA	21.2	69	5/8	MSB	Nil	12	2238	2318	2 x ftg SM	Nil	Spotted gum?
TabN-ie	23/03/2023	7	GR	22	80	0/8	RL	nil	nil	2416	2455	nil		Bloodwood
TabN-ie	28/03/2023	6	GR	22	92	8/8	nil	light	nil	2348	2427	nil		Bloodwood
TabN-ie	19/06/2023	7	DR	10	54	Nil	Nil	Nil	Nil	2212	2242	Nil		
TabN-ie	22/06/2023	5	DR	16	69	8/8	Nil	Nil	Nil	2007	2036	FtG, sg, 200m, 10E		
TabN-ie	19/09/2023	7	DR	15	83	Nil	Nil	Nil	Nil	2237	2337	Nil		Nil
TabN-ie	21/09/2023	3	DR	20	76	4/8	MLB	Nil	30	2145	2215	CRP 2, se, 400m, 10m W		
TabN-iw	18/12/2022	3	LA	19	68	7/8	MSB	Nil	29	2207	2237	Nil		
TabN-iw	20/12/2022	9	LA/GR	18.2	74	0/8	RL	Nil	12	0222	0235	Nil		
TabN-iw	23/03/2023	4	GR	22	80	0/8	RL	nil	nil	2154	2227	nil		Melaleuca, Banksia
TabN-iw	28/03/2023	3	GR	25	81	1/8	RL	nil	25	2105	2140	nil		
TabN-iw	19/06/2023	4	LA	12.8	63	3/8	Nil	Nil	1%	1941	2011	Nil	Nil	Nil
TabN-iw	22/06/2023	3	AE	11	95	8/8	Nil	Light showers	14.8%	1904	1934	2 x Ftg SM	Nil	Nil
TabN-iw	19/09/2023	3	DR	18	74	Nil	Nil	Nil	15	2005	2035	FtG 1, SG, 250m, 0m		Nil

Transect	Date	Order	Staff	Temp	Humidity	Cloud	Wind	Rain	Moon	Start	Finish	Fauna	Comments	Flowering
TabN-iw	21/09/2023	8	NM	19.2	73	7	RI	Nil	36	2310	2340	GhFF HC		
TabNR-rn	18/12/2022	5	GR/LA	19	82	8/8	RL	Nil	29	2340	2355	Nil		
TabNR-rn	20/12/2022	2	GR	21.2	69	5/8	MSB	Nil	12	2109	2149	Nil	Nil	Nil
TabNR-rn	23/03/2023	6	DR/GR	22	80	0/8	RL	nil	nil	1152	2407	nil		Pink bloodwood
TabNR-rn	28/03/2023	5	DR	24	82	8/8	RL	drizzle	nil	2253	2324	OnJ hc		bloodwood, banksia
TabNR-rn	19/06/2023	6	LA	11.4	64	0/8	Nil	Nil	1%	2059	2129	Nil	Nil	Nil
TabNR-rn	22/06/2023	2	DR	16	70	8/8	Nil	Light	Nil	1810	1840	Nil		
TabNR-rn	19/09/2023	6	DR	15	81	Nil	RL	Nil	Nil	2203	2232	FtG 1, sm, 500m, 5m N		
TabNR-rn	21/09/2023	1	NM	20.5	71	2	MIb	Nil	36	1800	1830	Nil		
TabNR-rs	18/12/2022	4	LA	19	82	8/8	RL	Nil	29	2310	2340	SqG SE 250n5e		
TabNR-rs	20/12/2022	1	GR	21.2	69	5/8	MSB	Nil	12	2025	2055	WTNJ, ONJ, TF	Nil	Nil
TabNR-rs	23/03/2023	6	GR	22	80	0/8	RL	nil	nil	2320	2350	nil		Bloodwood, Banksia
TabNR-rs	28/03/2023	5	GR	23	91	8/8	nil	nil	nil	2245	2315	OnJ x 3 hc		
TabNR-rs	19/06/2023	5	LA	11.4	64	0/8	Nil	Nil	1%	2022	2052	Nil	Nil	Nil
TabNR-rs	22/06/2023	1	DR	17	69	8/8	Nil	Light	Nil	1735	1805	Nil		
TabNR-rs	19/09/2023	5	DR	16	79	Nil	RL	Nil	Nil	2125	2155	OnJ		Nil
TabNR-rs	21/09/2023	1	DR	20	76	5	MLB	Nil	30	1830	1900	Nil		
TabS-ce	18/12/2022	8	DR	16	83	6/8	RL	Nil	Nil	0146	0216	Nil		
TabS-ce	20/12/2022	4	DR	17	69	2/8	RL	Nil	Nil	2240	2307	Nil		
TabS-ce	28/03/2023	8	DR	22	92	8/8	nil	light	nil	0115	0145	nil		bloodwood
TabS-ce	30/03/2023	2	AE	23	60	0/8	nil	nil	25	2009	2050	T Frogmouth		
TabS-ce	20/06/2023	4	DR	14	52	Nil	Nil	Nil	Nil	1918	1950	Nil		
TabS-ce	22/06/2023	6	AE	11	95	8/8	Nil	Nil	14.8%	2104	2134	Nil	Nil	Nil
TabS-ce	18/09/2023	3	NM	19.2	78	Nil	RI	Nil	11	1946	2016	Nil		
TabS-ce	20/09/2023	4	DR	19	70	Nil	Nil	Nil	15	2104	2131	Nil		Stringybark
TabS-cw	18/12/2022	7	DR	17	76	0/8	MLB	Nil	Nil	0106	0135	Nil		
TabS-cw	20/12/2022	3	DR	17	69	6/8	RL	Nil	Nil	2150	2223	Pet spp. (se); FtG (sm); CBTP (se)		Wattle
TabS-cw	27/03/2023	3	DR	24	82	4/8	RL	nil	25	2107	2137	nil		
TabS-cw	30/03/2023	1	DR	23	60	0/8	nil	nil	25	1930	2005	CBtP (se,50,5mS)		
TabS-cw	20/06/2023	4	DR	14	55	Nil	Nil	Nil	Nil	1840	1910	Nil		
TabS-cw	22/06/2023	1	LA	11	95	8/8	Nil	Light showers	14.8%	1742	1812	Small petaurid 250n20w SE	Nil	Nil
TabS-cw	18/09/2023	2	NM	19.5	78	Nil	RI	Nil	11	1904	1934	GhFF		Blackbutt
TabS-cw	20/09/2023	3	DR	20	69	Nil	RL	Nil	15	2016	2048	SuG 1, am, 200m, 20mN; GHFF		Stringybark, irombark
TabS-ie	18/12/2022	1	GR/LA	18.4	82	8/8	RL	Nil	29	0211	0224	Nil		

Transect	Date	Order	Staff	Temp	Humidity	Cloud	Wind	Rain	Moon	Start	Finish	Fauna	Comments	Flowering
TabS-ie	20/12/2022	4	LA	21.2	69	5/8	MSB	Nil	12	2326	2356	SqG SE 390N10W	Nil	Nil
TabS-ie	23/03/2023	9	DR	20	83	0/8	nil	nil	nil	0142	0212	nil		Pink bloodwood
TabS-ie	27/03/2023	6	DR	25	81	1/8	RL	nil	25	2328	2357	nil		
TabS-ie	19/06/2023	9	LA	11.4	64	0/8	Nil	Nil	1%	2251	2306	CBTP SE	Nil	Mahogany spp.
TabS-ie	22/06/2023	5	AE	11	95	8/8	Nil	Nil	14.8%	2028	2059	SE ftg	Nil	Nil
TabS-ie	19/09/2023	8	DR	15	85	Nil	Nil	Nil	Nil	2321	2351	Nil		Nil
TabS-ie	21/09/2023	5	DR			6/8	RL	Nil	30	2114	2140	Nil		
TabS-iw	18/12/2022	1	GR	19	68	7/8	MSB	Nil	29	2030	2100	Nil		
TabS-iw	20/12/2022	5	LA	18.2	74	0/8	RL	Nil	12	0003	0033	FTG SE	Nil	Nil
TabS-iw	23/03/2023	1	GR	23	77	1/8	nil	nil	nil	1930	2003	nil		
TabS-iw	27/03/2023	4	DR	24	82	7/8	nil	drizzle	nil	2154	2224	FtG (SG 350m, 20mW), GHFF, water rat		
TabS-iw	19/06/2023	1	DR	13	66	2/8	Nil	Nil	Nil	1733	1803	Nil		
TabS-iw	22/06/2023	1	AE	11	95	8/8	Nil	Light showers	14.8%	1740	1820	FtG Se, SuG SE	Nil	Nil
TabS-iw	19/09/2023	1	DR	19	67	Nil	MSB	Nil	15	1830	1900	Nil		Nil
TabS-iw	21/09/2023	5	NM	18.9	77	7	RI	Spit	36	2100	2130	GhFF HC		
TabVM-ie	18/12/2022	6	GR	18.4	82	8/8	RL	Nil	29	*0013*	0043	FtG SG, FtG SE		
TabVM-ie	20/12/2022	4	GR	18.2	74	0/8	RL	Nil	12	2240	2310	Nil	Nil	Nil
TabVM-ie	23/03/2023	7	DR	22	80	0/8	RL	nil	nil	*2415*	2445	nil		
TabVM-ie	28/03/2023	6	DR	22	92	8/8	nil	light	nil	2359	2420	Nil		
TabVM-ie	19/06/2023	6	DR	10	64	Nil	Nil	Nil	Nil	*2127*	2157	Nil		
TabVM-ie	22/06/2023	4	DR	16	69	8/8	Nil	Nil	Nil	1925	1955	Nil		Stringybark
TabVM-ie	19/09/2023	6	NM	17.1	74	Nil	RI	Nil	18	2205	2235	GG SE 54s1w, FtG SG 245s2w		Stringybark
TabVM-ie	21/09/2023	2	NM	20.5	71	2	Mlb	Nil	36	1907	1937	Nil		Stringybark
TabVM-iw	20/12/2022	2	LA	21.2	69	5/8	MSB	Nil	12	2112	2142	Nil	Nil	Nil
TabVM-iw	17/01/2023	1	DR	19.4	79	1/8	RL	Nil	Nil	2035	2100	Nil	Log over road	
TabVM-iw	23/03/2023	4	DR	22	80	0/8	RL	nil	nil	2212	2239	nil		Banksia, stringybark
TabVM-iw	28/03/2023	3	DR	23	90	8/8	nil	nil	nil	2118	2148	SqG (se,200m,15mW), SqG (se,400m,20W), ONJ hc		Bloodwood
TabVM-iw	19/06/2023	4	DR	11	62	1/8	Nil	Nil	Nil	2002	2030	Nil		
TabVM-iw	22/06/2023	7	DR	14	78	8/8	Nil	Nil	Nil	2146	2210	Nil		Stringybark
TabVM-iw	19/09/2023	4	NM	18.3	68	Nil	RI	Nil	18	2044	2114	Nil		Mahogany
TabVM-iw	21/09/2023	8	DR	18	78	Nil	MLB	Nil	Nil	2326	2358	FtG 1, se, 200m, 30m W		
TucM-ce	15/12/2022	4	DR	17	67	0	Nil	Nil	Nil	2245	2247	Nil		Tallowwood
TucM-ce	19/12/2022	3	DR	17	63	Nil	MSB	Nil	Nil	2142	2211	Nil		

Transect	Date	Order	Staff	Temp	Humidity	Cloud	Wind	Rain	Moon	Start	Finish	Fauna	Comments	Flowering
TucM-ce	27/03/2023	3	LA	23.3	91	8/8	NIl	Nil	34%	2045	2115	SqG SE 310s0e	Nil	Nil
TucM-ce	30/03/2023	3	LA	21.6	64	2/8	Nil	Nil	61%	2036	2104	Nil	Nil	Nil
TucM-ce	14/06/2023	3	LA	16.7	35	Nil	Nil	Nil	18.3	1855	1925	RTP SE	Nil	Nil
TucM-ce	20/06/2023	4	LA	8.7	73	6/8	Nil	Nil	3.9%	1928	1958	Nil	Nil	Nil
TucM-ce	18/09/2023	3	LA	18	77	0/8	MSB	Nil		1936	2006	SE RtP	Nil	Nil
TucM-ce	20/09/2023	1	DR	22	66	Nil	RL	Nil	15	1830	1900	Nil		Nil
TucM-cw	15/12/2022	3	DR	17	67	0	Nil	Nil	Nil	2200	2230	CBTP x 2 (se)		
TucM-cw	19/12/2022	4	DR	17	63	Nil	MSB	Nil	Nil	2230	2300	CBTP se		
TucM-cw	27/03/2023	4	LA	23.3	91	8/8	NIl	Nil	34%	2121	2151	Nil	Nil	Nil
TucM-cw	30/03/2023	4	LA	21.6	64	2/8	Nil	Nil	61%	2111	2141	Nil		
TucM-cw	14/06/2023	4	LA	16.7	35	Nil	Nil	Nil	18.3	1933	2003	Nil	Nil	Nil
TucM-cw	20/06/2023	3	LA	8.7	73	6/8	Nil	Nil	3.9%	1855	1925	GHFF	Nil	Melaleuca
TucM-cw	18/09/2023	4	LA	18	77	0/8	MSB	Nil		2011	2041	SE RtP, SE Cbtp	Clearing affecting up to 15% of transect	Nil
TucM-cw	20/09/2023	3	LA	22.5	54	0/8	Nil	Nil		1942	2012	Nil	Nil	Tallowwood
TucN-ce	15/12/2022	5	DR	17	67	Nil	RL	Nil	Nil	1135	1210	FtG sm		
TucN-ce	19/12/2022	1	DR	17	63	Nil	MLB	Nil	Nil	2030	2100	Nil		
TucN-ce	27/03/2023	5	LA	23.3	91	8/8	NIl	Nil	34%	2203	2233	Nil	Nil	Nil
TucN-ce	30/03/2023	5	LA	20.1	52	0/8	Nil	Nil	61%	2201	2231	RtP SE, CBTP Se, SqG SE 200e10n	Nil	Nil
TucN-ce	14/06/2023	1	LA	16.7	35	Nil	Nil	Nil	18.3	1733	1903	Btp spp. SE	Nil	Nil
TucN-ce	20/06/2023	5	LA	8.7	73	6/8	Nil	Nil	3.9%	2009	2039	SqG 120e5n	Nil	Nil
TucN-ce	18/09/2023	1	DR	19	75	Nil	MLB	Nil	10	1825	1855	Nil		Tallowwood
TucN-ce	20/09/2023	1	LA	22.5	54	0/8	Nil	Nil		1827	1857	SE Cbtp	Nil	Nil
TucN-cw	15/12/2022	6	DR	17	67	Nil	RL	Nil	Nil	1215	1240	Nil		
TucN-cw	19/12/2022	2	DR	17	63	Nil	MLB	Nil	Nil	2107	2132	Nil		
TucN-cw	27/03/2023	6	LA	23.3	91	8/8	NIl	Nil	34%	2237	2307	CBTP SE	Nil	Nil
TucN-cw	30/03/2023	6	LA	20.1	52	0/8	Nil	Nil	61%	2235	2305	Nil		
TucN-cw	14/06/2023	2	LA	16.7	35	Nil	Nil	Nil	18.3	1814	1844	Nil	Nil	Nil
TucN-cw	20/06/2023	6	LA	8.7	73	6/8	Nil	Nil	3.9%	2043	2113	Nil	Nil	Nil
TucN-cw	18/09/2023	2	DR	19	75	Nil	MSB	Nil	10	1903	1931	SqG, se, 250m, 10m N; 1 CBTP se, 150m 15S; 2cbtp se 300m 25N		Tallowwood
TucN-cw	20/09/2023	2	LA	22.5	54	0/8	Nil	Nil		1902	1932	SE Cbtp	Nil	Nil
TucN-ie	15/12/2022	2	LA	18	58	0/0	Nil	Nil	53.9	2114	2144	2 x ftg SE, PO SE 100n10e	Nil	Nil
TucN-ie	19/12/2022	7	LA	17.2	78	4/8	MSB	Nil	20	0029	0059	Barn owl		Nil
TucN-ie	23/03/2023	5	LA	20.5	71	8/8	Nil	Light showers	4.4	2256	2326	FtG SM	Nil	Nil

