



Transport
**Roads & Maritime
Services**

Warrell Creek to Nambucca Heads

Annual Underpass Monitoring Report - Operational
Phase, Year Two (2019-2020)

Transport for New South Wales | December 2020



Document Review

Date	Version	Status	Sent to	Represent	Delivered Format	Dispatched By
28/09/2020	A	Draft	David Rohweder	SES	MSW	L. Andrews
2/10/2020	B	Draft	David Rohweder	SES	MSW	L. Andrews
6/10/2020	1	Draft	Shayne Walker	TfNSW	MSW	D. Rohweder
22/10/20	2	Draft	Shayne Walker	TfNSW	MSW	D. Rohweder
2/11/2020	3	Draft	Shayne Walker	TfNSW	MSW	D. Rohweder
16/11/2020	4	Draft	Shayne Walker	TfNSW	MSW	D. Rohweder

Document Distribution

Date	Version	Status	Sent to	Represent	Delivered Format	Dispatched By
11/12/20	4	Draft	Shayne Walker	TfNSW	MSW & PDF	D. Rohweder

Project team:

Luke Andrews (Field survey, reporting)
Nirvarna Makings (Field survey)
Dr D. Rohweder (Project management, review, Field Survey)
Dr B. Taylor (Field survey)
Nick Priest (Field survey)
Sam Rohweder (Field assistant)
Oscar Taylor (Field assistant)

Report prepared for:

Transport for New South Wales (TfNSW)

© Sandpiper Ecological Surveys 2020
ABN: 82 084 096 828

PO Box 401
ALSTONVILLE NSW 2477
P 02 6628 3559 | E david@sandpipereco.com.au

Disclaimer:

This report has been prepared in accordance with the scope of services described in the contract or agreement between Sandpiper Ecological Surveys (ABN 82 084 096 828) and Transport for New South Wales. The report relies upon data, surveys and measurement obtained at the times and locations specified herein. The report has been prepared solely for Transport for New South Wales and Sandpiper Ecological Surveys accepts no responsibility for its use by other parties. Sandpiper Ecological Surveys accepts no responsibility or liability for changes in context, meaning, conclusions or omissions caused by cutting, pasting or editing the report.

Table of contents

1. Introduction	1
1.1 Background	1
1.2 Study area	2
2. Methods	4
2.1 Timing and weather conditions	4
2.2 Underpasses	4
2.2.1 Sand pads	4
2.2.2 Scat and track searches	5
2.2.3 Tile checks	5
2.2.4 Cameras	5
2.3 Adjacent habitat	8
2.3.1 Survey design	8
2.3.2 Trapping	8
2.3.3 Diurnal active search	9
2.3.4 Nocturnal active search	9
2.3.5 Opportunistic records	9
2.4 Exclusion fence	9
3. Results	10
3.1 Underpasses	10
3.1.1 Camera monitoring	10
3.1.2 Sand pads	18
3.1.3 Scat and track searches and tile checks	18
3.2 Adjacent habitat	18
3.2.1 Species recorded in underpasses and adjacent habitat	21
3.3 Fauna fence and road strike	22
4. Discussion	23
4.1 Low rates of use of fauna underpasses and adjacent habitats by feral predators	23
4.2 High levels of fauna underpass use by a variety of native species	23
4.3 No change to densities, distribution, habitat use and movement patterns compared to baseline population data of target species.	24
4.4 Evidence of use by dispersing individuals and different age cohorts	24
4.5 Use by cover-dependent species with low mobility	25
4.6 No breaches in fauna exclusion fencing; Low incidences of fauna road strike mortality.	25
4.7 Underpass survey effort	25
5. Contingency Measures and Recommendations	26
5.1 Contingency Measures	26
5.2 Recommendations	26
References	27
Appendix A – Species list	29
Appendix B – Weather and climatic conditions	31
Appendix C – Field data	37

List of tables

Table 1: Underpasses sampled during operational phase monitoring of the WC2NH upgrade. SQ = spotted-tailed quoll; K = koala; GBF = giant barred frog; * sites consist of dual cells 3x3m box culverts with one cell providing wet passage for aquatic fauna; P/A = presence/absence.	2
Table 2: Summary of weather conditions recorded at Coffs Harbour Airport (station 059151) and Bellwood weather station (059150) during year two operational phase monitoring.	4
Table 3: Camera survey effort during year two operational phase monitoring. * = camera stolen; ^ camera flooded	6
Table 4: Survey effort for sampling adjacent habitat on the WC2NH upgrade. S/S = spring/summer, W = winter, UP = Underpass.	9
Table 5: Complete crossings/week made by each species/group at each of the 12 underpasses monitored on the WC2NH upgrade during year 2 operational monitoring. Sites 1 and 5 did not contain fauna furniture. ' = introduced species, FI = Floor, G = ground (culvert floor).	12
Table 6: Species of vertebrate recorded during surveys of adjacent habitat in spring/summer 2019. SS = Spring/Summer, W = Winter. * = Threatened species. E = Endangered species. * denotes threatened species; I = Introduced species.	19
Table 7: Species and fauna groups recorded using underpasses by all methods and those recorded in adjacent habitat. * denotes threatened species. E = Endangered species.	22
Table 8: Potential problems outlined in the EMP and possible contingency measures. Mitigation measures applicable to the project are addressed in bold text in table below.	26
Table 9: Recommendations based on findings from year two operational phase monitoring and response from TfNSW.	26

List of figures

Figure 1: Underpass locations along the WC2NH alignment.	3
Figure 2: Complete crossings/week for native species and feral predators (combined cat, dog, red fox) at each underpass during year two monitoring. *K = indicates complete crossing by koala.	11
Figure 3: Mean number of complete crossing/week/underpass (+SD) for native and introduced species during year 1 and year 2 monitoring periods (operational).	13
Figure 4: Complete crossings/week by feral predators (cat, red fox, dog) in underpasses during year 2 operational monitoring.	14
Figure 5: Mean (+SD) number of complete crossing/week/underpass for feral predator species (Cat, Dog, Red fox) during year 1 and year 2 monitoring periods.	14
Figure 6: Mean (+SD) number of complete crossings/week/underpass for fauna groups during year 1 and year 2 operational monitoring. *Denotes cover dependent/low mobility species.	16
Figure 7: Mean (+SD) number of complete crossings/week/underpass for fauna groups using the culvert floor and furniture during year 1 and year 2 operational monitoring.	17

List of plates

Plate 1. Sand pad being installed in a fauna underpass on the WC2NH upgrade.	5
Plate 2: Example of a pitfall trap line installed during adjacent habitat surveys (L). Setting up traps in adjacent habitat at site 1 (R).	8
Plate 3. Koala recorded at Site 4, moving west on 1 August 2020.	11
Plate 4: Cat individual frequently recorded at site 3 (Top left). Dogs recorded at site 3 (Top right). Feral cat making a complete crossing east at site 7 (Bottom left). Feral dog making a complete crossing east at site 4 (Bottom right).	15
Plate 5: Antechinus making a complete crossing west using the fauna furniture at site 6 (Left). Short-eared brushtail possum utilising the fauna furniture at site 8.	17
Plate 6: Koala tracks (L) recorded on sand pads at Site 4 and Brushtail possum tracks (R) recorded during spring/summer monitoring.	18

Plate 7: <i>Calyptotis ruficauda</i> captured in a pitfall trap (L) and a sugar glider (L) captured in an arboreal Elliott.	20
Plate 8: A short-eared brushtail possum captured in a cage trap (L) and a fawn-footed melomys captured in a ground Elliot (R) during adjacent habitat trapping.	21

1. Introduction

In 2015, Transport for NSW (TfNSW), in conjunction with Acciona Ferrovia Joint Venture (AFJV), commenced the upgrade of the Pacific Highway between Warrell Creek and Nambucca Heads (WC2NH). The WC2NH project was opened to traffic in two stages:

- Stage 2a - 13.5km section from Lower Warrell Creek Bridge to Nambucca Heads opened on 18 December 2017; and
- Stage 2b - 6.25km section from the southern end of the project to the Lower Warrell Creek bridge opened on 29 June 2018.

Approvals for the WC2NH upgrade required monitoring of several species and mitigation measures during the operational phase. Species and mitigation measures targeted include koala, spotted-tailed quoll, grey-headed flying-fox, yellow-bellied glider, giant barred frog, green-thighed frog ponds, fauna underpasses, vegetated median, road-kill, exclusion fencing, and threatened flora. Sandpiper Ecological Surveys (Sandpiper) was contracted by TfNSW to deliver the WC2NH operational ecological and water quality monitoring program.

The objective of fauna underpass monitoring is “to assess use of underpasses by threatened and common fauna and to assess the effect of exclusion fencing on movement of small mammals, reptiles and frogs” (RMS 2018). Effectiveness of exclusion fence is also assessed in the annual road-kill report (see Sandpiper Ecological 2018, 2019).

The following annual report presents methods and results of the year two operational phase underpass and adjacent habitat surveys. The results are discussed in relation to the potential indicators of success detailed in the WC2NH Ecological Monitoring Program (RMS 2018) and recommendations regarding future monitoring are provided. The potential indicators of success used to assess the performance of the WC2NH underpasses include:

1. Low rates of use of fauna underpasses and adjacent habitats by feral predators;
2. High levels of fauna underpass use by a wide variety of native fauna species;
3. No change to densities, distribution, habitat use, and movement patterns compared to baseline population data of target species;
4. Evidence of use by dispersing individuals and different age cohorts;
5. Use by cover-dependent species and species with low mobility;
6. No breaches in fauna exclusion fencing;
7. Low incidences of fauna road strike mortality.

A list of species names for fauna referred to in text and Tables is provided in Appendix A.

1.1 Background

The WC2NH upgrade features 23 fauna underpasses, including 13 box culverts, three pipe culverts and seven bridges. Underpasses targeted for monitoring were specified in the WC2NH Ecological Monitoring Program (EMP; Table 1) and include eleven box culverts and one bridge. Site five includes a dual cell box culvert with one cell designated as a wet passage (for aquatic fauna) and the other as dry passage. The dry cell includes a concrete ledge that provides dry passage for terrestrial fauna. Fauna underpasses were designed to target spotted-tailed quoll (*Dasyurus maculatus*), koala (*Phascolarctos cinereus*) and giant barred frog (*Mixophyes iteratus*). Giant barred frog is known to occur at site 1 (Upper Warrell Creek) only, whilst quoll and koala could occur at sites 2-12. Sites 9/10, and 11/12 consist of corresponding culverts on either side of a vegetated median.

Table 1: Underpasses sampled during operational phase monitoring of the WC2NH upgrade. SQ = spotted-tailed quoll; K = koala; GBF = giant barred frog; * sites consist of dual cells 3x3m box culverts with one cell providing wet passage for aquatic fauna; P/A = presence/absence.

Site	Chainage	Type	Structure	Dimensions	Fauna Furniture (P/A)	Substrate	SQ	K	GBF
1	42500	Combined	Bridge		A	Soil			x
2	55120	Dedicated	Box Culvert	1 x 3000 x 3000	P	Concrete	x	x	
3	56410	Combined	Box Culvert	1 x 2400 x 2400	P	Concrete	x	x	
4	57770	Dedicated	Box Culvert	1 x 3000 x 3000	P	Mulch	x	x	
5 *	58510	Combined	Box Culvert	2 x 3000 x 3000	A	Concrete	x	x	
6	58560	Dedicated	Box Culvert	1 x 3000 x 3000	P	Mulch	x	x	
7	59090	Dedicated	Box Culvert	1 x 3000 x 3000	P	Mulch	x	x	
8	59550	Dedicated	Box Culvert	1 x 3000 x 3000	P	Mulch	x	x	
9	59750 NB	Dedicated	Box Culvert	1 x 2400 x 2400	P	Mulch	x	x	
10	59760 SB	Dedicated	Box Culvert	1 x 2400 x 2400	P	Mulch	x	x	
11	60600 NB	Dedicated	Box Culvert	1 x 2400 x 2400	P	Mulch	x	x	
12	60610 SB	Dedicated	Box Culvert	1 x 2400 x 2400	P	Mulch	x	x	

1.2 Study area

The WC2NH project covers a total length of 19.75km and extends from Warrell Creek in the south to Nambucca Heads in the north (Figure 1). The alignment bypasses the town of Macksville and the northern section traverses Nambucca State Forest. Eleven underpasses are situated north of the Nambucca River and one (Site 1) is situated at Upper Warrell Creek near the southern extent of the project. Sites four to twelve adjoin Nambucca State Forest and sites two and three adjoin remnant vegetation on private land.



Figure 1: Underpass locations along the WC2NH alignment.

2. Methods

2.1 Timing and weather conditions

Underpass and adjacent habitat surveys were conducted bi-annually between 22 September 2019–28 February 2020 (spring/summer) and 1 June – 1 September 2020 (winter). Dry warm conditions occurred from September 2019 through to January 2020 with a total of 194 mm of rainfall being recorded at the Bureau of Meteorology Bellwood weather station (059150) (Appendix B, Table B1). Warm and wet conditions occurred during February 2020 with the Bellwood station receiving 427 mm (Table 2, Appendix B, Table B1). The winter monitoring period was characterised by cooler and dry conditions (Table 2). Air temperature and relative humidity were collected from Coffs Harbour Airport (station 059151) (Appendix B, Table B1).

Table 2: Summary of weather conditions recorded at Coffs Harbour Airport (station 059151) and Bellwood weather station (059150) during year two operational phase monitoring.

Monitoring period	Total rainfall (mm)	No. rain days	Relative humidity (%)	Max temp range (°C)	Min temp range (°C)
Spring/Summer	665	37	>60% on 90% of days	18.5-35.5	6.7-25
Winter	87	5	>60% on 90% of days	15.9-25.4	2.7-13.3

2.2 Underpasses

2.2.1 Sand pads

Sand pads were installed on 15 October 2019 (spring/summer sample) and 17 June 2020 (winter sample). A 50:50 mix of brickies sand and washed beach sand was used for all sand pads. Two sand pads were installed at each site. In culverts, pads were installed 3-5m from each end, whilst at the bridge (site 1) one pad was installed on each side of Warrell Creek (North and South). Each pad was approximately 50mm deep by 1m wide and extended for the entire culvert width, or for 3m at site 1. At sites with a concrete ledge the pad covered both the floor and ledge (Plate 1). The exception was site 5 where the pad covered the ledge only due to standing water over the culvert floor.

Sand pads were inspected on eight consecutive days across all sites. Rain on 19 June 2020 led to complete or partial wash out of sand pads at sites 3, 5, 8, 9, 10, 11 and 12, with pads reinstalled on 20-21 June. Inspections were conducted by an ecologist and included a systematic scan of each pad searching for fauna tracks. A small torch was used to illuminate the pad, if required. Information recorded included species or fauna group, number of traverses, direction of traverse and pad condition (good, moderate, poor). A complete crossing was recorded when the direction and number of traverses from a species or fauna group was consistent across both pads (east and west) at each site. Incomplete crossings were recorded when the traverse direction and number of track sequences was not consistent across both sand pads. Small fauna exhibit erratic movement making it difficult to accurately determine complete and incomplete crossings. Tracks were identified with reference to Triggs (2004) and advice from senior ecologists. Tracks that could not be identified insitu were photographed and referred to a senior ecologist for identification.



Plate 1. Sand pad being installed in a fauna underpass on the WC2NH upgrade.

2.2.2 Scat and track searches

Each underpass was searched by a senior ecologist and/or ecologist for scats and tracks on two occasions during the spring/summer and winter sample periods. The search involved a slow systematic traverse of each culvert using a hand-held spotlight (Led Lenser P14). Fauna furniture, the culvert floor, and joints were targeted. Areas of accumulated fine sediment were targeted for tracks. Tracks and scats were identified in-situ, with reference to Triggs (2004) and the ecologists experience or photographed and sent to colleagues for identification.

2.2.3 Tile checks

Two roof tiles (300x200) were installed at both ends of underpasses 5m in from the entrance in autumn 2020. These were checked on two occasions during winter sample period.

2.2.4 Cameras

Two motion-activated infra-red cameras (Swift 3C, Swift Enduro or Reconyx HC500) were installed centrally in each culvert, with the exception of site five where one camera was mounted centrally in each cell. At site 1, Reconyx HC500 cameras were initially attached to steel posts, and following theft, were housed in security boxes attached to large boulders. A single camera was installed at approximately 200mm above ground near the water's edge on each side of Upper Warrell Creek (site 1). In total, 24 cameras were installed. In underpasses, both cameras were installed centrally, one on the fauna furniture, and one

approximately 300mm above the culvert floor. Cameras were oriented to the east except for site 1 where cameras were oriented perpendicular to the creek on the north and south banks. Cameras at site 10 were re-oriented to the west following a high incidence of false triggers caused by traffic on the southbound carriageway. Swift cameras were set to take 10 seconds of video with no delay between activation. Reconyx cameras were set on time-lapse mode to take a picture at 1-minute intervals between 8 pm and 6 am each day throughout the spring/summer sample period and 6pm to 6am during the winter sample. Time-lapse mode is better suited to targeting frogs and was used successfully to monitor frog pipes on the Sapphire to Woolgoolga Pacific Highway Upgrade (Sandpiper Ecological 2017a, 2018a). Cameras at site 1 were inundated by floodwater on several occasions in February 2020.

During the spring/summer sample period, cameras at sites 1-12 were installed on 8-9 October. Cameras were inspected during the middle of each session to change batteries and SD cards. Following camera checks between 22 October and 18 November, all cameras at sites 1, 2, 3 and 6 (8 cameras) were stolen. Replacement cameras were reinstalled on 28 November at sites 2, 3, 6 and 22 January at site 1. Cameras from sites 2-12 were retrieved on 18 December 2019 following a total sample period of 70-71 days (Table 3). Cameras at site 1 were retrieved on 28 February following a sample period of 49 days (Table 3). Nine of the 24 cameras were active for less than the 60-day minimum sample period, with eight a result of theft and one (site 11 furniture) due to battery failure. Sampling days were further reduced at site 6 (14 days) and site 1 south (14 days) due to camera malfunction and flooding (Table 3). The remaining 15 cameras were active for 70-71 days (Table 3).

During the winter sample period all cameras were installed between 22 and 25 June, except site 1 north, which was installed on 16 July due to replacement of security housing. Checks were conducted on 28 July and all cameras were retrieved on 1 September. Battery failure and camera malfunction reduced sample periods at sites 11 (furniture), 1 (south) and 12 (floor) with all remaining cameras active for the minimum 60 days (Table 3). Overall, the minimum 120 days annual sample period was achieved for 14 of the 24 cameras. Without theft the minimum sample period would have been achieved by 20 of the 24 cameras. Importantly, the total minimum number of camera days required (2880 days) was exceeded during year two operational monitoring (2917 days) (Table 3). Actions proposed to minimise camera malfunction and battery failure are included in the discussion.

Table 3: Camera survey effort during year two operational phase monitoring. * = camera stolen; ^ camera flooded

Site	Cam location	Days active		
		Spr/Sum	Winter	Total
1	North	34*^	47	81
	South	34*^	46	80
2	Furniture	20*	61	81
	Floor	34*	71	105
3	Furniture	34*	71	105
	Floor	34*	71	105
4	Furniture	71	71	142
	Floor	71	71	142
5	North	71	71	142
	South	71	71	142
6	Furniture	14*	72	86
	Floor	14*^	72	86
7	Furniture	71	72	143
	Floor	71	72	143
8	Furniture	71	72	143
	Floor	71	72	143
9	Furniture	70	72	142

	Floor	71	72	143
10	Furniture	71	72	143
	Floor	71	72	143
11	Furniture	48	35	83
	Floor	71	72	143
12	Furniture	71	72	143
	Floor	71	37	108
Totals		1330	1587	2917

Image review

Images were uploaded to a computer and viewed using Windows Photo Viewer ©. A senior ecologist or ecologist reviewed all images, with reference to standard field guides (i.e. Menkhorst & Knight 2004; Pizzey & Knight 2007; Van Dyck *et al.* undated).

Fauna were scored making a complete or incomplete crossing:

- A complete crossing was scored when an animal showed directional movement when detected by the centrally mounted camera.
- An incomplete crossing was scored when an animal showed no directional movement (i.e. remained stationary in front of camera) or passed the camera but returned within 10 minutes.

Crossing definitions are consistent with those used at other Pacific Highway monitoring sites (e.g. Sandpiper Ecological 2017b, 2018b, 2019) and crossing structure research programs (e.g. Soanes *et al.* 2015). Further, it represents a conservative approach to identification of complete crossings. Data recorded for each active image included: site, date, time, species, accuracy (definite 90%+ certainty, probable 75-90% certainty, and possible 60-75% certainty), movement direction (east, west, no directional movement (animal stationary, returned), number of images and image numbers. A hierarchical approach was adopted to species identification that included: species, genus or group. Microbats were recorded as presence only due to their transient nature and none reliance on underpasses for thoroughfare.

Data analysis and interpretation

The adequately assess “use of underpasses” from the EMP operation monitoring aim, complete crossings were used as the standard of measure as it encompasses the purpose of fauna underpasses (i.e. A crossings structure that allows fauna to access habitat that has been fragmented by construction of a road or highway). To account for variations in survey effort between sites and years (1 and 2), complete crossings/week and complete crossings/week/underpass were adopted. Birds and microbats were excluded from analysis as they do not require underpasses for thoroughfare.

As seen in dot point five in the potential indicators (see introduction), fauna with low mobility was not defined within the EMP. As such, fauna with low mobility has been assumed to include animals whose movement is generally limited by their size or behaviour. Hence, fauna that exhibit low mobility/cover dependence has been interpreted as frogs, small reptiles (excluding goanna and water dragon), rodents and bandicoots.

A student's t-test (assuming equal variances) was conducted to compare feral predator activity (cc/week/underpass) between year 1 and year 2 operational monitoring. Sites 11/12 and 9/10 were averaged as they function as a single site and lack independence if treated separately. Site 5 was removed from the analysis due its proximity to site 6 and presence of permanent water, which limits feral predator use. A square root transformation was performed on all data to achieve normality within the dataset.

2.3 Adjacent habitat

2.3.1 Survey design

A total of 18 sites were sampled at the 12 underpasses as part of adjacent habitat surveys. Sample sites were established on each side of an underpass or underpass pair in the case of sites 5/6, 9/10 and 11/12. Adjacent habitat at sites 5 and 6 was sampled as one site as the underpass entrances were located within 50m of each other. Survey effort was reduced at site 3 due to concern about disturbing neighbours. No spotlighting or arboreal Elliott trapping occurred on the west side at site 3 and the diurnal active search was restricted to a small (100m x 30m) triangular shaped remnant of vegetation in the road reserve.

2.3.2 Trapping

Trapping methods applied during the survey included: cage traps, ground Elliott traps (Type A), arboreal Elliott traps (Type B), pitfall traps, and hair funnels. Trapping occurred within a 1ha area immediately adjacent to each culvert entrance and was conducted over three nights at each site. A maximum of 10 sites were sampled concurrently and trapping was conducted between 14 and 20 November 2019 during the spring/summer and 15-21 June during the winter.

Traps were set in a “X” formation with five ground and five arboreal traps set at 20m intervals on one axis and two cage traps and two hair funnels set at 50m spacing on the other axis (Plate 2). A line of three pitfall traps with drift fence was set at the intersection of both lines (Plate 2). Pitfall traps typically followed the contour and were set near fallen logs and dense ground cover. Trap effort is summarised in Table 4.



Plate 2: Example of a pitfall trap line installed during adjacent habitat surveys (L). Setting up traps in adjacent habitat at site 1 (R).

Arboreal traps and ground Elliott traps were baited with a peanut butter, honey and oats mixture. Arboreal traps were installed 1.8m above ground and attached to a bracket. Honey water was sprayed on the trunk above each arboreal trap, and bait was replaced as required. A plastic bag was placed over the end of each trap to provide cover, and a small amount of leaf litter was placed inside the trap. In spring/summer, arboreal traps were set on the western side of trees to provide shelter from the morning sun. Cage traps were set in a sheltered location and alternately baited with either peanut butter, honey and oats, or sardines. A tuna oil and water mix was sprayed around the entrance to cage traps baited with sardines. All traps were checked within four hours of sunrise. In spring/summer cage and Elliott traps were closed following the morning inspection and re-opened in the late afternoon. Pitfall traps were checked in the morning and again in mid-afternoon.

Captured fauna were identified to species or genus, and, where possible, sexed and aged. Fauna were identified with reference to standard field guides (Van Dyck *et al.* 2013; Menkhorst & Knight 2004; Wilson & Swan 2010). Fauna were not marked as the aim of sampling was to determine the range of species present in adjacent habitat.

2.3.3 Diurnal active search

Diurnal active searches were conducted by one or two ecologists and involved a meandering traverse of habitat within 100m of the underpass entrance at each sample site. Surveys involved searching leaf litter, rolling logs, observing reptile habitat (i.e. log piles, rocks, dense leaf litter) and looking for fauna signs such as scats and tracks. Each site was sampled twice during each sample period for a minimum of 30 person minutes/sample. Spring/summer diurnal active searches were conducted between 22 September-21 October 2019 and winter search between 1 June-16 June. A total of 1080 person minutes were spent conducting diurnal active searches (Table 4).

2.3.4 Nocturnal active search

Nocturnal surveys were conducted on each side of each underpass on two non-consecutive nights during the spring/summer and winter sample periods. One or two ecologists conducted spotlight surveys for 60 person minutes per underpass side/sample period (Table 4). Surveys were conducted using hand-held Led Lenser P14 spotlights and involved a meandering traverse of habitat within 200m of the culvert entrance. Fauna were detected by sight and call and identified to species or genus where possible. Spring/summer surveys were conducted between 3 October and 28 November 2019 and winter surveys between 15-17 June. A total of 1080 person minutes were spent conducting nocturnal active searches (Table 4).

2.3.5 Opportunistic records

Opportunistic observations of fauna near culvert entrances made whilst doing other monitoring activities such as koala, giant barred frog and yellow-bellied glider monitoring were recorded. All fauna observed whilst setting up equipment, with exception of birds, were also recorded.

Table 4: Survey effort for sampling adjacent habitat on the WC2NH upgrade. S/S = spring/summer, W = winter, UP = Underpass.

Component	Method / culvert side	No Samples	Total effort
Arboreal Elliott traps	5 x traps @ 20m spacing	3 nights/site	510 trap nights
Ground Elliott traps	5 x Type A Elliott traps @ 20m spacing	3 nights/site	540 trap nights
Cage traps	2 @ 50m spacing	3 nights/site	216 trap nights
Pitfall traps	1 x line of 3 pits with drift fence	3 nights/site	324 trap nights
Hair funnels	2 @ 50m spacing	14 nights/site	504 trap nights
Active diurnal search	30 person minute search at UP entrance	2 sample/site	1080 person minutes
Active nocturnal search	30 person minute search at UP entrance	2 samples/site	1080 person minutes

2.4 Exclusion fence

Two people traversed the entire length of the fauna exclusion fence on foot on 17 June 2020. Sections of exclusion fence inspected included: type 1 chainmesh fence with floppy top feature (18.03km), Type 3 frog fence combined with floppy top (1.32 km) and Type 4 flying-fox fence (1km) fence. The exclusion fence was assessed in relation to condition, structural integrity, overhanging vegetation and vine growth. Any issues were recorded on a datasheet, and the location logged using a hand-held GPS along with a written description of the issue and location.

3. Results

3.1 Underpasses

3.1.1 Camera monitoring

Species diversity and native fauna use

Twenty species and seven fauna groups were confirmed using underpasses during camera monitoring (Table 5). The highest fauna diversity was recorded at site 7 with eighteen species/groups, followed by sites 4, 5 and 10 with fourteen species/groups (Table 5). The lowest diversity was recorded at site 1 with five species/groups (Table 5). Remaining sites recorded between nine and 13 fauna species/groups (Table 5). Six introduced species were recorded including cat, dog, red fox, black rat, house mouse and European hare (Table 5).

Native species were recorded making complete crossings (cc) at all underpass sites (Figure 2). Sites 2, 7 and 8 featured the highest use by native species averaging 4.25cc/week, 3.5cc/week and 2.8cc/week respectively (Figure 2). Swamp wallaby (2.3cc/week) and bandicoots (0.95cc/week) were frequently recorded at site 2 while short-eared brushtail possum contributed to the majority of complete crossings at sites 7 (1.71cc/week) and 8 (1.47cc/week) (Table 5). Sites 11 and 12 exhibited the lowest use by native species recording 0.15cc/week and 0.30cc/week (Figure 2).

Macropodidae (swamp wallaby, red-neck wallaby, eastern grey kangaroo, wallaby spp.) was the most frequently recorded native fauna group at a rate of 0.55 cc/week/underpass with detections (herein detections refer to complete crossings) at all sites (Figure 6, Table 5). Of the Macropodidae group swamp wallaby exhibited the highest use of underpasses (complete crossings) followed by red-necked wallaby and eastern grey kangaroo (Table 5). *Trichosurus* spp. (short-eared brushtail possum and common brushtail possum) was recorded at a rate of 0.35cc/week/underpass, Bandicoot spp 0.20cc/week/underpass, reptile (eastern water dragon and lace monitor) 0.19 cc/week/underpass, *Antechinus* spp 0.07cc/week/underpass and Koala 0.02 cc/week/underpass (Figure 6).

Koala was the only threatened species recorded, with complete crossings using the culvert floor recorded at sites 4, 9, and 10 (Table 5 and Figure 2). Koala made seven complete crossings (four east, three west) at site 4 during spring/summer and two complete crossings (one east, one west) during winter (Plate 3). An individual was also recorded making a complete crossing (heading west) through 9 and 10 (split median) during spring/summer (Figure 2, see appendix C Table 1)

Native species use increased from 1.04 ± 1.29 cc/week/underpass during year 1 monitoring to 1.49 ± 2.67 cc/week/underpass during year 2 (Figure 3). Further, in contrast to year 1 native species (1.49 cc/week/underpass) exceeded feral predator use (1.35cc/week/underpass) (Figure 3). Increases in use by Macropodidae spp and Peramelidae spp (Northern brown bandicoot, Long-nosed bandicoot and bandicoot spp.) and *Antechinus* spp largely contributed to increased use of underpasses by native species in year two (Figure 6).



Plate 3: Koala recorded at Site 4, moving west on 1 August 2020.

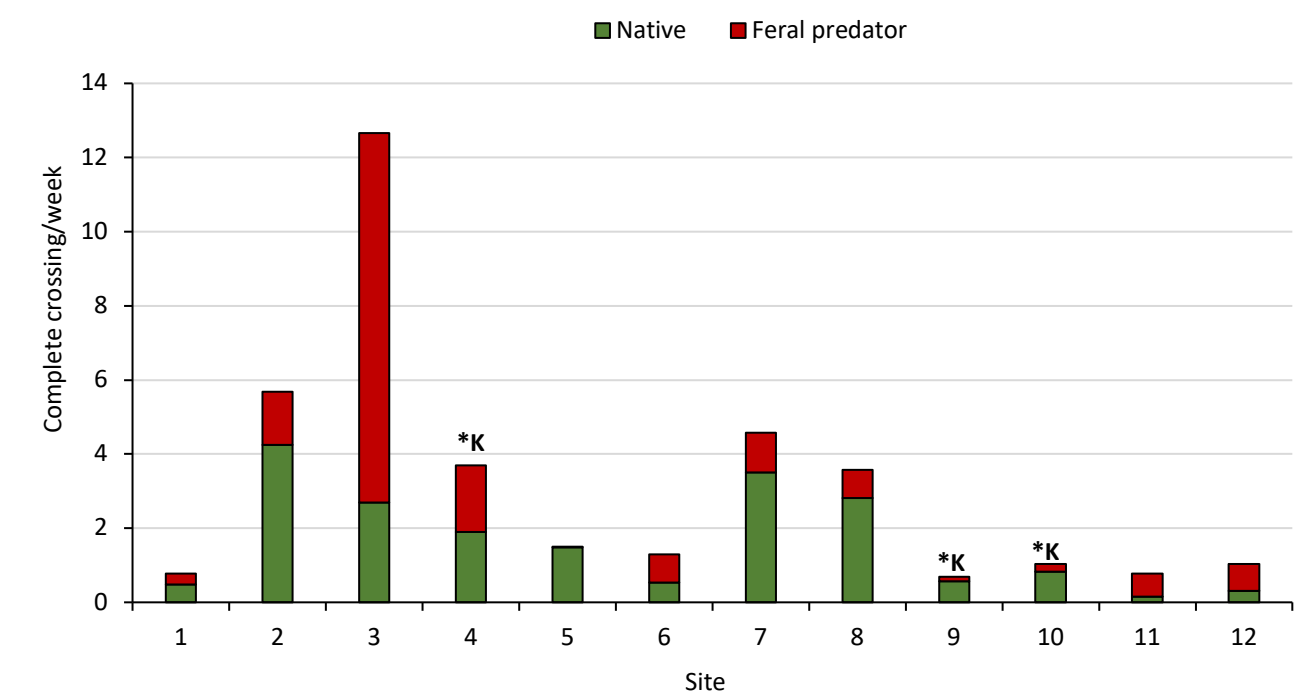


Table 5: Survey effort for sampling adjacent habitat on the WC2NH upgrade *K = indicates complete crossing by koala.

Table 6: Complete crossings/week made by each species/group at each of the 12 underpasses monitored on the WC2NH upgrade during year 2 operational monitoring. Sites 1 and 5 did not contain fauna furniture. 'I' = introduced species, Fl = Floor, G = ground (culvert floor). See appendix C, Table C1 for all data.

Species/groups	Site and camera location																							
	1		2		3		4		5		6		7		8		9		10		11		12	
	N	S	FF	G	FF	G	FF	G	N	S	FF	G	FF	G	FF	G	FF	G	FF	G	FF	G	FF	G
Short-beaked echidna				0.19										0.05										
<i>Antechinus</i> spp			0.23				0.3				0.16		0.17											
Northern brown bandicoot				0.08															0.02					0.11
Long-nosed bandicoot				0.04				0.02	0.02			0.04		0.02				0.02						
<i>Peramelidae</i> spp. (bandicoot)				0.94		0.03		0.39				0.08		0.02				0.07		0.22		0.09		0.14
Koala								0.22										0.02		0.02				
Common brushtail possum								0.02																
Short-eared brushtail possum										0.1	0.04		1.71	0.07	1.47	0.12		0.1		0.07				
<i>Trichosurus</i> spp						0.03		0.05					0.02	0.02	0.24					0.02				
Eastern grey kangaroo						0.17																		
Swamp wallaby	0.3			2.3		0.67		0.2	0.05	0.17		0.12	0.02	0.05		0.12		0.1		0.12		0.03		0.03
Red-necked wallaby						0.23								0.1						0.05				
Wallaby spp				0.3		0.57		0.02						0.15		0.02		0.07		0.07				
Macropod spp				0.15		0.2								0.49										
House mouse*									0.07	0.02								0.02						0.08
Faun-footed melomys							0.02						0.02											
Swamp rat				0.04						0.02														
Bush rat										0.02														
Water rat									0.02	0.79														
Black rat*			0.04				0.02	0.07	0.79	1.6		0.08	0.02	0.02	0.07			0.07		0.12	0.03			0.67
Rodent spp									0.07	0.32	0.04			0.05	0.42						0.03			
Small mammal										0.02				0.02										
Dog*				0.26		1.37		0.12						0.05						0.02		0.09		0.11
Red fox*	0.04	0.04		1.09		0.3		1.13		0.02		0.49		0.91		0.54		0.1		0.07		0.15		0.25
Cat*	0.09	0.13		0.08	0.13	8.17	0.02	0.49				0.28		0.12	0.02	0.2		0.02		0.1	0.03	0.34		0.36
European hare*												0.04				0.07								
Eastern water dragon									0.02	0.07										0.02		0.03		0.03
Lace monitor								0.69		0.07	0.04	0.04		0.17		0.81	0.02	0.1		0.2				
Australian brush turkey																		0.02						
Purple swamphen	0.09	0.04																						
White-browed treecreeper																	0.02							
Welcome swallow					0.73	0.07																		
White faced Heron	0.04																							
Wood duck										0.1														
Species Richness	5	3	2	11	2	11	4	12	7	13	4	8	6	16	5	7	2	12	0	14	3	6	0	9

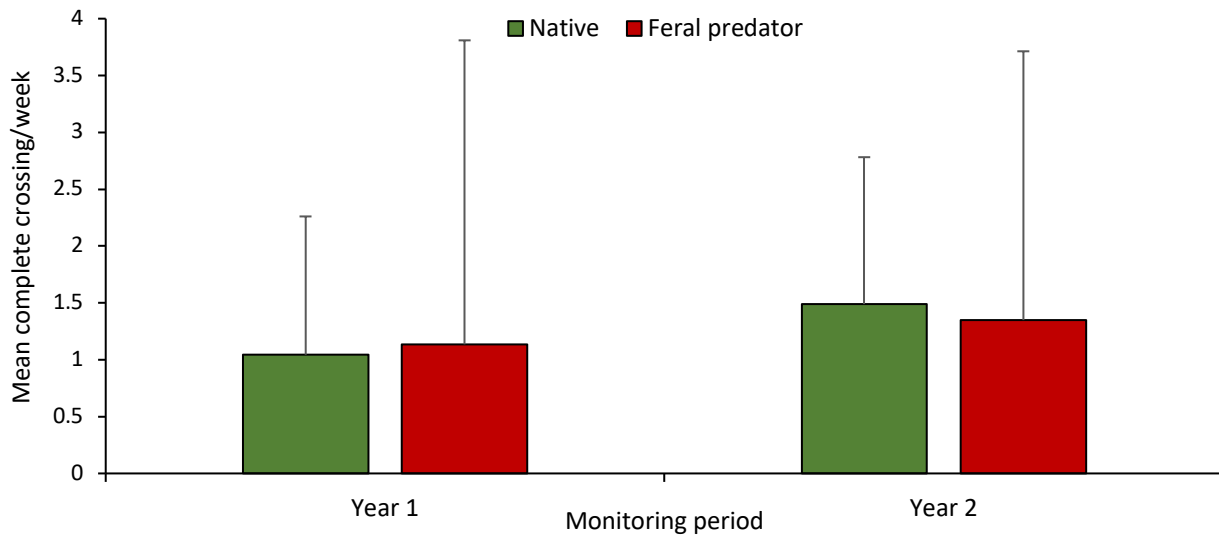


Figure 2: Mean number of complete crossing/week/underpass (+SD) for native and introduced species during year 1 and year 2 monitoring periods (operational).

Feral predator activity

Complete crossings by feral predators were recorded at all sites at an overall rate of 1.34 ± 2.67 cc/week/underpass. This equates to 47% of all complete crossings excluding rodents during year 2 (Figure 2, Figure 3). Feral predator activity was highest at sites 2, 3 and 4 and lowest at sites 5, 9 and 10 (Figure 4). Red fox was recorded at a rate of 0.41 ± 0.39 cc/week/underpass with detections in all underpasses (Figures 5 and 4). Cat (*Felis catus*) recorded 0.84 ± 2.2 cc/week/underpass with detections at all sites except site 5 (Figures 4 and 5). Dog (*Canis lupus familiaris*) exhibited 0.1 ± 0.15 cc/week/underpass and was detected at seven sites (2, 3, 4, 10, 11, 12) (Figures 5 and 4). High use at site 3 can largely be attributed to frequent cat crossings (8.3 cc/week, Figure 4) a majority of which were by 1-2 (distinctive) individuals (Plate 4). Red fox was frequently detected at sites 2 (1.1cc/week), 4 (1.13cc/week) and 7 (0.9cc/week) while dog detections were highest at sites 2 (0.26cc/week) and 3 (1.37cc/week) largely due to two domestic dogs (Figure 4, Plate 4). No instances of predation were recorded in underpasses, although cats carrying prey (rodents) were recorded moving through site 3 on two occasions (see appendix C. Table C1)).

Feral predator use increased from 1.13 ± 2.36 cc/week/underpass during year 1 monitoring to 1.34 ± 2.67 cc/week/underpass during year 2 (Figure 5). While use by cat has remained relatively constant, red fox increased from 0.24 ± 0.45 to 0.41 ± 0.39 cc/week/underpass while dog was recorded at a rate 0.1 ± 0.39 cc/week/underpass with no detections during year 1 monitoring (Figure 5).

Students t-Test comparing mean cc/week/underpass between year 1 and 2 for introduced predators ($P = 0.48$, $n = 12$), foxes ($P = 0.29$, $n = 12$), and cats ($P = 0.85$, $n = 12$) did not identify any statistically significant differences.

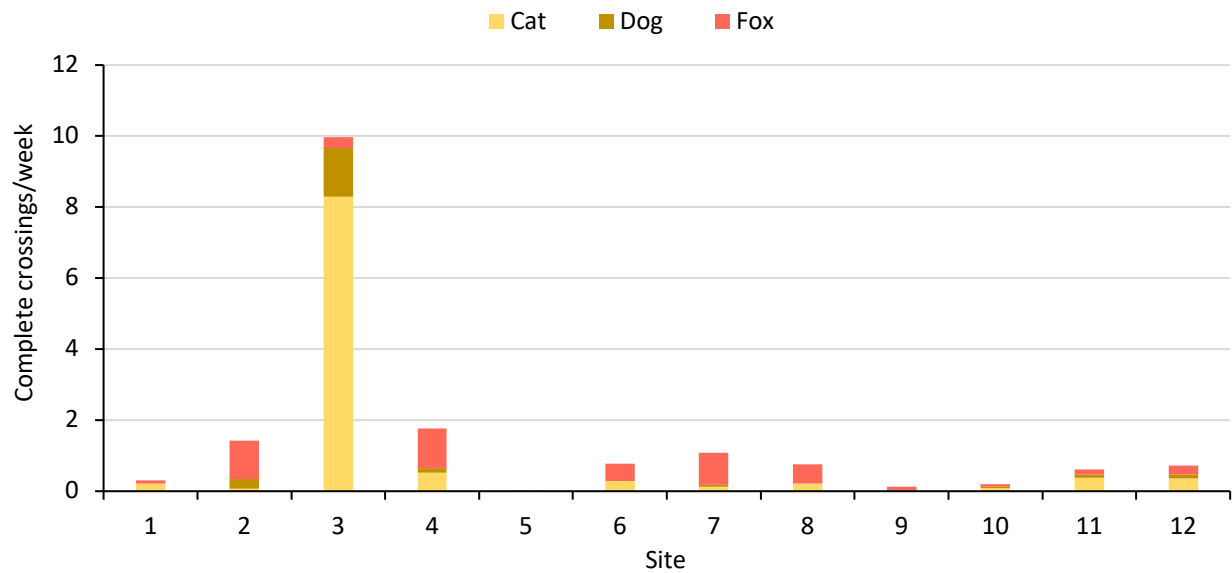


Figure 3: Complete crossings/week by feral predators (cat, red fox, dog) in underpasses during year 2 operational monitoring.

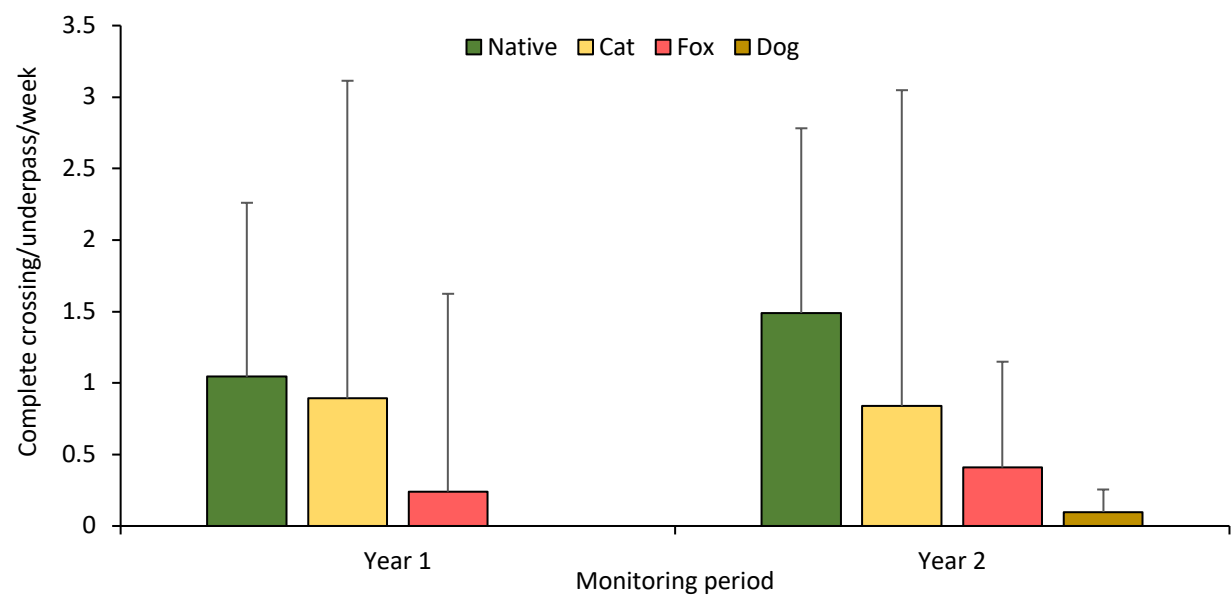


Figure 4. Mean (+SD) number of complete crossing/week/underpass for feral predator species (Cat, Dog, Red fox) during year 1 and year 2 monitoring periods.



Plate 4: Cat individual frequently recorded at site 3 (Top left). Dogs recorded at site 3 (Top right). Feral cat making a complete crossing east at site 7 (Bottom left). Feral dog making a complete crossing east at site 4 (Bottom right).

Use by cover dependent species with low mobility

Fauna with low mobility (see classification in methods) were recorded across all sites with the exception of site 1 (Table 5). In order of use, rodent spp were detected at a rate of 0.43cc/week/underpass, bandicoots 0.20cc/week/underpass and *Antechinus* spp 0.07cc/week/underpass (Figure 6). Rodent species were the most commonly recorded group with confirmed records of introduced black rat (sites 2 and 4-11) house mouse (site 5 and 9), swamp rat (sites 2 and 5), fauna-footed melomys (sites 4 and 7), bush rat (site 5) and water rat (site 5) (Table 5). Bandicoot use was prevalent at site 2 (0.94cc/week) while *Antechinus* spp records were relatively low with complete crossings made on furniture at sites 2, 4, 6 and 7 (Table 5). No cover dependent reptiles or frogs were recorded using underpasses during camera monitoring.

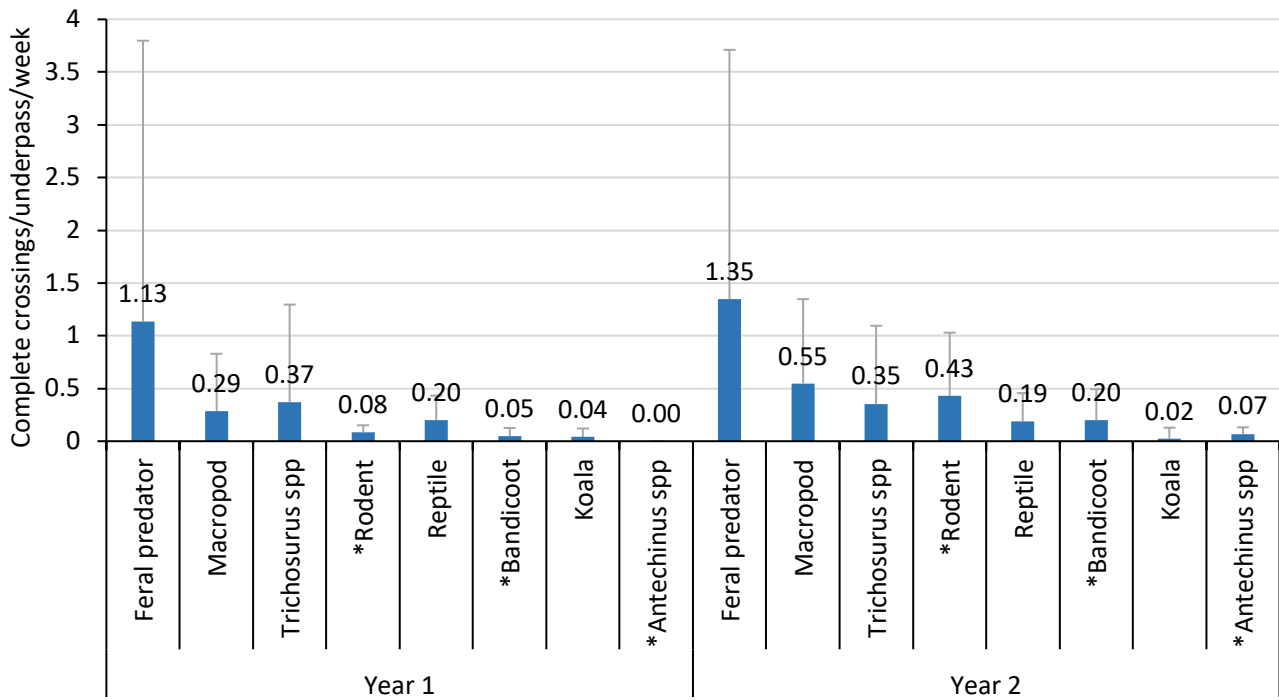


Figure 5: Mean (+SD) number of complete crossings/week/underpass for fauna groups during year 1 and year 2 operational monitoring. *Denotes cover dependent/low mobility species.

Furniture vs Floor

Fauna was recorded using both the culvert floor and furniture during operation phase monitoring (Figure 7). No fauna were recorded using fauna furniture at sites 10 and 12, and sites 1 and 5 did not contain furniture (Table 5). Use of the underpass floor was greater than use of furniture for natives, introduced rodents and feral predators (Figure 7). Furniture use was very low by feral predators, with complete crossings recorded by cat (none for dog or fox) at a rate of 0.02cc/week/underpass (1.2% of all cc by feral predators) (Figure 7, Table 5). Comparatively, 1/3 (31%) of native fauna crossings were completed on fauna furniture at a rate of 0.46cc/week/underpass and the remaining 69% on the culvert floor at a rate of 1cc/week/underpass during year 2 operation (Figure 7). *Trichosurus* spp and *Antechinus* spp, demonstrated preferential use of the fauna furniture accounting for a majority of crossings by native species on the furniture (Table 5, Plate 5). Koalas were recorded using the floor only (Table 5).

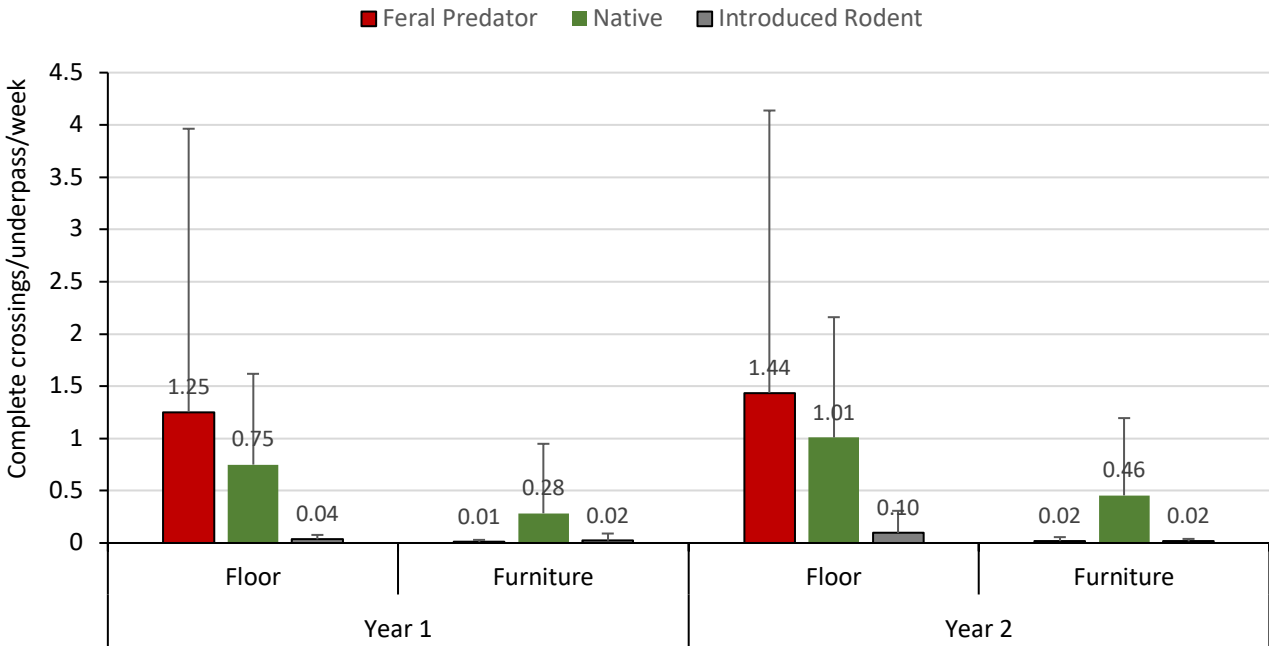


Figure 6: Mean (+SD) number of complete crossings/week/underpass for fauna groups using the culvert floor and furniture during year 1 and year 2 operational monitoring.



Plate 5: Antechinus making a complete crossing west using the fauna furniture at site 6 (Left). Short-eared brushtail possum utilising the fauna furniture at site 8.

3.1.2 Sand pads

Fauna recorded on sand pads largely complimented trends in the underpass camera data. Ten species and fauna groups were recorded on sand pads during monitoring (Appendix C, Table C3). As seen in camera data, species diversity was found to be highest at site 7 (10 species/groups). Rodent spp. was the most commonly recorded fauna group with tracks (incomplete and complete crossings) identified in all underpasses except sites 1 and 8. Koala was recorded making a complete crossing on two occasions at site 4 (Plate 6). Of the smaller fauna groups (small mammals, reptiles and amphibians), a small lizard was reported on one occasion at site 11 and *Antechinus* spp. was reported making three complete crossings at site 2. Sand pad records of feral predators were similar to camera data with cat, dog and red fox confirmed using the underpasses.



Plate 6: Koala tracks (L) recorded on sand pads at Site 4 and Brushtail possum tracks (R) recorded during spring/summer monitoring.

3.1.3 Scat and track searches and tile checks

Ten species, and ten fauna groups were recorded during scat and track surveys during year two monitoring (Appendix C, Table C2). Site 7 and 8 reported the highest diversity of fauna species with ten and nine fauna groups/species respectively (Table 6). Consistent to camera monitoring, sites 1, 11 and 12 report lower fauna diversity with six fauna groups/species or less (Appendix C, Table C2). Tracks or scats of rodents were found in eleven of the twelve culverts and was the most commonly recorded fauna across all sites (Table 6).

Native species/fauna groups were found to be using all culverts (Table 6). Wallaby spp. was recorded at ten sites with lace monitor at seven sites during spring/summer and bandicoot species reported at seven sites each (Table 6). Records of small fauna visitations to the underpasses included *Antechinus* spp. at sites 2,4,6,7, 10, 11 and 12, small and medium reptiles at sites 2, 3, 5 and 8, and a green-tree frog (*Litoria* spp.) scat was recorded at site 10 (Table 6, Appendix C, Table C3). Notably, koala tracks were recorded at site 4 on 28 November and at site 9/10 on 3 October (Appendix C, Table C3).

No fauna was recorded using tiles placed in underpasses.

3.2 Adjacent habitat

Thirty-four species and a further nine fauna groups were recorded in habitat adjoining underpasses (Table 6). The majority of species/groups (28 in total) were detected by diurnal and nocturnal active searches (Table 6, appendix C, Table C4&5). During

trapping surveys, a total of 14 species were identified while hair funnels reported a total of seven fauna groups and species (Appendix C, Table C6). Hair funnel analysis identified 6 species/groups using the adjacent habitat (Appendix C, Table C7). Several threatened species were recorded during spotlight surveys of adjacent habitat, including grey-headed flying fox (*Pteropus poliocephalus*) on 17 occasions, koala on the eastern side of site 4 and giant barred frog at site 1 (Appendix C, Table C5).

A total of 66 individuals were captured during the spring/summer survey and 85 individuals during winter (Appendix C, Table C6). Sugar glider, fawn-footed melomys and black rat were captured in arboreal Elliott traps (Plates 7 & 8). Eight species, two mammals, seven reptiles and two frogs were captured in pitfall traps, and five species including brown antechinus, sugar glider, fawn-footed melomys, bush rat and black rat were captured in ground Elliott traps.

During spring/summer trapping, fawn-footed melomys was the most commonly captured species, with 22 individuals, followed by brown antechinus (10 individuals); black rat (five individuals) and bush rat (three individuals). Remaining species and groups reported two individuals or less. Winter capture rates were highest for black rat (21 individuals), fawn-footed melomys (20 individuals), brown antechinus (16 individuals) and bush rat (10) (Appendix C. Table C6).

Table 7: Species of vertebrate recorded during surveys of adjacent habitat in spring/summer 2019. SS = Spring/Summer, W = Winter. * = Threatened species. E = Endangered species. + denotes threatened species; I = Introduced species.

Species	Active Search		Spotlight		Ground Elliott trap		Arboreal Elliott trap		Cage trap		Pitfall trap		Hair funnel	
	SS	W	SS	W	SS	W	SS	W	SS	W	SS	WW	SS	W
Mammals														
Short-beaked echidna	*			*										
Brown antechinus					*						*			*
Antechinus spp.						*						*	*	
Northern brown bandicoot			*						*	*			*	
Long-nosed bandicoot			*										*	
<i>Peramelidae</i> spp. (bandicoot)	*	*	*											
Sugar glider			*	*	*		*	*						
<i>Acrobates</i> spp				*										
Koala*		*	*											
Short-eared brushtail possum									*	*				
Common brushtail possum														*
<i>Trichosurus</i> spp.													*	*
Common ringtail possum				*										
Wallaby spp.	*	*		*										
Swamp wallaby			*										*	
Macropodidae spp.			*											
Grey-headed flying red fox *			*	*										
<i>Pteropus</i> spp.			*											
Fawn-footed melomys					*	*	*	*				*	*	
Bush rat					*	*							*	*
House mouse ^I						*					*			*
Black rat ^I					*	*	*	*		*			*	*
Red fox ^I	*	*												
Dog		*												
Cat ^I		*	*											

Reptiles														
Burton's legless lizard	*													
Eastern water dragon	*	*	*											
Agamid spp.	*													
<i>Ctenotus</i> spp.		*												
<i>Calyptotis ruficauda</i>		*									*			
<i>Lampropholis delicata</i>											*			
<i>Lampropholis</i> spp.	*	*												
Yellow-faced whipsnake	*													
Dwarf Crowned Snake											*			
Swamp snake														
Blackish blind snake											*			
Black-bellied swamp snake	*										*			
Bandy-bandy			*											
Frogs														
<i>Litoria fallax</i>			*											
<i>Litoria peronii</i>			*											
<i>Litoria taylori</i>														
<i>Adelotus brevis</i>	*		*											
<i>Limnodynastes peronii</i>			*									*		
<i>Mixophyes iteratus</i> ^E			*											
<i>Crinia signifera</i>		*	*	*										
<i>Pseudophryne coriacea</i>			*								*	*		
Total N^o. Species/groups	11	11	20	7	5	5	3	3	2	3	8	4	7	6



Plate 7: *Calyptotis ruficauda* captured in a pitfall trap (L) and a sugar glider (L) captured in an arboreal Elliott.



Plate 8: A short-eared brushtail possum captured in a cage trap (L) and a fawn-footed melomys captured in a ground Elliot (R) during adjacent habitat trapping.

3.2.1 Species recorded in underpasses and adjacent habitat

During year two monitoring 46 species and fauna groups were recorded in adjacent habitat and 34 in underpasses. Due to duplication between species and fauna groups (e.g. Macropodidae and wallaby spp. includes both red-necked and swamp wallaby) only confirmed species and unique genera have been included in the comparison between underpasses and adjacent habitat. Species that don't rely on underpasses to cross the alignment such as birds, flying-foxes and gliders have also been excluded. With the above exclusions 34 species and genera were confirmed using adjacent habitat and 22 species and genera were recorded using underpasses (Table 7). Red-necked wallaby, swamp rat, water rat, lace monitor, green tree frog were recorded in underpasses only (Table 7). If these species are assumed to also reside in adjacent habitat, the proportion of species in adjacent habitat that utilised underpasses in year two was 56% (Table 7). The proportion of mammals recorded in both adjacent habitat and underpasses was 90%. Green tree frog was the only species of amphibian reported using underpasses, while seven frog species were reported in adjacent habitat (Table 7). Further, of the 14 reptile species/families recorded during monitoring, only two (lace monitor and eastern water dragon) were confirmed using underpasses (Table 7).

Table 8: Species and genera recorded using underpasses and in adjacent habitat during year two monitoring. * denotes threatened species. E= Endangered species; + = species assumed to occur based on presence in underpass.

Species	Adjacent habitat	Underpass
Mammals		
Short-beaked echidna	*	*
Brown antechinus	*	
<i>Antechinus</i> spp.	*	*
Northern brown bandicoot	*	*
Long-nosed bandicoot	*	*
Koala*	*	*
Short-eared brushtail possum	*	*
Common brushtail possum	*	*
Common ringtail possum	*	
Swamp wallaby	*	*
Red-neck wallaby	*	*
Fawn-footed melomys	*	*
Rodent spp.	*	*
Swamp rat	*	*
Water rat	*	*
Bush rat	*	*
House mouse [†]	*	*
Black rat [†]	*	*
Dog [†]	*	*
Red fox [†]	*	*
Cat [†]	*	*
Sub-total mammals	21	19
Reptiles		
Burton's legless lizard	*	
Lace monitor	+	*
Eastern water dragon	*	*
<i>Calyptotis ruficauda</i>	*	
<i>Lampropholis delicata</i>	*	
<i>Ctenotus</i> spp	*	
Yellow-faced whipsnake	*	
Dwarf Crowned Snake	*	
Swamp Snake	*	
Blackish blind snake	*	
Black-bellied swamp snake	*	
Bandy-bandy	*	
Frogs		
<i>Litoria fallax</i>	*	
<i>Litoria peronii</i>	*	
<i>Adelotus brevis</i>	*	
<i>Limnodynastes peronii</i>	*	
<i>Mixophyes iteratus</i> ^E	*	
<i>Crinia signifera</i>	*	
<i>Pseudophryne coriacea</i>	*	
Green tree frog	+	*
Total N^o. Species/genus	34	22

3.3 Fauna fence and road strike

A total of 30 exclusion fence defects were recorded during the winter fence traverse (see appendix C, Table C8). Fifteen issues were considered minor priority, ten medium priority and four high priority (excluding gate which has since been closed). Minor issues included gaps where drains intersect the fence (8 issues) compromising the function of the exclusion fence and potentially enable fauna to breach the fence. Medium priority issues include instances where branches or trees are overhanging the exclusion fence. Four high priority issues identified included breach underneath the frog fence, substantial vegetation

growth over 100m of exclusion fence, a hole dug under the fence and above site 7 where a car had crashed into the exclusion fence (Appendix C, Table C8). An unlocked gate was also found at site 1 which was closed and locked.