Transect	Date	Order	Staff	Temp	Humidity	Cloud	Wind	Rain	Moon	Start	Finish	Fauna	Comments	Flowering
TucN-ie	28/03/2023	3	LA	24.5	76	7/8	Nil	Nil	43	2039	2111	CBTP SE, SqG Se 260n0e	Nil	Nil
TucN-ie	15/06/2023	5	LA	13.8	55	0/8	Nil	Nil	10.6	2056	2126	1x Cbtp SE	Nil	Nil
TucN-ie	21/06/2023	2	AE	12.4	61	1/8	Nil	Nil	8.6%	1825	1855	Nil	Nil	Nil
TucN-ie	19/09/2023	5	LA	18.4	67	0/8	RL	Nil		2120	2150	Se Cbtp	Nil	Nil
TucN-ie	21/09/2023	3	FM	18.6	67	0/8	MSB	Nil		2003	2033	Nil	Nil	Nil
TucN-iw	15/12/2022	2	FM	18	58	0/0	Nil	Nil	53.9	2114	2144		Nil	Nil
TucN-iw	19/12/2022	7	FM	17.2	78	4/8	MSB	Nil	20	0029	0059	Nil		Nil
TucN-iw	23/03/2023	5	FM	20.5	71	8/8	Nil	Light showers	4.4	2256	2326	TF, FTG SE	Nil	Nil
TucN-iw	28/03/2023	3	FM	24.5	76	7/8	Nil	Nil	43	2039	2111	Nil	Nil	Nil
TucN-iw	15/06/2023	5	AE	13.8	55	0/8	Nil	Nil	10.6	2056	2126	Nil	Nil	Nil
TucN-iw	21/06/2023	2	LA	12.4	61	1/8	Nil	Nil	8.6%	1825	1855	SqG se 375n30w	Nil	Nil
TucN-iw	19/09/2023	5	FM	18.4	67	0/8	RL	Nil		2120	2150	Nil	Nil	Nil
TucN-iw	21/09/2023	3	LA	18.6	67	0/8	MSB	Nil		2003	2033	SE SqG 120n30e	Nil	Ironbark
Tuc-r-n	15/12/2022	2	DR	19	53	0	Nil	Nil	Nil	2115	2146	SuG (sm); MO sm, WtN hc, OnJ hc		Wattle
Tuc-r-n	19/12/2022	8	DR	17	67	Nil	RL	Nil	Nil	2402	2434	Nil		Wattle
Tuc-r-n	27/03/2023	2	LA	23.3	91	8/8	NIl	Nil	34%	2002	2032	SqGSE 120e10 n	Nil	Nil
Tuc-r-n	30/03/2023	2	LA	21.6	64	2/8	Nil	Nil	61%	1925	1955	FtG SM, PO HC x2 individuals	Nil	Nil
Tuc-r-n	14/06/2023	5	LA	16.7	35	Nil	Nil	Nil	18.3	2014	2044	Nil	Hazard reduction burn 30% understorey	Nil
Tuc-r-n	20/06/2023	2	LA	8.7	73	6/8	Nil	Nil	3.9%	1807	1837	Nil	Nil	Nil
Tuc-r-n	18/09/2023	1	LA	18	77	0/8	MSB	Nil		1816	1846	Nil	Nil	Ni
Tuc-r-n	20/09/2023	4	LA	22.5	54	0/8	Nil	Nil		2025	2055	SM ftg	Nil	Nil
Tuc-r-s	15/12/2022	1	DR	19	53	0	RL	Nil	Nil	2035	2136	CBTP x 1 (se); OnJ hc, WtN, hc, TF hc.		Iron bark
Tuc-r-s	19/12/2022	7	DR	17	67	0	RL	Nil	Nil	2323	2353	Nil		Iron bark
Tuc-r-s	27/03/2023	1	LA	23.3	91	8/8	NIl	Showers	34%	1925	1955	CBTP SE	Nil	Nil
Tuc-r-s	30/03/2023	1	LA	21.6	64	2/8	Nil	Nil	61%	1958	2028	Nil	Nil	Nil
Tuc-r-s	14/06/2023	6	LA	16.7	35	Nil	Nil	Nil	18.3	2051	2121	Nil	70%% understory	Nil
Tuc-r-s	20/06/2023	1	LA	8.7	73	6/8	Nil	Nil	3.9%	1733	1803	FtG se	Nil	Nil
Tuc-r-s	18/09/2023	2	LA	18	77	0/8	MSB	Nil		1850	1926	Nil	Nil	Tallowwood
Tuc-r-s	20/09/2023	5	LA	22.5	54	0/8	Nil	Nil		2106	2136	bTP HC	Nil	Nil
TucS-ce	15/12/2022	3	LA	18	58	0/0	Nil	Nil	53.9	2203	2233	Nil	Nil	Pink bloodwood
TucS-ce	19/12/2022	8	FM	17.2	78	4/8	MSB	Nil	20	0107	0137	SE FtG		Pink bloodwood
TucS-ce	23/03/2023	6	FM	20.5	71	8/8	Nil	Light showers	4.4	2334	0004	Cbtp		
TucS-ce	28/03/2023	1	LA	24.5	76	7/8	Nil	Nil	43	1921	1951	Nil	Nil	Corymbia intermedia

Transect	Date	Order	Staff	Temp	Humidity	Cloud	Wind	Rain	Moon	Start	Finish	Fauna	Comments	Flowering
TucS-ce	15/06/2023	6	LA	13.8	55	0/8	Nil	Nil	10.6	2142	2212	SqG SE 310s5e, Cbtp SE.	Nil	Nil
TucS-ce	21/06/2023	3	AE	12.4	61	1/8	Nil	Nil	8.6%	1911	1941	SqG se 10s5w	Nil	Nil
TucS-ce	19/09/2023	6	LA	12.5	90	0/8	Nil	Nil		2203	2233	Nil	Nil	Swamy mahogany
TucS-ce	21/09/2023	4	FM	18.6	67	0/8	MSB	Nil		2045	2115	Nil	Nil	Nil
TucS-cw	15/12/2022	3	FM	18	58	0/0	Nil	Nil	53.9	2203	2233	SqG SE 100s0e, 2 x cbtp SE	Nil	Nil
TucS-cw	19/12/2022	8	LA	17.2	78	4/8	MSB	Nil	20	0107	0137	Cbtp SE SE SqG 70s20e		Nil
TucS-cw	23/03/2023	6	LA	20.5	71	8/8	Nil	Light showers	4.4	2334	0004	FtG SM, CbtpSE		
TucS-cw	28/03/2023	1	FM	24.5	76	7/8	Nil	Nil	43	1921	1951	CBTP Se	Nil	Nil
TucS-cw	15/06/2023	6	AE	13.8	55	0/8	Nil	Nil	10.6	2142	2212	FtG SE, Cbtp SE	Nil	Nil
TucS-cw	21/06/2023	3	LA	12.4	61	1/8	Nil	Nil	8.6%	1911	1941	2 x CBTP SE	Nil	Nil
TucS-cw	19/09/2023	6	FM	12.5	90	0/8	Nil	Nil		2203	2233	SE Cbtp	Nil	Nil
TucS-cw	21/09/2023	4	LA	18.6	67	0/8	MSB	Nil		2045	2115	SE Btphasc 320s10w	Nil	Nil
TucS-ie	15/12/2022	1	FM	18	58	0/0	RL	Nil	53.9	2020	2050	GG SE 50s20w, GG SE 480s20	Nil	Nil
TucS-ie	19/12/2022	5	LA	18	61	0/8	MSB	Nil	20	2319	2349	Nil		Nil
TucS-ie	23/03/2023	4	LA	20.5	71	8/8	Nil	Nil	4.4	2207	2247	CBTP x 2	Nil	Nil
TucS-ie	28/03/2023	2	FM	24.5	76	7/8	Nil	Nil	43	2004	2034	CBTP Se	Nil	Nil
TucS-ie	15/06/2023	7	LA	13.8	55	0/8	Nil	Nil	10.6	2224	2254	Nil	Nil	Nil
TucS-ie	21/06/2023	1	LA	12.4	61	1/8	Nil	Nil	8.6%	1741	1811	GG se 410n25e	Nil	Nil
TucS-ie	19/09/2023	4	LA	18.4	67	0/8	RL	Nil		2033	2107	Btphasc HM 250N10w	Nil	Nil
TucS-ie	21/09/2023	2	FM	18.6	67	0/8	MLB	Nil		1921	1951	SE CBTP, SE SuG	Nil	Nil
TucS-iw	15/12/2022	1	LA	18	58	0/0	RL	Nil	53.9	2020	2050	GG SE 20s5e	Emerging hollow	Nil
TucS-iw	19/12/2022	5	FM	18	61	0/8	MSB	Nil	20	2319	2349	SE SqG 500sw10		Nil
TucS-iw	23/03/2023	4	FM	20.5	71	8/8	Nil	Nil	4.4	2207	2247	SqG SE, GG SE	SqG 511698 6711254, GG 511707 6711472	Nil
TucS-iw	28/03/2023	2	LA	24.5	76	7/8	Nil	Nil	43	2004	2034	Nil	Nil	Nil
TucS-iw	15/06/2023	7	AE	13.8	55	0/8	Nil	Nil	10.6	2224	2254	Nil	Nil	Nil
TucS-iw	21/06/2023	1	AE	12.4	61	1/8	Nil	Nil	8.6%	1741	1811	FtG SM	Nil	Nil
TucS-iw	19/09/2023	4	FM	18.4	67	0/8	RL	Nil		2033	2107	3 x BtP SE	Tallowwood	Nil
TucS-iw	21/09/2023	2	LA	18.6	67	0/8	MLB	Nil		1921	1951	3 x BtP SE	Nil	Nil

Appendix C –Aerial crossing structure fauna detections

Table C1: Results of year three (2023) rope bridge and glide pole fauna detections in sections 3-11. E = moved east; W = moved west; CC = complete crossing; IC = incomplete crossing; NC = non-crossing movement; NDM = non-directional movement; EXM = exploratory movement; D = definite; Pr = probable; Po = Possible.

Structure	Side	Cam	Location	Year	Date	Time	Species	Accuracy	Movement Direction	Crossing type	Comments
GP4	East	E19	Roadside	2023	14/01/2023	2031	Petaurus spp.	D	EXM	IC	
GP4	east	W19	Roadside	2023	14/01/2023	2031	Petaurus spp.	D	EXM	IC	
GP4	East	E19	Roadside	2023	15/01/2023	2315	Feathertail glider	D	EXM	IC	
GP4	East	E19	Roadside	2023	15/01/2023	0248	Squirrel glider	D	EXM	IC	
GP4	East	E19	Roadside	2023	15/01/2023	0020	Feathertail glider	D	EXM	IC	
GP4	east	W19	Roadside	2023	15/01/2023	2315	Feathertail glider	D	EXM	IC	
GP4	east	W19	Roadside	2023	15/01/2023	0248	Squirrel glider	D	EXM	IC	
GP4	east	W19	Roadside	2023	15/01/2023	0020	Feathertail glider	D	EXM	IC	
GP4	East	E19	Roadside	2023	28/01/2023	0402	Squirrel glider	D	towards	CC	
GP4	east	W19	Roadside	2023	28/01/2023	0402	Squirrel glider	D	towards	CC	
GP4	East	E19	Roadside	2023	5/02/2023	2244	Petaurus spp.	D	EXM	IC	
GP4	east	W19	Roadside	2023	5/02/2023	2244	Petaurus spp.	D	EXM	IC	
GP4	east	W19	Roadside	2023	9/04/2023	0056	Brush-tailed phascogale	D	Towards	IC	
GP4	east	W19	Roadside	2023	12/04/2023	2019	Sugar glider	D	CC	CC	
GP4	east	W19	Roadside	2023	13/05/2023	0015	Petaurus spp.	Pr	EXM	IC	
GP4	east	W19	Roadside	2023	13/05/2023	0015	Petaurus spp.	D	EXM	IC	
GP4	east	W19	Roadside	2023	16/06/2023	2043	Feathertail glider	D	EXM	IC	
GP4	east	W19	Roadside	2023	16/06/2023	2043	Feathertail glider	D	Away	IC	
GP4	east	W19	Roadside	2023	9/09/2023	0214	Squirrel glider	D	EXM	IC	
GP4	east	W19	Roadside	2023	9/09/2023	0215	Squirrel glider	D	EXM	IC	
GP4	east	W19	Roadside	2023	11/09/2023	0042	Feathertail glider	D	EXM	IC	
GP4	east	W19	Roadside	2023	11/09/2023	0042	Feathertail glider	D	EXM	IC	
GP4	east	W19	Roadside	2023	21/01/2024	2158	Petaurus spp.	D	EXM	IC	
GP4	west	W20	Roadside	2023	18/02/2023	0225	Sugar glider	D	EXM	IC	
GP4	west	W20	Roadside	2023	4/04/2023	2105	Brush-tailed phascogale	D	EXM	IC	
GP4	west	W20	Roadside	2023	11/04/2023	2222	Sugar glider	D	NDM	IC	
GP4	west	W20	Roadside	2023	23/04/2023	0326	Squirrel glider	D	Away	CC	

Structure	Side	Cam	Location	Year	Date	Time	Species	Accuracy	Movement Direction	Crossing type	Comments
GP4	west	W20	Roadside	2023	11/09/2023	0327	Feathertail glider	D	Away	IC	
GP4	west	W20	Roadside	2023	14/09/2023	0148	Squirrel glider	D	Towards	CC	Launch off arm
GP4	west	W20	Roadside	2023	23/09/2023	0146	Feathertail glider	D	EXM	IC	
GP4	west	W20	Roadside	2023	5/12/2023	0300	Squirrel glider	D	NDM	IC	
GP5	east	W31	Roadside	2023	4/01/2023	0447	Feathertail glider	Pr	EXM	IC	
GP5	east	W31	Roadside	2023	19/02/2023	2346	Feathertail glider	D	EXM	IC	
GP5	east	W31	Roadside	2023	25/02/2023	0039	Brush-tailed phascogale	D	EXM	IC	
GP5	east	W31	Roadside	2023	10/10/2023	0153	Squirrel glider	D	EXM	IC	
GP5	east	W31	Roadside	2023	10/10/2023	0255	Antechinus spp.	D	EXM	IC	
GP5	east	W31	Roadside	2023	14/11/2023	2212	Feathertail glider	D	Towards	CC	Glide arm
GP5	east	W31	Roadside	2023	27/11/2023	2137	Feathertail glider	D	NDM	IC	
GP5	east	W31	Roadside	2023	4/12/2023	2153	Feathertail glider	D	NDM	IC	
GP5	east	W31	Roadside	2023	14/10/20253	2143	Feathertail glider	D	EXM	IC	
GP5	West	S000	Roadside	2023	23/01/2023	0040	Feathertail glider	D	EXM	IC	
GP5	west	S000	Roadside	2023	23/01/2023	0040	Feathertail glider	D	EXM	IC	
GP5	west	S000	Roadside	2023	10/04/2023	2201	Squirrel glider	D	EXM	IC	
GP5	west	S000	Roadside	2023	29/04/2023	2140	Squirrel glider	D	EXM	IC	
GP6	GP6	W26	Median	2023	21/01/2023	0009	Petaurus spp.	D	Towards	IC	climbs on cam
GP6	GP6	W26	Median	2023	27/02/2023	0313	Feathertail glider	Pr	NDM	IC	
GP6	GP6	W26	Median	2023	21/03/2023	0342	Squirrel glider	Pr	NDM	CC	
GP6	GP6	W26	Median	2023	3/04/2023	0401	Squirrel glider	Pr	Towards	IC	
GP6	GP6	W26	Median	2023	9/04/2023	0457	Petaurus spp.	D	Towards	CC	Launch off arm
GP6	GP6	W26	Median	2023	12/04/2023	0059	Squirrel glider	Pr	Towards	CC	Launch off arm
GP6	GP6	W26	Median	2023	13/04/2023	0200	Petaurus spp.	D	EXM	IC	
GP6	GP6	W26	Median	2023	14/04/2023	0411	Squirrel glider	Pr	Towards	IC	
GP6	GP6	W26	Median	2023	14/04/2023	2346	Feathertail glider	D	Towards	CC	
GP6	GP6	W26	Median	2023	18/04/2023	2116	Feathertail glider	D	Towards	CC	
GP6	GP6	W26	Median	2023	17/07/2023	2340	Squirrel glider	D	Towards	IC	
GP6	GP6	W26	Median	2023	22/08/2023	2351	Feathertail glider	D	EXM	CC	
GP6	GP6	W26	Median	2023	5/10/2023	2018	Squirrel glider	D	Towards	CC	
GP6	GP6	W26	Median	2023	1/12/2023	2354	Petaurus spp.	D	Towards	IC	
GP6	Median	M26	Median	2023	21/01/2023	0009	Petaurus spp.	D	Towards	IC	climbs on cam