No road-kill hot spots were identified adjacent to the underpasses or in sections with exclusion fencing (see road-kill report Sandpiper 2019e). In 2019, nine road-kills were recorded in the fenced area between sites 2 and 12, 66% of which were birds. Three road-kills were reported as small to medium mammals, which should have been excluded by the fence.

4. Discussion

4.1 Low rates of use of fauna underpasses and adjacent habitats by feral predators

Feral predators (combined cat, red fox and dog) recorded complete crossings in underpasses at an overall rate of 1.34 ± 2.67 cc/week/underpass. While what constitutes “low use” is not specified within the WC2NH EMP (RMS 2018), feral predators accounted for 47% of complete crossings with marginally lower rates than recorded for native species (1.49cc/week/underpass). This suggests that feral predators are readily using underpasses to transverse the alignment at a rate that is similar to native fauna.

Introduced predators are commonly encountered during underpass monitoring though their impact on use by native species remains equivocal (e.g. Fitzgerald 2005; Chambers & Bencini 2014; Taylor & Goldingay 2014). It is unknown if feral predators are capturing prey near underpass entrances or simply using underpasses to move through their home range. Given that no instances of predation were recorded, evidence suggests that feral predators are using underpasses to access habitat on both sides of the Pacific Highway. While no instances of predation were observed on camera footage, it is possible that either predation or avoidance by native species is occurring at monitored underpasses.

Rates of feral predator underpass usage were not consistent throughout the study area. The high usage recorded at site 3 was due to complete crossings by one or two distinctive cats. Previous trapping has failed to capture the individuals, which are likely to be domestic cats from a neighbouring property. Site 2 also recorded relatively high use by fox and cat, which is attributed to the surrounding fragmented agricultural landscape and proximity to site 3. Records of fox were still recorded at all sites (highest at 2, 4, 6, 7, 8) cat 11 sites (highest at 3, 4, 11 and 12) and dog eight sites (highest at 2, 4, 6, 11 and 12). Use of site 4 by dog is of particular concern due to consistent records of koala during both spring/summer and winter 2019/20 and 2018/19 (Sandpiper Ecological 2019).

Despite the absence of statistically significant differences feral predator use increased from a mean of 1.13 ± 2.36 cc/week/underpass in year 1 to 1.34 ± 2.67 cc/week/underpass in year 2. While use by cat has remained relatively constant, red fox increased from 0.24 ± 0.45 to 0.41 ± 0.39 cc/week/underpass (63% increase) and dog increased from nil in year 1 to 0.1 ± 0.39 cc/week/underpass in year 2. These findings suggest that action may be warranted to prevent further increase in feral predator activity, in particular fox and dog. Due to the limited temporal coverage of sampling confirmation of increased activity in year 3 is warranted before control measures are implemented.

4.2 High levels of fauna underpass use by a variety of native species

Native species frequented underpasses at a rate of 1.49cc/week/underpass. A total of 16 native species/genera were recorded making complete crossings. Of the 39 species/genera (includes species recorded in underpasses only) recorded in the adjacent habitat 56% (22 species/genera) were recorded using underpasses. This result is broadly consistent with findings at Sapphire to Woolgoolga (23% to 50%) and slightly higher than the 38% and 42% recorded at NH2U in 2018 and 2019 (Sandpiper Ecological 2018a; 2019d, 2020).

Fauna furniture accounted for 31% of native fauna crossings at a rate of 0.46cc/week/underpass with the remaining 69% on the culvert floor at a rate of 1cc/week/underpass during year 2. *Trichosurus* spp and *Antechinus* spp, demonstrated preferential use of the fauna furniture accounting for the majority of crossings by native species on the furniture. In contrast, feral predators

tended to use the culvert floor with only limited use of furniture by cat. Despite no evidence of predation occurring in the underpasses, the furniture is likely to act as a refuge for native fauna, alleviating predation risk and encouraging underpass crossings by native species. These findings demonstrate that fauna furniture is an important feature in underpasses to facilitate complete crossings by some native species and highlight its importance in providing refuge from feral predators. Results are consistent with the findings of Goldingay *et al.* (2017).

Use of underpasses by koalas was consistent across years one and two sampling. Year one monitoring revealed rapid use of underpasses by koalas, with individuals recorded in five culverts. The number of culverts used in year two declined to three with a peak of 0.22 cc/week recorded at Site 4. Koala use of underpasses at WC2NH was quicker than recorded at other nearby sites. The speed of uptake is likely associated with the location of underpasses in relation to home ranges and importance of adjoining habitat.

The results obtained at WC2NH are encouraging and the number of species and frequency of use of the underpasses will likely increase over time (Gagnon *et al.* 2011). Increase in the use of underpasses by macropods, bandicoots and antechinus between year 1 and year 2 monitoring was apparent. However, this may be due to improved conditions during year 2 as year 1 was characterised by drought. Improved vegetation cover will be critical in attracting species with small home ranges, such as the common garden skink, eastern crevice skink and red-tailed skink that were reported using the adjacent habitat. Recent landscape plantings near the entrance of several underpasses will assist in providing such cover. Further, a reduction in the number of feral predators is likely to alleviate predation pressure and lead to increase use of underpasses by native species. To achieve this targeted control may be warranted, particularly at sites regularly used by koalas.

4.3 No change to densities, distribution, habitat use, and movement patterns compared to baseline population data of target species.

The target species for underpass monitoring, as outlined in the project brief, are spotted-tailed quoll, koala and giant barred frog. No spotted-tailed quolls were detected during year two, consistent with baseline monitoring (GeoLink 2014). Spotted-tailed quolls occur in low densities in northern NSW and the absence of records in underpasses is not unexpected.

Koalas occur in low densities in Nambucca State Forest and small numbers of individuals were recorded near the alignment during baseline (1 individual), construction phase (3 individuals), and year one operational phase (3 individuals) surveys (GeoLink 2014; Geolink 2017; Sandpiper Ecological 2019b).

Koalas were recorded using underpasses at sites 4, 9 and 10 during both sand pad and camera monitoring. However, there is no substantive baseline data to confirm if changes in habitat use and movement patterns have occurred. Results to date are encouraging as they suggest that koalas continue to maintain territory on both sides of the alignment.

Giant barred frogs were detected in adjacent habitat at site 1 but not recorded on underpass cameras. Riparian vegetation partially obstructed the camera field of view at site 1 in winter and new camera locations will be selected for year 3 monitoring. Notwithstanding, movement by giant barred frogs at site 1 is likely limited by the sparse riparian vegetation, and low activity in winter. Indeed, sampling giant barred frogs in winter is unlikely to provide useful data. Improved habitat connectivity beneath the Warrell Creek Bridge in conjunction with significant rainfall events and reduced human disturbance may increase giant barred frog movement beneath the highway. Further monitoring is required to confirm if the species can rebound to previous population levels (Sandpiper Ecological 2019c).

4.4 Evidence of use by dispersing individuals and different age cohorts

Accurately confirming age of individuals using underpasses is difficult using surveys methods outlined in the EMP. However, immature short-eared brushtail possums and juvenile swamp wallaby were regularly recorded making complete crossings at sites 2, 7, and 8. Other methods such mark-release-recapture would likely be required to provide definitive proof of use by dispersing individuals and different age cohorts. Such a survey would be expensive and is not warranted.

4.5 Use by cover-dependent species with low mobility

Several cover-dependent species (typically small mammals, small reptiles and frogs) were recorded in adjacent habitat, including eight frog species, three native mammals (brown antechinus, fawn-footed melomys and bush rat) and ten reptile species. Of these, only four (small reptile, antechinus, fawn-footed melomys and bush rat) were recorded using underpasses. Additional, cover dependent, small mammal species recorded in underpasses only were swamp rat, and water rat. Consistent with previous surveys there were limited records of reptiles and amphibians in underpasses. Low occurrence of frogs and reptiles is most likely due to the inability of cameras to detect these species as opposed to avoidance. This shortfall is assisted by the use of sand pads and scat and tracks searches to detect smaller fauna. Sand pads captured tracks of a small reptile at site 12 and scat searches recorded frog scat at Site 10. Further, while the floor tiles installed during winter monitoring did not increase detection of cover dependent species, activity of reptiles and frogs is typically low during winter and improved detection may occur during spring/summer monitoring.

Whilst frogs and reptiles are consistently recorded using underpasses at a low frequency there is substantial evidence that this is due to sampling method and revegetation of culvert entrances rather than avoidance. For example, Sandpiper Ecological (2018c) using time lapse photography recorded four species of frog and eight species of reptile using pipe culverts on the S2W upgrade and both *Litoria barringtonensis* and *L. gracilentia* have been recorded in culverts at Butchers Creek on the WC2Nh upgrade. Use of underpasses by cover dependent species, such as antechinus, is likely to improve as landscape plantings at culvert entrances grow to provide cover between the forest edge and culvert entrance.

4.6 No breaches in fauna exclusion fencing; Low incidences of fauna road strike mortality.

A total of 30 exclusion fence defects were recorded during the winter fence traverse. Gaps were commonly identified where drains intersect the fence (8 issues) compromising the function of the exclusion fence and potentially enabling fauna to breach the fence. Vegetation (vines) was identified on one occasion growing up the fence (Appendix C, Table C8). An unlocked gate was found and subsequently closed upon inspection. Gates have been implicated as a potential cause in the road-kill deaths of koalas on Nambucca Heads to Urunga upgrade (NH2U) and Section 11 of the Woolgoolga to Ballina (W2B) upgrade. In general, the exclusion fence was in good condition. A recent observation of a koala within the road corridor suggests that fauna may push under loose wire beneath gates. This finding suggests that a koala actively seeking to move through the exclusion fence could breach a gate that may appear secure. In that instance TfNSW immediately repaired the loose wire.

No road-kill hot spots were identified adjacent to the underpasses or in sections with exclusion fencing (see Sandpiper 2019e). Nine road-kills were recorded between sites 2 and 12 during 2019, 66% of which were birds. Three were reported as small to medium mammals, which should have been excluded by the fence. Access for these individuals may have been via drains where the metal screen was blocked by sticks.

4.7 Underpass survey effort and methods

Underpass survey effort was compromised due to theft of all cameras at sites 1, 2, 3 and 6 during the spring/summer sample. Battery failure and camera malfunction reduced effort during the winter sample at a small number of sites. Removal of defective cameras and changing camera orientation will be applied to reduce the incidence of false triggers in year three sampling. To reduce the incidence of malfunction and maximise monitoring days, camera operation will in future be checked opportunistically while conducting other work nearby. This will involve checking the infrared flash when passing through the underpasses. Any cameras that do not show an active infrared flash will be inspected more closely.

Records from sand pad checks largely complimented UP camera data. Discerning tracks on sand pads contributes substantially to the inclusion of broad groups such as small reptile and macropod spp. However, sand pads may better detect smaller fauna groups, which can evade camera activation. For instance, a small reptile (site 11) and *Antechinus* spp (site 2) were recorded using the culvert floor without being recorded by the cameras. Further, sand pads have demonstrated moderate persistence in

underpass allowing for longer-term monitoring of tracks. This is beneficial when conducting scat and tracks surveys and noting opportunistic records (crossings) that may occur outside of camera or sand pad monitoring periods.

5. Contingency Measures and Recommendations

5.1 Contingency Measures

Contingency measures are summarised in Table 8.

Table 9: Potential problems outlined in the EMP and possible contingency measures. Mitigation measures applicable to the project are addressed in bold text in table below.

Problem	Contingency/Corrective Action	Proposed action
High rates of feral predator activity;	Control program	<ul style="list-style-type: none"> Consider need for control programs targeting fox and dog (in particular at site 4). Discuss alternative methods of cat capture/removal at site 3 with TfNSW
Low levels of native fauna movement and species diversity in underpasses;	Modify habitat structure near underpass entrances and/or modify underpass fauna furniture	Revegetation work has already occurred – no further action required.
No use of underpasses by cover-dependent species or species with low mobility or target threatened species	Modify or add potential groundcover resources	Continue with monitoring of tiles leading into year 3-spring/summer sample.
High rates of fauna road mortality.	Modify exclusion fencing design, location or extent depending on the species and location of mortalities	At this stage of monitoring no modifications to exclusion fence design or extent is recommended.

5.2 Recommendations

Recommendations are summarised in Table 9.

Table 10: Recommendations based on findings from year two operational phase monitoring and response from TfNSW.

Number	Recommendation	Transport for NSW Response
1.	Assess options to control canids at sites regularly used by koalas. The spring/summer year 3 sample should be used to confirm if canid use of underpasses remains high. If monitoring shows high canid activity at key sites (i.e. those used regularly by koala) then TfNSW should consult Local Land Services to identify opportunities to link with other control programs in the locality.	With the assistance of Local Land Services (LLS), TfNSW commenced targeted feral dog baiting and cat trapping in May 2019. Further meetings with LLS have resulted in TfNSW being included as a participant in co-ordinated predator pest baiting programs,

		where LLS has the option to place baits in culverts as part of wider baiting efforts involving other stakeholders. Baiting programs are proposed to take place twice per year at peak predator pest activity times. LLS are aiming to have all stakeholders bait at the same time to maximise impact on predator species including feral dogs, foxes and cats.
2.	Sandpiper Ecological to investigate alternative methods to control cats at sites 2 and 3	Agree and adopted
3.	Continue monitoring of tiles in underpasses during year 3	Agree and adopted
4.	At site 1 (Upper Warrell Creek), undertake an additional 6-8 weeks of camera monitoring in autumn (March/April), commencing in autumn year 3 (2021).	Agree and adopted

References

Chambers, B. and Bencini, R. (2014). Encouraging underpass use by bandicoots and bobtails: keep them short and well vegetated. Proceedings of the Australasian Network for Ecology & Transportation. Coffs Harbour

Fitzgerald, M. (2005). Final Report: results of sand trap monitoring in eight designated fauna crossings in the Yelgun to Chinderah pacific Highway Upgrade. Report prepared for Abigroup Road maintenance.

GeoLink (2014) Warrell Creek to Nambucca Heads Pacific Highway Upgrade, Koala Management Plan. Report prepared for Roads and Maritime service NSW.

GeoLink (2014) Warrell Creek to Nambucca Heads Pacific Highway Upgrade, Spotted-tailed Quoll Management Plan. Report prepared for Roads and Maritime service NSW.

Goldingay, R. L., Taylor, B. & Parkyn, J. L. (2017). Movement of small mammals through a road-underpass is facilitated by a wildlife railing. *Australian Mammalogy*: **41**, 142-146.

Gagnon, J. W. Dodd, N. L., Ogren, K. S. & Schweinsburg, R. E. (2011). Factors associated with use of wildlife underpasses and the importance of long-term monitoring. *Journal of Wildlife Management*: **75**, 1477-1487.

Menkhorst, P. & Knight, F. (2004). *A field guide to the mammals of Australia*. Oxford University press, Melbourne.

Pizzey, G. & Knight, F. (2007). *The field guide to the birds of Australia*. Harper Collins, Sydney.

Reconyx (2010). Hyperfire instruction manual. Reconyx Inc Holmen, Wisconsin

RMS (2018). *Warrell Creek to Nambucca Heads Operational Ecological and Water Quality Monitoring Brief*. NSW Government.

Sandpiper Ecological (2017a). Pacific Highway Upgrade – Sapphire to Woolgoolga: operational phase fauna monitoring year 1 – Greys Dam Frog Pipes. Report prepared for Roads and Maritime Services.

Sandpiper Ecological (2017b). Pacific Highway Upgrade – Glenugie: operational phase fauna crossing monitoring program (years 1-3). Report prepared for NSW Roads and Maritime Services.

- Sandpiper Ecological (2018a). Sapphire to Woolgoolga Pacific Highway Upgrade: operational phase fauna crossing monitoring program years 1-3. Report prepared for NSW Roads and Maritime Services.
- Sandpiper Ecological (2018b). Pacific Highway Upgrade – Warrell Creek to Nambucca Heads operational phase road-kill monitoring – annual report. Report prepared for NSW Roads and Maritime Services.
- Sandpiper Ecological (2018c). Pacific Highway Upgrade – Sapphire to Woolgoolga: operational phase fauna monitoring year 3 – Greys Dam frog pipes. Report prepared for Roads and Maritime NSW.
- Sandpiper Ecological (2019a). Pacific Highway Upgrade – Warrell Creek to Nambucca Heads operational phase road-kill monitoring – summer 2019. Report prepared for NSW Roads and Maritime Services.
- Sandpiper Ecological (2019b). Pacific Highway Upgrade – Warrell Creek to Nambucca Heads operational phase koala monitoring – year one operational phase. Report prepared for NSW Roads and Maritime Services.
- Sandpiper Ecological (2019c). Pacific Highway Upgrade – Warrell Creek to Nambucca Heads giant barred frog (*Mixophyes iteratus*) monitoring program – year 1 operational phase. Report prepared for NSW Roads and Maritime Services.
- Sandpiper Ecological (2019d). Pacific Highway Upgrade –Nambucca Heads to Urunga underpass and vegetated median monitoring program monitoring – year 2 operational phase. Report prepared for NSW Roads and Maritime Services.
- Sandpiper Ecological (2019e). Pacific Highway Upgrade – Warrell Creek to Nambucca Heads Operational roadkill monitoring program monitoring – year one operational phase. Report prepared for NSW Roads and Maritime Services.
- Sandpiper Ecological (2019f). Pacific Highway Upgrade – Warrell Creek to Nambucca Heads underpass monitoring program– year one operational phase. Report prepared for NSW Roads and Maritime Services.
- Sandpiper Ecological (2020). Pacific Highway Upgrade –Nambucca Heads to Urunga underpass and vegetated median monitoring program monitoring – year 3 operational phase. Report prepared for NSW Roads and Maritime Services.
- Soanes, K., Vesk, P. A. and van der Ree, R. (2015). Monitoring the use of road-crossing structures by arboreal marsupials: insights gained from motion-triggered cameras and passive integrated transponder (PIT) tags. *Wildlife Research*: 10.107.
- Taylor, B. D. & Goldingay, R. L. (2003). Cutting the carnage: wildlife usage of road culverts in north-eastern New South Wales. *Wildlife Research*: 30, 529-537.
- Triggs, B. (2004). *Tracks, scats and other traces: a field guide to Australian mammals*. Oxford University Press, Melbourne.
- Wilson, S. & Swan, G. (2010). *A complete guide to reptiles of Australia*. New Holland, Sydney.
- Van Dyck, S., Gynther, I. & Baker, A. (2013). *Field companion to the mammals of Australia*. New Holland, Sydney.

Appendix A – Species list

Table A1: Common and scientific names for all species recorded during year two monitoring at WC2NH. ^ = Threatened species.

Common Name	Scientific Name
Koala^	<i>Phascolarctos cinereus</i>
Swamp wallaby	<i>Wallabia bicolor</i>
Red-necked wallaby	<i>Macropus rufogriseus</i>
Wallaby spp.	
Eastern grey kangaroo	<i>Macropus giganteus</i>
	<i>Macropodidae spp.</i>
Short-beaked echidna	<i>Tachyglossus aculeatus</i>
Yellow-bellied glider^	<i>Petaurus australis</i>
Sugar glider	<i>Petaurus breviceps</i>
	<i>Petaurus spp.</i>
Feathertail glider	<i>Acrobates pygmaeus</i>
Short-eared brushtail possum	<i>Trichosurus caninus</i>
Common brushtail possum	<i>Trichosurus vulpecula</i>
Brushtail possum spp.	<i>Trichosurus spp.</i>
Common ringtail possum	<i>Pseudocheirus peregrinus</i>
Northern brown bandicoot	<i>Isodon macrourus</i>
Long-nosed bandicoot	<i>Perameles nasuta</i>
Bandicoot species	<i>Peramelidae spp.</i>
Fawn-footed melomys	<i>Melomys cervinnipes</i>
	<i>Melomys spp.</i>
Water rat	<i>Hydromys chrysogaster</i>
Bush rat	<i>Rattus fuscipes</i>
Murid spp.	<i>Muridae spp.</i>
Brown antechinus	<i>Antechinus stuartii</i>
	<i>Antechinus spp.</i>
Long-nosed potoroo^	<i>Potorous tridactylus</i>
Grey-headed flying red fox^	<i>Pteropus poliocephalus</i>
Flying red fox spp.	<i>Pteropus spp.</i>
Bent-wing spp.	<i>Miniopterus spp.</i>
Small mammal spp.	
	<i>Dasyuridae spp.</i>
Eastern crevice skink	<i>Egernia mcpheii</i>
Garden skink	<i>Lampropholis delicata</i>
Grass skink	<i>Lampropholis guichenoti</i>
	<i>Lampropholis spp.</i>
Red-tailed calyptotis	<i>Calyptotis ruficauda</i>
Eastern water-skink	<i>Eulamprus quoyii</i>
Three-toed skink	<i>Saiphos equalis</i>
Skink spp.	<i>Scincidae spp.</i>
Coastal carpet python	<i>Morelia spilota</i>
Red-bellied black snake	<i>Pseudechis porphyriacus</i>
Yellow-faced whipsnake	<i>Demansia psammophis</i>
Black-bellied swamp snake	<i>Hemiaspis signata</i>
Blackish blind snake	<i>Anilius nigrescens</i>
Bandy bandy	<i>Vermicella annulata</i>
Coastal carpet python	<i>Morelia spilota</i>
Burton's legless lizard	<i>Lialis burtonis</i>
Lace monitor	<i>Varanus varius</i>
Eastern water dragon	<i>Intellagama lesueurii</i>

	<i>Agamid spp.</i>
Freshwater turtle spp.	<i>Chelidae spp.</i>
Medium reptile spp.	
Small reptile spp.	
Small snake spp.	
Pacific black duck	<i>Anas superciliosa</i>
Pheasant coucal	<i>Centropus phasianinus</i>
Intermediate egret	<i>Ardea intermedia</i>
Tawny frogmouth	<i>Podargus strigoides</i>
Owlet-nightjar	<i>Aegotheles</i>
Common Name	Scientific Name
Little eagle^	<i>Hieraaetus morphnoides</i>
Eastern osprey^	<i>Pandion haliaetus</i>
Glossy Black Cockatoo^	<i>Calyptorhynchus lathami</i>
White-throated treecreeper	<i>Cormobates leucophaea</i>
Green catbird	<i>Ailuroedus crassirostris</i>
Eastern yellow robin	<i>Eopsaltria australis</i>
Eastern whipbird	<i>Psophodes olivaceus</i>
Water bird spp.	
Medium bird spp.	
Small bird spp.	
Eastern dwarf tree frog	<i>Litoria fallax</i>
Tyler's tree frog	<i>Litoria tyleri</i>
Red-eyed tree frog	<i>Litoria chloris</i>
Green tree frog	<i>Litoria cerulea</i>
Dusky toadlet	<i>Uperolia fusca</i>
	<i>Uperolia spp.</i>
Tusked frog	<i>Adelotus brevis</i>
Common eastern froglet	<i>Crinia signifera</i>
Great barred frog	<i>Mixophyes fasciolatus</i>
Giant barred frog^	<i>Mixophyes iteratus</i>
Striped marsh frog	<i>Limnodynastes peronii</i>
Red-backed toadlet	<i>Pseudophryne coriacea</i>
Medium frog spp.	
Frog spp.	
Cat	<i>Felis catus</i>
Red red fox	<i>Vulpes vulpes</i>
Black rat	<i>Rattus rattus</i>
European hare	<i>Lepus europaeus</i>
House mouse	<i>Mus musculus</i>

Appendix B – Weather and climatic conditions

Table B1: Weather during the year 2 monitoring period. Rainfall taken from the BOM weather station at Bellwood (059150). Air temperature, wind and relative humidity collected from Coffs Harbour Airport (station 059151).

Date	MINIMUM Air Temperature (°C)	MAXIMUM Air Temperature (°C)	TOTAL Rain Gauge (mm)	AVERAGE Wind Direction DESCRIPTION	MAXIMUM Wind Speed (km/h)	9am Relative Humidity (%)
22/09/2019	18	26.7	0	SE		64
23/09/2019	16	22	4	SE	26	90
24/09/2019	11.2	20.7	0	SW	30	58
25/09/2019	11.8	22	0	NE	39	61
26/09/2019	14.1	22.7	0	NE	54	89
27/09/2019	10.9	25.3	0	NNE	37	72
28/09/2019	10.4	28.3	0	SSW	57	32
29/09/2019	9.7	21.5	0	NE	35	62
30/09/2019	11.8	22	0	SE	41	73
1/10/2019	13.9	20.7	4	SSE	31	81
2/10/2019	12.1	22.3	0	NE	41	54
3/10/2019	14.2	24.1	0	NE	46	54
4/10/2019	11.7	25.5	0	NE	46	44
5/10/2019	16.7	21.7	0	SW	48	76
6/10/2019	16.6	23.5	0			73
7/10/2019	15.7	28.4	0	NE	41	63
8/10/2019	14.3	22.3	0	SSW	46	96
9/10/2019	9.1	21	0	SSE	50	43
10/10/2019	12.4	20.9	0	SW	44	54
11/10/2019	10.4	19.3	0	ESE	31	82
12/10/2019	11.5	18.5	14	SW	31	83
13/10/2019	12.7	21	6	SW	43	77
14/10/2019	10.2	22.2	7	NE	37	64
15/10/2019	14.7	25.4	0	NE	46	77
16/10/2019	15.3	26.6	0	S	69	65
17/10/2019	18.3	32.8	7	NNW	50	73
18/10/2019	12.1	23.2	0	SSW	31	32
19/10/2019	13	25	0	NNE	33	60
20/10/2019	14.7	22.6	0	SW	54	59
21/10/2019	10.9	22.1	0	SE	28	62
22/10/2019	10	22.8	0	ESE	26	59
23/10/2019	12	24.3	0	NE	44	68

24/10/2019	13.8	25.2	0	NNE	54	57
25/10/2019	14.1	26.3	0	NE	56	56
26/10/2019	18.4	28.7	0	NNE	63	44
27/10/2019	16.5	23.9	0	SW	37	55
28/10/2019	12.5	24.3	0	ESE	28	67

Date	MINIMUM Air Temperature (°C)	MAXIMUM Air Temperature (°C)	TOTAL Rain Gauge (mm)	AVERAGE Wind Direction DESCRIPTION	MAXIMUM Wind Speed (km/h)	9am Relative Humidity (%)
29/10/2019	12.7	24.4	0	NE	44	60
30/10/2019	17.4	26	0	NNE	54	63
31/10/2019	15.9	25	0	NNE	52	61
1/11/2019	17.1	24.9	0	NE	48	58
2/11/2019	17.4	25.4	0	NNE	54	62
3/11/2019	18.9	27.8	0	NNE	72	60
4/11/2019	19.1	28.8	2	N	33	59
5/11/2019	13.9	22	0	S	65	71
6/11/2019	12.4	24.4	3	N	35	48
7/11/2019	10.9	30.2	0	NE	48	34
8/11/2019	12	34.3	0	WSW	44	19
9/11/2019	17.3	22.4	0	S	63	52
10/11/2019	6.7	24.9	0	ENE	33	31
11/11/2019	10.6	23.8	0	NE	41	66
12/11/2019	16.1	30.3	0	NE	54	55
13/11/2019	13.4	23.1	0	S	57	66
14/11/2019	13.3	24.1	0	SE	22	68
15/11/2019	14.7	26.3	0	NNE	48	69
16/11/2019	11.2	24.8	0	SW	41	57
17/11/2019	15.1	24.4	0	WSW	54	73
18/11/2019	14.5	24.4	0	NE	44	69
19/11/2019	16.7	26.5	0	N	39	54
20/11/2019	16.2	25.7	0	SSW	37	57
21/11/2019	17.7	27.6	0	NNE	70	68
22/11/2019	20.6	32	0	NNE	70	42
23/11/2019	20.5	26.1	0	NNE	61	65

24/11/2019	17.7	25.8	0	NNE	37	75
25/11/2019	20.7	27.3	0	NNE	67	67
26/11/2019	17.7	31.2	0	NNE	61	59
27/11/2019	18.2	24.2	1	S	48	43
28/11/2019	14.6	25.6	0	NE	50	65
29/11/2019	21	27.7	0	NE	61	81
30/11/2019	21.4	30.3	0	SW	72	74
1/12/2019	19.9	27.5	16	NE	35	78
2/12/2019	18.7	31.2	6	WSW	65	56
3/12/2019	12.6	25.8	0	NNE	54	27
4/12/2019	10.5	27.4	0	NNE	43	31
5/12/2019	11.8	30	0	NE	30	44
6/12/2019	11.8	34.1	0	NNE	43	26
7/12/2019	14.3	26.2	0	S	41	55
8/12/2019	13.8	26.8	0	ESE	28	67

Date	MINIMUM Air Temperature (°C)	MAXIMUM Air Temperature (°C)	TOTAL Rain Gauge (mm)	AVERAGE Wind Direction DESCRIPTION	MAXIMUM Wind Speed (km/h)	9am Relative Humidity (%)
9/12/2019	16.4	27.7	0	NE	50	67
10/12/2019	23.3	29.5	0	NNE	57	66
11/12/2019	21.8	24	0	N	54	86
12/12/2019	21	25.8	0	SSW	35	79
13/12/2019	19.3	24	7	SSE	35	95
14/12/2019	19.3	27.2	0	WSW	30	77
15/12/2019	19.2	28.4	0	NNE	37	74
16/12/2019	17.6	28.6	0	S	61	50
17/12/2019	18.3	25.6	0	SW	37	60
18/12/2019	16	25.7	0	ENE	35	56
19/12/2019	19.1	28.7	0	NNE	63	54
20/12/2019	18.8	27.2	0	WSW	35	72
21/12/2019	17.9	27.6	0	NNE	56	67
22/12/2019	21.9	25.5	0	S	57	85
23/12/2019	19.5	27.3	0	WSW	39	65
24/12/2019	21.7	27.4	1	NE	48	79

25/12/2019	20.7	25.9	8	ESE	33	81
26/12/2019	16.9	26.4	4	E	28	93
27/12/2019	16.9	27.4	0	E	31	58
28/12/2019	15	27.8	0	NE	43	53
29/12/2019	18.3	29.3	0	NE	54	55
30/12/2019	20.9	28.8	0	NNE	59	58
31/12/2019	21.6	30	0	NNE	69	55
1/01/2020	22	28.3	0	NNE	67	64
2/01/2020	20.9	28.3	0	NE	46	67
3/01/2020	21.9	28	0	NNE	54	65
4/01/2020	21.5	29.2	0	NNE	63	57
5/01/2020	21.5	28	0	SSW	57	68
6/01/2020	21.5	28.1	0	SSW	35	69
7/01/2020	22.6	29.4	0	NE	44	71
8/01/2020	22.7	30.7	0	NE	56	59
9/01/2020	20.5	30	0	ENE	37	61
10/01/2020	20.1	30.1	0	NNE	67	63
11/01/2020	25	34.5	0	SSE	54	61
12/01/2020	19.2	26.2	3	SSE	41	92
13/01/2020	18.2	27.3	0	S	31	66
14/01/2020	19.2	26.4	0	SW	28	74
15/01/2020	20.5	28.5	0	ENE	26	83
16/01/2020	23.6	30.5	0	NE	54	67
17/01/2020	20.7	24.9	4	NNE	35	83
18/01/2020	20.7	24.4	12	WSW	26	91

Date	MINIMUM Air Temperature (°C)	MAXIMUM Air Temperature (°C)	TOTAL Rain Gauge (mm)	AVERAGE Wind Direction DESCRIPTION	MAXIMUM Wind Speed (km/h)	9am Relative Humidity (%)
19/01/2020	20.5	28.9	85	NNE	41	87
20/01/2020	22.9	33	0	NW	61	66
21/01/2020	22.6	30.7	0	NE	48	62
22/01/2020	21.5	29.7	0	NNE	41	71
23/01/2020	23.6	33.6	0	NNE	63	69
24/01/2020	23.5	31.2	0	NNE	48	80

25/01/2020	21	30.4	0	N	39	77
26/01/2020	23.6	29	0	NNE	59	70
27/01/2020	24.2	29.3	0	NNE	48	65
28/01/2020	23.6	29.6	0	NNE	57	65
29/01/2020	21.3	28.7	0	S	37	76
30/01/2020	23.6	28.8	0	NNE	31	76
31/01/2020	24.6	30	0	NNE	54	63
1/02/2020	23.6	30.8	0	NNE	63	63
2/02/2020	24.1	33.3	0	NE	59	65
3/02/2020	21.5	35.3	10	S	81	73
4/02/2020	20.2	21.8	3	SSW	61	74
5/02/2020	18.9	24.2	0	WSW	26	72
6/02/2020	19.1	25.4	2	E	48	92
7/02/2020	19.3	28.1	69	ENE	43	85
8/02/2020	21.1	25.9	6	SSE	30	92
9/02/2020	21.1	24.3	95	ENE	52	95
10/02/2020	21	28.7	59	NNE	50	88
11/02/2020	20.5	27.1	35	ENE	41	92
12/02/2020	20.6	25.4	32	NE	41	93
13/02/2020	21.5	26.6	42	ESE	35	94
14/02/2020	21	27.2	6	SSW	39	93
15/02/2020	18.6	29	0	NE	28	71
16/02/2020	22.2	26.5	1	S	33	89
17/02/2020	22.4	29.5	0	SW	63	93
18/02/2020	19.1	31.4	13	NE	50	70
19/02/2020	24.4	35.5	0	SSW	39	73
20/02/2020	21	27.8	3	SSE	31	58
21/02/2020	19.9	26.7	0	ESE	28	71
22/02/2020	19.6	25.5	3	WSW	28	92
23/02/2020	18.4	24.6	13	S	22	88
24/02/2020	19.2	24.5	58	SSW	22	95
25/02/2020	19.8	27.7	20	ENE	30	81
26/02/2020	19.7	30.3	0	NNE	44	69

27/02/2020	18.7	28.7	1	SSW	41	76
28/02/2020	19.2	28.6	0	SSW	43	78

Appendix C – Field data

Table C 1: Underpass camera data recorded during spring/summer and winter of year two operational monitoring WC2NH, 2020.