Structure	Side	Cam	Location	Year	Date	Time	Species	Accuracy	Movement Direction	Crossing type	Comments
GP7	east	W15	Roadside	2023	2/01/2023	2204	Feathertail glider	D	away	CC	Launch off arm
GP7	east	W15	Roadside	2023	7/01/2023	0159	Unid mammal	D	EXM	IC	
GP7	east	W15	Roadside	2023	20/01/2023	2338	Feathertail glider	D	Towards	CC	launch off cam arm
GP7	East	E15	Roadside	2023	18/02/2023	2217	Sugar glider	D	EXM	IC	
GP7	east	W15	Roadside	2023	18/02/2023	2217	Sugar glider	D	EXM	IC	
GP7	east	W15	Roadside	2023	27/02/2023	2305	Petaurus spp.	D	EXM	IC	
GP7	east	W15	Roadside	2023	13/03/2023	0327	Petaurus spp.	D	CC	CC	
GP7	east	W15	Roadside	2023	28/03/2023	2120	Feathertail glider	Pr	EXM	IC	
GP7	east	W15	Roadside	2023	30/04/2023	0317	Feathertail glider	D	Towards	CC	
GP7	east	W15	Roadside	2023	10/06/2023	2226	Unid mammal	D	EXM	IC	
GP7	east	W15	Roadside	2023	12/08/2023	2126	Feathertail glider	Pr	towards	CC	launch off cam arm
GP7	east	W15	Roadside	2023	11/10/2023	2149	Feathertail glider	Pr	towards	CC	Launch off cam arm
GP7	West	W16	Roadside	2023	13/01/2023	0043	Petaurus spp.	Pr	EXM	IC	
GP7	west	W16	Roadside	2023	13/01/2023	0043	Petaurus spp.	Pr	EXM	IC	
GP7	West	W16	Roadside	2023	20/01/2023	2244	Feathertail glider	D	EXM	IC	
GP7	west	W16	Roadside	2023	20/01/2023	2244	Feathertail glider	D	EXM	IC	
GP7	West	W16	Roadside	2023	22/01/2023	0255	Feathertail glider	Pr	Towards	CC	
GP7	west	W16	Roadside	2023	22/01/2023	0255	Feathertail glider	Pr	Towards	CC	
GP7	West	W16	Roadside	2023	6/02/2023	0433	Petaurus spp.	D	EXM	IC	
GP7	west	W16	Roadside	2023	6/02/2023	0433	Petaurus spp.	D	EXM	IC	
GP7	West	W16	Roadside	2023	10/02/2023	2216	Petaurus spp.	D	Towards	CC	
GP7	west	W16	Roadside	2023	10/02/2023	2216	Petaurus spp.	D	Towards	CC	
GP7	West	W16	Roadside	2023	14/02/2023	0023	Feathertail glider	Pr	EXM	IC	
GP7	west	W16	Roadside	2023	14/02/2023	0023	Feathertail glider	Pr	EXM	IC	
GP7	west	W16	Roadside	2023	24/02/2023	2338	Petaurus spp.	D	Towards	IC	
GP7	west	W16	Roadside	2023	27/02/2023	0024	Petaurus spp.	Pr	EXM	IC	
GP7	west	W16	Roadside	2023	23/08/2023	0026	Sugar glider	D	EXM	IC	
GP7	west	W16	Roadside	2023	9/10/2023	0019	Petaurus spp.	Pr	EXM	IC	Cam off alignment
GP7	west	W16	Roadside	2023	5/12/2023	0334	Petaurus spp.	D	EXM	IC	
GP7	west	W16	Roadside	2023	5/12/2023	2038	Petaurus spp.	D	EXM	IC	

Structure	Side	Cam	Location	Year	Date	Time	Species	Accuracy	Movement Direction	Crossing type	Comments
GP7	west	W16	Roadside	2023	13/01/2024	2123	Petaurus spp.	D	EXM	IC	
GP8	GP8	W11	Median	2023	18/01/2023	2139	Sugar glider	D	EXM	IC	
GP8	GP8	W11	Median	2023	20/02/2023	0253	Petaurus spp.	D	EXM	CC	
GP8	GP8	W11	Median	2023	26/02/2023	2259	Feathertail glider	D	EXM	IC	
GP8	GP8	W11	Median	2023	20/03/2023	2330	Feathertail glider	D	Towards	CC	
GP8	GP8	W11	Median	2023	15/04/2023	2151	Petaurus spp.	D	EXM	CC	
GP8	GP8	W11	Median	2023	19/04/2023	2136	Squirrel glider	D	EXM	CC	
GP8	GP8	W11	Median	2023	12/05/2023	2030	Petaurus spp.	D	EXM	IC	
GP8	GP8	W11	Median	2023	14/05/2023	0206	Unid mammal	D	EXM	IC	
GP8	GP8	W11	Median	2023	24/06/2023	2255	Feathertail glider	D	EXM	IC	
GP8	GP8	W11	Median	2023	21/07/2023	2134	Feathertail glider	D	EXM	CC	
GP8	Median	M11	Median	2023	18/01/2023	2139	Sugar glider	D	EXM	IC	
GP8	Median	M11	Median	2023	20/02/2023	0253	Petaurus spp.	D	EXM	CC	
GP9	West	W27	Roadside	2023	15/02/2023	2337	Feathertail glider	D	EXM	IC	
GP9	West	W27	Roadside	2023	15/02/2023	2258	Feathertail glider	D	EXM	IC	
GP9	west	W25	Roadside	2023	15/02/2023	2337	Feathertail glider	D	EXM	IC	
GP9	west	W25	Roadside	2023	15/02/2023	2258	Feathertail glider	D	EXM	IC	
GP9	west	W25	Roadside	2023	15/02/2023	2258	Feathertail glider	D	EXM	IC	
GP9	west	W25	Roadside	2023	15/02/2023	2337	Feathertail glider	D	EXM	IC	
GP9	West	W27	Roadside	2023	17/02/2023	0002	Feathertail glider	D	EXM	IC	S29, 10' 11"; E153 16' 54"
GP9	west	W25	Roadside	2023	17/02/2023	0002	Feathertail glider	D	EXM	IC	S29, 10' 11"; E153 16' 54"
GP9	west	W25	Roadside	2023	17/02/2023	0002	Feathertail glider	D	EXM	IC	
GP9	West	W27	Roadside	2023	20/02/2023	0038	Squirrel glider	Pr	Away	CC	See pics
GP9	west	W25	Roadside	2023	20/02/2023	0038	Sugar glider	Pr	Away	CC	See pics
GP9	west	W25	Roadside	2023	25/02/2023	2337	Feathertail glider	D	NDM	IC	
GP9	west	W25	Roadside	2023	25/02/2023	2247	Feathertail glider	D	Towards	IC	
GP9	west	W25	Roadside	2023	26/02/2023	0324	Squirrel glider	D	Away	CC	
GP9	west	W25	Roadside	2023	26/02/2023	0217	Feathertail glider	D	Away	IC	
GP9	west	W25	Roadside	2023	26/02/2023	0046	Feathertail glider	D	Away	CC	
GP9	west	W25	Roadside	2023	27/02/2023	0104	Feathertail glider	D	Away	CC	
GP9	west	W25	Roadside	2023	28/02/2023	0358	Squirrel glider	D	Away	IC	

Structure	Side	Cam	Location	Year	Date	Time	Species	Accuracy	Movement Direction	Crossing type	Comments
GP9	west	W25	Roadside	2023	3/03/2023	0208	Feathertail glider	D	EXM	IC	
GP9	west	W25	Roadside	2023	4/03/2023	0159	Feathertail glider	D	Towards	IC	moved past cam
GP9	west	W25	Roadside	2023	5/03/2023	0328	Feathertail glider	D	Away	CC	Launch off arm
GP9	west	W25	Roadside	2023	5/03/2023	0311	Feathertail glider	D	Towards	IC	
GP9	west	W25	Roadside	2023	11/03/2023	2056	Feathertail glider	D	EXM	IC	
GP9	west	W25	Roadside	2023	14/03/2023	2053	Feathertail glider	D	EXM	IC	
GP9	west	W25	Roadside	2023	15/03/2023	2243	Feathertail glider	D	Towards	IC	
GP9	west	W25	Roadside	2023	16/03/2023	2250	Feathertail glider	D	Towards	IC	
GP9	west	W25	Roadside	2023	18/03/2023	1942	Feathertail glider	D	Away	CC	Launch of arm
GP9	west	W25	Roadside	2023	18/03/2023	0048	Feathertail glider	D	Towards	CC	Launch off arm; 2 ind
GP9	west	W25	Roadside	2023	20/03/2023	0339	Feathertail glider	D	Away	CC	Launch of arm
GP9	west	W25	Roadside	2023	21/03/2023	0010	Feathertail glider	D	Away	IC	
GP9	west	W25	Roadside	2023	23/03/2023	0130	Feathertail glider	D	Towards	IC	
GP9	west	W25	Roadside	2023	23/03/2023	0456	Feathertail glider	D	Towards	IC	
GP9	west	W25	Roadside	2023	27/03/2023	0023	Feathertail glider	D	Away	IC	
GP9	west	W25	Roadside	2023	29/03/2023	0209	Feathertail glider	D	Away	IC	
GP9	west	W25	Roadside	2023	29/03/2023	2205	Feathertail glider	D	Away	IC	
GP9	west	W25	Roadside	2023	31/03/2023	0224	Feathertail glider	D	Away	CC	Launch off arm
GP9	west	W25	Roadside	2023	17/05/2023	2221	Feathertail glider	D	EXM	IC	
GP9	west	W25	Roadside	2023	19/05/2023	0219	Feathertail glider	D	NDM	IC	
GP9	west	W25	Roadside	2023	16/06/2023	2141	Feathertail glider	Pr	Towards	CC	
GP9	west	W25	Roadside	2023	16/06/2023	0043	Feathertail glider	D	Away	IC	
GP9	west	W25	Roadside	2023	17/06/2023	2115	Feathertail glider	D	NDM	IC	
GP9	west	W25	Roadside	2023	16/07/2023	0210	Feathertail glider	D	Away	IC	
GP10	East	W2/E701	Roadside	2023	5/01/2023	2240	Feathertail glider	D	EXM	IC	
GP10	east	W701	Roadside	2023	5/01/2023	2240	Feathertail glider	D	EXM	IC	
GP10	East	W2/E701	Roadside	2023	6/01/2023	2308	Feathertail glider	D	EXM	IC	
GP10	East	W2/E701	Roadside	2023	6/01/2023	2210	Feathertail glider	D	EXM	IC	
GP10	east	W701	Roadside	2023	6/01/2023	2308	Feathertail glider	D	EXM	IC	
GP10	east	W701	Roadside	2023	6/01/2023	2210	Feathertail glider	D	EXM	IC	
GP10	East	W2/E701	Roadside	2023	7/01/2023	2245	Feathertail glider	D	EXM	IC	
GP10	east	W701	Roadside	2023	7/01/2023	2245	Feathertail glider	D	EXM	IC	

Structure	Side	Cam	Location	Year	Date	Time	Species	Accuracy	Movement Direction	Crossing type	Comments
GP10	East	W2/E701	Roadside	2023	9/01/2023	2222	Feathertail glider	D	EXM	IC	
GP10	East	W2/E701	Roadside	2023	9/01/2023	0023	Feathertail glider	D	EXM	IC	
GP10	east	W701	Roadside	2023	9/01/2023	2222	Feathertail glider	D	EXM	IC	
GP10	east	W701	Roadside	2023	9/01/2023	0023	Feathertail glider	D	EXM	IC	
GP10	East	W2/E701	Roadside	2023	12/01/2023	2210	Feathertail glider	D	EXM	IC	
GP10	east	W701	Roadside	2023	12/01/2023	2210	Feathertail glider	D	EXM	IC	
GP10	East	W2/E701	Roadside	2023	14/01/2023	0051	Feathertail glider	D	EXM	IC	
GP10	east	W701	Roadside	2023	14/01/2023	0051	Feathertail glider	D	EXM	IC	
GP10	East	W2/E701	Roadside	2023	18/01/2023	2254	Feathertail glider	D	EXM	IC	
GP10	east	W701	Roadside	2023	18/01/2023	2254	Feathertail glider	D	EXM	IC	
GP10	East	W2/E701	Roadside	2023	21/01/2023	2237	Feathertail glider	D	EXM	IC	
GP10	east	W701	Roadside	2023	21/01/2023	2237	Feathertail glider	D	EXM	IC	
GP10	East	W2/E701	Roadside	2023	26/01/2023	0134	Feathertail glider	D	EXM	IC	
GP10	east	W701	Roadside	2023	26/01/2023	0134	Feathertail glider	D	EXM	IC	
GP10	East	W2/E701	Roadside	2023	4/02/2023	0238	Feathertail glider	D	EXM	IC	
GP10	east	W701	Roadside	2023	4/02/2023	0238	Feathertail glider	D	EXM	IC	
GP10	East	W2/E701	Roadside	2023	7/02/2023	2226	Feathertail glider	D	EXM	IC	
GP10	east	W701	Roadside	2023	7/02/2023	2226	Feathertail glider	D	EXM	IC	
GP10	East	W2/E701	Roadside	2023	16/02/2023	2347	Feathertail glider	D	EXM	IC	
GP10	east	W701	Roadside	2023	16/02/2023	2347	Feathertail glider	D	EXM	IC	
GP10	east	W701	Roadside	2023	16/02/2023	2347	Feathertail glider	D	EXM	IC	
GP10	East	W2/E701	Roadside	2023	17/02/2023	0156	Feathertail glider	D	Towards	IC	
GP10	east	W701	Roadside	2023	17/02/2023	0156	Feathertail glider	D	Towards	IC	
GP10	east	W701	Roadside	2023	17/02/2023	0156	Feathertail glider	D	EXM	IC	
GP10	East	W2/E701	Roadside	2023	18/02/2023	0231	Feathertail glider	Pr	Towards	CC	launch off cam arm
GP10	East	W2/E701	Roadside	2023	18/02/2023	0217	Feathertail glider	D	Away	IC	
GP10	east	W701	Roadside	2023	18/02/2023	0231	Feathertail glider	Pr	Towards	CC	launch off cam arm
GP10	east	W701	Roadside	2023	18/02/2023	0217	Feathertail glider	D	Away	IC	
GP10	East	W2/E701	Roadside	2023	19/02/2023	0209	Squirrel glider	D	EXM	IC	
GP10	east	W701	Roadside	2023	19/02/2023	0209	Squirrel glider	D	EXM	IC	