Site	Side	Date	Time	Species	Complete or incomplete	Movement	Accuracy	Pic/vid No.	Comments
12 (west)	G	10/10/2019	0139	Black Rat	Complete	E	Pr	17	
12 (west)	G	10/10/2019	0438	Cat	Complete	W	D	19-20	black cat
12 (west)	G	12/10/2019	2217	house mouse	Complete	E	Pr	28	
12 (west)	G	13/10/2019	2153	Cat	Complete	E	D	29-30	tabby
12 (west)	G	15/10/2019	0201	Black Rat	Complete	E	Pr	42	
12 (west)	G	15/10/2019	2006	Black Rat	Complete	W	D	86	
12 (west)	G	18/10/2019	0306	house mouse	Complete	E	Pr	111	
12 (west)	G	18/10/2019	2332	Black Rat	Complete	E	D	152-153	
12 (west)	G	20/10/2019	1946	Black Rat	Complete	W	D	165	
12 (west)	G	22/10/2019	2327	Black Rat	Complete	E	D	13	
12 (west)	G	5/11/2019	2350	Black Rat	Complete	E	D	23	
12 (west)	G	6/11/2019	1948	Black Rat	Complete	W	D	28	
12 (west)	G	7/11/2019	0047	Cat	Complete	E	D	29	
12 (west)	G	7/11/2019	0447	Black Rat	Complete	E	D	30	
12 (west)	G	7/11/2019	1946	Black Rat	Complete	W	D	35	
12 (west)	G	11/11/2019	2140	Black Rat	Complete	W	Pr	52	
12 (west)	G	12/11/2019	1006	EW dragon	Complete	W	D	53	
12 (west)	G	12/11/2019	1956	Black Rat	Complete	W	D	55	
12 (west)	G	13/11/2019	0022	Black Rat	Complete	E	D	56	
12 (west)	G	17/11/2019	0103	Black Rat	Complete	E	Pr	63	
12 (west)	G	17/11/2019	2200	Black Rat	Complete	W	D	64	
12 (west)	G	17/11/2019	2259	Black Rat	Complete	E	D	65	
12 (west)	G	18/11/2019	2010	Black Rat	Complete	W	D	66	
12 (west)	G	19/11/2019	0148	Black Rat	Complete	E	D	67	
12 (west)	G	26/11/2019	2308	Black Rat	Complete	E	D	9	
12 (west)	G	2/12/2019	0015	Black Rat	Complete	E	D	20	
12 (west)	G	2/12/2019	2049	Black Rat	Complete	E	D	24	
12 (west)	G	6/12/2019	0144	Black Rat	Complete	E	D	34	
12 (west)	G	7/12/2019	0123	Black Rat	Complete	E	D	37-38	
12 (west)	G	14/12/2019	0158	Black Rat	Complete	E	D	45	
12 (west)	G	14/12/2019	2252	Northern brown bandicoot	Complete	E	Pr	46-47	
12 (west)	G	21/06/2020	2103	Cat	Complete	E	D	9-10	Tabby

Site	Side	Date	Time	Species	Complete or incomplete	Movement	Accuracy	Pic/vid No.	Comments
12 (west)	G	24/06/2020	0303	Fox	Incomplete	W-E	D	16-18	
12 (west)	G	25/06/2020	2218	Cat	Complete	E	D	23	Tabby (likely same individual)
12 (west)	G	4/07/2020	2151	Fox	Complete	E	D	24	
12 (west)	G	6/07/2020	0532	Swamp wallaby	Complete	E	D	25	
12 (west)	G	15/07/2020	0042	Fox	Complete	E	D	30	
12 (west)	G	16/07/2020	2204	Bandicoot	Complete	E	D	32	
12 (west)	G	18/07/2020	1928	Cat	Complete	W	D	35	Black cat
12 (west)	G	20/07/2020	0118	Cat	Complete	W	D	36	Tabby
12 (west)	G	16/07/2020	2204	Northern brown bandicoot	Complete	E	D	32	
12 (west)	G	25/07/2020	0032	Bandicoot spp	Complete	E	D	56	
12 (west)	G	26/07/2020	0013	Cat	Complete	W	D	57	black cat
12 (west)	G	26/07/2020	0133	Fox	Complete	W	D	58	
12 (west)	G	28/07/2020	2152	house mouse	Complete	E	D	13	
12 (west)	G	29/07/2020	1906	Cat	Complete	E	D	14	Tabby
12 (west)	G	30/07/2020	1247	Fox	Complete	W	D	15	
12 (west)	G	9/08/2020	2041	Cat	Complete	E	D	16	Tabby
12 (west)	G	12/08/2020	1215	Dog	Incomplete	E-W	D	18-19	Dark Brown
12 (west)	G	12/08/2020	2254	Cat	Complete	W	D	22	Tabby
12 (west)	G	13/08/2020	1009	Dog	Complete	E	D	23	Dark Brown
12 (west)	G	14/08/2020	2317	Northern brown bandicoot	Complete	W	D	26	
12 (west)	G	14/08/2020	2332	Cat	Complete	W	D	27	Black Cat
12 (west)	G	15/08/2020	0158	Northern brown bandicoot	Complete	E	D	28	
12 (west)	G	16/08/2020	2205	Bandicoot spp	Complete	E	D	30	
12 (west)	G	17/08/2020	1942	Bandicoot spp	Complete	W	D	31	
12 (west)	G	17/08/2020	2048	Bandicoot spp	Complete	E	D	32	
12 (west)	G	19/08/2020	0759	Dog	Complete	E	D	33	
12 (west)	G	24/08/2020	1102	Dog	Complete	E	D	34	
12 (west)	G	27/08/2020	2119	Fox	Complete	W	D	40	
12 (west)	G	27/08/2020	2202	Cat	Complete	E	D	41	
12 (west)	G	29/08/2020	0245	Fox	Complete	E	D	43	
12 (west)	G	31/08/2020	0537	Fox	Complete	E	D	44	
12 (west)	G	1/09/2020	0345	Fox	Complete	W	D	45	
11 (East)	FF	17/12/2019	0041	Black Rat	Complete	E	D	61	
11 (East)	FF	24/06/2020	2357	Rodent spp	Complete	E	D	11-23	Several crossings back and forth
11 (East)	FF	26/10/19	0433	Cat	Complete	E	D	69	tabby
11 (East)	G	20/11/2019	nil						
11 (East)	G	10/10/2019	0435	Cat	Complete	W	D	29	black cat

Site	Side	Date	Time	Species	Complete or incomplete	Movement	Accuracy	Pic/vid No.	Comments
11 (East)	G	13/10/2019	2155	Cat	Complete	E	D	32	tabby
11 (East)	G	26/10/2019	0430	Cat	Complete	W	D	37	
11 (East)	G	7/11/2019	0049	Cat	Complete	E	D	84-85	
11 (East)	G	8/11/2019	1545	EW Dragon	Complete	E	Pr	105	
11 (East)	G	29/07/2020	1909	Cat	Complete	E	D	10	Tabby
11 (East)	G	30/07/2020	0246	Fox	Complete	E	D	11	
11 (East)	G	4/08/2020	2033	Cat	Complete	E	D	12-13	Tabby
11 (East)	G	4/08/2020	2039	Cat	Complete	E	D	14	Tabby
11 (East)	G	9/08/2020	2045	Cat	Complete	E	D	16	Tabby
11 (East)	G	12/08/2020	2251	Cat	Complete	E	D	30	Tabby
11 (East)	G	13/08/2020	1010	Dog	Complete	E	D	31	Dark Brown
11 (East)	G	14/08/2020	2318	Cat	Complete	E	D	33	Black Cat
11 (East)	G	15/08/2020	0158	Bandicoot	Complete	E	D	34	
11 (East)	G	16/08/2020	2206	Bandicoot	Complete	E	D	36	
11 (East)	G	17/08/2020	2049	Bandicoot	Complete	E	D	38	
11 (East)	G	19/08/2020	0800	Dog	Complete	E	D	39	Dark Brown
11 (East)	G	24/08/2020	1143	Dog	Complete	E	D	41	Dark Brown
11 (East)	G	27/08/2020	2118	Fox	Complete	W	D	51	
11 (East)	G	27/08/2020	2205	Cat	Complete	E	D	52-54	Tabby
11 (East)	G	29/08/2020	0246	Fox	Complete	E	D	59	
11 (East)	G	31/08/2020	0431	Swamp wallaby	Complete	E	D	61	
11 (East)	G	31/08/2020	0537	Fox	Complete	E	D	62	
11 (East)	G	1/09/2020	0344	Fox	Complete	W	D	63	
10 (west)	FF			Nil (Summer)					
10 (west)	G	26/10/2019	2219	SEBtP	Incomplete	E-W	Pr	41,43-44	
10 (west)	G	27/10/2019	2055	Black Rat	Complete	W	D	45	
10 (west)	G	7/11/2019	0109	SEBtP	Complete	W	Pr	75	
10 (west)	G	25/11/2019	2220	Black Rat	Incomplete	EXM	D	11-14, 16	
10 (west)	G	13/10/2019	2219	cat	Complete	E	D	19	tabby
10 (west)	G	21/10/2019	1314	EW Dragon	Complete	E	Pr	142	
10 (west)	G	21/10/2019	1457	Lace Monitor	Complete	E	D	11	
10 (west)	G	22/10/2019	1321	Lace Monitor	Complete	W	D	24	
10 (west)	G	24/10/2019	2233	Bandicoot spp.	Incomplete	W-E	D	31-32	
10 (west)	G	25/10/2019	1443	Lace Monitor	Complete	E	D	40	
10 (west)	G	28/10/2019	0220	Bandicoot spp	Complete	W	D	42	
10 (west)	G	31/10/2019	0446	Black Rat	Complete	E	D	46	
10 (west)	G	31/10/2019	1254	Lace Monitor	Complete	E	D	47	
10 (west)	G	1/11/2019	2329	Btposs spp	Complete	W	D	49	

Site	Side	Date	Time	Species	Complete or incomplete	Movement	Accuracy	Pic/vid No.	Comments
10 (west)	G	7/11/2019	0255	Northern brown bandicoot	Complete	W	Pr	55	
10 (west)	G	8/11/2019	0159	Bandicoot spp	Complete	W	D	58	
10 (west)	G	9/11/2019	0404	Cat	Complete	W	D	61	tabby
10 (west)	G	9/11/2019	2242	Koala	Complete	W	D	63	
10 (west)	G	12/11/2019	0311	Bandicoot spp	Complete	W	D	67	
10 (west)	G	13/11/2019	0139	Bandicoot spp	Complete	W	D	77	
10 (west)	G	16/11/2019	0106	Bandicoot spp	Complete	W	D	80	
10 (west)	G	18/11/2019	1158	Lace Monitor	Complete	W	D	93	
10 (west)	G	19/11/2019	0210	Bandicoot spp	Complete	W	D	94	
10 (west)	G	22/11/2019	0149	Bandicoot spp.	Complete	W	D	15	
10 (west)	G	22/11/2019	0216	Black Rat	Complete	W	D	16	
10 (west)	G	22/11/2019	1559	Lace Monitor	Complete	E	D	19	
10 (west)	G	23/11/2019	0003	Bandicoot spp.	Complete	W	Pr	20	
10 (west)	G	25/11/2019	2252	Black Rat	Complete	EXM	D	31	
10 (west)	G	28/11/2019	1403	Lace Monitor	Complete	E	D	46	
10 (west)	G	4/12/2019	0055	Swamp wallaby	Complete	E	D	110	
10 (west)	G	4/12/2019	0539	Swamp wallaby	Complete	W	Pr	111	
10 (west)	G	4/12/2019	2350	SEBtP	Complete	W	D	112	
10 (west)	G	6/12/2019	1535	Lace Monitor	Complete	E	D	118	
10 (west)	G	22/06/2020	2023	Wallaby spp (probable red-neck)	Complete	W	D	10	
10 (west)	G	23/06/2020	2024	Wallaby spp (probable swamp wallaby)	Complete	W	D	11	
10 (west)	G	24/06/2020	0651	Wallaby spp (probable swamp wallaby)	Complete	E	D	12	
10 (west)	G	24/06/2020	2058	Fox	Complete	E	D	17	
10 (west)	G	28/06/2020	1855	Swamp wallaby	Complete	W	D	18	
10 (west)	G	3/07/2020	1707	Wallaby spp	Complete	E	D	19	
10 (west)	G	5/07/2020	0357	Fox	Complete	E	D	20	
10 (west)	G	5/07/2020	1816	Fox	Incomplete	W-E	D	20	
10 (west)	G	21/07/2020	2316	Cat	Complete	W	D	43	
10 (west)	G	30/07/2020	2228	Red neck Wallaby	Complete	E	D	20	
10 (west)	G	1/08/2020	0643	Wallaby spp	Complete	W	D	21	
10 (west)	G	6/08/2020	2025	Cat	Complete	E	D	23	Tabby
10 (west)	G	16/08/2020	0557	Wallaby spp	Complete	W	D	29	
10 (west)	G	19/08/2020	1741	Dog	Complete	W	D	31	
9 (East)	FF	17/12/2019	1049	Lace Monitor	Complete	W	D	187	
9 (East)	FF	4/12/2019	0653	Treecreeper spp.	Complete	E	Pr	176	
9 (East)	FF			Nil winter part 1					

Site	Side	Date	Time	Species	Complete or incomplete	Movement	Accuracy	Pic/vid No.	Comments
9 (East)	G	17/12/2019	0659	Australian bushturkey	Incomplete	NDM	D	318	
9 (East)	G	13/10/2019	0447	Black Rat	Complete	W	Pr	8	
9 (East)	G	14/10/2019	2049	Black Rat	Complete	E	Pr	24	
9 (East)	G	21/10/2019	1459	Lace Monitor	Complete	E	D	128	
9 (East)	G	22/10/2019	1159	Lace Monitor	Complete	W	D	4-5	
9 (East)	G	22/10/2019	1315	Lace Monitor	Complete	W	D	6	
9 (East)	G	23/10/2019	2306	SEBtP	Complete	E	Pr	9	
9 (East)	G	24/10/2019	2229	Long-nosed bandicoot	Complete	W	Pr	10	
9 (East)	G	24/10/2019	2336	Bandicoot spp	Complete	E	D	11	
9 (East)	G	25/10/2019	0157	SEBtP	Complete	E	D	13-16	
9 (East)	G	29/10/2019	0229	SEBtP	Incomplete	W-E	Pr	19-23	
9 (East)	G	1/11/2019	2101	Bandicoot spp	Complete	E	D	26	
9 (East)	G	9/11/2019	2239	Koala	Complete	W	D	43	
9 (East)	G	21/11/2019	2150	Bandicoot spp.	Complete	E	D	4	
9 (East)	G	22/11/2019	0019	SEBtP	Incomplete	EXM	D	5	
9 (East)	G	2/12/2019	0116	Black Rat	Complete	E	D	40	
9 (East)	G	4/12/2019	0054	Swamp wallaby	Complete	E	Pr	67	
9 (East)	G	4/12/2019	0535	Swamp wallaby	Complete	W	D	68	
9 (East)	G	6/12/2019	1536	Lace Monitor	Complete	E	D	97	MB present
9 (East)	G	21/06/2020	2213	House mouse	Complete	E	D	3	
9 (East)	G	22/06/2020	2024	Wallaby spp	Complete	E	D	11	
9 (East)	G	24/06/2020	2055	Fox	Complete	W	D	18-20	
9 (East)	G	28/06/2020	1855	Wallaby spp.	Complete	E	D	21	
9 (East)	G	3/07/2020	1705	Swamp wallaby	Complete	W	D	29-31	
9 (East)	G	5/07/2020	0356	Fox	Complete	W	D	32	
9 (East)	G	5/07/2020	1814	Fox	Complete	W	D	33	
9 (East)	G	14/07/2020	0140	Cat	Complete	W	D	34-35	Tabby
9 (East)	G	26/07/2020	2036	Fox	Incomplete	W-E	D	131	
9 (East)	G	7/08/2020	1751	Swamp wallaby	Complete	E	D	9	
9 (East)	G	7/08/2020	0158	Wallaby spp	Complete	W	D	10	
8	FF	9/12/2019	0331	cat	Complete	E	D	115	Tabby
8	FF	9/10/2019	0407	SEBtP	Complete	E	Pr	3	
8	FF	9/10/2019	1955	SEBtP	Complete	W	D	14	
8	FF	10/10/2019	0317	2 x SEBtP	Complete	E	Pr	15	2 individuals
8	FF	10/10/2019	0349	SEBtP	Complete	W	D	16	
8	FF	12/10/2019	0445	SEBtP	Complete	E	Pr	28	
8	FF	12/10/2019	2149	SEBtP	Complete	W	D	29	
8	FF	13/10/2019	0235	2 x SEBtP	Complete	E	D	30	2 individuals

Site	Side	Date	Time	Species	Complete or incomplete	Movement	Accuracy	Pic/vid No.	Comments
8	FF	13/10/2019	0401	SEBtP	Complete	E	D	31	
8	FF	13/10/2019	2018	SEBtP	Complete	E	Pr	33	
8	FF	14/10/2019	0027	SEBtP	Complete	W	D	34	
8	FF	14/10/2019	0514	SEBtP	Complete	E	Pr	36	
8	FF	14/10/2019	2022	SEBtP	Complete	W	D	44	
8	FF	15/10/2019	2107	SEBtP	Complete	E	D	57	
8	FF	17/10/2019	0419	SEBtP	Complete	E	D	62	
8	FF	18/10/2019	2055	SEBtP	Complete	E	D	73	
8	FF	19/10/2019	0119	2 x SEBtP	Complete	E	D	74	2 individuals
8	FF	21/10/2019	0046	SEBtP	Complete	E	D	92	
8	FF	21/10/2019	0329	2 x SEBtP	Complete	E	D	93	2 individuals
8	FF	21/10/2019	1927	SEBtP	Complete	E	Pr	101	
8	FF	22/10/2019	2345	SEBtP	Complete	W	D	3	
8	FF	24/10/2019	0133	SEBtP	Complete	W	Pr	6	
8	FF	24/10/2019	0243	SEBtP	Complete	W	Pr	7	
8	FF	24/10/2019	1933	SEBtP	Complete	E	Pr	9	
8	FF	24/10/2019	2232	SEBtP	Complete	E	D	12	
8	FF	25/10/2019	0129	SEBtP	Complete	W	D	13	
8	FF	25/10/2019	0249	2 x SEBtP	Complete	E	D	14	2 individuals
8	FF	27/10/2019	2306	SEBtP	Incomplete	E-W	Pr	21-22	
8	FF	28/10/2019	0118	SEBtP	Complete	W	D	24	
8	FF	30/10/2019	0141	2 x SEBtP	Complete	E	D	30	2 individuals (mother and young)
8	FF	31/10/2019	2348	SEBtP	Complete	E	D	32	
8	FF	1/11/2019	0215	2 x SEBtP	Complete	E	Pr	33	2 individuals (mother and young)
8	FF	1/11/2019	2141	SEBtP	Complete	W	Pr	35	
8	FF	2/11/2019	0004	SEBtP	Complete	W	D	37	
8	FF	4/11/2019	0333	2 x SEBtP	Complete	E	Pr	40	2 individuals (mother and young)
8	FF	6/11/2019	0126	SEBtP	Complete	W	D	43	
8	FF	6/11/2019	0231	2 x SEBtP	Complete	E	D	44	2 individuals (mother and young)
8	FF	10/11/2019	0144	SEBtP	Complete	E	D	51	
8	FF	11/11/2019	0146	2 x SEBtP	Complete	E	D	55	2 individuals (mother and young)
8	FF	14/11/2019	0244	2 x SEBtP	Complete	E	D	61	3 individuals (mother and young)
8	FF	15/11/2019	0127	SEBtP	Complete	E	Pr	62	

Site	Side	Date	Time	Species	Complete or incomplete	Movement	Accuracy	Pic/vid No.	Comments
8	FF	15/11/2019	2053	SEBtP	Complete	W	D	66	
8	FF	18/11/2019	0214	2 x SEBtP	Complete	E	D	70	2 individuals (mother and young)
8	FF	19/11/2019	2229	SEBtP	Complete	E	D	76	
8	FF	22/11/2019	0126	2 x SEBtP	Complete	E	D	2	2 individuals (mother and young)
8	FF	22/11/2019	2230	2 x SEBtP	Complete	W	D	5	2 individuals (mother and young)
8	FF	25/11/2019	0335	2 x SEBtP	Complete	E	D	9	2 individuals (mother and young)
8	FF	27/11/2019	0111	SEBtP	Complete	E	D	12	
8	FF	27/11/2019	2218	SEBtP	Complete	E	D	18	
8	FF	28/11/2019	0204	2 x SEBtP	Complete	E	D	19	2 individuals (mother and young)
8	FF	28/11/2019	2244	BtPoss spp	Complete	W	D	24	
8	FF	30/11/2019	0339	2 x SEBtP	Complete	E	D	25	2 individuals (mother and young)
8	FF	30/11/2019	2140	BtPoss spp	Complete	W	D	27	
8	FF	1/12/2019	2311	BtPoss spp	Complete	W	D	30	
8	FF	2/12/2019	0208	SEBtP	Complete	E	D	31-33	
8	FF	4/12/2019	0021	SEBtP	Complete	E	D	52	
8	FF	4/12/2019	0124	BtPoss spp	Complete	W	D	53	
8	FF	5/12/2019	1106	Small bird	Incomplete	NDM	Pr	66	
8	FF	6/12/2019	2155	SEBtP	Complete	E	Pr	73	
8	FF	7/12/2019	0151	SEBtP	Complete	E	D	74	
8	FF	9/12/2019	0250	BtPoss spp	Complete	W	D	84	
8	FF	10/12/2019	0204	BtPoss spp	Complete	W	D	89	
8	FF	10/12/2019	2318	BtPoss spp	Complete	W	Pr	95	
8	FF	11/12/2019	0025	SEBtP	Complete	E	D	96	
8	FF	12/12/2019	2333	SEBtP	Complete	E	D	100	
8	FF	13/12/2019	0218	BtPoss spp	Complete	W	D	101	
8	FF	14/12/2019	2354	SEBtP	Incomplete	W-E	D	102-104	
8	FF	15/12/2019	2337	BtPoss spp	Complete	W	Pr	106	
8	FF	16/12/2019	2329	SEBtP	Complete	E	D	110	
8	FF	17/12/2019	0244	BtPoss spp	Complete	W	Pr	111	
8	FF	17/12/2019	2355	SEBtP	Complete	E	Pr	116	
8	FF	28/06/2020	0209	Black Rat	Complete	E	D	9	
8	FF	28/06/2020	0337	Black Rat	Complete	W	D	10	
8	FF	28/06/2020	2310	Rodent spp	Complete	E	D	11	

Site	Side	Date	Time	Species	Complete or incomplete	Movement	Accuracy	Pic/vid No.	Comments
8	FF	29/06/2020	0130	Rodent spp	Complete	E	D	12	Only capture tail
8	FF	29/06/2020	2316	Rodent spp	Complete	E	D	13	
8	FF	30/06/2020	2308	Rodent spp	Complete	E	D	15	
8	FF	3/07/2020	0241	Rodent spp	Complete	E	D	17	
8	FF	4/07/2020	0209	Rodent spp	Complete	E	D	19	
8	FF	4/07/2020	0508	Black Rat	Complete	W	D	20	
8	FF	6/07/2020	0407	Rodent spp	Complete	E	D	22	
8	FF	6/07/2020	1814	Rodent spp	Complete	E	D	24	
8	FF	7/07/2020	1802	Rodent spp	Complete	E	D	26	
8	FF	10/07/2020	1800	Rodent spp	Complete	E	D	30	
8	FF	11/07/2020	2215	Rodent spp	Complete	E	D	32	
8	FF	12/07/2020	2333	Rodent spp	Complete	E	D	34	
8	FF	14/07/2020	2131	Rodent spp	Complete	E	D	36	
8	FF	15/07/2020	2232	Rodent spp	Complete	E	D	38	
8	FF	17/07/2020	0304	Rodent spp	Complete	E	D	43	
8	FF	25/07/2020	2258	Rodent spp	Complete	E	D	52	
8	FF	27/07/2020	0402	Rodent spp	Complete	E	D	54	
8	G	18/12/2019	0039	SEBtP	Complete	E	D	118	MB present
8	G	9/10/2019	1336	Lace Monitor	Complete	E	D	11	
8	G	10/10/2019	2356	SEBtP	Complete	W	Pr	45	
8	G	17/10/2019	2038	SEBtP	Complete	E	D	93	
8	G	19/10/2019	0038	SEBtP	Complete	W	D	101	
8	G	19/10/2019	1224	Lace Monitor	Complete	W	D	108	
8	G	20/10/2019	2245	Cat	Complete	E	D	115	tabby
8	G	21/10/2019	0045	SEBtP	Complete	E	Pr	116	
8	G	22/10/2019	0437	Swamp wallaby	Complete	E	D	126	
8	G	23/10/2019	1037	Lace Monitor	Complete	W	D	7	
8	G	23/10/2019	1452	Lace Monitor	Complete	E	D	8	
8	G	27/10/2019	1324	Lace Monitor	Complete	W	D	28	
8	G	27/10/2019	1524	Lace Monitor	Complete	E	D	30	
8	G	27/10/2019	1612	Lace Monitor	Complete	E	D	31	
8	G	28/10/2019	1128	Lace Monitor	Complete	W	D	40	
8	G	28/10/2019	1504	Lace Monitor	Complete	W	D	41	
8	G	29/10/2019	1002	Lace Monitor	Complete	W	D	48	
8	G	1/11/2019	1010	Lace Monitor	Complete	W	D	58	
8	G	1/11/2019	1450	Lace Monitor	Complete	E	D	60	
8	G	4/11/2019	1425	Lace Monitor	Complete	W	D	69	
8	G	6/11/2019	0956	Lace Monitor	Complete	W	D	75	

Site	Side	Date	Time	Species	Complete or incomplete	Movement	Accuracy	Pic/vid No.	Comments
8	G	6/11/2019	1317	Lace Monitor	Incomplete	E-W	D	77-78	
8	G	6/11/2019	1413	Lace Monitor	Complete	E	D	79	
8	G	7/11/2019	1531	Lace Monitor	Complete	E	D	87	
8	G	12/11/2019	1936	Wallaby spp.	Complete	E	D	130	
8	G	13/11/2019	1328	Lace Monitor	Complete	W	D	134	
8	G	15/11/2019	1125	Lace Monitor	Complete	W	D	150	
8	G	15/11/2019	1523	Lace Monitor	Complete	E	D	152	
8	G	17/11/2019	1052	Lace Monitor	Complete	E	D	167-169	
8	G	18/11/2019	1214	Lace Monitor	Complete	W	Pr	182	
8	G	25/11/2019	0606	Swamp wallaby	Complete	W	D	23-24	
8	G	28/11/2019	1148	Lace Monitor	Complete	E	D	41	
8	G	30/11/2019	1014	Lace Monitor	Complete	W	D	56	
8	G	2/12/2019	1155	Lace Monitor	Complete	W	D	62	
8	G	3/12/2019	1450	Lace Monitor	Complete	W	D	72	
8	G	4/12/2019	1148	Lace Monitor	Complete	W	D	82	
8	G	7/12/2019	1316	Lace Monitor	Complete	W	D	152	
8	G	8/12/2019	1115	Lace Monitor	Complete	W	D	159	
8	G	8/12/2019	1439	Lace Monitor	Complete	E	Pr	160	
8	G	9/12/2019	0645	Swamp wallaby	Complete	E	Pr	167	
8	G	9/12/2019	0750	Swamp wallaby	Complete	W	D	173	
8	G	12/12/2019	1445	Lace Monitor	Complete	W	D	181	
8	G	15/12/2019	1141	Lace Monitor	Complete	E	Pr	185	
8	G	17/12/2019	0609	Swamp wallaby	Complete	E	D	208	
8	G	23/06/2020	2245	Fox	Complete	E	D	13	
8	G	24/06/2020	2049	Fox	Complete	E	D	20	
8	G	25/06/2020	2147	Fox	Complete	W	D	22	
8	G	26/06/2020	2244	Fox	Complete	W	D	24	
8	G	27/06/2020	2009	Fox	Incomplete	E-W	D	25	
8	G	27/06/2020	2227	Fox	Complete	E	D	26	
8	G	28/06/2020	0342	Fox	Complete	E	D	27	Injured hind leg
8	G	28/06/2020	2225	Fox	Complete	W	D	28	
8	G	2/07/2020	2219	European Hare	Incomplete	E-W	D	30	
8	G	3/07/2020	0148	European Hare	Complete	E	D	31	
8	G	3/07/2020	0250	European Hare	Complete	W	D	32	
8	G	5/07/2020	0532	Fox	Complete	E	D	33	
8	G	10/07/2020	0136	Fox	Complete	W	D	35	Black socks
8	G	14/07/2020	2345	Fox	Complete	W	D	41	Black socks
8	G	15/07/2020	2206	Fox	Complete	W	D	42	Black socks