Structure	Side	Cam	Location	Year	Date	Time	Species	Accuracy	Movement Direction	Crossing type	Comments
GP10	East	W2/E701	Roadside	2023	20/02/2023	2359	Feathertail glider	Pr	Towards	CC	launch off cam arm
GP10	east	W701	Roadside	2023	20/02/2023	2359	Feathertail glider	Pr	Towards	CC	launch off cam arm
GP10	East	W2/E701	Roadside	2023	21/02/2023	2044	Feathertail glider	D	Towards	CC	launch off arm
GP10	east	W701	Roadside	2023	21/02/2023	2044	Feathertail glider	D	Towards	CC	launch off arm
GP10	East	W2/E701	Roadside	2023	22/02/2023	0138	Feathertail glider	D	Towards	CC	launch of cam arm
GP10	east	W701	Roadside	2023	22/02/2023	0138	Feathertail glider	D	Towards	CC	launch off cam arm
GP10	east	W701	Roadside	2023	3/03/2023	0209	Feathertail glider	D	EXM	IC	
GP10	east	W701	Roadside	2023	5/03/2023	0319	Feathertail glider	Pr	EXM	IC	
GP10	east	W701	Roadside	2023	10/03/2023	1933	Feathertail glider	D	Towards	IC	
GP10	east	W701	Roadside	2023	24/03/2023	0019	Feathertail glider	Pr	Towards	IC	Launch off cam arm
GP10	east	W701	Roadside	2023	10/04/2023	0412	Petaurus spp.	D	NDM	IC	
GP10	east	W701	Roadside	2023	12/04/2023	2209	Feathertail glider	D	Towards	CC	Launch off cam arm
GP10	east	W701	Roadside	2023	26/04/2023	2235	Feathertail glider	D	Towards	CC	launch off arm
GP10	east	W701	Roadside	2023	26/04/2023	0133	Sugar glider	Pr	Towards	CC	Launch off arm
GP10	east	W701	Roadside	2023	14/08/2023	0207	Feathertail glider	D	Towards	CC	launch off cam arm
GP10	east	W701	Roadside	2023	20/08/2023	0050	Petaurus spp.	Pr	Towards	CC	Launch off arm
GP10	east	W701	Roadside	2023	23/08/2023	0104	Feathertail glider	Pr	Towards	CC	launch off cam arm
GP10	east	W701	Roadside	2023	26/08/2023	0307	Feathertail glider	D	EXM	IC	
GP10	east	W701	Roadside	2023	8/09/2023	0446	Feathertail glider	D	Towards	CC	launch off cam arm
GP10	east	W701	Roadside	2023	9/09/2023	2126	Feathertail glider	D	Towards	CC	launch off cam arm
GP10	east	W701	Roadside	2023	11/09/2023	1843	Feathertail glider	D	EXM	IC	
GP10	east	W701	Roadside	2023	14/09/2023	0022	Feathertail glider	D	Towards	CC	Launch off arm
GP10	east	W701	Roadside	2023	15/09/2023	0332	Feathertail glider	D	Towards	CC	launch off cam arm
GP10	east	W701	Roadside	2023	17/09/2023	0223	Feathertail glider	D	Towards	CC	Launch off cam arm

Structure	Side	Cam	Location	Year	Date	Time	Species	Accuracy	Movement Direction	Crossing type	Comments
GP10	east	W701	Roadside	2023	18/09/2023	0342	Feathertail glider	D	Towards	CC	launch off cam arm
GP10	east	W701	Roadside	2023	20/09/2023	2350	Feathertail glider	Po	EXM	IC	
GP10	east	W701	Roadside	2023	26/09/2023	0340	Feathertail glider	D	Towards	CC	Glide off cam arm
GP10	east	W701	Roadside	2023	26/09/2023	0325	Feathertail glider	D	Towards	CC	Launch off arm
GP10	east	W701	Roadside	2023	7/10/2023	0205	Feathertail glider	PR	Towards	CC	Glide off cam arm
GP10	east	W701	Roadside	2023	9/10/2023	2257	Feathertail glider	D	Towards	CC	launch off cam arm
GP10	east	W701	Roadside	2023	9/10/2023	2336	Feathertail glider	D	towards	CC	launch off cam arm
GP10	east	W701	Roadside	2023	11/10/2023	0343	Feathertail glider	D	Towards	CC	launch off cam arm
GP10	east	W701	Roadside	2023	12/10/2023	0312	Feathertail glider	D	NDM	IC	
GP10	east	W701	Roadside	2023	16/10/2023	0153	Feathertail glider	D	EXM	IC	
GP10	east	W701	Roadside	2023	20/10/2023	2311	Feathertail glider	D	Towards	CC	launch off cam arm
GP10	east	W701	Roadside	2023	14/12/2023	0326	Feathertail glider	D	EXM	IC	
GP10	east	W701	Roadside	2023	21/12/2023	0303	Sugar glider	D	Towards	CC	launch off cam arm
GP10	east	W701	Roadside	2023	7/01/2024	0056	Feathertail glider	D	NDM	IC	
GP10	east	W701	Roadside	2023	8/01/2024	2356	Sugar glider	D	Towards	CC	launch off arm
GP10	east	W701	Roadside	2023	9/01/2024	0402	Sugar glider	Pr	NDM	IC	
GP10	east	W701	Roadside	2023	22/01/2024	0417	Sugar glider	D	Towards	CC	launch off cam arm
GP10	east	W701	Roadside	2023	3/02/2024	0421	Sugar glider	D	NDM	IC	
GP10	west	W01	Roadside	2023	11/09/2023	2149	Unid mammal	D	EXM	IC	
RB5	East	E23	Roadside	2023	6/01/2023	0415	Unid mammal	D	Towards	CC	Wire rope
RB5	east	W23	Roadside	2023	6/01/2023	0415	Unid mammal	D	Towards	CC	Wire rope
RB5	East	E23	Roadside	2023	22/01/2023	0205	Feathertail glider	D	towards	CC	Wire rope
RB5	east	W23	Roadside	2023	22/01/2023	0205	Feathertail glider	D	towards	CC	Wire rope
RB5	east	W23	Roadside	2023	12/11/2023	2341	Squirrel glider	D	EXM	IC	rope ladder
RB5	West	W22	Roadside	2023	22/01/2023	0006	Feathertail glider	Pr	Towards	CC	wire rope
RB5	west	W22	Roadside	2023	22/01/2023	0006	Feathertail glider	Pr	Towards	CC	wire rope

Structure	Side	Cam	Location	Year	Date	Time	Species	Accuracy	Movement Direction	Crossing type	Comments
RB5	West	W22	Roadside	2023	19/02/2023	2042	Squirrel glider	Pr	Towards	CC	central rope
RB5	west	W22	Roadside	2023	19/02/2023	2042	Squirrel glider	Pr	Towards	CC	central rope
RB6	East	E24	Roadside	2023	24/01/2023	0319	Squirrel glider	D	Away	CC	wire rope
RB6	east	W24	Roadside	2023	24/01/2023	0319	Squirrel glider	D	Away	CC	wire rope
RB6	East	E24	Roadside	2023	27/01/2023	2233	Unid mammal	D	EXM	IC	
RB6	east	W24	Roadside	2023	27/01/2023	2233	Unid mammal	D	EXM	IC	
RB6	East	E24	Roadside	2023	12/02/2023	0350	Petaurus spp.	Pr	Towards	CC	wire rope
RB6	east	W24	Roadside	2023	12/02/2023	0350	Petaurus spp.	Pr	Towards	CC	wire rope
RB6	east	W24	Roadside	2023	22/03/2023	0137	Unid mammal	D	EXM	IC	
RB6	east	W24	Roadside	2023	30/03/2023	0100	Unid mammal	D	EXM	IC	
RB6	east	W24	Roadside	2023	5/02/2024	0158	Feathertail glider	D	NDM	IC	
RB6	West	W25	Roadside	2023	20/01/2023	0353	Unid mammal	D	EXM	IC	
RB6	west	W25	Roadside	2023	20/01/2023	0353	Unid mammal	D	EXM	IC	
RB6	West	W25	Roadside	2023	26/01/2023	2349	Petaurus spp.	Pr	EXM	IC	
RB6	west	W25	Roadside	2023	26/01/2023	2349	Petaurus spp.	Pr	EXM	IC	
RB6	west	W25	Roadside	2023	10/03/2023	2324	Petaurus spp.	Pr	EXM	IC	
RB6	west	W25	Roadside	2023	16/03/2023	0411	Petaurus spp.	Pr	EXM	IC	
RB7	East	E17	Roadside	2023	18/02/2023	0315	Unid mammal	D	EXM	IC	bulkhead
RB7	east	W17	Roadside	2023	18/02/2023	0315	Unid mammal	D	EXM	IC	bulkhead
RB7	East	E17	Roadside	2023	19/02/2023	0149	Petaurus spp.	D	Towards	CC	wire rope
RB7	east	W17	Roadside	2023	19/02/2023	0149	Petaurus spp.	D	Towards	CC	wire rope
RB7	East	E17	Roadside	2023	20/02/2023	0116	Squirrel glider	Pr	Towards	CC	wire rope
RB7	east	W17	Roadside	2023	20/02/2023	0116	Squirrel glider	Pr	Towards	CC	wire rope
RB7	east	W17	Roadside	2023	27/02/2023	2302	Feathertail glider	D	EXM	IC	wire rope
RB7	east	W17	Roadside	2023	6/03/2023	2242	Unid mammal	D	EXM	IC	
RB7	east	W17	Roadside	2023	1/04/2023	0149	Unid mammal	D	Towards	CC	wire rope
RB7	east	W17	Roadside	2023	1/05/2023	0132	Petaurus spp.	Pr	EXM	IC	
RB7	east	W17	Roadside	2023	29/05/2023	0219	Feathertail glider	Pr	EXM	IC	Rope ladder
RB7	east	W17	Roadside	2023	21/06/2023	0426	Squirrel glider	Pr	EXM	IC	
RB7	east	W17	Roadside	2023	26/09/2023	0226	Unid mammal	D	NDM	IC	
RB7	east	W17	Roadside	2023	26/09/2023	0223	Common ringtail possum	D	Away	CC	Wire rope
RB7	east	W17	Roadside	2023	28/09/2023	0226	Common ringtail possum	D	Away	CC	Wire rope

Structure	Side	Cam	Location	Year	Date	Time	Species	Accuracy	Movement Direction	Crossing type	Comments
RB7	east	W17	Roadside	2023	28/09/2023	0140	Common ringtail possum	D	Away	IC	Wire rope
RB7	west	W18	Roadside	2023	16/08/2023	0403	Petaurus spp.	D	Glide off central rope	IC	
RB7	west	W18	Roadside	2023	20/09/2023	0041	Common ringtail possum	D	Towards	CC	central rope
RB7	west	W18	Roadside	2023	23/09/2023	0109	Common ringtail possum	D	NDM	IC	
RB7	west	W18	Roadside	2023	23/09/2023	0103	Common ringtail possum	D	Towards	CC	wire rope
RB7	west	W18	Roadside	2023	26/09/2023	0232	Common ringtail possum	D	Towards	CC	wire rope
RB7	west	W18	Roadside	2023	26/09/2023	0146	Common ringtail possum	D	Towards	CC	wire rope
RB7	west	W18	Roadside	2023	26/09/2023	0044	Common ringtail possum	D	Towards	CC	wire rope
RB7	west	W18	Roadside	2023	26/09/2023	0026	Common ringtail possum	D	Away	CC	wire rope
RB7	west	W18	Roadside	2023	28/09/2023	0236	Common ringtail possum	D	Towards	CC	wire rope
RB7	west	W18	Roadside	2023	8/01/2024	2013	Short-eared brushtail possum	D	Towards	CC	Rope ladder
RB8	East	E10	Roadside	2023	18/02/2023	0014	Squirrel glider	D	EXM	IC	wire rope
RB8	east	W10	Roadside	2023	18/02/2023	0014	Squirrel glider	D	EXM	IC	wire rope
RB8	east	W10	Roadside	2023	1/03/2023	0358	Squirrel glider	D	EXM	IC	wire rope, rope ladder
RB8	east	W10	Roadside	2023	7/05/2023	2007	Petaurus spp.	Pr	EXM	IC	wire rope
RB8	east	W10	Roadside	2023	13/08/2023	0020	Petaurus spp.	D	EXM	IC	wire rope, rope ladder
RB8	east	W10	Roadside	2023	5/10/2023	2307	Petaurus spp.	D	Towards	CC	wire rope
RB8	east	W10	Roadside	2023	17/10/2023	2224	Petaurus spp.	D	EXM	IC	
RB8	east	W10	Roadside	2023	28/10/2023	2030	Unid mammal	D	EXM	IC	
RB8	east	W10	Roadside	2023	13/10/2023	2315	Sugar glider	D	Away	CC	wire rope
RB8	West	W12	Roadside	2023	21/01/2023	0057	Squirrel glider	D	Towards	CC	wire rope
RB8	west	W12	Roadside	2023	21/01/2023	0057	Squirrel glider	D	Towards	CC	wire rope
RB8	West	W12	Roadside	2023	16/02/2023	0029	Unid mammal	D	EXM	IC	bulkhead
RB8	west	W12	Roadside	2023	16/02/2023	0029	Unid mammal	D	EXM	IC	bulkhead
RB8	West	W12	Roadside	2023	18/02/2023	2309	Unid mammal	D	Towards	CC	wire rope
RB8	west	W12	Roadside	2023	18/02/2023	2309	Unid mammal	D	Towards	CC	wire rope
RB8	west	W12	Roadside	2023	25/02/2023	2323	Unid mammal	D	EXM	IC	
RB9	East	E9	Roadside	2023	22/01/2023	0252	Squirrel Glider	Pr	Towards	IC	central rope
RB9	east	W9	Roadside	2023	22/01/2023	0251	Squirrel Glider	Pr	Towards	IC	central rope
RB9	east	W9	Roadside	2023	4/04/2023	0407	Feathertail glider	D	Away	CC	rope ladder
RB9	east	W9	Roadside	2023	25/06/2023	0117	Feathertail glider	D	EXM	IC	Rope ladder

Structure	Side	Cam	Location	Year	Date	Time	Species	Accuracy	Movement Direction	Crossing type	Comments
RB9	east	W9	Roadside	2023	26/06/2023	0136	Petaurus spp.	D	EXM	IC	
RB9	West	W13	Roadside	2023	1/01/2023	0138	Feathertail glider	D	EXM	IC	wire rope
RB9	West	W13	Roadside	2023	1/01/2023	0243	Feathertail glider	D	Away	CC	Wire rope
RB9	west	W13	Roadside	2023	1/01/2023	0138	Feathertail glider	D	EXM	IC	wire rope
RB9	west	W13	Roadside	2023	1/01/2023	0243	Feathertail glider	D	Away	CC	Wire rope
RB9	West	W13	Roadside	2023	11/01/2023	0348	Feathertail glider	D	Towards	CC	Wire rope
RB9	West	W13	Roadside	2023	11/01/2023	0019	Feathertail glider	D	Away	CC	Wire rope
RB9	West	W13	Roadside	2023	11/01/2023	2326	Feathertail glider	D	Away	CC	wire rope
RB9	west	W13	Roadside	2023	11/01/2023	0348	Feathertail glider	D	Towards	CC	Wire rope
RB9	west	W13	Roadside	2023	11/01/2023	0019	Feathertail glider	D	Away	CC	Wire rope
RB9	west	W13	Roadside	2023	11/01/2023	2326	Feathertail glider	D	Away	CC	wire rope
RB9	West	W13	Roadside	2023	14/01/2023	2353	Feathertail glider	D	EXM	IC	Wire rope
RB9	West	W13	Roadside	2023	14/01/2023	0317	Feathertail glider	D	EXM	IC	Wire rope
RB9	west	W13	Roadside	2023	14/01/2023	2353	Feathertail glider	D	EXM	IC	Wire rope
RB9	west	W13	Roadside	2023	14/01/2023	0317	Feathertail glider	D	EXM	IC	Wire rope
RB9	West	W13	Roadside	2023	15/01/2023	2347	Feathertail glider	D	Towards	CC	Wire rope
RB9	West	W13	Roadside	2023	15/01/2023	2245	Feathertail glider	D	Away	CC	Wire rope
RB9	West	W13	Roadside	2023	15/01/2023	2120	Feathertail glider	D	Away	CC	Wire rope
RB9	West	W13	Roadside	2023	15/01/2023	0232	Feathertail glider	D	Away	CC	Wire rope
RB9	West	W13	Roadside	2023	15/01/2023	0152	Feathertail glider	D	Away	CC	central rope
RB9	west	W13	Roadside	2023	15/01/2023	2347	Feathertail glider	D	Towards	CC	Wire rope
RB9	west	W13	Roadside	2023	15/01/2023	2245	Feathertail glider	D	Away	CC	Wire rope
RB9	west	W13	Roadside	2023	15/01/2023	2120	Feathertail glider	D	Away	CC	Wire rope
RB9	west	W13	Roadside	2023	15/01/2023	0232	Feathertail glider	D	Away	CC	Wire rope
RB9	west	W13	Roadside	2023	15/01/2023	0152	Feathertail glider	D	Away	CC	central rope
RB9	West	W13	Roadside	2023	16/01/2023	0056	Feathertail glider	D	Away	CC	Wire rope
RB9	west	W13	Roadside	2023	16/01/2023	0056	Feathertail glider	D	Away	CC	Wire rope
RB9	West	W13	Roadside	2023	19/01/2023	0325	Feathertail glider	D	Towards	CC	Wire rope
RB9	west	W13	Roadside	2023	19/01/2023	0325	Feathertail glider	D	Towards	CC	Wire rope
RB9	west	W13	Roadside	2023	20/01/2023	0417	Feathertail glider	D	EXM	IC	wire rope
RB9	West	W13	Roadside	2023	21/01/2023	2307	Feathertail glider	D	EXM	IC	Wire rope
RB9	West	W13	Roadside	2023	21/01/2023	2133	Feathertail glider	D	Towards	CC	Wire rope

Structure	Side	Cam	Location	Year	Date	Time	Species	Accuracy	Movement Direction	Crossing type	Comments
RB9	West	W13	Roadside	2023	21/01/2023	0029	Feathertail glider	D	EXM	IC	Wire rope
RB9	west	W13	Roadside	2023	21/01/2023	2307	Feathertail glider	D	EXM	IC	Wire rope
RB9	west	W13	Roadside	2023	21/01/2023	2133	Feathertail glider	D	Towards	CC	Wire rope
RB9	west	W13	Roadside	2023	21/01/2023	0029	Feathertail glider	D	EXM	IC	Wire rope
RB9	West	W13	Roadside	2023	22/01/2023	0325	Feathertail glider	D	EXM	IC	central rope
RB9	West	W13	Roadside	2023	22/01/2023	0304	Feathertail glider	D	Away	CC	wire rope
RB9	west	W13	Roadside	2023	22/01/2023	0325	Feathertail glider	D	EXM	IC	central rope
RB9	west	W13	Roadside	2023	22/01/2023	0304	Feathertail glider	D	Away	CC	wire rope
RB9	west	W13	Roadside	2023	22/01/2023	0009	Squirrel glider	Pr	Towards	CC	wire rope
RB9	West	W13	Roadside	2023	23/01/2023	0336	Squirrel glider	D	EXM	IC	central rope
RB9	West	W13	Roadside	2023	23/01/2023	0219	Feathertail glider	Pr	Towards	CC	wire rope
RB9	west	W13	Roadside	2023	23/01/2023	0336	Squirrel glider	D	EXM	IC	central rope
RB9	west	W13	Roadside	2023	23/01/2023	0219	Feathertail glider	Pr	Towards	CC	wire rope
RB9	West	W13	Roadside	2023	26/01/2023	2300	Squirrel glider	D	EXM	IC	wire rope
RB9	west	W13	Roadside	2023	26/01/2023	2300	Squirrel glider	D	EXM	IC	wire rope
RB9	West	W13	Roadside	2023	27/01/2023	0121	Feathertail glider	D	EXM	IC	cross bracket
RB9	West	W13	Roadside	2023	27/01/2023	0137	Feathertail glider	D	Away	CC	wire rope
RB9	West	W13	Roadside	2023	27/01/2023	0239	Squirrel glider	D	EXM	IC	central rope
RB9	West	W13	Roadside	2023	27/01/2023	0259	Squirrel glider	D	Away	CC	central rope
RB9	west	W13	Roadside	2023	27/01/2023	0121	Feathertail glider	D	EXM	IC	cross bracket
RB9	west	W13	Roadside	2023	27/01/2023	0137	Feathertail glider	D	Away	CC	wire rope
RB9	west	W13	Roadside	2023	27/01/2023	0239	Squirrel glider	D	EXM	IC	central rope
RB9	west	W13	Roadside	2023	27/01/2023	0259	Squirrel glider	D	Away	CC	central rope
RB9	West	W13	Roadside	2023	28/01/2023	2343	Feathertail glider	D	Towards	CC	wire rope
RB9	west	W13	Roadside	2023	28/01/2023	2343	Feathertail glider	D	Towards	CC	wire rope
RB9	West	W13	Roadside	2023	30/01/2023	0226	Feathertail glider	D	Towards	CC	wire rope
RB9	west	W13	Roadside	2023	30/01/2023	0226	Feathertail glider	D	Towards	CC	wire rope
RB9	West	W13	Roadside	2023	1/02/2023	2246	Feathertail glider	D	Towards	CC	wire rope
RB9	west	W13	Roadside	2023	1/02/2023	2246	Feathertail glider	D	Towards	CC	wire rope
RB9	West	W13	Roadside	2023	3/02/2023	0050	Feathertail glider	D	Away	CC	wire rope
RB9	west	W13	Roadside	2023	3/02/2023	0050	Feathertail glider	D	Away	CC	wire rope
RB9	west	W13	Roadside	2023	3/02/2023	0433	Feathertail glider	D	Towards	CC	wire rope

Structure	Side	Cam	Location	Year	Date	Time	Species	Accuracy	Movement Direction	Crossing type	Comments
RB9	West	W13	Roadside	2023	4/02/2023	2332	Feathertail glider	D	Away	CC	wire rope
RB9	West	W13	Roadside	2023	4/02/2023	2310	Squirrel glider	D	EXM	IC	wire rope, central rope, screen
RB9	West	W13	Roadside	2023	4/02/2023	0048	Squirrel glider	D	EXM	IC	rope ladder
RB9	west	W13	Roadside	2023	4/02/2023	2332	Feathertail glider	D	Away	CC	wire rope
RB9	west	W13	Roadside	2023	4/02/2023	2310	Squirrel glider	D	EXM	IC	wire rope, central rope, screen, 2 ind
RB9	west	W13	Roadside	2023	4/02/2023	0048	Squirrel glider	D	EXM	IC	rope ladder
RB9	West	W13	Roadside	2023	5/02/2023	0340	Feathertail glider	D	Away	CC	wire rope
RB9	West	W13	Roadside	2023	5/02/2023	0147	Petaurus spp.	Pr	EXM	IC	rope ladder
RB9	west	W13	Roadside	2023	5/02/2023	0340	Feathertail glider	D	Away	CC	wire rope
RB9	west	W13	Roadside	2023	5/02/2023	0147	Petaurus spp.	Pr	EXM	IC	rope ladder
RB9	west	W13	Roadside	2023	6/02/2023	0441	Feathertail glider	D	Towards	CC	wire rope
RB9	West	W13	Roadside	2023	10/02/2023	2138	Feathertail glider	D	EXM	IC	chain
RB9	west	W13	Roadside	2023	10/02/2023	2138	Feathertail glider	D	EXM	IC	chain
RB9	West	W13	Roadside	2023	11/02/2023	2232	Feathertail glider	D	Towards	CC	wire rope
RB9	west	W13	Roadside	2023	11/02/2023	2232	Feathertail glider	D	Towards	CC	wire rope
RB9	West	W13	Roadside	2023	16/02/2023	2256	Feathertail glider	D	Away	CC	wire rope
RB9	west	W13	Roadside	2023	16/02/2023	2256	Feathertail glider	D	Away	CC	wire rope
RB9	West	W13	Roadside	2023	17/02/2023	2021	Feathertail glider	D	away	CC	wire rope
RB9	west	W13	Roadside	2023	17/02/2023	2021	Feathertail glider	D	away	CC	wire rope
RB9	West	W13	Roadside	2023	19/02/2023	0121	Feathertail glider	D	Away	CC	wire rope
RB9	west	W13	Roadside	2023	19/02/2023	0121	Feathertail glider	D	Away	CC	wire rope
RB9	West	W13	Roadside	2023	20/02/2023	0116	Feathertail glider	D	Away	CC	wire rope
RB9	West	W13	Roadside	2023	20/02/2023	0049	Feathertail glider	D	Away	CC	Wire rope
RB9	west	W13	Roadside	2023	20/02/2023	0116	Feathertail glider	D	Away	CC	wire rope
RB9	west	W13	Roadside	2023	20/02/2023	0049	Feathertail glider	D	Away	CC	Wire rope
RB9	West	W13	Roadside	2023	21/02/2023	2357	Feathertail glider	D	across	IC	glide from wire rope
RB9	west	W13	Roadside	2023	21/02/2023	2357	Feathertail glider	D	across	IC	glide from wire rope
RB9	West	W13	Roadside	2023	22/02/2023	0132	Feathertail glider	D	away	CC	wire rope

Structure	Side	Cam	Location	Year	Date	Time	Species	Accuracy	Movement Direction	Crossing type	Comments
RB9	west	W13	Roadside	2023	22/02/2023	0132	Feathertail glider	D	away	CC	wire rope
RB9	west	W13	Roadside	2023	22/02/2023	1937	Feathertail glider	D	Away	CC	wire rope
RB9	west	W13	Roadside	2023	25/02/2023	2349	Squirrel glider	D	EXM	IC	central rope
RB9	west	W13	Roadside	2023	26/02/2023	0315	Squirrel glider	D	Away	CC	wire rope
RB9	west	W13	Roadside	2023	1/03/2023	0256	Feathertail glider	D	Aw	CC	wire rope
RB9	west	W13	Roadside	2023	9/03/2023	2139	Feathertail glider	D	EXM	IC	wire rope
RB9	west	W13	Roadside	2023	9/03/2023	2202	Feathertail glider	D	EXM	IC	wire rope
RB9	west	W13	Roadside	2023	12/03/2023	2237	Petaurus spp.	D	Towards	CC	wire rope
RB9	west	W13	Roadside	2023	12/03/2023	2336	Squirrel glider	D	EXM	IC	
RB9	west	W13	Roadside	2023	14/03/2023	1922	Feathertail glider	D	EXM	IC	wire rope
RB9	west	W13	Roadside	2023	15/03/2023	2321	Squirrel glider	D	EXM	IC	
RB9	west	W13	Roadside	2023	18/03/2023	2024	Feathertail glider	D	Towards	CC	wire rope
RB9	west	W13	Roadside	2023	21/03/2023	0133	Squirrel glider	D	Away	CC	wire rope
RB9	west	W13	Roadside	2023	21/03/2023	0146	Squirrel glider	D	Towards	CC	central rope
RB9	west	W13	Roadside	2023	21/03/2023	0158	Squirrel glider	D	EXM	IC	central rope & wire rope
RB9	west	W13	Roadside	2023	21/03/2023	0318	Squirrel Glider	D	Towards	CC	wire rope
RB9	west	W13	Roadside	2023	21/03/2023	0354	Squirrel glider	D	EXM	IC	central rope
RB9	west	W13	Roadside	2023	21/03/2023	0329	Feathertail glider	D	Away	CC	wire rope
RB9	west	W13	Roadside	2023	21/03/2023	1903	Feathertail glider	D	Away	CC	Wire rope
RB9	west	W13	Roadside	2023	22/03/2023	0418	Petaurus spp.	D	EXM	IC	Central rope
RB9	west	W13	Roadside	2023	24/03/2023	0253	Feathertail glider	D	Away	CC	wire rope
RB9	west	W13	Roadside	2023	24/03/2023	0104	Feathertail glider	Pr	Away	CC	wire rope
RB9	west	W13	Roadside	2023	25/03/2023	0435	Feathertail glider	D	Away	CC	wire rope
RB9	west	W13	Roadside	2023	26/03/2023	1944	Petaurus spp.	Pr	EXM	IC	rope ladder
RB9	west	W13	Roadside	2023	6/04/2023	2204	Petaurus spp.	D	Away	CC	Wire rope
RB9	west	W13	Roadside	2023	15/04/2023	0340	Squirrel glider	Pr	NDM	IC	central rope
RB9	west	W13	Roadside	2023	18/04/2023	2243	Feathertail glider	D	Away	CC	wire rope
RB9	west	W13	Roadside	2023	1/05/2023	2325	Squirrel glider	D	NDM	IC	wire rope
RB9	west	W13	Roadside	2023	1/05/2023	0247	Petaurus spp.	Pr	NDM	IC	central rope
RB9	west	W13	Roadside	2023	1/05/2023	0117	Feathertail glider	D	Away	CC	wire rope
RB9	west	W13	Roadside	2023	1/05/2023	0034	Squirrel glider	D	Away	CC	central rope
RB9	west	W13	Roadside	2023	7/05/2023	0046	Squirrel glider	D	Away	CC	central rope

Structure	Side	Cam	Location	Year	Date	Time	Species	Accuracy	Movement Direction	Crossing type	Comments
RB9	west	W13	Roadside	2023	13/05/2023	2154	Feathertail glider	D	Away	CC	wire rope
RB9	west	W13	Roadside	2023	21/05/2023	0030	Feathertail glider	D	Towards	CC	central rope
RB9	west	W13	Roadside	2023	26/05/2023	0243	Unid mammal	D	EXM	IC	
RB9	west	W13	Roadside	2023	27/05/2023	0406	Feathertail glider	D	Towards	CC	wire rope
RB9	west	W13	Roadside	2023	17/06/2023	1932	Feathertail glider	D	Towards	CC	wire rope
RB9	west	W13	Roadside	2023	28/06/2023	0136	Feathertail glider	D	Away	CC	Wire rope
RB9	west	W13	Roadside	2023	16/07/2023	1941	Feathertail glider	D	Away	CC	Wire rope
RB9	west	W13	Roadside	2023	23/07/2023	0125	Feathertail glider	D	EXM	IC	central rope
RB9	west	W13	Roadside	2023	23/07/2023	0244	Feathertail glider	D	EXM	IC	rope ladder
RB9	west	W13	Roadside	2023	9/08/2023	0047	Feathertail glider	D	EXM	IC	wire rope
RB9	west	W13	Roadside	2023	13/08/2023	0146	Feathertail glider	D	EXM	IC	rope ladder
RB9	west	W13	Roadside	2023	14/08/2023	0257	Feathertail glider	D	Towards	CC	rope ladder
RB9	west	W13	Roadside	2023	14/08/2023	0204	Feathertail glider	D	Away	CC	wire rope
RB9	west	W13	Roadside	2023	15/08/2023	2042	Feathertail glider	D	EXM	IC	central rope
RB9	west	W13	Roadside	2023	15/08/2023	2223	Feathertail glider	D	Away	CC	wire rope
RB9	west	W13	Roadside	2023	15/08/2023	1542	Feathertail glider	D	EXM	IC	central rope
RB9	west	W13	Roadside	2023	19/08/2023	2315	Feathertail glider	D	EXM	IC	rope ladder
RB9	west	W13	Roadside	2023	22/08/2023	2311	Feathertail glider	D	EXM	IC	central rope
RB9	west	W13	Roadside	2023	27/08/2023	0330	Feathertail glider	D	Towards	CC	wire rope
RB9	west	W13	Roadside	2023	28/08/2023	0441	Feathertail glider	D	EXM	IC	centr
RB9	west	W13	Roadside	2023	6/09/2023	0025	Feathertail glider	D	Away	CC	wire rope
RB9	west	W13	Roadside	2023	9/09/2023	0140	Feathertail glider	D	Away	CC	Wire rope
RB9	west	W13	Roadside	2023	11/09/2023	0034	Feathertail glider	D	EXM	IC	rope ladder
RB9	west	W13	Roadside	2023	12/09/2023	0442	Feathertail glider	D	Away	CC	wire rope
RB9	west	W13	Roadside	2023	30/09/2023	1912	Feathertail glider	D	Towards	CC	wire rope
RB9	west	W13	Roadside	2023	30/09/2023	1912	Feathertail glider	D	Towards	CC	wire rope
RB9	west	W13	Roadside	2023	5/10/2023	2019	Feathertail glider	D	EXM	IC	central rope
RB9	west	W13	Roadside	2023	9/10/2023	0400	Feathertail glider	D	Away	CC	rope ladder
RB9	west	W13	Roadside	2023	17/10/2023	0201	Feathertail glider	D	Away	CC	rope ladder
RB9	west	W13	Roadside	2023	17/10/2023	0414	Feathertail glider	D	EXM	IC	rope ladder
RB9	west	W13	Roadside	2023	18/10/2023	0433	Feathertail glider	D	Away	CC	wire rope
RB9	west	W13	Roadside	2023	19/10/2023	0434	Feathertail glider	D	Away	CC	rope ladder