Site	Side	Date	Time	Species	Complete or incomplete	Movement	Accuracy	Pic/vid No.	Comments
8	G	21/07/2020	2323	Fox	Complete	W	D	52	Black socks
8	G	24/07/2020	0020	Fox	Complete	E	D	68	
8	G	26/07/2020	0227	Fox	Complete	E	D	69	
8	G	30/07/2020	0253	Cat	Complete	W	D	4	Tabby
8	G	30/07/2020	0329	Fox	Complete	E	D	5	
8	G	31/07/2020	0103	Fox	Complete	W	D	6	
8	G	3/08/2020	0348	Fox	Complete	E	D	7	
8	G	3/08/2020	1857	Cat	Complete	W	D	8	Black Cat
8	G	7/08/2020	0551	Cat	Complete	E	D	9	Black Cat
8	G	7/08/2020	1508	Cat	Complete	W	D	10	Black Cat
8	G	9/08/2020	0328	Fox	Complete	E	D	11	
8	G	12/08/2020	2036	Cat	Complete	E	D	20	Black Cat
8	G	14/08/2020	0755	Cat	Complete	E	D	21	Tabby
8	G	14/08/2020	0759	Cat	Complete	W	D	22	Tabby
8	G	17/08/2020	1849	Fox	Complete	W	D	25	
8	G	18/08/2020	1321	Lace Monitor	Complete	W	D	26	
8	G	20/08/2020	0015	Fox	Complete	E	D	27	
8	G	21/08/2020	0240	Fox	Complete	E	D	28	
7	FF	17/12/2019	1644	Swamp wallaby	Complete	W	D	212-213	
7	FF	9/10/2019	2056	SEBtP	Incomplete	W-E	D	35-39	
7	FF	9/10/2019	2217	SEBtP	Complete	W	D	40-43	
7	FF	9/10/2019	2316	SEBtP	Complete	W	D	44-45	
7	FF	10/10/2019	0116	SEBtP	Complete	E	D	46-47	
7	FF	12/10/2019	2122	2 x SEBtP	Complete	W	D	60	2 individuals (mother and joey)
7	FF	13/10/2019	0305	SEBtP	Incomplete	E-W	D	61-64	
7	FF	20/10/2019	0154	SEBtP	Incomplete	E-W	D	109-108	
7	FF	20/10/2019	0814	SEBtP	Complete	E	D	110	
7	FF	20/10/2019	1942	SEBtP	Incomplete	E-W	D	117-118	
7	FF	20/10/2019	2358	2 x SEBtP	Complete	W	D	119	2 individuals (mother and joey)
7	FF	21/10/2019	0121	SEBtP	Complete	W	D	121	
7	FF	22/10/2019	0133	SEBtP	Complete	W	D	130	
7	FF	22/10/2019	2104	SEBtP	Complete	E	D	2	
7	FF	22/10/2019	2247	SEBtP	Complete	W	D	3	
7	FF	23/10/2019	0021	2 x SEBtP	Complete	E	D	5	2 individuals (mother and joey)
7	FF	23/10/2019	0249	SEBtP	Complete	E	D	7	
7	FF	23/10/2019	1959	SEBtP	Complete	E	D	10	

Site	Side	Date	Time	Species	Complete or incomplete	Movement	Accuracy	Pic/vid No.	Comments
7	FF	23/10/2019	2126	SEBtP	Complete	E	D	11	
7	FF	24/10/2019	0419	SEBtP	Complete	W	D	12	
7	FF	24/10/2019	2204	SEBtP	Complete	E	D	13	
7	FF	24/10/2019	2240	SEBtP	Complete	W	D	14	
7	FF	25/10/2019	2253	SEBtP	Complete	E	D	15	
7	FF	27/10/2019	0031	SEBtP	Complete	E	D	16	
7	FF	27/10/2019	0219	2 x SEBtP	Complete	E	D	17	2 individuals (mother and joey)
7	FF	27/10/2019	2047	SEBtP	Complete	E	D	18	
7	FF	27/10/2019	2303	SEBtP	Complete	E	D	19	
7	FF	29/10/2019	2135	SEBtP	Complete	E	D	22	
7	FF	30/10/2019	2109	Antechinus spp	Complete	E	D	25	
7	FF	30/10/2019	2317	2 x SEBtP	Complete	W	D	27	2 individuals (mother and joey)
7	FF	31/10/2019	0107	Antechinus spp	Complete	E	D	28	
7	FF	1/11/2019	0442	Antechinus spp	Complete	E	D	31	
7	FF	2/11/2019	0051	Antechinus spp	Complete	E	D	38	
7	FF	3/11/2019	0035	Antechinus spp	Complete	E	D	42-44	
7	FF	4/11/2019	0208	Black Rat	Complete	E	D	52-53	
7	FF	5/11/2019	0036	2 x SEBtP	Complete	W	D	54	2 individuals (mother and joey)
7	FF	5/11/2019	2102	SEBtP	Complete	E	D	56	
7	FF	6/11/2019	2238	2 x SEBtP	Complete	W	D	58	2 individuals (mother and joey)
7	FF	7/11/2019	0331	Antechinus spp	Complete	E	D	59	
7	FF	8/11/2019	0227	SEBtP	Complete	W	D	64	
7	FF	11/11/2019	2140	SEBtP	Complete	E	D	69	
7	FF	12/11/2019	0055	2 x SEBtP	Complete	W	D	70	2 individuals (mother and joey)
7	FF	13/11/2019	2253	SEBtP	Complete	E	D	77	
7	FF	18/11/2019	2320	2 x SEBtP	Complete	W	D	82	2 individuals (mother and joey)
7	FF	20/11/2019	0111	SEBtP	Complete	E	D	88	
7	FF	20/11/2019	0230	SEBtP	Complete	W	D	89	
7	FF	25/11/2019	2323	2 x SEBtP	Complete	W	D	5	2 individuals (mother and joey)
7	FF	27/11/2019	0339	SEBtP	Complete	E	D	6-7	
7	FF	27/11/2019	2111	SEBtP	Complete	W	D	8	
7	FF	28/11/2019	0124	SEBtP	Complete	W	D	9	

Site	Side	Date	Time	Species	Complete or incomplete	Movement	Accuracy	Pic/vid No.	Comments
7	FF	28/11/2019	2034	SEBtP	Complete	E	D	20	
7	FF	28/11/2019	2034	SEBtP	Complete	E	D	21	
7	FF	28/11/2019	2154	SEBtP	Complete	W	D	24-25	
7	FF	28/11/2019	2309	SEBtP	Complete	W	D	27-28	
7	FF	1/12/2019	2107	SEBtP	Complete	E	D	29	
7	FF	6/12/2019	0156	SEBtP	Complete	E	D	47	
7	FF	6/12/2019	2223	SEBtP	Complete	W	D	51	
7	FF	9/12/2019	0338	SEBtP	Complete	E	D	58-59	
7	FF	9/12/2019	2140	SEBtP	Complete	W	D	60	
7	FF	9/12/2019	2231	SEBtP	Complete	E	D	61-62	
7	FF	10/12/2019	0438	SEBtP	Complete	E	D	63	
7	FF	10/12/2019	2303	SEBtP	Complete	W	D	69	
7	FF	11/12/2019	0332	SEBtP	Complete	E	D	70	
7	FF	11/12/2019	2046	SEBtP	Complete	W	Pr	72	
7	FF	13/12/2019	0423	SEBtP	Complete	E	D	76	
7	FF	13/12/2019	2354	BtPoss spp	Complete	W	D	77	
7	FF	14/12/2019	0429	SEBtP	Complete	W	D	78	
7	FF	14/12/2019	2139	SEBtP	Complete	W	D	80	
7	FF	15/12/2019	0431	SEBtP	Complete	E	D	82	
7	FF	12/07/2020	2127	Antechinus spp	Complete	E	D	11	
7	FF	13/07/2020	2022	Short-eared brushtail possum	Incomplete	W	D	12-13	
7	FF	19/07/2020	2148	Short-eared brushtail possum	Complete	E	D	18-19	
7	FF	20/07/2020	006	Short-eared brushtail possum	Complete	E	D	20	
7	FF	1/08/2020	2110	Short-eared brushtail possum	Complete	E	D	9-11	
7	FF	1/08/2020	2214	Short-eared brushtail possum	Complete	W	D	12-13	
7	FF	9/08/2020	2214	Short-eared brushtail possum	Complete	E	D	14-15	
7	FF	15/08/2020	0536	FF Melomys	Complete	E	Pr		
7	FF	18/08/2020	2104	Short-eared brushtail possum	Complete	W	D	18	
7	FF	27/08/2020	2028	Short-eared brushtail possum	Complete	E	D	23-24	
7	FF	1/09/2020	0113	Short-eared brushtail possum	Complete	W	D	25	
7	G	15/12/2019	2132	SEBtP	Complete	W	D	85	
7	G	9/10/2019	1046	Lace Monitor	Complete	W	Pr	12	
7	G	9/10/2019	2053	SEBtP	Complete	E	D	23	
7	G	10/10/2019	0702	Macropod spp	Complete	E	D	25	
7	G	10/10/2019	2233	Wallaby spp	Complete	W	D	31	
7	G	14/10/2019	0618	Macropod spp	Complete	E	D	34	
7	G	17/10/19	0616	Macropod spp	Complete	E	D	35	
7	G	17/10/2019	1147	Brush turkey	Complete	E	Pr	55	

Site	Side	Date	Time	Species	Complete or incomplete	Movement	Accuracy	Pic/vid No.	Comments
7	G	18/10/2019	0017	Red-necked wallaby	Complete	W	Pr	63	
7	G	19/10/2019	2237	Red-necked wallaby	Complete	W	Pr	79	
7	G	20/10/2019	1947	SEBtP	Complete	E	Pr	90	
7	G	21/10/2019	0015	Fox	Complete	E	Pr	91	
7	G	22/10/2019	0333	Macropod spp	Complete	E	Pr	97	
7	G	22/10/19	0423	Macropod spp	Complete	E	D	98	
7	G	22/10/2019	1821	Echidna	Complete	W	D	5	
7	G	22/10/2019	2139	Macropod spp	Complete	W	D	6	
7	G	29/10/2019	0513	Macropod spp	Complete	E	Pr	24	
7	G	30/10/2019	0025	Red-necked wallaby	Complete	W	D	25-27	
7	G	1/11/2019	2037	BtPoss spp	Complete	E	D	28	
7	G	3/11/2019	0956	Macropod spp	Complete	E	D	29	
7	G	6/11/2019	0719	Macropod spp	Complete	E	D	32	
7	G	6/11/2019	1201	Lace Monitor	Complete	W	Pr	33	
7	G	7/11/2019	2038	Red-necked wallaby	Complete	W	D	36	
7	G	8/11/2019	2031	Macropod spp	Complete	E	D	46	
7	G	10/11/2019	0521	Macropod spp	Complete	E	D	48	
7	G	13/11/2019	0431	Macropod spp	Complete	E	D	56	
7	G	15/11/2019	0508	Macropod spp	Complete	E	D	61	
7	G	18/11/2019	0328	Macropod spp	Complete	E	D	72	
7	G	21/11/2019	0557	Wallaby spp.	Complete	E	D	7	
7	G	22/11/2019	2248	Black Rat	Incomplete	EXM	D	10-13	
7	G	23/11/2019	0131	Echidna	Complete	W	D	14	
7	G	23/11/2019	0525	Macropod spp	Complete	E	D	15	
7	G	26/11/2019	0002	Bandicoot spp.	Complete	W	D	19	
7	G	26/11/2019	0855	Macropod spp	Complete	E	D	20	
7	G	27/11/2019	0624	Macropod spp	Complete	E	D	22	
7	G	27/11/2019	1126	Lace Monitor	Complete	W	D	26	
7	G	28/11/2019	0820	Macropod spp	Complete	E	D	29	
7	G	29/11/2019	1414	Lace Monitor	Complete	W	D	36	
7	G	2/12/2019	0503	Macropod spp	Complete	E	Pr	40	
7	G	3/12/2019	0044	Long-nosed bandicoot	Complete	E	D	52	
7	G	4/12/2019	0921	Lace Monitor	Complete	E	D	62	
7	G	8/12/2019	0528	Macropod spp	Complete	E	D	101	
7	G	8/12/2019	0955	Lace Monitor	Complete	E	D	103	
7	G	15/12/2019	2213	Swamp wallaby	Complete	W	D	128	
7	G	17/12/2019	0015	Cat	Complete	E	Pr	139	tabby
7	G	22/06/2020	2212	Short-eared brushtail possum	Complete	E	D	6	

Site	Side	Date	Time	Species	Complete or incomplete	Movement	Accuracy	Pic/vid No.	Comments
7	G	23/06/2020	0001	Short-eared brushtail possum	Complete	E	D	7	
7	G	23/06/2020	2139	Short-eared brushtail possum	Complete	E	D	9	
7	G	26/06/2020	2031	Fox	Complete	E	D	16	
7	G	27/06/2020	0300	Fox	Complete	E	D	17	
7	G	28/06/2020	0039	Fox	Complete	E	D	19	
7	G	28/06/2020	0653	Fox	Complete	E	D	20	
7	G	29/06/2020	0143	Fox	Complete	E	D	23	
7	G	29/06/2020	0620	Fox	Complete	E	D	25	
7	G	30/06/2020	0310	Fox	Complete	W	D	26	x2
7	G	4/07/2020	0053	Fox	Complete	W	Pr	28	
7	G	4/07/2020	0150	Short-eared brushtail possum	Complete	W	Pr	29	
7	G	5/07/2020	0103	wallaby spp	Complete	E	D	30	
7	G	5/07/2020	1859	Fox	Complete	E	D	32	
7	G	6/07/2020	0459	Fox	Complete	E	D	33	
7	G	7/07/2020	2217	Fox	Complete	W	D	34	
7	G	10/07/2020	0001	Fox	Complete	E	D	35	
7	G	13/07/2020	0304	fox	Complete	e	d	38	
7	G	15/07/2020	2222	Fox	Complete	E	D	43	
7	G	17/07/2020	2317	Cat	Complete	E	D	45	
7	G	19/07/2020	2249	Short-eared brushtail possum	Complete	W	D	47	
7	G	25/07/2020	2238	Rodent spp	Complete	E	D	49	
7	G	26/07/2020	2324	Fox	Complete	E	D	51	
7	G	27/07/2020	1633	Wallaby spp	Complete	W	D	52	
7	G	27/07/2020	1634	Wallaby spp	Complete	W	D	53	
7	G	27/07/2020	1712	Wallaby spp	Complete	E	D	54	
7	G	27/07/2020	2247	Fox	Complete	E	D	55	
7	G	29/07/2020	1208	Fox	Complete	E	D	5	
7	G	29/07/2020	2207	Cat	Complete	E	D	6	Tabby
7	G	31/07/2020	2056	Cat	Complete	E	D	7	Tabby
7	G	1/08/2020	05050	Fox	Complete	E	D	9	
7	G	5/08/2020	05050	Fox	Complete	E	D	10	
7	G	6/08/2020	0138	Cat	Complete	E	D	11	
7	G	7/08/2020	0027	Dog	Complete	E	D	12	
7	G	8/08/2020	1807	Fox	Complete	E	D	13	
7	G	11/08/2020	1253	Dog	Complete	W	D	15	
7	G	15/08/2020	1933	Fox	Complete	E	D	16	
7	G	15/08/2020	2344	Rodent spp	Complete	E	D	17	
7	G	16/08/2020	1938	Fox	Complete	E	D	18	

Site	Side	Date	Time	Species	Complete or incomplete	Movement	Accuracy	Pic/vid No.	Comments
7	G	17/08/2020	0108	Fox	Complete	E	D	19	
7	G	19/08/2020	1409	Fox	Complete	W	D	20-21	
7	G	19/08/2020	1758	Fox	Complete	E	D	22	
7	G	21/08/2020	0050	Fox	Complete	E	D	22	
7	G	22/08/2020	1338	Fox	Complete	E	D	25	
7	G	23/08/2020	1712	Swamp wallaby	Incomplete	E-W	D	30-31	
7	G	24/08/2020	0524	Fox	Complete	E	D	32	
7	G	25/08/2020	0652	Fox	Complete	E	D	35	
7	G	25/08/2020	1822	Fox	Complete	E	D	36	
7	G	26/08/2020	0123	Fox	Complete	E	D	37	
7	G	26/08/2020	1206	Lace Monitor	Complete	E	D	39	
7	G	28/08/2020	2341	Fox	Complete	E	D	40	
7	G	29/08/2020	0208	Short-eared brushtail possum	Complete	W	D	41	
7	G	29/08/2020	1055	Fox	Complete	E	D	42	
7	G	29/08/2020	1125	Fox	Complete	E	D	42	
7	G	31/08/2020	00167	Fox	Complete	E	D	43	
7	G	31/08/2020	0417	Small mammal	Complete	E	D	44	
6	FF	17/12/2019	0218	SEBtP	Complete	W	D	140	
6	FF	19/10/2019	1233	Lace Monitor	Complete	E		136-139	
6	FF	13/07/2020	0819	Rodent spp	Incomplete	NDM	D	59-63	
6	FF	4/08/2020	1936	Microbat spp	Present	NDM	D	97-98	Microbat sitting on furniture
6	FF	28/08/2020	0118	Antechinus spp	Complete	E	D	115-123	
6	FF	30/08/2020	1831	Antechinus spp	Complete	E	D	130-131	
6	FF	31/08/2020	1950	Antechinus spp	Complete	E	D	133-134	
6	FF	31/08/2020	2016	Antechinus spp	Complete	E	D	135-136	
6	FF								
6	FF								
6	G	20/10/2019	No fauna photos taken, only photos of camera retrieval - maybe camera malfunction				Pr		
6	G	14/10/2019	0421	Swamp wallaby	Incomplete	E-W	D	47	
6	G	19/10/2019	1115	Lace Monitor	Complete	EXM	D	106-167	

Site	Side	Date	Time	Species	Complete or incomplete	Movement	Accuracy	Pic/vid No.	Comments
6	G	19/10/2019	2146	Black Rat	Complete	E	Pr	173	
6	G	21/10/2019	2317	Black Rat	Complete	W		180	
6	G	23/06/2020	0559	Fox	Complete	E	D	7-9	
6	G	25/06/2020	0457	Fox	Complete	E	D	28-30	
6	G	25/06/2020	0829	Fox	Complete	E	D	31-33	
6	G	27/06/2020	2223	Fox	Complete	E	D	58-60	
6	G	30/06/2020	1143	Cat	Complete	E	D	112-114	x 2
6	G	5/07/2020	0631	Fox	Complete	E	D	160-162	
6	G	6/07/2020	0013	Swamp wallaby	Complete	W	D	169-178	
6	G	6/07/2020	0851	cat	Complete	E	D	181-183	
6	G	16/07/2020	0907	Fox	Complete	E	D	220-222	
6	G	17/07/2020	0600	Fox	Complete	W	D	223-224	
6	G	17/07/2020	0625	Swamp Wallaby	Complete	W	D	226-228	
6	G	19/07/2020	2208	Cat	Complete	E	D	229-231	Kitten
6	G	21/07/2020	0941	Cat	Complete	E	D	238-240	Kitten
6	G	26/07/2020	0829	Cat	Complete	E	D	247-249	Tabby
6	G	27/07/2020	0203	Bandicoot spp	Complete	E	D	250-252	
6	G	28/07/2020	0534	Fox	Complete	E	D	253-255	
6	G	28/07/2020	1734	Fox	Complete	W	D	235-237	
6	G	2/08/2020	0023	European Hare	Complete	E	D	238-242	
6	G	10/08/2020	1825	Fox	complete	w	d	265-267	
6	G	10/08/2020	2153	bandicoot spp	Complete	E	D	268-270	
6	G	10/08/2020	2238	Long-nosed bandicoot	Complete	W	D	270-273	
6	G	13/08/2020	0249	Cat	Complete	E	D	275-279	Tabby
6	G	18/08/2020	0507	Fox	Complete	E	D	292-294	
6	G	31/08/2020	0244	Fox	Complete	E	D	328-331	
5	North	20/10/2019	No photos taken - camera malfunction				D		
5	North	9/10/2019	2033	Black Rat	Complete	E	Pr	22	
5	North	17/10/2019	1956	house mouse	Complete	E	D	48	
5	North	21/10/2019	2112	Black Rat	Incomplete	NDM	D	60	
5	North	22/10/2019	2035	Rodent spp	Complete	E	Pr	4	
5	North	23/10/2019	2102	Black Rat	Complete	E	D	11	
5	North	23/10/2019	2158	Rodent spp	Complete	E	Pr	14	
5	North	23/10/2019	2224	Black Rat	Complete	E	D	16	
5	North	24/10/2019	0302	Rodent spp	Complete	E	Pr	18	
5	North	24/10/2019	2122	Black Rat	Complete	E	Pr	21	

Site	Side	Date	Time	Species	Complete or incomplete	Movement	Accuracy	Pic/vid No.	Comments
5	North	24/10/2019	2159	Black Rat	Incomplete	E-W	Pr	22	
5	North	25/10/2019	1503	EW dragon	Complete	W	D	26	
5	North	25/10/2019	2130	Black Rat	Incomplete	NDM	Pr	29	
5	North	25/10/2019	2148	Black Rat	Complete	E	D	32	
5	North	26/10/2019	2037	Black Rat	Incomplete	EXM	D	37,39	
5	North	26/10/2019	2119	Black Rat	Complete	W	D	40	
5	North	29/10/2019	2312	Black Rat	Complete	E	Pr	67	
5	North	1/11/2019	2019	Black Rat	Complete	E	D	73	
5	North	1/11/2019	2043	Black Rat	Complete	E	D	75	
5	North	1/11/2019	2249	Black Rat	Complete	W-E	Pr	79-81	
5	North	2/11/2019	2004	Black Rat	Complete	E	Pr	83	
5	North	4/11/2019	0254	Black Rat	Complete	E	D	88	
5	North	4/11/2019	0414	Black Rat	Complete	W	D	89	
5	North	4/11/2019	0441	Black Rat	Complete	E	D	90	
5	North	12/11/2019	1327	Swamp wallaby	Incomplete	NDM	D	137	
5	North	13/11/2019	0241	Swamp wallaby	Complete	E	Pr	138	
5	North	14/11/2019	2137	Black Rat	Incomplete	NDM	D	149	
5	North	16/11/2019	2035	Black Rat	Complete	E	D	175-176	
5	North	18/11/2019	2045	Black Rat	Complete	E	D	227-228	
5	North	22/11/2019	0303	Black Rat	Complete	E	D	36	
5	North	23/11/2019	0026	Long-nosed bandicoot	Complete	W	D	48	
5	North	23/11/2019	2058	Black Rat	Complete	E	Pr	62	
5	North	26/11/2019	2354	Black Rat	Complete	E	D	79	
5	North	15/12/2019	2307	Black Rat	Complete	E	D	336	
5	North	15/12/2019	2327	Black Rat	Complete	W	D	338	
5	North	16/12/2019	0044	Black Rat	Complete	E	D	339	
5	North	16/12/2019	0240	Black Rat	Complete	E	Pr	341	
5	North	16/12/2019	0503	Black Rat	Complete	E	D	343	
5	North	16/12/2019	0518	house mouse	Complete	E	Pr	345	
5	North	16/12/2019	2116	Black Rat	Complete	E	D	364	
5	North	16/12/2019	2310	house mouse	Complete	E	D	366	
5	North	17/12/2019	2149	Black Rat	Complete	E	D	391	
5	North	14/07/2020	2103	Black Rat	Incomplete	E-W	D	19-20	
5	North	26/07/2020	2341	Water Rat	Complete	E	D	22	
5	South	18/12/2019	0125	Black Rat	Complete	W	D	393	
5	South	8/10/2019	2055	Black Rat	Complete	E	D	16	
5	South	8/10/2019	2236	Black Rat	Complete	W	Pr	17	
5	South	8/10/2019	2326	Black Rat	Complete	E	Pr	18	

Site	Side	Date	Time	Species	Complete or incomplete	Movement	Accuracy	Pic/vid No.	Comments
5	South	9/10/2019	2021	Black Rat	Complete	E	D	63, 65	
5	South	10/10/2019	2131	Black Rat	Complete	E	Pr	76	
5	South	12/10/2019	0008	Water rat	Complete	E	Pr	88	
5	South	12/10/2019	2257	Water rat	Complete	E	D	93	
5	South	14/10/2019	2208	Water rat	Complete	W	D	105	
5	South	14/10/2019	2307	Water rat	Complete	E	D	106	
5	South	15/10/2019	0150	Water rat	Complete	E	D	107	
5	South	16/10/2019	2333	Water rat	Complete	E	Pr	117	
5	South	20/10/2019	0009	Black Rat	Complete	E	D	138	
5	South	20/10/2019	0243	Fox	Incomplete	E-W	D	139-140	
5	South	21/10/2019	2118	Black Rat	Incomplete	E-W	D	177-178	
5	South	21/10/2019	2135	Black Rat	Complete	W	D	179	
5	South	21/10/2019	2138	Black Rat	Incomplete	EXM	D	180-183	
5	South	21/10/2019	2153	Black Rat	Complete	E	D	184	
5	South	22/10/2019	2025	Black Rat	Incomplete	E-W	Pr	9-10	
5	South	23/10/2019	0211	Black Rat	Complete	E	Pr	11	
5	South	24/10/2019	0116	Black Rat	Complete	E	Pr	17	
5	South	24/10/2019	1958	Black Rat	Complete	E	D	18	
5	South	25/10/2019	0034	Black Rat	Complete	E	Pr	20	
5	South	25/10/2019	2036	Black Rat	Complete	E	D	26	
5	South	25/10/2019	2154	Rodent spp	Complete	E	D	27	
5	South	25/10/2019	2314	Rodent spp	Complete	E	Pr	29	
5	South	26/10/2019	0128	Black Rat	Complete	E	Pr	30	
5	South	26/10/2019	0204	Black Rat	Incomplete	E-W	Pr	31-32	
5	South	26/10/2019	2105	Black Rat	Complete	E	Pr	35	
5	South	26/10/2019	2242	Black Rat	Incomplete	NDM	D	36	
5	South	26/10/2019	2359	Water rat	Complete	E	Pr	39	
5	South	27/10/2019	0458	Black Rat	Complete	E	Pr	40	
5	South	27/10/2019	2012	Black Rat	Complete	E	D	46	
5	South	27/10/2019	2051	Rodent spp	Complete	E	Pr	48	
5	South	27/10/2019	2158	Black Rat	Complete	E	Pr	49	
5	South	28/10/2019	0507	Black Rat	Incomplete	NDM	Pr	50	
5	South	28/10/2019	1936	Black Rat	Complete	E	Pr	60	
5	South	28/10/2019	2341	Water rat	Complete	W	D	62	
5	South	29/10/2019	0141	Black Rat	Complete	W	Pr	63-64	
5	South	29/10/2019	2109	Black Rat	Complete	E	D	81	
5	South	29/10/2019	2250	Black Rat	Complete	W	D	82	
5	South	30/10/2019	0039	Rodent spp	Complete	E	Pr	84	

Site	Side	Date	Time	Species	Complete or incomplete	Movement	Accuracy	Pic/vid No.	Comments
5	South	30/10/2019	0149	Black Rat	Complete	E	Pr	86	
5	South	30/10/2019	2027	Black Rat	Complete	E	Pr	96	
5	South	30/10/2019	2134	Black Rat	Complete	E	Pr	97	
5	South	31/10/2019	2158	Black Rat	Complete	E	D	116	
5	South	1/11/2019	0308	Black Rat	Complete	W	Pr	117	
5	South	1/11/2019	2143	Black Rat	Complete	E	D	126	
5	South	1/11/2019	2301	Black Rat	Complete	W	D	128	
5	South	2/11/2019	0354	Rodent spp	Complete	E	D	129	
5	South	3/11/2019	0244	Rodent spp	Complete	E	D	137	
5	South	3/11/2019	2233	Water rat	Complete	W	D	139	
5	South	4/11/2019	0346	Rodent spp	Complete	E	D	140	
5	South	4/11/2019	1445	EW dragon	Incomplete	NDM	Pr	147	
5	South	4/11/2019	2322	Black Rat	Complete	E	D	148	
5	South	4/11/2019	2342	Black Rat	Complete	W	D	149	
5	South	6/11/2019	0025	Rodent spp	Complete	E	Pr	157	
5	South	6/11/2019	2045	SEBtP x 2	Complete	E	Pr	165	Mother and joey
5	South	6/11/2019	2112	SEBtP x 3	Complete	W	D	166	Mother and joey
5	South	6/11/2019	2250	Black Rat	Complete	W	D	167	
5	South	6/11/2019	2314	Black Rat	Complete	E	D	168	
5	South	7/11/2019	0242	Rodent spp	Complete	E	D	169	
5	South	8/11/2019	0025	Black Rat	Complete	E	D	182	
5	South	8/11/2019	0445	Black Rat	Complete	W	D	183	
5	South	8/11/2019	2052	Black Rat	Complete	W	Pr	197	
5	South	9/11/2019	0054	Black Rat	Complete	E	D	199	
5	South	9/11/2019	0133	Black Rat	Incomplete	W-E	Pr	200,202	
5	South	9/11/2019	0433	Black Rat	Complete	W	D	203	
5	South	10/11/2019	0124	Rodent spp	Complete	E	Pr	209-210	
5	South	11/11/2019	0248	Black Rat	Complete	W	Pr	230	
5	South	11/11/2019	0440	Black Rat	Complete	W	D	231	
5	South	12/11/2019	0427	Rodent spp	Complete	E	Pr	232	
5	South	12/11/2019	0801	Swamp wallaby	Complete	E	D	234	
5	South	12/11/2019	1239	Lace Monitor	Complete	W	D	237	
5	South	12/11/2019	1748	Swamp wallaby	Complete	E	D	239-242	
5	South	14/11/2019	1506	Swamp wallaby	Complete	W	D	261-262	
5	South	15/11/2019	1401	Lace Monitor	Complete	E	Pr	277	
5	South	15/11/2019	1705	Swamp wallaby	Incomplete	E-W	D	278-279	
5	South	15/11/2019	2047	Rodent spp	Complete	E	D	280	
5	South	15/11/2019	2201	Black Rat	Complete	W	D	281	

Site	Side	Date	Time	Species	Complete or incomplete	Movement	Accuracy	Pic/vid No.	Comments
5	South	15/11/2019	2319	Black Rat	Complete	W	D	282	
5	South	17/11/2019	2109	Small mammal	Complete	E	Pr	306	
5	South	17/11/2019	2342	Black Rat	Complete	E	Pr	307	
5	South	18/11/2019	0532	Swamp wallaby	Complete	E	D	310	
5	South	19/11/2019	1142	Lace Monitor	Complete	W	Pr	368	
5	South	19/11/2019	1945	Black Rat	Complete	E	Pr	369	
5	South	20/11/2019	0028	Black Rat	Complete	E	Pr	371	
5	South	20/11/2019	1951	Black Rat	Complete	E	D	8	
5	South	21/11/2019	1131	EW dragon	Complete	W	D	29	
5	South	21/11/2019	2327	Black Rat	Complete	W	D	30	
5	South	22/11/2019	0414	Black Rat	Complete	W	D	31	
5	South	22/11/2019	2121	Black Rat	Complete	E	D	71	
5	South	22/11/2019	2211	Black Rat	Incomplete	EXM	D	72-75	
5	South	24/11/2019	0153	Black Rat	Incomplete	W	Po	90	
5	South	24/11/2019	2306	Swamp rat	Complete	E	Pr	109	
5	South	25/11/2019	2246	Black Rat	Complete	E	D	120	
5	South	26/11/2019	2318	Black Rat	Complete	W	D	147	
5	South	27/11/2019	0001	Black Rat	Complete	E	D	148	
5	South	27/11/2019	0204	Black Rat	Complete	W	D	149-150	
5	South	2/12/2019	0052	Black Rat	Incomplete	E-W	D	231-233	
5	South	3/12/2019	1427	EW dragon	Complete	E	D	280	
5	South	9/12/2019	0039	Bush rat	Complete	W	Pr	394	
5	South	9/12/2019	0523	Swamp wallaby	Complete	E	Pr	395	
5	South	9/12/2019	0728	Swamp wallaby	Complete	E	Po	407	
5	South	11/12/2019	0422	Water rat	Complete	E	D	422	
5	South	16/12/2019	0120	house mouse	Incomplete	EXM	D	443-444	
5	South	17/12/2019	2217	Black Rat	Complete	W	D	473	
5	South	5/06/2020	2211	Water Rat	Complete	E	D	20	
5	South	10/06/2020	0315	Water Rat	Complete	E	D	21-22	
5	South	10/06/2020	0411	Water Rat	Incomplete	E-W	D	23-26	
5	South	15/06/2020	2007	Water Rat	Complete	E	D	27	
5	South	16/06/2020	0323	Water Rat	Complete	E	D	29-31	
5	South	17/06/2020	0406	Water Rat	Complete	W	D	32	
5	South	18/06/2020	0350	Water Rat	Complete	W	D	33	
5	South	18/06/2020	2011	Water Rat	Incomplete	EXM	D	35	
5	South	19/06/2020	0354	Water Rat	Complete	W	D	36-37	
5	South	20/06/2020	2307	Water Rat	Complete	E	D	38-40	
5	South	21/06/2020	0408	Water Rat	Complete	W	D	41	