Structure	Side	Cam	Location	Year	Date	Time	Species	Accuracy	Movement Direction	Crossing type	Comments
RB9	west	W13	Roadside	2023	20/10/2023	0024	Feathertail glider	D	Away	CC	wire rope
RB9	west	W13	Roadside	2023	20/10/2023	0432	Feathertail glider	D	Away	CC	central rope
RB9	west	W13	Roadside	2023	21/10/2023	0137	Feathertail glider	D	Away	CC	wire rope
RB9	west	W13	Roadside	2023	21/10/2023	0425	Feathertail glider	D	Away	CC	wire rope
RB9	west	W13	Roadside	2023	22/10/2023	2128	Feathertail glider	D	Away	CC	central rope
RB9	west	W13	Roadside	2023	2/11/2023	2328	Feathertail glider	D	Away	CC	central rope
RB9	west	W13	Roadside	2023	23/11/2023	0205	Feathertail glider	D	EXM	IC	rope ladder
RB9	west	W13	Roadside	2023	16/12/2023	2353	Petaurus spp.	D	Towards	CC	central rope
RB9	West	W13	Roadside	2023	20/12/2023	0053	Feathertail glider	D	EXM	IC	bracket
RB9	west	W13	Roadside	2023	20/12/2023	0053	Feathertail glider	D	EXM	IC	bracket
RB9	west	W13	Roadside	2023	25/12/2023	2052	Squirrel glider	D	Towards	CC	central rope
RB9	west	W13	Roadside	2023	31/12/2024	2358	Feathertail glider	D	EXM	IC	central rope
RB10	East	E7	Roadside	2023	1/01/2023	0221	Feathertail glider	D	Away	CC	wire rope
RB10	east	W7	Roadside	2023	1/01/2023	0221	Feathertail glider	D	Away	CC	wire rope
RB10	East	E7	Roadside	2023	2/01/2023	0210	Feathertail glider	D	Towards	CC	Wire rope
RB10	east	W7	Roadside	2023	2/01/2023	0210	Feathertail glider	D	Towards	CC	Wire rope
RB10	East	E7	Roadside	2023	3/01/2023	2126	Feathertail glider	Pr	Towards	CC	wire rope
RB10	east	W7	Roadside	2023	3/01/2023	2126	Feathertail glider	Pr	Towards	CC	wire rope
RB10	East	E7	Roadside	2023	11/01/2023	2154	Feathertail glider	D	Away	CC	wire rope
RB10	east	W7	Roadside	2023	11/01/2023	2154	Feathertail glider	D	Away	CC	wire rope
RB10	East	E7	Roadside	2023	17/01/2023	2222	Feathertail glider	D	Away	CC	wire rope
RB10	east	W7	Roadside	2023	17/01/2023	2222	Feathertail glider	D	Away	CC	wire rope
RB10	East	E7	Roadside	2023	25/01/2023	0125	Squirrel glider	D	EXM	IC	central rope
RB10	east	W7	Roadside	2023	25/01/2023	0125	Squirrel glider	D	EXM	IC	central rope
RB10	East	E7	Roadside	2023	27/01/2023	0102	Feathertail glider	D	Away	CC	wire rope
RB10	east	W7	Roadside	2023	27/01/2023	0102	Feathertail glider	D	Away	CC	wire rope
RB10	East	E7	Roadside	2023	29/01/2023	0119	Petaurus spp.	Pr	EXM	IC	wire rope
RB10	east	W7	Roadside	2023	29/01/2023	0119	Petaurus spp.	Pr	EXM	IC	wire rope
RB10	East	E7	Roadside	2023	18/02/2023	0132	Feathertail glider	D	Away	CC	wire rope
RB10	East	E7	Roadside	2023	18/02/2023	0109	Unid mammal	D	EXM	IC	bulkhead
RB10	east	W7	Roadside	2023	18/02/2023	0132	Feathertail glider	D	Away	CC	wire rope
RB10	east	W7	Roadside	2023	18/02/2023	0109	Unid mammal	D	EXM	IC	bulkhead

Structure	Side	Cam	Location	Year	Date	Time	Species	Accuracy	Movement Direction	Crossing type	Comments
RB10	East	E7	Roadside	2023	20/02/2023	0422	Petaurus spp.	Pr	EXM	IC	rope ladder
RB10	east	W7	Roadside	2023	20/02/2023	0422	Petaurus spp.	Pr	EXM	IC	rope ladder
RB10	east	W7	Roadside	2023	23/02/2023	0055	Squirrel glider	D	EXM	IC	rope ladder
RB10	east	W7	Roadside	2023	25/02/2023	0119	Petaurus spp.	D	Away	CC	wire rope
RB10	east	W7	Roadside	2023	25/02/2023	0054	Feathertail glider	D	Towards	CC	Central rope
RB10	east	W7	Roadside	2023	26/02/2023	0237	Feathertail glider	D	EXM	IC	Central rope
RB10	east	W7	Roadside	2023	1/03/2023	0059	Feathertail glider	D	EXM	IC	Central rope
RB10	east	W7	Roadside	2023	25/04/2023	0420	Feathertail glider	Pr	Towards	CC	Central rope
RB10	east	W7	Roadside	2023	22/05/2023	0333	Squirrel glider	D	Away	CC	Central rope
RB10	east	W7	Roadside	2023	12/08/2023	2304	Feathertail glider	D	Away	CC	wire rope
RB10	east	W7	Roadside	2023	13/08/2023	2018	Squirrel glider	D	Away	CC	Central rope
RB10	east	W7	Roadside	2023	21/08/2023	1917	Squirrel glider	D	EXM	IC	Central & wire rope
RB10	east	W7	Roadside	2023	29/08/2023	0349	Squirrel glider	Pr	Away	CC	central rope
RB10	east	W7	Roadside	2023	31/08/2023	1850	Squirrel glider	Pr	Away	CC	Central & wire rope
RB10	east	W7	Roadside	2023	2/09/2023	1840	Petaurus spp.	D	Away	CC	Central rope
RB10	east	W7	Roadside	2023	15/09/2023	2133	Squirrel glider	D	EXM	IC	
RB10	east	W7	Roadside	2023	16/09/2023	2358	Feathertail glider	D	EXM	IC	
RB10	east	W7	Roadside	2023	16/09/2023	2042	Squirrel glider	D	EXM	IC	
RB10	east	W7	Roadside	2023	22/09/2023	1920	Squirrel glider	D	Away	CC	central rope
RB10	east	W7	Roadside	2023	1/10/2023	1949	Petaurus spp.	D	Towards	CC	Central rope
RB10	east	W7	Roadside	2023	2/10/2023	1947	Sugar glider	Pr	Away	CC	Central rope
RB10	east	W7	Roadside	2023	11/10/2023	2017	Squirrel glider	Pr	Away	CC	Wire rope
RB10	east	W7	Roadside	2023	22/10/2023	0130	Feathertail glider	D	Away	CC	Wire rope
RB10	east	W7	Roadside	2023	4/11/2023	2026	Petaurus spp.	Pr	NDM	IC	
RB10	West	W8	Roadside	2023	14/01/2023	0437	Feathertail glider	D	EXM	IC	wire rope
RB10	west	W8	Roadside	2023	14/01/2023	0437	Feathertail glider	D	EXM	IC	wire rope
RB10	west	W8	Roadside	2023	20/09/2023	0215	Feathertail glider	Pr	EXM	IC	
RB10	west	W8	Roadside	2023	6/10/2023	2144	Squirrel glider	Pr	Towards	CC	Central rope
RB10	west	W8	Roadside	2023	20/10/2023	0010	Squirrel glider	Pr	Towards	CC	Central rope
RB10	west	W8	Roadside	2023	20/01/2024	0226	Petaurus spp.	D	Towards	CC	Wire rope
RB11	East	E3	Roadside	2023	18/02/2023	0133	Unid mammal	D	EXM	IC	

Structure	Side	Cam	Location	Year	Date	Time	Species	Accuracy	Movement Direction	Crossing type	Comments
RB11	east	W3	Roadside	2023	18/02/2023	0133	Unid mammal	D	EXM	IC	
RB11	east	W3	Roadside	2023	26/02/2023	0130	Unid mammal	D	Towards	CC	Central rope
RB11	east	W3	Roadside	2023	8/03/2023	0008	Feathertail glider	D	EXM	IC	
RB11	east	W3	Roadside	2023	29/05/2023	0104	Squirrel glider	Pr	EXM	IC	rope ladder
RB11	east	W3	Roadside	2023	12/08/2023	0057	Squirrel glider	Pr	Towards	CC	central rope
RB11	east	W3	Roadside	2023	8/09/2023	2159	Petaurus spp.	D	EXM	IC	
RB11	east	W3	Roadside	2023	12/09/2023	0105	Petaurus spp.	D	Towards	CC	central rope
RB11	west	W4/27	Roadside	2023	11/03/2023	2148	Green tree frog	D	NDM	IC	
RB11	west	W4/27	Roadside	2023	9/11/2023	0258	Petaurus spp.	D	Towards	CC	wire rope
RB11	west	W4/27	Roadside	2023	12/11/2023	0138	Sugar glider	D	Towards	CC	wire rope
RB11	west	W4/27	Roadside	2023	25/11/2023	0102	Petaurus spp.	Pr	Towards	CC	wire rope
RB12	West	W5	Roadside	2023	21/02/2023	0208	Squirrel glider	D	Towards	CC	Inside box
RB12	west	W5	Roadside	2023	21/02/2023	0208	Squirrel glider	D	Towards	CC	Inside box
RB12	west	W5	Roadside	2023	17/04/2023	0208	Unid mammal	D	NDM	IC	Inside box
RB12	west	W5	Roadside	2023	24/04/2023	2240	Sugar glider	Po	NDM	IC	Inside box
RB12	west	W5	Roadside	2023	24/04/2023	2240	Sugar glider	Pr	NDM	IC	Inside box

Appendix D – Vegetated median fauna detections

Table D1: Results of year three (2023) Tabbimoble vegetated median monitoring, W2B section 3-11.

Cam ID	Date start	Time	Species	Image No's
Tab VM1	1/03/2023		Nil	1-12
Tab VM1	1/03/2023	0:39	Feathertail glider	13
Tab VM1	1/03/2023	20:13	Small petaurid	35-36
Tab VM1	1/03/2023	2:06	Microbat	45
Tab VM1	1/03/2023	4:31	Feathertail glider	49
Tab VM1	1/03/2023	0:28	Feathertail glider	56
Tab VM1	1/03/2023	1:28	Feathertail glider	58-60
Tab VM1	1/03/2023	1:40	Feathertail glider	63
Tab VM1	1/03/2023	3:26	Feathertail glider	65

Cam ID	Date start	Time	Species	Image No's
Tab VM1	1/03/2023	3:25	Feathertail glider	14/15
Tab VM1	1/03/2023	23:51	Feathertail glider	30
Tab VM1	1/03/2023	0:04	Feathertail glider	69
Tab VM1	1/03/2023	2:34	Feathertail glider	71
Tab VM1	1/03/2023	2:46	Squirrel glider	73-76
Tab VM1	1/03/2023	3:37	Feathertail glider	77
Tab VM1	1/03/2023	2:17	Squirrel glider	81-110
Tab VM1	1/03/2023	1:02	Feathertail glider	111
Tab VM1	1/03/2023	3:21	Feathertail glider	112-113
Tab VM1	1/03/2023	3:58	Feathertail glider	119-120
Tab VM1	1/03/2023	21:52	Feathertail glider	121-122
Tab VM1	1/03/2023	0:57	Feathertail glider	124-125
Tab VM1	1/03/2023	2:01	Feathertail glider	126-128
Tab VM1	26/05/2023	4:43:00	Acrobates spp.	1-2
Tab VM1	26/05/2023	23:21:00	Sugar glider	3
Tab VM1	26/05/2023	1:13:00	Acrobates spp.	4-5
Tab VM1	26/05/2023	20:47:00	Acrobates spp.	6
Tab VM1	26/05/2023	20:21:00	Acrobates spp.	7-8
Tab VM1	26/05/2023	2:49:00	Acrobates spp.	10-14
Tab VM1	26/05/2023	21:05:00	Acrobates spp.	15
Tab VM1	26/05/2023	23:11:00	Acrobates spp.	23-25
Tab VM1	26/05/2023	21:44:00	Sugar glider	26-27
Tab VM2	29/11/2022	02:31	Acrobates spp.	29
Tab VM2	29/11/2022	01:53	Squirrel glider	30-31
Tab VM2	29/11/2022	02:48	Squirrel glider	35
Tab VM2	29/11/2022	23:49	Acrobates spp.	59
Tab VM2	29/11/2022	00:08	Squirrel glider	76
Tab VM2	29/11/2022	23:05	Small petaurid	83
Tab VM2	29/11/2022	04:28	Acrobates spp.	04:28
Tab VM2	29/11/2022	23:52	Acrobates spp.	68
Tab VM2	29/11/2022	01:07	Black rat	111
Tab VM2	29/11/2022	20:30	Antechinus spp.	128

Cam ID	Date start	Time	Species	Image No's
Tab VM2	29/11/2022	23:29	Squirrel glider	142
Tab VM2	29/11/2022	22:37	Antechinus spp.	144
Tab VM2	29/11/2022	23:47	Acrobates spp.	90
Tab VM2	29/11/2022	22:56	Acrobates spp.	162
Tab VM2	1/03/2023	5:31	Small petaurid	111,112
Tab VM2	1/03/2023	4:43	Sugar glider	4-7
Tab VM2	1/03/2023	21:02	Antechinus spp.	11,12
Tab VM2	1/03/2023	5:31	Antechinus spp.	35
Tab VM2	1/03/2023	0:39	Small petaurid	36,37
Tab VM2	1/03/2023	5:50	Squirrel glider	38,39
Tab VM2	1/03/2023	19:59	Antechinus spp.	40-43
Tab VM2	1/03/2023	21:54	Squirrel glider	45-48
Tab VM2	1/03/2023	3:59	Feathertail glider	52
Tab VM2	1/03/2023	5:26	Small petaurid	64-65
Tab VM2	1/03/2023	21:04	Small petaurid	68-69
Tab VM2	1/03/2023	22:17	Small petaurid	70-72
Tab VM2	1/03/2023	1:29	Sugar glider	73-74
Tab VM2	1/03/2023	5:41	Squirrel glider	81
Tab VM2	1/03/2023	22:25	Antechinus spp.	88
Tab VM2	1/03/2023	21:32	Sugar glider	91-93
Tab VM2	1/03/2023	0:05	Squirrel glider	94
Tab VM2	1/03/2023	22:52	Antechinus spp.	98
Tab VM2	1/03/2023	3:07	Small petaurid	107
Tab VM2	1/03/2023	4:44	Sugar glider	108
Tab VM2	1/03/2023	4:47	Feathertail glider	109
Tab VM2	1/03/2023	5:59	Small petaurid	115
Tab VM2	1/03/2023	2:21	Feathertail glider	118-119
Tab VM2	1/03/2023	5:14	Feathertail glider	130
Tab VM2	1/03/2023	22:04	Antechinus spp.	134
Tab VM2	1/03/2023	0:46	Sugar glider	135-137
Tab VM2	1/03/2023	19:48	Black rat	141
Tab VM2	1/03/2023	5:56	Squirrel glider	146

Cam ID	Date start	Time	Species	Image No's
Tab VM2	1/03/2023	1:02	Sugar glider	147-150
Tab VM2	1/03/2023	4:31	Sugar glider	151,152
Tab VM2	1/03/2023	4:35	Small petaurid	154-160
Tab VM2	1/03/2023	21:51	Antechinus spp.	161
Tab VM2	1/03/2023	3:12	Feathertail glider	166
Tab VM2	1/03/2023	1:18	Sugar glider	168,169
Tab VM2	1/03/2023	0:10	Sugar glider	172-175
Tab VM2	1/03/2023	21:51	Feathertail glider	177
Tab VM2	1/03/2023	4:50	Feathertail glider	179
Tab VM2	1/03/2023	19:51	Feathertail glider	180
Tab VM2	1/03/2023	3:44	Small petaurid	181
Tab VM2	1/03/2023	19:41	Antechinus spp.	183
Tab VM2	1/03/2023	21:30	Sugar glider	184
Tab VM2	1/03/2023	1:22	Sugar glider	185
Tab VM2	1/03/2023	0:07	Sugar glider	186
Tab VM2	1/03/2023	0:43	Small petaurid	187-189
Tab VM2	1/03/2023	21:20	Feathertail glider	191
Tab VM2	1/03/2023	1:29	Sugar glider	192
Tab VM2	1/03/2023	20:50	Feathertail glider	193-184
Tab VM2	1/03/2023	22:15	Small petaurid	195
Tab VM2	1/03/2023	2:59	Feathertail glider	196
Tab VM2	1/03/2023	3:02	Feathertail glider	197-198
Tab VM2	1/03/2023	0:20	Feathertail glider	201
Tab VM2	1/03/2023	22:49	Feathertail glider	203
Tab VM2	1/03/2023	2:14	Feathertail glider	205
Tab VM2	26/05/2023	01:09:00	Acrobates spp.	1-2
Tab VM3	29/11/2022	01:09	Acrobates spp.	33
Tab VM3	29/11/2022	01:07	Squirrel glider	50
Tab VM3	29/11/2022	01:05	Acrobates spp.	55
Tab VM3	29/11/2022	01:16	Acrobates spp.	58
Tab VM3	29/11/2022	02:51	Acrobates spp.	61
Tab VM3	29/11/2022	00:15	Acrobates spp.	64