Site	Side	Date	Time	Species	Complete or incomplete	Movement	Accuracy	Pic/vid No.	Comments
5	South	21/06/2020	1855	Water Rat	Complete	E	D	42	
5	South	22/06/2020	0325	Water Rat	Complete	W	D	44	
5	South	23/06/2020	2218	Water Rat	Complete	E	D	45	
5	South	24/06/2020	2156	Water Rat	Complete	W	D	46	
5	South	1/07/2020	2209	Water Rat	Complete	W	D	47	
5	South	7/07/2020	0606	Wood duck	Complete	W	D	7	x 2
5	South	7/07/2020	0716	Wood duck	Complete	E	D	8-10	
5	South	8/07/2020	1019	Wood duck	Complete	E	D	11-13	x 2
5	South	9/07/2020	1732	Water rat	Complete	E	D	14	
5	South	11/07/2020	0315	Water rat	Complete	E	D	15	
5	South	14/0/2020	0417	Water rat	Complete	E	D	16	
5	South	16/07/2020	0447	Water rat	Complete	E	D	17	
5	South	17/07/2020	1458	Rodent spp	Complete	E	D	18	
5	South	24/07/2020	0343	Water rat	Complete	E	D	19	
5	South	26/02/2020	1811	Water rat	Complete	E	D	22	
5	South	26/07/2020	2257	Microbat spp	Present	NDM	D	23-25	
4	FF	18/12/2019	0437	Black Rat	Complete	W	D	474-475	
4	FF	1/07/2020	0625	Microbat spp	Present	NDM	D	6	
4	FF	1/07/2020	2338	Cat	Complete	W	D	9	
4	FF	13/07/2020	0625	Microbat spp	Present	NDM	D	11	
4	FF	17/07/2020	2104	Antechinus spp	Complete	E	D	12-14	
4	FF	23/07/2020	2104	Antechinus spp	Complete	E	D	16	
4	FF	29/07/2020	2336	Antechinus spp	Complete	E	D	9	
4	FF	3/08/2020	1836	Antechinus spp	Complete	E	D	10	
4	FF	9/08/2020	2339	Antechinus spp	Complete	E	D	11	
4	FF	10/08/2020	1821	Antechinus spp	Complete	E	D	12	
4	FF	11/08/2020	1823	Antechinus spp	Complete	E	D	14	
4	FF	14/08/2020	0254	Antechinus spp	Complete	E	D	16	
4	FF	14/08/2020	2055	Antechinus spp	Complete	E	D	17	
4	FF	17/08/2020	0045	Antechinus spp	Complete	E	D	19	
4	FF	17/08/2020	1910	Antechinus spp	Complete	E	D	19	
4	FF	18/08/2020	2334	Antechinus spp	Complete	E	D	22	
4	FF	24/08/2020	0114	Rodent spp (probable FF)	Complete	E	D	23	
4	G	11/12/2019	1028	Lace Monitor	Complete	E	D	39	MB present
4	G	14/10/12019	0145	cat	Complete	E	D	33	Tabby
4	G	14/10/2019	0200	Fox	Complete	E	D	34	
4	G	16/10/2019	2253	Black Rat	Complete	E	D	48	
4	G	19/10/2019	0234	Koala	Complete	E	D	68	

Site	Side	Date	Time	Species	Complete or incomplete	Movement	Accuracy	Pic/vid No.	Comments
4	G	20/10/2019	1242	Lace Monitor	Complete	W	D	90	
4	G	21/10/2019	2227	Koala	Complete	W	D	95	
4	G	22/10/2019	2055	cat	Complete	W	D	4	tabby
4	G	23/10/2019	1217	Lace Monitor	Complete	E	D	6	
4	G	25/10/2019	1113	Lace Monitor	Complete	E	D	12	
4	G	28/10/2019	1203	Lace Monitor	Complete	W	D	17	
4	G	29/10/2019	1156	Lace Monitor	Complete	E	D	18	
4	G	29/10/2019	2227	Black Rat	Complete	E	D	19	
4	G	30/10/2019	1227	Lace Monitor	Complete	W	D	20	
4	G	1/11/2019	0956	Lace Monitor	Complete	E	D	21	
4	G	1/11/2019	1521	Lace Monitor	Complete	W	D	23	
4	G	3/11/2019	1007	Lace Monitor	Complete	E	D	27	
4	G	3/11/2019	1354	Lace Monitor	Complete	W	D	30	
4	G	9/11/2019	0959	Lace Monitor	Complete	E	D	47	
4	G	9/11/2019	1505	Lace Monitor	Complete	W	D	48	
4	G	13/11/2019	0825	Cat	Complete	E	D	65	
4	G	13/11/2019	1944	Cat	Complete	W	D	66	
4	G	15/11/2019	0104	Koala	Complete	E	D	67	
4	G	15/11/2019	1255	Lace Monitor	Complete	E	D	73-74	
4	G	16/11/2019	1402	Lace Monitor	Complete	E	D	77	
4	G	18/11/2019	1223	Lace Monitor	Complete	W	Pr	85	
4	G	19/11/2019	0431	Swamp wallaby	Complete	W	D	86-87	
4	G	19/11/2019	1052	Lace Monitor	Complete	E	D	89	
4	G	20/11/2019	0502	Cat	Complete	E		91	
4	G	20/11/2019 to 18/12/2019 period (Camera date record malfunction)					D		
4	G	21/11/2019	1925	cat	Complete	E	D	5	Tabby
4	G	6/01/2015	2152	Koala	Complete	E	D	6	
4	G	7/01/2015	1121	Lace Monitor	Complete	W	D	10	
4	G	10/01/2015	2017	Koala	Complete	W	D	12	
4	G	10/01/2015	2052	cat	Complete	E	Pr	13	
4	G	11/01/2015	1853	Black Rat	Complete	E	D	16	
4	G	12/01/2015	1854	Koala	Complete	E	D	20	
4	G	14/01/2015	1003	Lace Monitor	Complete	W	D	37	
4	G	18/01/2015	0616	Lace Monitor	Complete	W	D	45	
4	G	20/01/2015	0514	Lace Monitor	Complete	E	D	53	

Site	Side	Date	Time	Species	Complete or incomplete	Movement	Accuracy	Pic/vid No.	Comments
4	G	20/01/2015	0624	Lace Monitor	Complete	W	Pr	54	
4	G	23/01/2015	0936	Lace Monitor	Complete	W	D	88	
4	G	26/01/2015	1056	Lace Monitor	Complete	W	D	93	
4	G	27/01/2015	1014	Lace Monitor	Complete	W	D	99	
4	G	29/01/2015	1945	Cat	Complete	E	D	106	Tabby
4	G	30/01/2015	2130	Koala	Complete	W	D	107	
4	G	31/01/2015	0414	cat	Complete	E	D	108	Tabby
4	G	31/01/2015	0918	Lace Monitor	Complete	W	D	118	
4	G	22/06/2020	2040	Fox	Complete	W	D	3-7	Eats chicken thighs left
4	G	23/06/2020	0541	Fox	Complete	E	D	8	
4	G	24/06/2020	0103	Fox	Complete	W	D	9	
4	G	24/06/2020	0443	Fox	Complete	E	D	10-12	
4	G	25/06/2020	0206	Fox	Complete	E	D	17	
4	G	25/05/2020	2138	Fox	Complete	W	D	18	
4	G	26/05/2020	2037	Fox	Complete	E	D	20	Running
4	G	26/05/2020	2057	Fox	Complete	W	D	21	Running
4	G	27/05/2020	0006	Fox	Complete	E	D	23	Running
4	G	27/05/2020	0457	Fox	Complete	E	D	25	
4	G	27/05/2020	1026	Fox	Complete	W	D	26	
4	G	27/05/2020	1126	Fox	Complete	E	D	27	
4	G	27/06/2020	1926	Cat	Complete	W	D	28	Spotted
4	G	28/06/2020	0529	Fox	Complete	E	D	29	
4	G	29/06/2020	0444	Cat	Complete	E	D	30	Dark paws and tail
4	G	30/06/2020	0134	Cat	Complete	W	D	32	Spotted
4	G	30/06/2020	2217	Cat	Complete	E	D	35	
4	G	1/07/2020	0448	Fox	Complete	E	D	36	
4	G	1/07/2020	1941	Fox	Complete	E	D	39	
4	G	1/07/2020	2338	Cat	Complete	E	D	40	Dark paws and tail
4	G	3/07/2020	0731	Dog	Complete	E	D	42-45	
4	G	3/07/2020	1754	Fox	Complete	W	D	46	
4	G	3/07/2020	1828	Fox	Complete	W	D	47	
4	G	6/07/2020	1756	Bandicoot spp	Complete	E	D	49	
4	G	7/07/2020	0304	Fox	Complete	E	D	51	
4	G	7/07/2020	2023	Fox	Complete	E	D	52	
4	G	10/07/2020	1915	Cat	Complete	W	D	53	Spotted
4	G	11/07/2020	1949	Bandicoot spp	Complete	E	D	54	
4	G	12/07/2020	0422	Fox	Complete	W	D	55	
4	G	14/07/2020	0456	Fox	Complete	E	D	56	

Site	Side	Date	Time	Species	Complete or incomplete	Movement	Accuracy	Pic/vid No.	Comments
4	G	14/07/2020	0553	Fox	Complete	W	D	57	
4	G	14/07/2020	1800	Fox	Complete	W	D	59	
4	G	15/07/2020	0615	Fox	Complete	E	D	60	
4	G	17/07/2020	0616	Fox	Complete	E	D	62	
4	G	17/07/2020	0616	Fox	Complete	W	D	62	
4	G	18/07/2020	0520	Cat	Complete	E	D	64	
4	G	20/07/2020	2142	Bandicoot spp.	Complete	E	D	66	
4	G	21/07/2020	1920	Bandicoot spp.	Complete	E	D	67	
4	G	24/07/2020	0741	Fox	Complete	E	D	68	
4	G	25/07/2020	0000	Bandicoot spp.	Complete	E	D	69	
4	G	26/07/2020	2314	Bandicoot spp.	Complete	E	D	71	
4	G	27/07/2020	2113	Bandicoot spp.	Complete	E	D	72	
4	G	29/07/2020	0049	cat	Complete	E	D	9	
4	G	29/07/2020	1800	Fox	Complete	E	D	10	
4	G	29/07/2020	2156	Bandicoot spp	C	E	D	11	
4	G	30/07/2020	0539	Cat	Complete	E	D	12	
4	G	30/07/2020	1540	Dog	C	E	D	13	
4	G	30/07/2020	1636	Fox	Complete	W	D	14	
4	G	30/07/2020	2317	Bandicoot	C	E	D	16	
4	G	1/08/2020	0102	Koala	Complete	W	D	17	
4	G	1/08/2020	0342	Koala	Complete	E	D	18	
4	G	1/08/2020	1751	Bandicoot spp	Complete	E	D	19	
4	G	1/08/2020	1916	Fox	Complete	E	D	20	
4	G	1/08/2020	1934	Fox	Complete	E	D	21	
4	G	2/08/2020	1816	Fox	Complete	E	D	22	
4	G	3/08/2020	1704	Fox	Complete	E	D	23	
4	G	4/08/2020	1816	Bandicoot spp	Complete	E	D	24	
4	G	4/08/2020	2022	Cat	Complete	E	D	25	
4	G	5/08/2020	1819	Fox	Complete	W	D	26	
4	G	7/08/2020	1817	Fox	Complete	W	D	27	
4	G	9/08/2020	1841	Fox	Complete	W	D	28	
4	G	9/08/2020	2149	Common brushtail possum	Complete	E	D	29	
4	G	10/08/2020	1950	Bandicoot spp	C	E	D	31	
4	G	11/08/2020	2025	Bandicoot spp	C	E	D	32	
4	G	11/08/2020	2035	Long nosed bandicoot	C	W	D	33	
4	G	13/08/2020	1825	Fox	C	W	D	36	
4	G	13/08/2020	1939	Bandicoot spp	C	E	D	37	
4	G	14/08/2020	1836	Bandicoot spp	C	E	D	38	

Site	Side	Date	Time	Species	Complete or incomplete	Movement	Accuracy	Pic/vid No.	Comments
4	G	14/08/2020	218	Bandicoot spp	C	E	D	40	
4	G	15/08/2020	2046	Cat	C	W	D	44	
4	G	16/08/2002	2030	Fox	C	W	D	45	
4	G	16/08/2020	2038	Fox	C	W	D	46	
4	G	16/08/2020	2110	Fox	C	E	D	47	
4	G	17/08/2020	0251	Fox	C	W	D	48	
4	G	18/08/2020	0252	Fox	C	W	D	50	
4	G	22/08/2020	1359	Dog	C	E	D	51	Black white on chest
4	G	22/08/2020	1400	Dog	C	W	D	53	Black white on chest
4	G	25/08/2020	2207	BtPoss spp	C	E	D	59	
4	G	25/08/2020	2225	BtPoss spp	C	E	D	60	
4	G	25/08/2020	2302	Swamp Wallaby	C	W	D	61	
4	G	25/08/2020	2302	Swamp Wallaby	C	W	D	62	
4	G	26/08/2020	1227	Lace Monitor	C	W	D	63	
4	G	26/08/2020	1925	Swamp Wallaby	C	W	D	65	
4	G	27/08/2020	0537	Swamp Wallaby	C	E	D	68	
4	G	27/08/2020	0551	Swamp Wallaby	C	E	D	69	
4	G	29/08/2020	1446	Lace Monitor	C	E	D	70	
4	G	29/08/2020	1813	Fox	C	W	D	71	
4	G	29/08/2020	1907	Wallaby spp.	C	W	D	72	
4	G	30/08/3030	1917	Dog	C	E	D	74	Black
4	G	31/08/2020	1245	Fox	C	W	D	75	
4	G	31/08/2020	1824	Fox	C	E	D	76	
4	G	1/09/2020	0443	Swamp Wallaby	C	W	D	77	
4	G	1/09/2020	0453	Swamp Wallaby	C	W	D	79	
3	FF	31/01/2015	1617	cat	Complete	W	D	119	Tabby
3	FF	9/10/2019	1013	Welcome swallow	Incomplete	EXM	Pr	8-10	2 individuals
3	FF	9/10/2019	1147	Welcome swallow	Incomplete	EXM	D	13	
3	FF	14/10/2019	0417	Cat	Complete	W	Pr	22	Black, white paws
3	FF	14/10/2019	1002	Welcome swallow	Incomplete	EXM	D	24-26	
3	FF	15/10/2019	1059	Welcome swallow	Incomplete	EXM	Pr	32-33	2 individuals
3	FF	16/10/2019	0952	Welcome swallow	Incomplete	EXM	Pr	49-50	
3	FF	16/10/2019	1052	Welcome swallow	Incomplete	EXM	Pr	51-52	
3	FF	17/10/2019	0817	Welcome swallow	Incomplete	EXM	Pr	70	2 individuals
3	FF	17/10/2019	1026	Welcome swallow	Incomplete	EXM	Pr	81	
3	FF	17/10/2019	1251	Welcome swallow	Incomplete	EXM	Pr	91	
3	FF	17/10/2019	1426	Welcome swallow	Incomplete	EXM	Pr	95, 97	
3	FF	17/10/2019	1527	Welcome swallow	Incomplete	EXM	Pr	103	

Site	Side	Date	Time	Species	Complete or incomplete	Movement	Accuracy	Pic/vid No.	Comments
3	FF	17/10/2019	1705	Welcome swallow	Incomplete	EXM	Pr	108	
3	FF	18/10/2019	1604	Welcome swallow	Incomplete	EXM	Pr	133	
3	FF	18/10/2019	1350	Welcome swallow	Incomplete	EXM	Pr	144	
3	FF	19/10/2019	1408	Welcome swallow	Incomplete	EXM	Pr	146	
3	FF	21/10/2019	1020	Welcome swallow	Incomplete	EXM	Pr	157-159	2 individuals
3	FF	29/11/2019	1048	Welcome swallow	Incomplete	EXM	D	10-11	
3	FF	1/12/2019	1453	cat	Complete	E	Pr	18	Black, white paws
3	FF	1/12/2019	1826	Welcome swallow	Incomplete	EXM	D	20	
3	FF	25/06/2020	2336	Microbat spp	Present	EXM	D	8	
3	FF	28/06/2020	2012	Cat	Incomplete	E-W	D	19-20	White socks - Grey
3	G	5/12/2019	0705	cat	Complete	E	D	52	Black, white paws
3	G	9/10/2019	0529	Cat	Complete	E	D	55	Black, white paws
3	G	10/10/2019	0146	Cat	Complete	W	D	65-69	Black, white paws
3	G	10/10/2019	0542	Cat	Complete	W	D	71	Black, white paws
3	G	10/10/2019	0722	Cat	Complete	E	Pr	72	Black, white paws
3	G	10/10/2019	2037	Fox	Complete	E	Pr	76	
3	G	11/10/2019	0547	Wallaby spp.	Complete	E	Pr	77	
3	G	11/10/2019	0623	Wallaby spp.	Complete	E	D	78	
3	G	11/10/2019	0834	Wallaby spp.	Complete	W	D	80	
3	G	11/10/2019	1331	Cat	Complete	W	D	81	Black, white paws
3	G	11/10/2019	1401	Cat	Complete	E	D	82	Black, white paws (With killed rodent spp.)
3	G	12/10/2019	0412	Cat	Complete	W	D	83	Black, white paws
3	G	12/10/2019	0442	Cat	Complete	E	D	84	Black, white paws
3	G	12/10/2019	0545	Cat	Complete	W	D	85	Black, white paws
3	G	12/10/2019	0629	Cat	Complete	E	D	86	Black, white paws
3	G	12/10/2019	1351	Cat	Complete	W	D	87	Black, white paws
3	G	12/10/2019	1438	Cat	Complete	W	D	88	Black, white paws
3	G	12/10/2019	1542	Cat	Complete	E	D	89	Black, white paws
3	G	12/10/2019	1545	Cat	Complete	E	D	90	Black, white paws
3	G	13/10/2019	0410	Cat	Complete	W	D	91	Black, white paws
3	G	13/10/2019	0607	Cat	Complete	E	Po	92	Black, white paws
3	G	13/10/2019	0930	Macropod	Complete	W	D	93	
3	G	13/10/2019	2232	Fox	Complete	E	D	94	
3	G	13/10/2019	2322	Cat	Complete	W	D	95	Black, white paws
3	G	14/10/2019	0542	Cat	Complete	W	D	97	Black, white paws
3	G	14/10/2019	0633	Cat	Complete	E	D	102	Black, white paws (With killed rodent

Site	Side	Date	Time	Species	Complete or incomplete	Movement	Accuracy	Pic/vid No.	Comments
									spp.)
3	G	14/10/2019	0658	Cat	Complete	E	D	103	Black, white paws
3	G	14/10/2019	1828	EG kangaroo	Complete	W	D	104-106	
3	G	14/10/2019	2035	Cat	Complete	W	D	107	Black, white paws
3	G	14/10/2019	2227	Cat	Complete	E	D	108	Black, white paws
3	G	15/10/2019	0103	Cat	Complete	W	D	109	Black, white paws
3	G	15/10/2019	0143	Cat	Complete	E	D	110	Black, white paws
3	G	15/10/2019	0228	Cat	Complete	W	D	111-115	Black, white paws, and throat
3	G	15/10/2019	0320	Cat	Complete	E	D	116	Black, white paws
3	G	15/10/2019	0436	Fox	Complete	W	Pr	118-120	
3	G	15/10/2019	0453	EG kangaroo	Complete	E	D	121	
3	G	15/10/2019	0553	Cat	Complete	W	D	122	
3	G	15/10/2019	0605	Fox	Complete	E	Pr	123	
3	G	15/10/2019	0625	EG kangaroo	Complete	E	D	124-125	
3	G	15/10/2019	0629	Cat	Complete	E	Pr	126	Black, white paws
3	G	15/10/2019	2020	Wallaby spp.	Complete	W	D	131-132	
3	G	16/10/2019	0458	Cat	Complete	W	Pr	136	Black, white paws
3	G	16/10/2019	0533	EG kangaroo	Complete	E	Pr	137-138	
3	G	16/10/2019	0537	EG kangaroo	Complete	W	D	139	
3	G	17/10/2019	0207	Fox	Complete	W	D	145	
3	G	17/10/2019	1413	Cat	Complete	W	D	156-159	Black, white paws, and throat
3	G	17/10/2019	1454	Cat	Complete	E	D	160	
3	G	17/10/2019	1538	Cat	Complete	W	D	161	
3	G	17/10/2019	1542	Cat	Complete	E	D	163	
3	G	17/10/2019	1549	Cat	Complete	E	D	164	
3	G	18/10/2019	0522	Fox	Complete	E	D	165	
3	G	18/10/2019	1012	Cat	Incomplete	NDM	Pr	177-178	
3	G	18/10/2019	1138	Welcome swallow	Incomplete	EXM	D	187-189	
3	G	18/10/2019	1209	Welcome swallow	Incomplete	EXM	Pr	192-193	
3	G	18/10/2019	1911	Swamp wallaby	Complete	W	D	202-206	
3	G	18/10/2019	2053	Cat	Complete	W	D	210	Black, white paws
3	G	19/10/2019	0142	Fox	Complete	W	D	211	
3	G	19/10/2019	0222	Fox	Complete	E	D	212	
3	G	19/10/2019	0331	Cat	Complete	W	D	213	Black, white paws, and throat
3	G	19/10/2019	0356	Cat	Complete	W	D	214	Black, white paws
3	G	19/10/2019	0401	Cat	Complete	E	D	215	Black, white paws

Site	Side	Date	Time	Species	Complete or incomplete	Movement	Accuracy	Pic/vid No.	Comments
3	G	19/10/2019	0415	Cat	Complete	W	Pr	216	Black, white paws
3	G	19/10/2019	0508	Swamp wallaby	Complete	E	D	217-219	
3	G	19/10/2019	0618	Cat	Complete	E	Pr	221	Black, white paws
3	G	19/10/2019	2001	Wallaby spp.	Complete	W	D	230	
3	G	20/10/2019	0511	Macropod spp.	Complete	E	Pr	231	
3	G	20/10/2019	1752	Swamp wallaby	Complete	W	D	240-241	
3	G	20/10/2019	2202	Cat	Complete	W	D	242	Black, white paws
3	G	21/10/2019	0514	Swamp wallaby	Complete	E	D	243-245	
3	G	21/10/2019	0519	Cat	Complete	E	D	246	Black, white paws
3	G	21/10/2019	0804	Cat	Complete	W	D	247	Black, white paws
3	G	21/10/2019	0814	Cat	Complete	E	D	248	Black, white paws, (with killed rodent spp.)
3	G	21/10/2019	1302	Cat	Complete	W	D	249	Black, white paws, and throat
3	G	21/10/2019	1307	Cat	Complete	E	D	250	Black, white paws
3	G	21/10/2019	1331	Cat	Complete	W	D	251	Black, white paws, and throat
3	G	21/10/2019	1558	Cat	Complete	E	D	252	Black, white paws
3	G	21/10/2019	2313	Cat	Complete	E	D	257	Black, white paws
3	G	22/10/2019	0446	Cat	Complete	W	D	258	Black, white paws, and throat
3	G	22/10/2019	0644	Cat	Complete	E	D	259	Black, white paws
3	G	22/10/2019	0704	Macropod spp.	Complete	E	D	260	
3	G	22/10/2019	0836	Cat	Complete	E	D	262	Black, white paws
3	G	22/10/2019	1107	Cat	Complete	W	D	265	Black, white paws, and throat
3	G	22/10/2019	1146	Cat	Complete	E	D	266	Black, white paws
3	G	28/11/2019	2018	Cat	Complete	E	D	12	Black, white paws
3	G	30/11/2019	2240	Cat	Complete	EXM	Po	22-30	Black, white paws
3	G	1/12/2019	0435	Fox	Complete	W	D	33	
3	G	1/12/2019	0507	Wallaby spp.	Complete	E	Pr	34	
3	G	1/12/2019	1231	Cat	Complete	W	Pr	38	
3	G	1/12/2019	2302	Swamp wallaby	Complete	W	D	40-41	
3	G	2/12/2019	2121	Cat	Complete	E	D	43-51	Tabby
3	G	2/12/2019	2250	Cat	Complete	W	D	52-54	Black, white paws
3	G	3/12/2019	0347	Cat	Complete	EXM	Pr	55-58	
3	G	3/12/2019	0517	Wallaby spp.	Complete	E	D	61	
3	G	3/12/2019	2041	Swamp wallaby	Complete	W	D	78	

Site	Side	Date	Time	Species	Complete or incomplete	Movement	Accuracy	Pic/vid No.	Comments
3	G	4/12/2019	0101	Cat	Complete	W	D	79	Black, white paws
3	G	4/12/2019	0517	Wallaby spp.	Complete	E	D	81	
3	G	4/12/2019	1831	Cat	Complete	E	D	94	Black, white paws
3	G	5/12/2019	0308	Cat	Complete	W	D	95	Black, white paws, and throat
3	G	6/12/2019	0235	Cat	Complete	W	D	103-104	Black, white paws, and throat
3	G	6/12/2019	2237	Swamp wallaby	Complete	W	Po	135	
3	G	7/12/2019	0227	Cat	Complete	W	D	136	Tabby
3	G	7/12/2019	0530	Cat	Complete	E	Pr	138	Black, white paws
3	G	8/12/2019	0450	Macropod spp.	Complete	E	D	150	
3	G	8/12/2019	0613	Cat	Complete	EXM	Po	153-154	Black, white paws, and throat
3	G	8/12/2019	1700	Swamp wallaby	Complete	E	Po	156	
3	G	9/12/2019	0508	Macropod spp.	Complete	E	Pr	158	
3	G	9/12/2019	1728	Swamp wallaby	Complete	E	D	161	
3	G	9/12/2019	2227	Cat	Complete	E	D	162-163	
3	G	10/12/2019	0648	Swamp wallaby	Complete	E	D	165	
3	G	10/12/2019	0743	Swamp wallaby	Complete	W	D	166	
3	G	10/12/2019	2224	Macropod spp.	Complete	E	D	176	
3	G	11/12/2019	1701	Swamp wallaby	Complete	E	D	177	
3	G	12/12/2019	0109	Cat	Complete	E	D	178	Black, white paws, and throat
3	G	12/12/2019	2130	Cat	Complete	W	D	179-181	Black, white paws, and throat
3	G	12/12/2019	2351	Cat	Complete	W	D	182	Black, white paws, and throat
3	G	13/12/2019	0054	Swamp wallaby	Complete	W	Pr	183	
3	G	13/12/2019	0622	Wallaby spp.	Complete	W	Pr	184	
3	G	13/12/2019	0645	Wallaby spp.	Complete	E	Pr	185	
3	G	14/12/2019	2017	Wallaby spp.	Complete	E	D	187	
3	G	14/12/2019	2210	Cat	Complete	W	D	188	Black, white paws, and throat
3	G	15/12/2019	0043	Cat	Complete	E	D	189	Black, white paws
3	G	17/12/2019	2112	Swamp wallaby	Complete	W	Pr	194-195	
3	G	18/12/2019	0228	Cat	Complete	W	D	196	
3	G	18/12/2019	0451	Cat	Complete	E	D	197	
3	G	21/06/2020	1837	Cat	Complete	W	D	5-6	Larger Grey - white socks

Site	Side	Date	Time	Species	Complete or incomplete	Movement	Accuracy	Pic/vid No.	Comments
3	G	21/06/2020	1904	Cat	Complete	W	D	7	Smaller grey - white socks
3	G	21/06/2020	1837	Cat	Complete	E	D	8	Larger Grey - white socks carrying Prey (probable Rodent)
3	G	21/06/2020	2026	Cat	Complete	E	D	9	Tabby
3	G	21/06/2020	1904	Cat	Complete	W	D	10-11	Smaller grey - white socks investigates cage
3	G	22/06/2020	0355	Red-necked wallaby	Complete	E	D	12-13	
3	G	22/06/2020	1838	Cat	Complete	W	D	22-25	White socks - Grey
3	G	23/06/2020	1839	Cat	Complete	E	D	26-77	White socks - Grey feeding on drumsticks
3	G	23/06/2020	0522	Wallaby spp.	Complete	E	D	78	
3	G	23/06/2020	0658	Dogs	Incomplete	W-E	D	79-94	x 2 (kelpie crosses - collars)
3	G	23/06/2020	1842	Cat	Complete	E	D	96-97	
3	G	23/06/2020	1853	Red-necked wallaby	Complete	W	D	98-100	
3	G	23/06/2020	1930	Cat	Complete	W	D	101	
3	G	23/06/2020	2022	Cat	Complete	W	D	102-105	
3	G	23/06/2020	2024	Cat	Complete	E	D	106	
3	G	23/06/2020	2149	Cat	Complete	E	D	107	
3	G	23/06/2020	2301	Cat	Complete	W	D	108	
3	G	24/06/2020	0017	Cat	Complete	W	D	109	
3	G	24/06/2020	0442	Cat	Complete	E	D	112	
3	G	24/06/2020	1528	Cat	Complete	E	D	116	
3	G	24/06/2020	1609	Red-necked wallaby	Complete	W	D	117	
3	G	24/06/2020	1652	Cat	Complete	E	D	118	
3	G	24/06/2020	1923	Cat	Complete	E	D	119	
3	G	24/06/2020	2243	Cat	Complete	E	D	121	
3	G	24/06/2020	0029	Cat	Complete	E	D	121	Carrying prey (Probable Large Rodent)
3	G	25/06/2020	0630	Dog	Complete	W	D	124-129	x 2 (kelpie crosses - collars)
3	G	25/06/2020	1226	Cat	Complete	W	D	138	
3	G	25/06/2020	1324	Cat	Complete	E	D	139	
3	G	25/06/2020	2343	Cat	Complete	E	D	144	
3	G	26/06/2020	0621	Dog	Complete	W	D	145-146	x 2 (kelpie crosses - collars)