Cam ID	Date start	Time	Species	Image No's
Tab VM3	29/11/2022	23:33	Acrobates spp.	72
Tab VM3	29/11/2022	02:21	Acrobates spp.	78-80
Tab VM3	29/11/2022	03:13	Acrobates spp.	81
Tab VM3	29/11/2022	02:40	Squirrel glider	75
Tab VM3	29/11/2022	04:05	Squirrel glider	88
Tab VM3	29/11/2022	01:52	Sugar glider	93
Tab VM3	29/11/2022	21:34	Squirrel glider	112-118
Tab VM3	29/11/2022	23:31	Acrobates spp.	123
Tab VM3	29/11/2022	22:50	Acrobates spp.	130
Tab VM3	29/11/2022	22:31	Small petaurid	141
Tab VM3	29/11/2022	04:15	Acrobates spp.	146
Tab VM3	29/11/2022	01:25	Squirrel glider	148
Tab VM3	29/11/2022	02:05	Acrobates spp.	152
Tab VM3	29/11/2022	22:05	Small petaurid	161
Tab VM3	29/11/2022	01:29	Acrobates spp.	158
Tab VM3	29/11/2022	04:23	Acrobates spp.	159
Tab VM3	29/11/2022	01:10	Acrobates spp.	160
Tab VM3	29/11/2022	22:47	Squirrel glider	164
Tab VM3	29/11/2022	23:08	Acrobates spp.	169
Tab VM3	29/11/2022	02:37	Acrobates spp.	181
Tab VM3	29/11/2022	03:37	Acrobates spp.	175
Tab VM3	29/11/2022	03:59	Squirrel glider	177-178
Tab VM3	1/03/2023	23:36	Squirrel glider	7-16
Tab VM3	1/03/2023	4:53	Small petaurid	21-28
Tab VM3	1/03/2023	3:40	Small petaurid	32-37
Tab VM3	1/03/2023	0:37	Small petaurid	38-40
Tab VM3	1/03/2023	22:28	Small petaurid	41
Tab VM3	1/03/2023	20:44	Squirrel glider	60-69
Tab VM3	1/03/2023	21:41	Feathertail glider	89
Tab VM3	1/03/2023	3:41	Small petaurid	94
Tab VM3	1/03/2023	2:28	Squirrel glider	108-115
Tab VM3	1/03/2023	21:47	Small petaurid	116-122

Cam ID	Date start	Time	Species	Image No's
Tab VM3	1/03/2023	0:20	Squirrel glider	127-129
Tab VM3	1/03/2023	20:20	Squirrel glider	137,138
Tab VM3	1/03/2023	1:31	Feathertail glider	139,140
Tab VM3	1/03/2023	2:35	Sugar glider	141-146
Tab VM3	1/03/2023	4:01	Feathertail glider	147
Tab VM3	1/03/2023	5:36	Small petaurid	150-151
Tab VM3	1/03/2023	1:19	Feathertail glider	174
Tab VM3	1/03/2023	2:17	Feathertail glider	175
Tab VM3	1/03/2023	1:19	Squirrel glider	177
Tab VM3	1/03/2023	1:53	Squirrel glider	179-187
Tab VM3	1/03/2023	20:58	Squirrel glider	189-198
Tab VM3	1/03/2023	0:31	Feathertail glider	199-204
Tab VM3	1/03/2023	5:43	Squirrel glider	205
Tab VM3	29/11/2022	01:43	Small petaurid	130
Tab VM3	1/03/2023	0:34	Squirrel glider	155-157
Tab VM3	1/03/2023	19:46	Squirrel glider	158-161
Tab VM3	26/05/2023	04:46:00	Acrobates spp.	1
Tab VM3	1/03/2023	20:19	Small petaurid	209
Tab VM3	1/03/2023	4:37	Squirrel glider	211-212
Tab VM3	1/03/2023	5:30	Small petaurid	213
Tab VM3	26/05/2023	01:55:00	Squirrel glider	3-5
Tab VM3	1/03/2023	2:26	Feathertail glider	162
Tab VM3	26/05/2023	21:18:00	Squirrel glider	6-11
Tab VM3	26/05/2023	21:19:00	Sugar glider	12-15
Tab VM3	26/05/2023	22:41:00	Small petaurid	16
Tab VM3	26/05/2023	22:22:00	Sugar glider	17
Tab VM3	26/05/2023	23:20:00	Sugar glider	18-24
Tab VM3	26/05/2023	20:46:00	Sugar glider	25-27
Tab VM3	26/05/2023	00:32:00	Sugar glider	28-29
Tab VM3	1/03/2023	4:49	Feathertail glider	163
Tab VM3	26/05/2023	02:18:00	Sugar glider	30-34
Tab VM3	26/05/2023	23:17:00	Sugar glider	35-36

Cam ID	Date start	Time	Species	Image No's
Tab VM3	26/05/2023	20:06:00	Squirrel glider	37-40
Tab VM3	26/05/2023	23:37:00	Acrobates spp.	41-44
Tab VM3	26/05/2023	01:42:00	Sugar glider	45
Tab VM3	26/05/2023	20:06:00	Squirrel glider	46, 48
Tab VM3	26/05/2023	20:07:00	Sugar glider	47
Tab VM3	1/03/2023	0:05	Feathertail glider	166
Tab VM3	1/03/2023	20:59	Squirrel glider	167-169
Tab VM3	26/05/2023	19:50:00	Sugar glider	50-54
Tab VM3	26/05/2023	19:33:00	Sugar glider	55
Tab VM3	1/03/2023	0:13	Feathertail glider	171
Tab VM3	1/03/2023	4:48	Small petaurid	172
Tab VM3	26/05/2023	19:38:00	Sugar glider	62-64
Tab VM3	1/03/2023	23:01	Small petaurid	207
Tab VM3	26/05/2023	22:47:00	Acrobates spp.	67
Tab VM3	26/05/2023	01:57:00	Sugar glider	85
Tab VM4	26/05/2023	21:42:00	Black rat	74
Tab VM4	29/11/2022	05:19	Acrobates spp.	6
Tab VM4	26/05/2023	21:30:00	Antechinus spp.	76
Tab VM4	29/11/2022	00:31	Acrobates spp.	38-57
Tab VM4	29/11/2022	02:14	Acrobates spp.	58-60
Tab VM4	26/05/2023	23:36:00	Antechinus spp.	79
Tab VM4	29/11/2022	20:28	Antechinus spp.	8
Tab VM4	29/11/2022	20:10	Antechinus spp.	12
Tab VM4	29/11/2022	21:49	Antechinus spp.	16
Tab VM4	29/11/2022	03:46	Antechinus spp.	20
Tab VM4	29/11/2022	05:46	Antechinus spp.	27
Tab VM4	29/11/2022	02:15	Acrobates spp.	105
Tab VM4	29/11/2022	20:17	Antechinus spp.	37
Tab VM4	29/11/2022	01:33	Green-tree frog	124
Tab VM4	29/11/2022	23:34	Acrobates spp.	38
Tab VM4	29/11/2022	23:33	Acrobates spp.	133
Tab VM4	1/03/2023	2:01	Feathertail glider	1

Cam ID	Date start	Time	Species	Image No's
Tab VM4	1/03/2023	5:22	Antechinus spp.	2
Tab VM4	1/03/2023	3:05	Feathertail glider	6
Tab VM4	1/03/2023	20:48	Antechinus spp.	8-10
Tab VM4	1/03/2023	22:24	Antechinus spp.	13
Tab VM4	1/03/2023	22:11	Antechinus spp.	19-21
Tab VM4	1/03/2023	4:36	Antechinus spp.	29
Tab VM4	1/03/2023	21:03	Antechinus spp.	30
Tab VM4	1/03/2023	3:08	Antechinus spp.	31-32
Tab VM4	1/03/2023	5:15	Antechinus spp.	34
Tab VM4	1/03/2023	22:14	Feathertail glider	35
Tab VM4	1/03/2023	5:31	Antechinus spp.	36
Tab VM4	1/03/2023	0:24	Antechinus spp.	37
Tab VM4	1/03/2023	5:06	Antechinus spp.	38-39
Tab VM4	1/03/2023	19:43	Antechinus spp.	42
Tab VM4	1/03/2023	4:19	Squirrel glider	49-56
Tab VM4	1/03/2023	2:37	Feathertail glider	67
Tab VM4	1/03/2023	21:38	Antechinus spp.	68
Tab VM4	1/03/2023	0:06	Antechinus spp.	69-70
Tab VM4	1/03/2023	5:51	Antechinus spp.	71
Tab VM4	1/03/2023	20:54	Antechinus spp.	72
Tab VM4	1/03/2023	0:39	Antechinus spp.	74
Tab VM4	1/03/2023	4:17	Antechinus spp.	77
Tab VM4	1/03/2023	21:04	Antechinus spp.	78
Tab VM4	1/03/2023	20:11	Antechinus spp.	79
Tab VM4	1/03/2023	20:36	Antechinus spp.	80
Tab VM4	1/03/2023	1:50	Antechinus spp.	81
Tab VM4	1/03/2023	5:17	Feathertail glider	4
Tab VM4	1/03/2023	3:58	Feathertail glider	84
Tab VM4	1/03/2023	19:49	Antechinus spp.	85
Tab VM4	1/03/2023	5:24	Antechinus spp.	87
Tab VM4	26/05/2023	05:23:00	Antechinus spp.	1
Tab VM4	26/05/2023	02:42:00	Sugar glider	2-4

Cam ID	Date start	Time	Species	Image No's
Tab VM4	26/05/2023	05:10:00	Sugar glider	5-7
Tab VM4	26/05/2023	02:42:00	Acrobates spp.	8
Tab VM4	26/05/2023	00:30:00	Acrobates spp.	12
Tab VM4	26/05/2023	20:57:00	Acrobates spp.	13
Tab VM4	26/05/2023	19:24:00	Acrobates spp.	15
Tab VM4	26/05/2023	23:33:00	Acrobates spp.	17
Tab VM4	26/05/2023	20:07:00	Black rat	18
Tab VM4	26/05/2023	04:05:00	Acrobates spp.	20
Tab VM4	26/05/2023	00:56:00	Sugar glider	21-22
Tab VM4	26/05/2023	02:39:00	Acrobates spp.	23
Tab VM4	26/05/2023	04:33:00	Acrobates spp.	25
Tab VM4	26/05/2023	02:04:00	Acrobates spp.	26
Tab VM4	26/05/2023	00:43:00	Acrobates spp.	28
Tab VM4	26/05/2023	01:23:00	Sugar glider	29
Tab VM4	26/05/2023	22:44:00	Acrobates spp.	37
Tab VM4	26/05/2023	19:17:00	Acrobates spp.	39
Tab VM4	26/05/2023	20:02:00	Antechinus spp.	42-43
Tab VM4	26/05/2023	23:18:00	Antechinus spp.	53-54
Tab VM4	26/05/2023	00:54:00	Antechinus spp.	53-54
Tab VM4	26/05/2023	02:20:00	Acrobates spp.	59
Tab VM4	26/05/2023	04:12:00	Acrobates spp.	70
Tab VM4	26/05/2023	04:51:00	Acrobates spp.	83
Tab VM4	26/05/2023	23:30:00	Antechinus spp.	84

Appendix E – Fisher exact test results

Table E1: Results of Fisher's Exact tests on the presence and absence data of squirrel gliders on transects, comparing treatment effects (control, impact, and reference) across each monitoring period. The table includes phases, p-values, odds ratios, and confidence intervals (CI).

Phase and Year	Treatment 1	Treatment 2	P-value	Odds Ratio	CI Lower	CI Upper
Pre-construction Year 1	Control	Impact	1.0000	1.0473	0.4603	2.3829
Pre-construction Year 1	Control	Reference	0.3364	1.7215	0.6876	4.3101
Pre-construction Year 1	Impact	Reference	0.3475	1.6437	0.6732	4.0133
Construction Year 1	Control	Impact	0.6376	1.4000	0.5503	3.5618
Construction Year 1	Control	Reference	0.0017	4.6667	1.8187	11.9743
Construction Year 1	Impact	Reference	0.0113	3.3333	1.3749	8.0815
Construction Year 2	Control	Impact	0.0810	2.3051	0.9262	5.7366
Construction Year 2	Control	Reference	0.0102	3.8519	1.4328	10.3551
Construction Year 2	Impact	Reference	0.2686	1.6710	0.7116	3.9242
Construction Year 3	Control	Impact	0.0147	2.6700	1.2065	5.9091
Construction Year 3	Control	Reference	0.5815	1.4377	0.5029	4.1100
Construction Year 3	Impact	Reference	0.2607	0.5385	0.2074	1.3978
Construction Year 4	Control	Impact	0.0541	2.8424	0.9689	8.3383
Construction Year 4	Control	Reference	0.0012	6.7000	2.1370	21.0064
Construction Year 4	Impact	Reference	0.0904	2.3571	0.9569	5.8066
Operational Year 1	Control	Impact	1.0000	1.8228	0.0602	55.1529
Operational Year 1	Control	Reference	0.0128	16.9412	0.8708	329.5894
Operational Year 1	Impact	Reference	0.0366	9.2941	1.0015	86.2507
Operational Year 2	Control	Impact	0.6540	1.2794	0.5223	3.1338
Operational Year 2	Control	Reference	0.5427	0.6000	0.1539	2.3385
Operational Year 2	Impact	Reference	0.3818	0.4690	0.1244	1.7679
Operational Year 3	Control	Impact	0.2712	0.5918	0.2448	1.4311
Operational Year 3	Control	Reference	0.8066	1.2429	0.4824	3.2018
Operational Year 3	Impact	Reference	0.1826	2.1000	0.7749	5.6910

Table E2: Results of Fisher's Exact tests comparing the presence and absence of squirrel gliders for each phase and year. The table includes p-values, odds ratios, and confidence intervals (CI).

Treatment	Phase 1	Phase 2	P-value	Odds Ratio	CI Lower	CI Upper
Control	Pre-construction	Construction Year 1	0.48784	0.648352	0.2581	1.62868
Control	Pre-construction	Construction Year 2	0.34521	0.567308	0.2196	1.465589
Control	Pre-construction	Construction Year 3	0.8235	0.818411	0.33977	1.971318
Control	Pre-construction	Construction Year 4	0.07552	0.338691	0.11397	1.006498
Control	Pre-construction	Operational Year 1	0.00014	0.031517	0.00183	0.542415
Control	Pre-construction	Operational Year 2	0.64989	0.73201	0.29816	1.797164
Control	Pre-construction	Operational Year 3	1	1.095491	0.47417	2.530954
Impact	Pre-construction	Construction Year 1	0.83282	0.866667	0.37555	2.000038
Impact	Pre-construction	Construction Year 2	0.69219	1.248588	0.57314	2.720047
Impact	Pre-construction	Construction Year 3	0.06941	2.08642	1.00465	4.332997
Impact	Pre-construction	Construction Year 4	1	0.919192	0.41102	2.055654
Impact	Pre-construction	Operational Year 1	0.00028	0.054852	0.00706	0.426377
Impact	Pre-construction	Operational Year 2	0.83689	0.89418	0.394	2.02933
Impact	Pre-construction	Operational Year 3	0.38415	0.619048	0.25975	1.475336
Reference	Pre-construction	Construction Year 1	0.34442	1.757576	0.6872	4.495148
Reference	Pre-construction	Construction Year 2	0.80761	1.26936	0.48657	3.31149
Reference	Pre-construction	Construction Year 3	0.59084	0.683502	0.23143	2.018605
Reference	Pre-construction	Construction Year 4	0.62398	1.318182	0.49436	3.514872
Reference	Pre-construction	Operational Year 1	0.08437	0.31016	0.08913	1.079335
Reference	Pre-construction	Operational Year 2	0.07166	0.255132	0.06461	1.007404
Reference	Pre-construction	Operational Year 3	0.79676	0.790909	0.28574	2.189222

Appendix F – Road mortality data

Table F1: Details of road mortality surveys within sections 3-11 of the Woolgoolga to Ballina Highway upgrade during year three monitoring (2023). SB = South bound. NB = North bound.

Date	Sections	Quarter	Observers	Start:end	Fauna	Carriage way	Easting	Northing
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Bandicoot spp.	Northbound	502646	6703538
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Corvid spp.	Northbound	508272	6708759
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Small mammal spp.	Northbound	513115	6719749
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Small mammal spp.	Northbound	513419	6727150
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Laughing kookaburra	Northbound	514561	6729521
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Red-necked wallaby	Northbound	522848	6742884
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Eastern grey kangaroo	Northbound	523452	6745391
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Eastern grey kangaroo	Northbound	523471	6746403
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Unid bird	Northbound	523419	6747462
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Small mammal spp.	Northbound	524307	6751769
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Swamp wallaby	Northbound	522599	6755872
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Unid fauna	Northbound	522450	6756191
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Bandicoot spp.	Northbound	520771	6758643
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Snake spp.	Northbound	520650	6758983
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Unid bird	Northbound	521448	6762013
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Bandicoot spp.	Northbound	521703	6762338
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Rattus spp.	Northbound	525326	6768114
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Rattus spp.	Northbound	526298	6769957
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Small mammal spp.	Northbound	526302	6769963
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Bandicoot spp.	Northbound	526903	6771597
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Unid fauna	Northbound	527005	6772243
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Bandicoot spp.	Northbound	527278	6772981
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Wallaby spp.	Northbound	530628	6776043
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Macropod spp.	Northbound	532821	6779352
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Magpie lark	Northbound	532987	6780493
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Unid fauna	Northbound	536603	6784189
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Medium mammal spp.	Northbound	545381	6799580
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Unid bird	Northbound	544771	6799582
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Bandicoot spp.	South bound	544131	6799739
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Rattus spp.	South bound	542037	6795070
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Meliphagidae spp.	South bound	538622	6787189
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Magpie lark	South bound	538129	6786013

Date	Sections	Quarter	Observers	Start:end	Fauna	Carriage way	Easting	Northing
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Macropod spp.	South bound	533206	6781966
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	European hare	South bound	533081	6781208
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Bandicoot spp.	South bound	531975	6778484
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Rattus spp.	South bound	531186	6776980
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Bandicoot spp.	South bound	526325	6769905
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Bandicoot spp.	South bound	523372	6764185
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Unid bird	South bound	521343	6761731
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Rattus spp.	South bound	520804	6758632
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Small mammal spp.	South bound	522016	6756969
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Rattus spp.	South bound	524121	6752654
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Small mammal spp.	South bound	524468	6751124
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	European hare	South bound	523583	6747072
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Pterpus spp.	South bound	523454	6745093
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Medium mammal spp.	South bound	522839	6742849
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Unid bird	South bound	521496	6742140
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Unid fauna	South bound	520371	6740475
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Bandicoot spp.	South bound	519960	6738652
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Snake spp.	South bound	519750	6737405
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	snake	South bound	519619	6736246
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Unid fauna	South bound	519200	6734393
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Unid bird	South bound	514765	6730151
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Wallaby spp.	South bound	513869	6728206
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Australian magpie	South bound	513319	6720187
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Rattus spp.	South bound	512142	6715338
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Pacific black duck	South bound	509247	6708985
12/04/2023	3-11	Q1	AE and EL	9:00-13:30	Laughing kookaburra	South bound	504127	6707987
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Northern brown bandicoot	SB	541386	6789063
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Red fox	SB	534848	6782902
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Macropod spp.	SB	533221	6781997
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Bandicoot spp.	SB	526306	6769874
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Medium mammal spp.	SB	522872	6763361
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Rattus spp.	SB	521151	6761311
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Australian magpie	SB	521020	6758271
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	tawny frog mouth	SB	521195	6758047
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Red fox	SB	524167	6752472
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Unid bird	SB	524394	6751510

Date	Sections	Quarter	Observers	Start:end	Fauna	Carriage way	Easting	Northing
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Laughing kookaburra	SB	523332	6747680
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Unid bird	SB	523465	6745329
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Cane toad	SB	523430	6744695
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Unid bird	SB	523378	6743637
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Unid fauna	SB	521226	6741546
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Reptile spp.	SB	520584	6740740
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Rattus spp.	SB	514719	6729992
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Bookbook	SB	513161	6719807
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Coast carpet python	SB	512257	6712213
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Unid bird	SB	509855	6709137
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Eastern Grey Kangaroo	-	538105	6786354
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Swamp wallaby	-	541121	6789056
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Wallaby spp.	-	543007	6789899
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Bandicoot spp.	-	542443	6794020
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Small bird spp.	-	542189	6794726
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Unid bird	-	541691	6797026
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Snake spp.	-	542651	6798841
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Laughing kookaburra	-	545030	6799529
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Short-beaked echidna	-	544332	6799692
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Medium mammal spp.	-	542953	6799491
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Snake spp.	-	542782	6799194
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Bandicoot spp.	-	542073	6794987
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Rattus spp.	-	543355	6791326
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Small bird spp.	-	502601	6703641
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Bookbook	-	503566	6706066
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Bandicoot spp.	-	504515	6708317
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Medium mammal spp.	-	510817	6709642
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Medium mammal spp.	-	512918	6718553
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Small bird spp.	-	513540	6720730
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Swamp wallaby	-	514165	6728766
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Unid bird	-	514577	6729576
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Unid bird	-	518864	6732813
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Reptile spp.	-	519654	6737012
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	tawny frog mouth	-	519948	6738725
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Small bird spp.	-	520003	6739139
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	European hare	-	520087	6739913
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Wallaby spp.	-	520417	6740579

Date	Sections	Quarter	Observers	Start:end	Fauna	Carriage way	Easting	Northing
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Bandicoot spp.	-	520692	6740885
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Medium mammal spp.	-	521168	6741463
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Laughing kookaburra	-	522119	6742526
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Bandicoot spp.	-	523448	6745378
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Unid bird	-	523529	6747207
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Unid bird	-	524422	6751240
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Rattus spp.	-	524158	6752403
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	European hare	-	523327	6754328
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Laughing kookaburra	-	521607	6762224
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Unid bird	-	530106	6775758
29/06/2023	3-11	Q2	AE/LA	8:30:14:45	Lizard spp.	-	532733	6779206
6/09/2023	3-11	Q3	NM/EL	800:1230	Unid bird	SB	545903	6799901
6/09/2023	3-11	Q3	NM/EL	800:1230	Unid bird	SB	545179	6799521
6/09/2023	3-11	Q3	NM/EL	800:1230	Short-beaked echidna	SB	544360	6799677
6/09/2023	3-11	Q3	NM/EL	800:1230	Medium mammal spp.	SB	542985	6799523
6/09/2023	3-11	Q3	NM/EL	800:1230	Medium mammal spp.	SB	543321	6791398
6/09/2023	3-11	Q3	NM/EL	800:1230	Small mammal spp.	SB	543387	6790433
6/09/2023	3-11	Q3	NM/EL	800:1230	Unid bird	SB	543143	6790016
6/09/2023	3-11	Q3	NM/EL	800:1230	Short-beaked echidna	SB	542897	6789798
6/09/2023	3-11	Q3	NM/EL	800:1230	Raptor spp.	SB	538131	6786060
6/09/2023	3-11	Q3	NM/EL	800:1230	Bandicoot spp.	SB	537404	6784554
6/09/2023	3-11	Q3	NM/EL	800:1230	Swamp wallaby	SB	537198	6784420
6/09/2023	3-11	Q3	NM/EL	800:1230	Wallaby spp.	SB	533141	6781801
6/09/2023	3-11	Q3	NM/EL	800:1230	Medium mammal spp.	SB	533085	6781312
6/09/2023	3-11	Q3	NM/EL	800:1230	Small mammal spp.	SB	528045	6773894
6/09/2023	3-11	Q3	NM/EL	800:1230	Bandicoot spp.	SB	526174	6769635
6/09/2023	3-11	Q3	NM/EL	800:1230	Barn owl	SB	521030	6758252
6/09/2023	3-11	Q3	NM/EL	800:1230	Bandicoot spp.	SB	521949	6757061
6/09/2023	3-11	Q3	NM/EL	800:1230	Medium mammal spp.	SB	524186	6752382
6/09/2023	3-11	Q3	NM/EL	800:1230	Dog	SB	524368	6751598
6/09/2023	3-11	Q3	NM/EL	800:1230	Unid bird	SB	523934	6749777
6/09/2023	3-11	Q3	NM/EL	800:1230	Unid bird	SB	523843	6749681
6/09/2023	3-11	Q3	NM/EL	800:1230	Rattus spp.	SB	523460	6746165
6/09/2023	3-11	Q3	NM/EL	800:1230	Grey-headed flying fox	SB	523424	6744728
6/09/2023	3-11	Q3	NM/EL	800:1230	Medium mammal spp.	SB	520611	6740754
6/09/2023	3-11	Q3	NM/EL	800:1230	Medium mammal spp.	SB	520454	6740583
6/09/2023	3-11	Q3	NM/EL	800:1230	Eastern water dragon	SB	519749	6737433

Date	Sections	Quarter	Observers	Start:end	Fauna	Carriage way	Easting	Northing
6/09/2023	3-11	Q3	NM/EL	800:1230	Bandicoot spp.	SB	514342	6729021
6/09/2023	3-11	Q3	NM/EL	800:1230	Unid bird	SB	513859	6722049
6/09/2023	3-11	Q3	NM/EL	800:1230	Unid bird	SB	503641	6706275
6/09/2023	3-11	Q3	NM/EL	800:1230	Unid bird	SB	503383	6705566
6/09/2023	3-11	Q3	NM/EL	800:1230	Unid bird	NB	516450	6731230
6/09/2023	3-11	Q3	NM/EL	800:1230	Medium mammal spp.	NB	519275	6734865
6/09/2023	3-11	Q3	NM/EL	800:1230	Medium mammal spp.	NB	519968	6738839
6/09/2023	3-11	Q3	NM/EL	800:1230	Medium mammal spp.	NB	520075	6739932
6/09/2023	3-11	Q3	NM/EL	800:1230	Unid bird	NB	521290	6741832
6/09/2023	3-11	Q3	NM/EL	800:1230	Unid bird	NB	522375	6742653
6/09/2023	3-11	Q3	NM/EL	800:1230	Medium mammal spp.	NB	522813	6742862
6/09/2023	3-11	Q3	NM/EL	800:1230	Bandicoot spp.	NB	523454	6745318
6/09/2023	3-11	Q3	NM/EL	800:1230	Silvergull	NB	523450	6745356
6/09/2023	3-11	Q3	NM/EL	800:1230	Pheasant coucal	NB	523506	6746678
6/09/2023	3-11	Q3	NM/EL	800:1230	Tyto spp.	NB	523235	6747805
6/09/2023	3-11	Q3	NM/EL	800:1230	Tyto spp.	NB	523311	6748876
6/09/2023	3-11	Q3	NM/EL	800:1230	Tyto spp.	NB	523510	6749317
6/09/2023	3-11	Q3	NM/EL	800:1230	Pheasant coucal	NB	523809	6749677
6/09/2023	3-11	Q3	NM/EL	800:1230	Tyto spp.	NB	524432	6751186
6/09/2023	3-11	Q3	NM/EL	800:1230	Small mammal spp.	NB	524165	6752370
6/09/2023	3-11	Q3	NM/EL	800:1230	Wallaby spp.	NB	523997	6752916
6/09/2023	3-11	Q3	NM/EL	800:1230	Laughing kookaburra	NB	521093	6758141
6/09/2023	3-11	Q3	NM/EL	800:1230	Unid bird	NB	529332	6775147
6/09/2023	3-11	Q3	NM/EL	800:1230	Laughing kookaburra	NB	532989	6780551
6/09/2023	3-11	Q3	NM/EL	800:1230	Laughing kookaburra	NB	533444	6782361
6/09/2023	3-11	Q3	NM/EL	800:1230	Laughing kookaburra	NB	533661	6782538
6/09/2023	3-11	Q3	NM/EL	800:1230	Unid bird	NB	536070	6783965
6/09/2023	3-11	Q3	NM/EL	800:1230	Unid bird	NB	536119	6783992
6/09/2023	3-11	Q3	NM/EL	800:1230	Medium mammal spp.	NB	541657	6796677
6/09/2023	3-11	Q3	NM/EL	800:1230	Unid bird	NB	542074	6797718
6/09/2023	3-11	Q3	NM/EL	800:1230	Snake spp.	NB	542263	6797960
6/09/2023	3-11	Q3	NM/EL	800:1230	Medium mammal spp.	SB	546721	6802374
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Bandicoot spp.	-	507536	6708581
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Unid bird	-	511015	6709871
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Bandicoot spp.	-	513214	6723553
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Small mammal spp.	-	514561	6729540
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Pheasant coucal	-	515876	6731237

Date	Sections	Quarter	Observers	Start:end	Fauna	Carriage way	Easting	Northing
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Unid fauna	-	519597	6736092
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Bandicoot spp.	-	519932	6738585
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Unid bird	-	519932	6738585
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Bandicoot spp.	-	520096	6739966
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Bandicoot spp.	-	520667	6740861
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	European hare	-	522787	6742855
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Small mammal spp.	-	523072	6743043
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Medium mammal spp.	-	523365	6743755
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Unid bird	-	523408	6744613
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Small mammal spp.	-	523447	6745363
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Unid bird	-	523450	6745578
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Unid fauna	-	523429	6746071
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Australian magpie	-	523513	6746664
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Small mammal spp.	-	523400	6747489
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Bandicoot spp.	-	524372	6750531
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Macropod spp.	-	524417	6751264
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Cormorant spp.	-	525380	6751478
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Bandicoot spp.	-	523363	6754248
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Frog spp.	-	520621	6759870
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Lizard spp.	-	521253	6761675
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Magpie lark	-	524224	6765765
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Cane toad	-	526006	6769411
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Cane toad x 4	-	526147	6769676
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Cane toad	-	526311	6769980
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Pheasant coucal	-	526526	6770376
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Macropod spp.	-	527882	6773721
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Bandicoot spp.	-	528071	6773954
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Macropod spp.	-	532687	6779154
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Unid bird	-	532914	6779677
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Macropod spp.	-	532963	6780214
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Macropod spp.	-	533365	6782270
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Bandicoot spp.	-	540825	6789014
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Short-beaked echidna	-	543425	6790708
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Small mammal spp.	-	542115	6794851
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Small mammal spp.	-	542391	6798147
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Rattus spp.	-	542951	6799528
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Unid bird	-	543733	6799838

Date	Sections	Quarter	Observers	Start:end	Fauna	Carriage way	Easting	Northing
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Laughing kookaburra	-	544730	6799611
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Australian Brush turkey	-	545918	6799949
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Unid bird	-	546326	6800837
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Microbat spp.	-	547021	6804145
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Anatidae spp.	-	547255	6804892
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Unid bird	-	547771	6805947
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Unid bird	-	549808	6806911
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Unid bird	-	541927	6795624
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Unid bird	-	541940	6795537
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Unid bird	-	537328	6784497
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Small mammal spp.	-	534889	6782922
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Macropod spp.	-	533083	6781264
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Macropod spp.	-	532583	6779012
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Cane toad	-	531875	6778400
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Medium mammal spp.	-	528147	6774005
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Small mammal spp.	-	527948	6773763
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Cane toad	-	526478	6770188
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Medium mammal spp.	-	526254	6769776
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Trichosurus spp.	-	520771	6760283
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Macropod spp.	-	520713	6760091
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Medium mammal spp.	-	521963	6757033
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Medium mammal spp.	-	523984	6752989
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Small mammal spp.	-	524093	6752742
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Bandicoot spp.	-	524240	6752191
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Unid bird	-	524299	6750251
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Bandicoot spp.	-	523776	6749587
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Small mammal spp.	-	523539	6749291
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Medium mammal spp.	-	523412	6747534
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Medium mammal spp.	-	522822	6742837
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Unid fauna	-	519037	6733328
17/11/2023	3-11	Q4	AE/NM	11:00-3:30	Wallaby spp.	-	514101	6728619