Site	Side	Date	Time	Species	Complete or incomplete	Movement	Accuracy	Pic/vid No.	Comments
3	G	26/06/2020	0634	Dog	Complete	E	D	148	x 2 (kelpie crosses - collars)
3	G	26/06/2020	0719	Dog	Complete	W	D	149	x 2 (kelpie crosses - collars)
3	G	26/06/2020	0727	Dog	Complete	E	D	150	x 2 (kelpie crosses - collars)
3	G	27/06/2020	1918	Cat	Complete	W	D	157	
3	G	27/06/2020	1918	Cat	Complete	W	D	158	
3	G	27/06/2020	2105	Cat	Complete	E	D	157	
3	G	27/06/2020	0258	Cat	Complete	E	D	158	
3	G	27/06/2020	2231	Cat	Complete	E	D	164	
3	G	27/06/2020	2256	Cat	Complete	E	D	165	Carry prey
3	G	28/06/2020	0630	Dog	Complete	W	D	166	x 2 (kelpie crosses - collars)
3	G	28/06/2020	0641	Dog	Complete	E	D	166	
3	G	28/06/2020	2217	Cat	Complete	W	D	170	
3	G	29/06/2020	0046	Cat	C	E	D	171	
3	G	29/06/2020	0451	Cat	C	E	D	173	
3	G	29/06/2020	1409	Cat	C	E	D	178	
3	G	29/06/2020	1704	Cat	C	E	D	178	
3	G	28/07/2020	1904	Cat	Complete	W	D	5	Fat tabby or ginger
3	G	28/07/2020	1914	Cat	Complete	W	D	6	Black with white socks
3	G	28/07/2020	2041	Cat	Complete	E	D	7-8	Black with white socks
3	G	28/07/2020	2102	Cat	Complete	W	D	9	Black with white socks
3	G	28/07/2020	2117	Cat	Complete	W	D	10	Fat tabby or ginger
3	G	28/07/2020	2208	Cat	Complete	E	D	11	Fat tabby or ginger
3	G	28/07/2020	2317	Cat	Complete	W	D	12	Fat tabby or ginger
3	G	29/07/2020	0036	Cat	Complete	E	D	13	Fat tabby or ginger
3	G	29/07/2020	0059	Cat	Complete	W	D	14	Fat tabby or ginger
3	G	29/07/2020	0135	Cat	Complete	E	D	15-16	Black with white socks
3	G	29/07/2020	0446	Cat	Complete	E	D	17	Fat tabby or ginger
3	G	29/07/2020	1105	Cat	Complete	W	D	18	Black with white socks
3	G	29/07/2020	1719	Cat	Complete	E	D	20	Black with white socks
3	G	29/07/2020	1845	Cat	Complete	E	D	21	Black with white socks
3	G	29/07/2020	1922	Cat	Complete	W	D	22	
3	G	29/07/2020	2113	Cat	Complete	E	D	23	Fat tabby or ginger
3	G	30/07/2020	0048	Cat	Complete	W	D	24	Fat tabby or ginger
3	G	30/07/2020	0241	Cat	Complete	W	D	25	Black with white socks
3	G	30/07/2020	0336	Cat	Complete	E	D	26	Fat tabby or ginger

Site	Side	Date	Time	Species	Complete or incomplete	Movement	Accuracy	Pic/vid No.	Comments
3	G	30/07/2020	1733	Cat	Complete	E	D	27	Black with white socks
3	G	30/07/2020	2236	Cat	Incomplete	WE	D	28-29	
3	G	31/07/2020	0130	Cat	Complete	W	D	30	Black with white socks
3	G	31/07/2020	0149	Cat	Complete	E	D	31	Black with white socks
3	G	31/07/2020	0443	Cat	Complete	E	D	35	Fat tabby or ginger
3	G	31/07/2020	0829	Cat	Complete	E	D	36	Black with white socks
3	G	31/07/2020	1332	Cat	Complete	W	D	37	Black with white socks
3	G	31/07/2020	1620	Cat	Complete	E	D	38	Black with white socks
3	G	31/07/2020	2030	Cat	Complete	E	D	40	Black with white socks
3	G	1/08/2020	0124	Cat	Complete	W	D	41	
3	G	1/08/2020	0357	Cat	Complete	W	D	42	Black with white socks
3	G	1/08/2020	0409	Cat	Incomplete	EW	D	43-45	Black with white socks
3	G	1/08/2020	0433	Cat	Complete	E	D	46	Black with white socks
3	G	1/08/2020	0501	Cat	Incomplete	WE	D	47-48	Black with white socks
3	G	1/08/2020	0644	Dog	Incomplete	EXM	D	50	
3	G	1/08/2020	1744	Swamp wallaby	Complete	W	D	52	
3	G	1/08/2020	1843	Cat	Complete	E	D	54	Black with white socks
3	G	2/08/2020	0234	Cat	Incomplete	WE	D	55-56	Black with white socks
3	G	2/08/2020	0356	Swamp wallaby	Complete	E	D	57	
3	G	2/08/2020	0705	Dogs	Incomplete	WE	D	58-59	2 x kelpies
3	G	2/08/2020	1206	Cat	Complete	W	D	60	Black with white socks
3	G	2/08/2020	2157	Cat	Complete	E	D	61	Black with white socks
3	G	3/08/2020	0538	Cat	Complete	E	D	62	Black with white socks
3	G	3/08/2020	2353	Cat	Complete	W	D	63	Black with white socks
3	G	4/08/2020	0648	Dogs	Incomplete	WE	D	64-67	2 x kelpies
3	G	4/08/2020	0801	Cat	Complete	E	D	68	Black with white socks
3	G	5/08/2020	0003	Cat	Complete	W	D	69	Black with white socks
3	G	5/08/2020	0434	Cat	Complete	E	D	70-72	Black with white socks
3	G	5/08/2020	0704	Dogs	Incomplete	WE	D	74-75	2 x kelpies
3	G	5/08/2020	0749	Cat	Complete	E	D	77	Black with white socks
3	G	5/08/2020	1538	Cat	Complete	W	D	78	Black with white socks
3	G	5/08/2020	1708	Cat	Complete	E	D	79	Black with white socks
3	G	5/08/2020	1730	Cat	Complete	W	D	80	
3	G	5/08/2020	2152	Cat	Complete	E	D	84	Black with white socks
3	G	6/08/2020	0639	Dogs	Incomplete	EW	D	85-86	2 x kelpies
3	G	6/08/2020	0823	Cat	Complete	E	D	87	Black with white socks
3	G	6/08/2020	1202	Cat	Complete	W	D	88	Black with white socks
3	G	6/08/2020	1603	Cat	Complete	E	D	89-91	Black with white socks

Site	Side	Date	Time	Species	Complete or incomplete	Movement	Accuracy	Pic/vid No.	Comments
3	G	6/08/2020	1657	Cat	Complete	E	D	92	Black with white socks
3	G	6/08/2020	1812	Cat	Complete	E	D	93	Black with white socks
3	G	6/08/2020	1949	Cat	Complete	E	D	94	
3	G	6/08/2020	2255	Cat	Complete	E	D	97	
3	G	7/08/2020	0739	Dogs	Incomplete	EW	D	98-100	2 x kelpies
3	G	7/08/2020	1043	Cat	Incomplete	EW	D	102-103	Black with white socks
3	G	7/08/2020	1357	Cat	Complete	E	D	104	Black with white socks
3	G	7/08/2020	1923	Cat	Complete	W	D	105	
3	G	7/08/2020	1939	Cat	Complete	E	D	107	Black with white socks
3	G	7/08/2020	2136	Cat	Complete	E	D	108	Black with white socks
3	G	8/08/2020	0654	Dogs	Incomplete	WE	D	109-112	2 x kelpies
3	G	8/08/2020	1503	Swamp wallaby	Complete	W	Pr	113	
3	G	8/08/2020	2120	Cat	Complete	W	D	115	
3	G	8/08/2020	2301	Cat	Complete	E	D	116	
3	G	8/08/2020	2327	Wallaby spp.	Complete	E	D	117	
3	G	9/08/2020	0003	Cat	Complete	W	D	118	
3	G	9/08/2020	0409	Wallaby spp.	Complete	W	D	119	
3	G	9/08/2020	0658	Dogs	Incomplete	WE	D	120-121	2 x kelpies
3	G	9/08/2020	0708	Cat	Complete	E	D	122	
3	G	9/08/2020	1855	Cat	Complete	W	D	123	
3	G	9/08/2020	1959	Cat	Complete	E	D	124	
3	G	9/08/2020	2331	Cat	Complete	E	D	125	
3	G	10/08/2020	2001	Cat	Complete	W	D	126	
3	G	10/08/2020	2148	Cat	Complete	E	D	127	
3	G	11/08/2020	1357	Cat	Complete	W	D	128	
3	G	11/08/2020	1441	Cat	Complete	E	D	129	
3	G	11/08/2020	1856	Bandicoot spp	Complete	E	Pr	130	
3	G	12/08/2020	1946	Cat	Complete	W	D	131	
3	G	13/08/2020	0130	Cat	Complete	E	D	132	
3	G	14/08/2020	0025	BtPoss spp	Complete	E	D	133	
3	G	14/08/2020	0510	Cat	Complete	E	D	135	
3	G	15/08/2020	0504	Cat	Complete	W	D	136	
3	G	15/08/2020	0719	Cat	Complete	E	D	137	
3	G	15/08/2020	1845	Cat	Complete	W	Pr	138	
3	G	15/08/2020	1906	Cat	Complete	W	D	139	
3	G	15/08/2020	1944	Cat	Complete	E	D	140	
3	G	15/08/2020	2041	Cat	Complete	E	D	141-145	
3	G	15/08/2020	2340	Cat	Complete	W	D	146	

Site	Side	Date	Time	Species	Complete or incomplete	Movement	Accuracy	Pic/vid No.	Comments
3	G	16/08/2020	0144	Cat	Complete	W	D	147	
3	G	16/08/2020	0508	Cat	Complete	E	D	148-149	
3	G	16/08/2020	0546	Cat	Complete	W	D	150	
3	G	16/08/2020	0709	Dogs	Incomplete	WE	D	151-153	2 x kelpies
3	G	16/08/2020	1719	Cat	Complete	E	D	154	
3	G	16/08/2020	1922	Cat	Complete	W	D	156	
3	G	16/08/2020	2228	Cat	Complete	E	D	157	
3	G	16/08/2020	2302	Cat	Complete	W	D	158	
3	G	17/08/2020	0040	Cat	Complete	W	D	159	
3	G	17/08/2020	0202	Cat	Complete	E	D	160	
3	G	17/08/2020	0340	Wallaby spp.	Complete	E	D	161	
3	G	17/08/2020	0438	Wallaby spp.	Complete	E	D	162	
3	G	17/08/2020	0532	Cat	Complete	E	D	163	
3	G	17/08/2020	0846	Cat	Complete	W	D	164	
3	G	17/08/2020	1809	Cat	Complete	E	D	165	
3	G	17/08/2020	2139	Cat	Complete	W	D	166	
3	G	17/08/2020	2254	Cat	Incomplete	WE	D	167-68	
3	G	18/08/2020	0254	Red-necked wallaby	Complete	W	D	169-170	
3	G	18/08/2020	0936	Cat	Incomplete	EW	D	171-72	
3	G	18/08/2020	1631	Cat	Complete	E	D	173	
3	G	18/08/2020	1959	Cat	Complete	W	D	174	
3	G	18/08/2020	2142	Cat	Complete	E	D	175	
3	G	19/08/2020	0604	Dogs	Incomplete	WE	D	176-178	2 x kelpies
3	G	20/08/2020	0152	Cat	Complete	W	D	179	
3	G	20/08/2020	0306	Cat	Complete	E	D	180	
3	G	20/08/2020	0624	Cat	Complete	W	D	181	
3	G	20/08/2020	0646	Cat	Complete	E	D	182	
3	G	20/08/2020	2111	Cat	Complete	E	D	184	
3	G	21/08/2020	0713	Dogs	Incomplete	WE	D	186-187	2 x kelpies
3	G	21/08/2020	0727	Cat	Complete	E	D	188	
3	G	21/08/2020	0906	Cat	Complete	E	D	190	
3	G	21/08/2020	1510	Cat	Incomplete	WE	D	192-3	
3	G	21/08/2020	1709	Cat	Complete	E	D	194	
3	G	21/08/2020	2138	Cat	Complete	E	D	196	
3	G	22/08/2020	0522	Wallaby spp.	Complete	E	D	197	
3	G	22/08/2020	0533	Cat	Complete	W	D	198	
3	G	22/08/2020	1341	Dog	Complete	W	D	200	
3	G	22/08/2020	1532	Cat	Complete	E	D	201	Black with white socks

Site	Side	Date	Time	Species	Complete or incomplete	Movement	Accuracy	Pic/vid No.	Comments
3	G	22/08/2020	2352	Cat	Complete	W	D	202	Fat tabby or ginger
3	G	23/08/2020	0015	Cat	Complete	E	D	203	Fat tabby or ginger
3	G	23/08/2020	0537	Cat	Complete	E	D	204	Black with white socks
3	G	23/08/2020	0713	Red-necked wallaby	Complete	E	Pr	206	Joey in pouch
3	G	23/08/2020	0723	Dogs	Complete	W	D	207,209-211	2 x kelpies
3	G	23/08/2020	1415	Cat	Complete	W	D	212	Black with white socks
3	G	23/08/2020	1804	Cat	Complete	E	D	213	Black with white socks
3	G	23/08/2020	1837	Red-necked wallaby	Complete	W	D	214	Joey in pouch
3	G	23/08/2020	1900	Swamp wallaby	Complete	W	D	215-216	
3	G	24/08/2020	0116	Swamp wallaby	Complete	E	Pr	217	
3	G	25/08/2020	0207	Cat	Complete	W	D	230	
3	G	25/08/2020	0645	Cat	Complete	E	D	232	Black with white socks
3	G	25/08/2020	1209	Cat	Incomplete	WE	D	234-235	Black with white socks
3	G	27/08/2020	1322	Cat	Incomplete	WE	D	236-237	Black with white socks
3	G	28/08/2020	1236	Cat	Complete	W	D	238	
3	G	28/08/2020	1623	Cat	Complete	E	D	239	
3	G	29/08/2020	0021	Swamp wallaby	Complete	E	D	241	
3	G	29/08/2020	0631	Cat	Complete	W	D	242-243	
3	G	29/08/2020	1538	Cat	Complete	W	D	244	
3	G	29/08/2020	1833	Cat	Complete	E	D	245	
3	G	29/08/2020	2254	Red-necked wallaby	Complete	E	D	246	
3	G	30/08/2020	1010	Cat	Complete	W	D	249	
3	G	30/08/2020	1032	Cat	Complete	E	D	250	
3	G	30/08/2020	2304	Cat	Complete	W	D	251	
3	G	30/08/2020	2329	Cat	Incomplete	EW	D	252-253	
3	G	31/08/2020	0405	Cat	Incomplete	WE	D	254-255	
3	G	31/08/2020	0657	Dogs	Incomplete	WE	D	256-258	2 x kelpies
3	G	31/08/2020	0804	Cat	Complete	E	D	259	
3	G	31/08/2020	1138	Cat	Complete	W	D	260	
3	G	31/08/2020	1824	Cat	Complete	E	D	261	
3	G	1/09/2020	0205	Cat	Complete	W	D	262	
3	G	1/09/2020	0359	Cat	Complete	E	D	263	
2	FF	18/12/2019	0458	Macropod spp.	Complete	E		198	
2	FF	24/06/2020	0301	Black Rat	Complete	W	D	10-15	
2	FF	11/07/2020	0813	Antechinus spp	Complete	E	D	76-106	
2	FF	21/08/2020	0321	Antechinus spp	C	E	D	22-33	
2	FF	24/08/2020	2321	Antechinus spp	C	W	D	34-35	
2	FF	27/08/2020	0132	Antechinus spp	C	W	D	43-45	

Site	Side	Date	Time	Species	Complete or incomplete	Movement	Accuracy	Pic/vid No.	Comments
2	FF	28/08/2020	0321	Antechinus spp	Incomplete	E-W	D	51-52	
2	FF	28/08/2020	2047	Antechinus spp	C	W	D	59-63	
2	FF	No pics							MB present
2	G	28/11/2019	Nil fauna				D		
2	G	8/10/2019	1943	Fox	Complete	W	D	2	
2	G	8/10/2019	2021	Cat	Complete	E	Pr	3	Black, white paws
2	G	9/10/2019	0431	Wallaby spp.	Complete	W	Pr	4	
2	G	10/10/2019	0102	Swamp wallaby	Complete	W	D	11	
2	G	10/10/2019	0312	Swamp wallaby	Complete	E	D	12	
2	G	10/10/2019	0329	Swamp wallaby	Complete	E	D	13-14	
2	G	10/10/2019	0343	Swamp wallaby	Complete	E	D	15-16	
2	G	13/10/2019	0154	Fox	Complete	E	D	27	
2	G	13/10/2019	2244	Fox	Incomplete	E-W	D	29-31	
2	G	14/10/2019	0358	Fox	Complete	E	D	33	
2	G	14/10/2019	1937	Fox	Complete	W	D	34	
2	G	15/10/2019	0002	Fox	Complete	W	D	35	
2	G	15/10/2019	0102	Fox	Complete	E	Po	36	
2	G	15/10/2019	1936	Swamp rat	Complete	E	D	41	
2	G	16/10/2019	2246	Fox	Incomplete	W-E	D	45-47	
2	G	17/10/2019	0342	Fox	Complete	E	D	48	
2	G	17/10/2019	2040	Fox	Complete	W	D	52	
2	G	18/10/2019	2353	Fox	Complete	E	D	60	
2	G	19/10/2019	0245	Fox	Complete	E	D	63	
2	G	19/10/2019	0456	Fox	Complete	E	D	64	
2	G	19/10/2019	2016	Fox	Complete	E-W	D	73	
2	G	19/10/2019	2028	Fox	Complete	W	D	74	
2	G	19/10/2019	2102	Fox	Complete	W	D	75	
2	G	20/10/2019	0322	Fox	Complete	E	D	76	
2	G	20/10/2019	2118	Fox	Incomplete	W-E	D	84-86	
2	G	21/10/2019	0330	Fox	Complete	W	D	87	
2	G	21/10/2019	0517	Fox	Complete	E	D	89	
2	G	21/10/2019	1927	Swamp wallaby	Complete	W	D	94	
2	G	21/10/2019	2014	Fox	Complete	W	D	96	
2	G	21/10/2019	2101	Fox	Complete	W	D	97	
2	G	22/10/2019	0417	Fox	Complete	E	D	99	
2	G	22/10/2019	0450	Swamp wallaby	Complete	E	Pr	100	
2	G	22/10/2019	0521	Fox	Complete	E	D	101	
2	G	22/10/2019	0544	Swamp wallaby	Complete	E	D	102	

Site	Side	Date	Time	Species	Complete or incomplete	Movement	Accuracy	Pic/vid No.	Comments
2	G	30/11/2019	0422	Macropod spp.	Complete	E	D	84	
2	G	1/12/2019	0249	Fox	Complete	E	D	90	
2	G	1/12/2019	0800	Macropod spp.	Complete	E	D	91	
2	G	2/12/2019	2353	Fox	Complete	E	Pr	138	
2	G	4/12/2019	2021	Swamp wallaby	Complete	E	D	236	
2	G	4/12/2019	2032	Swamp wallaby	Complete	W	D	237	
2	G	5/12/2019	0508	Swamp wallaby	Complete	E	D	238	
2	G	6/12/2019	0407	Swamp wallaby	Complete	E	D	313	
2	G	7/12/2019	0326	Swamp wallaby	Complete	E	D	416	
2	G	7/12/2019	2130	Swamp wallaby	Complete	E	D	441	
2	G	8/12/2019	0009	Fox	Complete	E	D	442	
2	G	8/12/2019	1624	Dog	Complete	E	D	465	No collar visible, relatively skinny
2	G	8/12/2019	2005	Macropod spp.	Incomplete	W-E	Pr	467	
2	G	9/12/2019	0409	Swamp wallaby	Complete	E	Pr	468	
2	G	10/12/2019	2028	Swamp wallaby	Complete	E	D	589	
2	G	11/12/2019	0453	Echidna	Complete	E	Po	591	
2	G	12/12/2019	0050	Swamp wallaby	Complete	E	D	674	
2	G	12/12/2019	0233	Swamp wallaby	Complete	E	D	676	
2	G	12/12/2019	2139	Swamp wallaby	Complete	E	D	733	
2	G	13/12/2019	0346	Swamp wallaby	Complete	E	Pr	735-737, 739	
2	G	14/12/2019	2021	Swamp wallaby	Complete	E	D	765	
2	G	15/12/2019	0035	Dog	Complete	E	D	769	
2	G	15/12/2019	0159	Swamp wallaby	Complete	E	D	770	
2	G	15/12/2019	0407	Swamp wallaby	Complete	W	D	771-772	
2	G	16/12/2019	2315	Fox	Complete	E	D	850	
2	G	23/06/2020	0428	Swamp Wallaby	Complete	E	D	43	
2	G	23/06/2020	0527	Swamp wallaby	Complete	E	D	44	
2	G	23/06/2020	1916	Swamp wallaby	Complete	E	D	114-117	
2	G	23/06/2020	1931	Wallaby	Incomplete	E-W	D	119	
2	G	23/06/2020	2139	Swamp wallaby	Incomplete	NDM	D	124-127	
2	G	23/06/2020	2152	Swamp wallaby	Complete	W	D	128-129	
2	G	26/06/2020	220	Fox	Complete	E	D	220	
2	G	28/06/2020	275	Swamp Wallaby	Complete	E	D	275	
2	G	28/06/2020	2343	Bandicoot spp	Complete	E	D	295	
2	G	29/06/2020	0725	Wallaby spp.	Complete	E	D	297	
2	G	29/06/2020	1457	Swamp wallaby	C	W	D	316-317	
2	G	30/06/2020	0527	Wallaby spp.	C	E	D	320	
2	G	30/06/2020	0613	Swamp Wallaby	C	E	D	321	

Site	Side	Date	Time	Species	Complete or incomplete	Movement	Accuracy	Pic/vid No.	Comments
2	G	1/07/2020	1926	Swamp Wallaby	C	W	D	400	
2	G	2/07/2020	0051	Swamp Wallaby	C	E	D	404	
2	G	3/07/2020	0516	Wallaby spp.	C	E	D	444	
2	G	5/07/2020	0043	Wallaby spp.	Incomplete	E	D	497	
2	G	29/07/2020	0547	Swamp wallaby	C	E	D	25	
2	G	29/07/2020	0613	Swamp wallaby	C	W	D	26	
2	G	30/07/2020	0713	Cat	C	E	D	47	Grey white socks
2	G	31/07/2020	0444	Swamp wallaby	C	E	D	80	
2	G	31/07/2020	0558	Swamp wallaby	C	E	D	81	
2	G	1/08/2020	0500	Swamp wallaby	C	E	D	82	
2	G	1/08/2020	0500	Dog	C	E	D	83	Kelpie from site 3
2	G	1/08/2020	1837	Swamp Wallaby	C	W	D	141	Carrying young
2	G	2/08/2020	1804	Bandicoot spp.	C	E	D	181	
2	G	3/08/2020	0416	Swamp wallaby	C	E	D	183	
2	G	3/08/2020	0529	Swamp wallaby	C	E	D	184	
2	G	3/08/2020	1536	Dog	C	E	D	202	Black Dog white chest
2	G	3/08/2020	1544	Dog	C	E	D	205	
2	G	3/08/2020	1900	Bandicoot spp.	C	E	D	208	
2	G	3/08/2020	1910	Northern brown bandicoot	C	E	D	209	
2	G	4/08/2020	1805	Wallaby spp.	C	W	D	235	
2	G	5/08/2020	0552	Swamp wallaby	C	E	D	239	
2	G	9/08/2020	0546	Swamp Wallaby	C	E	D	366	
2	G	9/08/2020	1752	Swamp Wallaby	C	E	D	393	
2	G	10/08/2020	0510	Swamp wallaby	C	E	D	395	x 2
2	G	10/08/2020	1850	Bandicoot spp.	C	E	D	414	
2	G	10/08/2020	1958	Bandicoot spp.	C	E	D	416	
2	G	11/08/2020	0024	Echidna	C	E	D	417	
2	G	11/08/2020	1800	Swamp wallaby	C	E	D	452	
2	G	12/08/2020	0522	Swamp wallaby	C	E	D	454	
2	G	12/08/2020	0524	Swamp wallaby	C	E	D	455	
2	G	12/08/2020	1757	Bandicoot spp.	c	e	d	478	
2	G	12/08/2020	2220	Bandicoot spp.	C	E	D	481	
2	G	13/08/2020	0559	Swamp Wallaby	C	E	D	482	
2	G	13/08/2020	2337	Swamp wallaby	C	E	D	521	
2	G	14/08/2020	0435	Swamp Wallaby	Incomplete	E-W	D	522	X 2
2	G	14/08/2020	0450	Swamp Wallaby	Complete	E-W	D	522	X 2
2	G	14/08/2020	1748	Bandicoot spp.	C	E	D	541	
2	G	14/08/2020	1821	Bandicoot spp.	C	E	D	542	

Site	Side	Date	Time	Species	Complete or incomplete	Movement	Accuracy	Pic/vid No.	Comments
2	G	14/08/2020	2103	Bandicoot spp.	C	E	D	546	
2	G	14/08/2020	2321	Bandicoot spp.	C	E	D	549	
2	G	15/08/2020	0606	Swamp Wallaby	C	E	D	551	
2	G	15/08/2020	12:08	Dog	C	W	D	552	Black white chest
2	G	15/08/2020	1705	Dog	C	E	D	579	Black white chest
2	G	15/08/2020	1749	Long-nosed bandicoot	C	E	D	580	
2	G	15/08/2020	1916	Bandicoot spp.	C	E	D	584	
2	G	16/08/2020	0343	Swamp wallaby	C	E	D	590	
2	G	16/08/2020	1755	Bandicoot spp.	C	E	D	623	
2	G	16/08/2020	1806	Bandicoot spp	C	E	D	624	
2	G	16/08/2020	1911	Bandicoot spp	C	E	D	629	
2	G	16/08/2020	1922	Bandicoot spp	C	E	D	630	
2	G	16/08/2020	1922	Bandicoot spp	C	E	D	633	
2	G	16/08/2002	2230	Bandicoot spp	C	E	D	635	
2	G	17/08/2020	0012	Northern brown bandicoot	C	E	D	638-639	
2	G	17/08/2020	0219	Bandicoot spp	C	E	D	641	
2	G	17/08/2020	1757	Bandicoot spp	C	E	D	682	
2	G	17/08/2020	1929	Bandicoot spp	C	E	D	686	
2	G	17/08/2020	2227	Echidna	C	W	D	687	
2	G	18/08/2020	0242	Swamp wallaby	C	E	D	689	x 2 with juvenile
2	G	18/08/2020	0355	Bandicoot	C	E	D	690	
2	G	18/08/2020	1752	Bandicoot spp	C	E	D	725	
2	G	19/08/2020	0428	Swamp Wallaby	C	E	D	730	
2	G	19/08/2020	1849	Bandicoot spp	C	E	D	783	
2	G	20/08/2020	1850	Bandicoot spp	C	E	D	784	
2	G	20/08/2020	0301	Echidna	C	W	D	789	
2	G	20/08/2020	0301	Echidna	C	E	D	789	
2	G	20/08/2020	2228	Swamp wallaby	C	E	D	835	
2	G	21/08/2020	0238	Wallaby spp.	C	E	D	838	
2	G	21/08/2020	0239	Swamp wallaby	C	E	D	839	
1	North	18/12/2019	0112	Cat	Incomplete	W-E	D	922-923	Tabby
1	North	27/02/2020	0611	Swamp Wallaby	Complete	W	D	2740-2778	
1	North	8/02/2020	0555	White faced Heron	Complete	E	D	9337-9339	
1	North	8/02/2020	0916	Purple Swamp-hen	Incomplete	W-E	D	9340-9348	
1	North	17/02/2020	0759	Purple Swamp-hen x 3	Incomplete	E-W		4228-4252	1 complete in background
1	North	7/08/2020	0403	Swamp wallaby	Complete	W	D	7652	

Site	Side	Date	Time	Species	Complete or incomplete	Movement	Accuracy	Pic/vid No.	Comments
1	North	12/08/2020	0223	Swamp wallaby	C	E	D	1294-1296	
1	North	12/08/2020	0624	Cat	C	W	D	1538-1539	Black cat
1	North	17/07/2020	1007	Swamp wallaby	C	E	D	1254-1258	
1	North	20/07/2020	1217	Fox	C	E	D	3070	
1	North	16/08/2020	0106	Swamp wallaby	C	E	D	4343-4355	
1	North	16/08/2020	0409	Swamp wallaby	C	W	D	4554-4557	
1	North	18/08/2020	0455	Swamp Wallaby	C	E	D	6165-6167	
1	South	22/10/2019	Nil fauna				D		Camera stolen replaced in Jan 20
1	South	22/10/2019	Nil fauna						Camera stolen replaced in Jan 20
1	South	5/07/2020	0714	Cat	Complete	E	E	8035-8039	
1	South	6/07/2020	0322	Cat	Complete	E	E	8534-835	
1	South	9/08/2020	0913	Cat	Complete	E	D	9434-9441	
1	South	9/07/2020	0703	Purple Swamp-hen	Complete	W	D	11093	
1	South	5/07/2020	1201	Fox	Complete	W	D	15358	

Table C 2: Scat and track data recorded during spring/summer (ss) and winter (w) during year two of operational phase monitoring WC2NH, 2020.

Species/Group	Site																							
	1		2		3		4		5		6		7		8		9		10		11		12	
	SS	W	SS	W	SS	W	SS	W	SS	W	SS	W	SS	W	SS	W	SS	W	SS	W	SS	W	SS	W
Short-beaked echidna															*									
<i>Antechinus</i> spp.			*				*				*		*						*		*		*	
<i>Peramelidae</i> spp. (bandicoot)			*	*				*	*				*		*		*		*				*	
Koala*							*										*		*					
<i>Trichosurus</i> spp.				*									*	*										
Swamp wallaby													*											
Wallaby spp.	*		*	*	*	*	*		*	*	*		*		*		*		*					
Macropod spp.	*			*											*									
Microbat spp.							*																	
House mouse		*												*			*							

Rodent spp.		*	*		*	*	*	*	*	*	*	*	*	*	*		*	*	*	*				*
Dog				*		*		*		*	*		*				*	*		*				
Red fox ¹	*		*	*	*	*		*	*	*	*	*	*	*		*		*		*		*		*
Cat ¹			*		*	*		*	*			*	*		*		*		*		*	*	*	*
Lace monitor					*		*				*		*		*		*		*					
Medium lizard			*						*						*									
Small reptile					*				*															
<i>Litoria</i> spp.																			*					
Welcome swallow					*																			
Bird spp.																	*							
Total no. Species/groups	3	2	7	6	7	4	6	4	7	3	6	3	9	4	7	2	6	4	7	3	1	2	3	3

Table C 3: Sand pad data recorded over 8 nights during spring/summer (ss) and winter (w) during year two of operational phase monitoring WC2NH, 2020.

Species/group	1		2		3		4		5		6		7		8		9		10		11		12	
	SS	W	SS	W	SS	W	SS	W	SS	W	SS	W	SS	W	SS	W	SS	W	SS	W	SS	W	SS	W
Short-beaked echidna			*										*											
<i>Antechinus</i> spp.			*																					
<i>Peramelidae</i> spp. (bandicoot)				*			*	*							*									
Koala*							*																	
<i>Trichosurus</i> spp.			*	*									*	*	*		*							
Swamp wallaby													*											
Red neck wallaby					*																			
Wallaby spp.			*	*	*	*			*				*				*		*					
Macropod spp.	*			*																				

House mouse ^l		*											*				*							
Rodent spp.		*	*	*		*	*	*	*	*	*	*	*	*		*	*	*	*	*		*	*	*
Dog ^l											*	*			*									
Red fox ^l	*		*	*	*	*		*		*			*		*		*		*		*		*	*
Cat ^l		*			*	*	*	*				*		*	*						*			
Lace monitor											*		*		*		*		*					
Waterbird spp.	*																							
<i>Lampropholis</i> spp.																					*			
Medium reptile							*		*		*					*								
Australian brush turkey												*												
Total species/group	3	3	6	6	4	4	5	4	2	3	4	2	7	4	4	3	4	4	2	3	2	2	1	2

Table C 4: Nocturnal (spotlighting) adjacent habitat surveys conducted during spring/summer and winter during year two of operational phase monitoring WC2NH, 2020.

Location	Side	Date	Obs. No.	Observers	Start Time	Finish Time	Species	Wind	Rain	Visibility	Air Temp	Humidity	Comment
11&12	E	15/06/20	1	LA	1859	1929	Wallaby spp (Heard)	Nil	Nil	Good	13.2	91	
	W	15/06/20	1	LA	1933	2003	SuG Sm	Nil	Nil	Good	13.2	91	
	E	17/06/20	2	DR	1750	1820	Nil	MSB	Nil	Good	14	77	
	W	17/06/20	2	LA	1750	1820	Nil	MSB	Nil	Good	14	77	
9&10	E	15/06/2020	1	BT	1908	1938	Common ringtail possum	Nil	Nil	Good	17	70	
	W	15/06/2021	1	DR	1908	1938	GHFF	Nil	Nil	Good	17	70	
	E	17/6/20	2	BT	1903	1932	ONj	MSB	NIL	GOOD	11.5	84	
	W	17/6/20	2	BT	1829	1900	Nil	MSB	NIL	GOOD	11.5	84	
8	E	15/06/2020	1	BT	1945	2015	Nil	Nil	Nil	Good	17	70	
	W	15/06/2021	1	DR	1945	2015		Nil	Nil	Good	17	70	
	E	17/6/20	2	BT	2009	2040	Nil	MSB	NIL	GOOD	10.6	89	
	W	17/6/20	2	BT	1936	2005	Nil	MSB	NIL	GOOD	10.6	89	
7	E	15/06/20	1	LA	2006	2036	Crinia signifera	Nil	Nil	Good	12.8	93	
	W	15/06/20	1	LA	2037	2107	Nil	Nil	Nil	Good	12.8	93	
	E	17/06/20	2	DR	1824	1854	Nil	MSB	Nil	Good	14	77	
	W	17/06/20	2	LA	1824	1854	Nil	MSB	Nil	Good	14	77	
5&6	E	15/06/2020	1	BT	2020	2050	Nil	Nil	Nil	Good	17	70	
	W	15/06/2020	1	DR	2020	2050	Crinia signifera	Nil	Nil	Good	17	70	
	E	17/06/2020	2	DR	1917	1947	Nil	MSB	Nil	Good	12.8	79	
	W	17/06/2020	2	LA	1917	1947	Nil	MSB	Nil	Good	12.8	79	
4	E	16/06/2020	1	BT	1836	1906	FtG	Nil	Nil	Good	13.8	84	
	W	16/06/2020	1	LA	1836	1906	nil	Nil	Nil	Good	13.8	84	
	E	19/06/20	2	DR	1832	1902	nil	MSB	NIL	Good	11.5	84	
	W	19/06/20	2	LA	1832	1902	nil	MSB	NIL	Good	11.5	84	
3 (E only)	E	15/06/20	1	LA	2112	2142	Nil	Nil	Nil	Good	12.8	93	
	E	17/06/2020	2	DR/LA	2008	2038	Wallaby (bouncing)	MSB	Nil	Good	12.8	79	
2	E	15/06/20	1	DR	2105	2140	Sb echidna, Cr. signifera, GHFF	Nil	Nil	Good	17	70	

	W	15/06/20	1	BT	2105	2140	SuG, Cr. signifera	Nil	Nil	Good	17	70	
	E	17/06/20	2	LA	2046	2116	GhFF	MSB	Nil	Good	14	77	
	W	17/06/20	2	DR	2046	2116	nil	MSB	Nil	Good	14	15	
1	E	16/06/2020	1	BT	1745	1815	nil	Nil	Nil	Good	14.9	84	
	W	16/06/2020	1	LA	1745	1815	nil	Nil	Nil	Good	14.9	84	
	E	19/06/20	2	DR	1748	1818	Nil	Nil	Nil	Good	15.6	68	
	W	19/06/20	2	LA	1748	1818	Crinia signifera	Nil	Nil	Good	15.6	68	
11&12	E	3/10/19	1	NM/BT	2210	2225	GHFF, P. coriacea	Nil	Nil	Good	14.9	84	
	W	3/10/19	1	NM/BT	2152	2207	GHFF	Nil	Nil	Good	14.9	84	
	E	27/11/19	2	LA	2120	2150	GHFF, A. brevis						
	W	27/11/19	2	DR	2120	2150	GHFF, SuG,						
9&10	E	3/10/19	1	NM/BT	2110	2125	GHFF, P.coriacea, A.brevis	Nil	Nil	Good	16.1	79	
	W	3/10/19	1	NM/BT	2128	2143	P.coriacea, GHFF	Nil	Nil	Good	16.1	79	
	E	27/11/19	2	LA	2200	2230	Swamp wallaby, GHFF						
	W	27/11/19	2	DR	2200	2230	GHFF						
8	E	21/10/19	1	NM/LA	2142	2157	GHFF	Nil	Nil	Good	14.2	83	
	W	21/10/19	1	NM/LA	2125	2140	GHFF	Nil	Nil	Good	14.2	83	
	E	28/11/19	2	LA	2000	2030	GHFF						
	W	28/11/19	2	DR	2000	2030	GHFF						
7	E	21/10/19	1	NM/LA	2045	2100	A.brevis, C.signifera, Limnodynastes peronii, GHFF	Nil	Nil	Good	14.2	83	
	W	21/10/19	1	NM/LA	2102	2117	A. Brevis, SuG SE, prob bandicoot HM, GHFF	Nil	Nil	Good	14.2	83	
	E	28/11/19	2	LA	2040	2110	Bandy bandy, GHFF, Adelotus brevis	Nil					
	W	28/11/19	2	DR	2040	2110	GHFF	Nil					
5&6	E	18/10/19	1	NP/NM	2025	2040	GHFF, Lit. peronii, Lit. fallax, A brevis	Nil	Nil	Good	16.2	65	
	W	18/10/19	1	NP/NM	2040	2055	Lit. tyleri, P. Coriacea	Nil	Nil	Good	16.2	65	
	E	28/11/19	2	LA	2120	2150	Lit. fallax, Lit. peroni, Lim. peroni, GHFF	Nil	V. Light	Good	22	77	
	W	28/11/19	2	DR	2120	2150	GHFF, Sw. Wallaby, Lit. peroni	Nil					
4	E	21/10/19	1	NM/LA	2005	2020	GHFF, Limnodynastes peronii	Nil	Nil	Good	16.4	71	
	W	21/10/19	1	NM/LA	2021	2036	GHFF, SuG hc	Nil	Nil	Good	16.4	71	

	E	28/11/19	2	LA	2200	2230	GHFF, koala (sub-adult)	Nil	V. Light	Mod	22	78	
	W	28/11/19	2	DR	2200	2230	GHFF						
3 (E only)	E	18/10/19	1	NP/NM	2005	2020	Cat, LN Bandicoot, Macropod spp.	Nil	Nil	Good	16.5	60	
	E	21/10/19	2	NM/LA	1935	1950	GHFF, Frog spp, cat, Wallaby spp	Nil	Nil	Good	16.4	71	
	E	28/11/19	3	DR/LA	1050	1105	Nil	Nil	Light	Mod	22	78	
2	E	18/10/19	1	NP/NM	1930	1945	C. signifera	Nil	Nil	Good	16.7	56	
	W	18/10/19	1	NP/NM	1945	2000	Nil	Nil	Nil	Good	16.7	56	
	E	28/11/19	2	LA	2315	2345	Nil	Nil	Light	Mod	22	80	
	W	28/11/19	2	DR	2315	2345	GHFF						
1	E	16/10/19	1	NP/NM	2015	2030	Lit fallax						
	W	16/10/19	1	NP/NM	2000	2015	M iteratus, water dragon, small mammal spp., ad brevis						
	E	27/11/19	2	LA	2018	2048	Lit flax, ff sp						
	W	27/11/19	2	DR	2018	2048	Ad brevis , lit fallax, northern brown, ff sp, swamp wallaby						

Table C 5: Diurnal adjacent habitat surveys conducted during spring/summer and winter during year two of operational phase monitoring WC2NH, 2020.

Site	Date	Side	Survey No.	Observers	Start Time	Finish Time	Wind	Rain	Visibility	Air Temp	Humidity	Species (no. of individuals / behaviour)	Signs (scats/tracks etc)	Comments
11&12	1/06/20	W	1	LA	11:50	0:20	Nil	Nil	Good	20.8	59	Lampropholis spp		
	1/06/20	E	1	LA	1221	1251	Nil	Nil	Good	20.8	59	Wallaby (scat)		
	16/6/20	W	2	BT	958	1027	MSB	Nil	Good	17.6	71	Lampropholis spp.		
	16/6/20	E	2	BT	1031	1100	MSB	Nil	Good	18.1	68	Lampropholis spp.; Saiphos equalis	B'coot diggings	
9&10	1/06/20	W	1	LA	1255	1325	Nil	Nil	Good	22.1	59	Wallaby (scat)		
	1/06/20	E	1	LA	1330	14:00	Nil	Nil	Good	23.8	53	Wallaby (scat)		
	16/6/20	W	2	BT	1120	1150	MSB	Nil	Good	19.1	64	Nil	B'coot diggings	
	16/6/20	E	2	BT	1154	1223	MSB	Nil	Good	19.1	64	Lampropholis spp.		
8	1/06/20	W	1	LA	1406	1446	Nil	Nil	Good	23.8	53	Bandicoot diggings		
	1/06/20	E	1	LA	1448	1516	Nil	Nil	Good	23.8	53	Cat (tracks), Lampropholis x1, Wallaby scat,		
	16/6/20	W	2	BT	1245	1315	MSB	Nil	Good	19	67	Nil		
	16/6/20	E	2	BT	1318	1347	MSB	Nil	Good	19	67	Nil		
7	5/06/20	W	1	LA	11:15	11:45	Nil	Light	Good	19.2	54	Wallaby (scat), Old koala scat		
	1/06/19	E	1	LA	1523	1553	Nil	Nil	Good	21.9	53	Calyptotis ruficauda, Bandicoot diggings		
	16/6/20	W	2	BT/LA	1356	1411	MSB	Nil	Good	19.6	70	Nil		
	16/6/20	E	2	BT/LA	1415	1430	MSB	Nil	Good	19.6	70	L.delicata		
5&6		W	1	LA	11:51	12:21	Nil	Light	Good	19.2	54	Calyptotis ruficauda, Bandicoot diggings		
		E	1	LA	12:24	12:54	Nil	Light	Good	19.2	54	Bandicoot diggings		
	16/6/20	W	2	BT/LA	1436	1451	MSB	Nil	Good	19.6	70	Nil		
	16/6/20	E	2	BT/LA	1453	1509	MSB	Nil	Good	19.6	70	Nil		
4		W	1	LA	13:04	13:34	Nil	Light	Good	19.2	54	Calyptotis ruficauda		
		E	1	LA	13:35	14:05	Nil	Light	Good	19.2	54	Nil		
	17/6/20	W	2	BT	1436	1451	MSB	Nil	Good	19.1	62	Nil	B'coot diggings	
	17/6/20	E	2	LA	1140	1210	MSB	Nil	Good	19.1	62	Rodent scats		
3	17/6/20	E	1	DR	1010	1040	MSB	Nil	Good	NR	NR	Nil		
	17/6/20	W	1	DR	945	1005	MSB	Nil	Good	NR	NR	Nil		
	20/6/20	E	2	LA	1115	1145	Nil	Nil	Good	18	60	Nil		
	20/6/20	W	2	DR	1115	1145	Nil	Nil	Good	18	60	Crinia signifera		
2	16/6/20	E	1	DR	1430	1500	MSB	Nil	Good	19.6	70	C. ruficauda x1, Lampropholis spp. x1, Ctenotus spp x1,	Swamp wallaby (scat)	
	16/6/20	W	1	DR	1505	1530	MSB	Nil	Good	19.6	70	Nil		
	20/06/2020	E	2	LA	1121	1151	Nil	Nil	Good	17.7	58	Crinia signifera, Lampropholis spp.		
	20/06/2020	W	2	DR	1121	1151	Nil	Nil	Good	17.7	58	Nil		
1	1/06/20	W	1	LA	1003	1033	Nil	Nil	Good	18.1	63	EW dragon x2, Lampropholis spp x 1, Btp (scat), Wallaby (track)		

	1/06/20	E	1	LA	1035	1105	Nil	Nil	Good	18.1	63	Lampropholis spp., Fox (scat), Dog (tracks)		
	20/06/2020	E	2	DR	1035	1105	Nil	Nil	Good	17.7	58	Nil		
	20/06/2020	W	2	LA	1035	1105	Nil	Nil	Good	17.7	58	Water dragon, Crinia signifera		
11&12	22/9/19	W	D1	NM	845	915	Msb	Nil	Good	19	82	Lampropholis spp.	OBS	
	22/9/19	E	D1	NM/NP	915	930	MSB	Nil	Good	19	82	Lampropholis spp., A. brevis, Wallaby scat, bandicoot diggings	Obs	
	1/10/19	W	D2	NP	1445	1515	Nil	Nil	Good	21	79	Wallaby scat		
	1/10/19	E	D2	NP	1515	1545	Nil	Nil	Good	21	79	Lampropholis spp., Wallaby scat		
9&10	3/10/19	W	D1	NP	11:00	11:30	RL	Nil	Good	21.5	68	Lampropholis spp., small mammal nest (melomys?), Bandicoot diggings		
	3/10/19	E	D1	NP	11:30	12:00	RL	Nil	Good	21.5	68	Echidna diggings		
	15/10/19	W	D2	Nm/La	9:30	9:45	Nil	Nil	Good	22.1	75	Lampropholis spp		
	15/10/19	E	D2	Nm/La	9:50	10:05	Nil	Nil	Good	22.1	75	Bandicoot diggings, Lampropholis spp, Wallaby scat		
8	3/10/19	W	D1	NP	12:05	1235	RL	Nil	Good	23	65	Lampropholis spp, Echidna diggings, Wallaby scat		
	3/10/19	E	D1	NP	1235	1305	RL	Nil	Good	23	65	Lampropholis spp.		
	Incidental											Swamp snake		
	15/10/19	W	D2	NM/LA	1010	1025	Nil	Nil	Good	22.7	75	Lampropholis spp, bearded dragon		
	15/10/19	E	D2	NM/LA	1030	1045	Nil	Nil	Good	22.7	75	Lampropholis spp, Wallaby scat		
	16/10/19	W	D3	LA	12:02	1232	Msb	Nil	Good	25.8	67	Yellow faced whipsnake, lace Monitor, Lampropholis spp, Bandicoot diggings		
	16/10/19	E	D3	LA			Msb	Nil	Good	25.8	67	Wallaby scat		
7	4/10/19	W	D1	NP	945	1015	RL	Nil	Good	23	61	Wallaby scat, bandicoot diggings		
	4/10/19	E	D1	NP	1015	1045	RL	Nil	Good	23	61	Echidna diggings, Wallaby scat		
	16/10/19	W	D2	LA	1245	1300	Msb	Nil	Good	24.9	69	Lampropholis spp multiple		
	16/10/19	E	D2	LA	1315	1330	Msb	Nil	Good	24.9	69	Lampropholis spp multiple, bandicoot diggings, Wallaby scat		
5&6	Incidental											Burtons legless lizard		
	16/10/19	W	D1	NP/NM	1025	1040	Nil	Nil	Good	29	49	Lampropholis spp, Wallaby scat, bandicoot digging		
	16/10/19	E	D1	NP/NM	1040	1055	Nil	Nil	Good	29	49	Lampropholis spp., Wallaby scat, bandicoot & echidna diggings		
	18/10/19	W	D2	NM	1200	1230	MSB	Nil	Good	22	27	Lampropholis spp multiple, bandicoot diggings		
	18/10/19	E	D2	NM	1235	1305	MSB	Nil	Good	22	27	Wallaby scat, Lampropholis spp multiple		
4	16/10/19	W	D1	NM	1105	1135	Nil	Nil	Good	25.5	66	Lampropholis spp., Wallaby scat, bandicoot & echidna diggings		
	16/10/19	E	D1	NP	1105	1135	Nil	Nil	Good	25.5	66	Lampropholis spp., Wallaby scat,		

												bandicoot & echidna diggings		
	18/10/19	W	D2	NM	1305	1335	MSB	Nil	Good	25.7	16	Med lizard, Wallaby scat		
	21/10/19	E	D2	NM	1035	1105	Nil	Nil	Good	21.8	62	Bandicoot diggings, Wallaby scat, Lampropholis spp		
3	16/10/19	W	D1	NM	1145	1215	Nil	Nil	Good	25.4	67	Wallaby scat, bandicoot diggings		
	16/10/19	E	D1	NP	1145	1215	Nil	Nil	Good	25.4	67	Lampropholis spp., Bandicoot scat, water dragon scat, echidna diggings, Wallaby scat		
	18/10/19	W	D2	NP/NM	1000	1015	Nil	Nil	Good	22.3	31	Wallaby scat, bandicoot diggings		
	18/10/19	E	D2	NP/NM	1015	1030	Nil	Nil	Good	22.3	31	Lampropholis spp., Bandicoot scat, water dragon scat, echidna diggings, Wallaby scat		
2	16/10/19	W	D1	LA	14:30	1500	Nil	Nil	Good	25.4	67	Echidna & bandicoot diggings, Wallaby scat, Lampropholis spp		
	15/10/19	E	D1	LA				nil		25.4	67			
	21/10/19	W	D2	NM	1110	1140	Nil	Nil	Good	25.5	22	Lampropholis spp, Wallaby scat		
	21/10/19	E	D2	NM	1145	1215	Nil	Nil	Good	25.5	22	Wallaby scat, lace Monitor scat, Lampropholis spp		
1	16/10/19	W	D1	LA	1055	1125	RL	Nil	Good	25	65	EW dragon x2, Lampropholis spp x 1		
	16/10/19	E	D1	LA	1130	1200	RL	Nil	Good	25	65	EW dragon x3, Lampropholis spp x2, Fox scat		
	21/10/19	W	D2	NM	1307	1337	Nil	Nil	Good	28	17	EW dragon x 2, wallaby scat, Fox scat, bandicoot diggings		
	21/10/19	E	D2	NM	1235	1305	Nil	Nil	Good	26.6	16	Lampropholis spp		

Table C 6: Fauna captured during adjacent habitat trapping surveys during spring/summer and winter of year two operational monitoring WC2NH, 2020.

Site	Season	Date	Trap type	Species	Sex	Weight	Comments
11&12 west	Winter	16/06/20	Large Elliot	sugar glider	M	125	
11&12 west	Winter	16/06/20	Large Elliot	sugar glider	F	105	
11&12 west	Winter	16/06/20	Pitfall	3X Redbank toadlet			
9/10 east	Winter	16/06/20	Ground Elliot	Brown antechinus	M	40	
9/10West	Winter	16/06/20	Ground Elliot	FF Melomys	F	80	
11&12 East	Winter	17/06/2020	Ground Elliot	FF Melomys	M	76	
11&12 East	Winter	17/06/2020	Ground Elliot	FF Melomys	F	62	
11&12 west	Winter	17/06/2020	Cage trap	Black rat	N/A	N/A	Escaped
9/10 east	Winter	17/06/2020	Ground Elliot	Brown antechinus	M	47	
9/10West	Winter	17/06/2020	Ground Elliot	FF Melomys	F	46	Grey in colour, distinct mosaic tail pattern
9/10West	Winter	17/06/2020	Ground Elliot	FF Melomys	F	63	
11&12 west	Winter	18/06/2020	Large Elliot	sugar glider	M	127	
11&12 west	Winter	18/06/2020	Large Elliot	sugar glider	F	110	
8 west	Winter	18/06/2020	Pitfall	2x FF Melomys	M	NR	Deceased
2 west	Winter	19/06/2020	Ground Elliot	Black rat	M	139	Euthanised
2 west	Winter	19/06/2020	Ground Elliot	Black rat	F	155g	Euthanised
2 west	Winter	19/06/2020	Ground Elliot	Brown Antechinus	F	290g	
2 west	Winter	19/06/2020	Cage trap	Black rat			Escaped
2 east	Winter	19/06/2020	Ground Elliot	FF Melomys	F	73g	
2 east	Winter	19/06/2020	Ground Elliot	FF Melomys	F	54g	
2 East	Winter	19/06/2020	Pitfall	Limnodynastes peronii			
1 West	Winter	19/06/2020	Ground Elliot	Black rat	F	130g	
1 west	Winter	19/06/2020	Cage trap	Black rat	M		Escaped
3 east	Winter	20/06/2020	Ground Elliot	House mouse	M	17 grams	
3east	Winter	20/06/2020	Ground Elliot	Black rat	M	103 grams	
2 East	Winter	20/06/2020	Ground Elliot	FF Melomys	M	79g	
1 West	Winter	20/06/2020	Cage trap	SeBtP	F	-	Carrying young in pouch
1 west	Winter	20/06/2020	Ground Elliot	Black rat	F	136g	
2 East	Winter	21/06/2020	Pitfall	Limnodynastes peronii			
2 East	Winter	21/06/2020	Large Elliot	FF Melomys	F	63g	
1 east	Winter	21/06/2020	Cage trap	SeBtP	F	-	
1 east	Winter	21/06/2020	Ground Elliot	Black rat	-	-	
3 East	Winter	21/06/2020	Ground Elliot	Brown Antechinus	M	42g	
5/6 east	Winter	16/6/20	Ground Elliot	FF Melomys	F	52g	
5/6 west	Winter	16/6/20	Ground Elliot	Bush rat	F	94g	
5/6 west	Winter	16/6/20	Ground Elliot	Bush rat	F	90g	
7 west	Winter	16/6/20	Ground Elliot	FF Melomys	F	72g	
7 west	Winter	16/6/20	Ground Elliot	Brown Antechinus	M	54g	
5/6 west	Winter	17/6/20	Ground Elliot	Bush rat	F	60g	
7 east	Winter	17/6/20	Ground Elliot	Brown Antechinus	F	32g	
7 west	Winter	17/6/20	Ground Elliot	FF Melomys	F	90g	
7 west	Winter	17/6/20	Cage trap	SeBtP	NR	NR	
8 west	Winter	17/6/20	Ground Elliot	Brown Antechinus	M	36g	
8 west	Winter	17/6/20	Ground Elliot	FF Melomys	F	58g	
5/6 west	Winter	18/6/20	Ground Elliot	Brown Antechinus	M	NR	
5/6 west	Winter	18/6/20	Ground Elliot	Bush rat	M	NR	
5/6 west	Winter	18/6/20	Ground Elliot	Black rat	F	NR	euthanised
5/6 west	Winter	18/6/20	Ground Elliot	Brown Antechinus	M	NR	
7 west	Winter	18/6/20	Ground Elliot	FF Melomys	F	NR	
7 east	Winter	18/6/20	Arboreal Elliot	FF Melomys	F	NR	
7 east	Winter	18/6/20	Ground Elliot	Brown Antechinus	M	NR	
8 west	Winter	18/6/20	Ground Elliot	Brown Antechinus	M	NR	
8 west	Winter	18/6/20	Ground Elliot	Brown Antechinus	M	43g	
3 west	Winter	19/6/20	Ground Elliot	FF Melomys	F	54g	
3 west	Winter	19/6/20	Ground Elliot	House mouse	F	15g	Euthanised
3 west	Winter	19/6/20	Ground Elliot	Black rat	F	120g	Euthanised
4 west	Winter	19/6/20	Ground Elliot	FF Melomys	F	54g	
4 west	Winter	19/6/20	Ground Elliot	Bush rat	F	138g	
4 west	Winter	19/6/20	Arboreal Elliot	Brown Antechinus	F	17g	
4 west	Winter	19/6/20	Ground Elliot	Bush rat	M	146g	

2 west	Winter	20/2/20	Ground Elliot	Black rat	M	118g	Euthanised
2 west	Winter	20/2/20	Ground Elliot	Black rat	F	148g	Euthanised
4 west	Winter	20/2/20	Ground Elliot	FF Melomys	F	76g	
4 west	Winter	20/2/20	Ground Elliot	FF Melomys	F	56g	
4 west	Winter	20/2/20	Ground Elliot	Bush rat	F	136g	
4 west	Winter	20/2/20	Ground Elliot	Bush rat	M	128g	
4 west	Winter	20/2/20	Ground Elliot	Brown Antechinus	M	42g	
1 west	Winter	20/6/20	Cage trap	Black rat	NR	NR	
1 west	Winter	20/6/20	Pitfall	Striped marsh frog	N/A	N/A	
3 west	Winter	21/6/20	Ground Elliot	House mouse	M	8g	Euthanised
3 west	Winter	21/6/20	Ground Elliot	House mouse	M	7g	Euthanised
3 west	Winter	21/6/20	Pitfall	House mouse	M	7g	Euthanised
2 west	Winter	21/6/20	Ground Elliot	Brown Antechinus	M	28g	
2 west	Winter	21/6/20	Arboreal Elliot	Black rat	F	87g	Euthanised
2 west	Winter	21/6/20	Ground Elliot	Black rat	F	156g	Euthanised
2 west	Winter	21/6/20	Cage trap	Black rat	NR	NR	
2 west	Winter	21/6/20	Cage trap	Black rat	NR	NR	
1 west	Winter	21/6/20	Cage trap	Black rat	NR	NR	
1 west	Winter	21/6/20	Ground Elliot	House mouse	F	13g	Euthanised
1 west	Winter	21/6/20	Ground Elliot	Black rat	F	92g	Euthanised
4 west	Winter	21/6/20	Arboreal Elliot	Brown Antechinus	F	38g	
4 west	Winter	21/6/20	Ground Elliot	Black rat	F	138g	Euthanised
4 west	Winter	21/6/20	Ground Elliot	Bush rat	F	122g	
4 west	Winter	21/6/20	Ground Elliot	FF Melomys	F	46g	
4 west	Winter	21/6/20	Ground Elliot	Bush rat	M	138g	
5/6 west	Spring/summer	15/10/19	Pit	Calypotitis ruficauda	UK	NA	
5/6 west	Spring/summer	15/10/19	Small Elliot	Bush Rat	UK	UK	Escaped before processing
5/6 west	Spring/summer	15/10/19	Small Elliot	Brown Antechinus	F	26g	Parous, 6 pouch young.
5/6 east	Spring/summer	15/10/19	Pit	Calypotitis ruficauda	UK	NA	
5/6 east	Spring/summer	15/10/19	Small Elliot	FF Melomys	M	56g?	Weight may not be accurate
5/6 east	Spring/summer	15/10/19	Small Elliot	Brown Antechinus	F	27g	Parous, 5 pouch young.
8 east	Spring/summer	15/10/19	Small Elliot	FF Melomys	M	74g	
9/10 west	Spring/summer	15/10/19	Small Elliot	FF Melomys	M	54g	
9/10 west	Spring/summer	15/10/19	Small Elliot	FF Melomys	M	77g	
9/10 west	Spring/summer	15/10/19	Cage	SEBtP	F	NA	Young adult
11/12 east	Spring/summer	15/10/19	Small Elliot	FF melomys	M	80	
11/12 west	Spring/summer	15/10/19	Large Elliot	Sugar Glider	F	100	
11/12 west	Spring/summer	15/10/19	Pitfall	Lampropholis delicata x 4	UK	UK	
5/6 west	Spring/summer	16/10/19	Pit	Blackish blind snake	NA	Na	
5/6 west	Spring/summer	16/10/19	Pit	S Dwarf Crowned Snake	NA	NA	
5/6 west	Spring/summer	16/10/19	Pit	Brown Antechinus	F		Parous
5/6 east	Spring/summer	16/10/19	Small Elliot	FF Melomys		70g	
8 west	Spring/summer	16/10/19	Small Elliot	FF Melomys	M	96g	
9/10 east	Spring/summer	16/10/19	Cage	SEBtP	M	NA	
9/10 west	Spring/summer	16/10/19	Small Elliot	Black Rat	F	90g	
11/12 east	Spring/summer	16/10/19	Pitfall	P. Coriacea	UK	UK	
5/6 west	Spring/summer	17/10/19	Small Elliot	Brown Antechinus	F	26g	Parous, 7 pouch young
5/6 east	Spring/summer	17/10/19	Small Elliot	Black Rat	M	NA	Euthanised
5/6 east	Spring/summer	17/10/19	Small Elliot	FF Melomys	M	77g	
8 east	Spring/summer	17/10/19	Small Elliot	FF Melomys	M	82g	
8 east	Spring/summer	17/10/19	Large Elliot	FF Melomys	M	64g	
8 west	Spring/summer	17/10/19	Small Elliot	Brown Antechinus	F	33	Parous
8 west	Spring/summer	17/10/19	Small Elliot	FF Melomys	F	64g	
1 west	Spring/summer	18/10/19	Large Elliot	Black Rat	M	NA	Euthanised
2 west	Spring/summer	18/10/19	Pit	Swamp snake	NA	NA	
2 east	Spring/summer	18/10/19	Small Elliot	FF Melomys			
2 east	Spring/summer	18/10/19	Small Elliot	FF Melomys			
2 east	Spring/summer	18/10/19	Small Elliot	Brown Antechinus	F		
2 west	Spring/summer	18/10/19	Pit	L delicata x 5			
3 west	Spring/summer	18/10/19	Pit	P. coriacea	NA	NA	
7 west	Spring/summer	18/10/19	Small Elliot	Sugar Glider	M	120	
7 west	Spring/summer	18/10/19	Pitfall	House mouse	F	30	
7West	Spring/summer	18/10/19	Small Elliot	Brown Antechinus	F	30	With 7 young
7West	Spring/summer	18/10/19	Small Elliot	FF melomys	M	80	
4 west	Spring/summer	18/10/19	Small Elliot	FF melomys	F	65	
4 west	Spring/summer	18/10/19	Large Elliot	FF melomys	M	85	

4 east	Spring/summer	18/10/19	Small Elliot	FF melomys	M	65	
2 east	Spring/summer	18/10/19	Small Elliot	Brown Antechinus			
3 east	Spring/summer	18/10/19	Pit	Swamp snake			
1 west	Spring/summer	19/10/19	Small Elliot	Yellow-throated scrubwren			
2 west	Spring/summer	19/10/19	Small Elliot	Bush Rat	M	149	
2 east	Spring/summer	19/10/19	Small Elliot	Brown Antechinus	F	20	Parous with 2 young
2 east	Spring/summer	19/10/19	Small Elliot	FF Melomys	M	49	
3 east	Spring/summer	19/10/19	Pit	Red-backed toadlet			
7 west	Spring/summer	19/10/19	Small Elliot	FF melomys	M	85	
4West	Spring/summer	19/10/19	Small Elliot	Black Rat	F	95	
4 west	Spring/summer	19/10/19	Small Elliot	Black Rat			Escaped
4East	Spring/summer	19/10/19	Cage	Northern brown bandicoot	Na	Na	Minor injuries
3West	Spring/summer	19/10/19	Pitfall	Lampropholis delicata			
3West	Spring/summer	19/10/19	Cage	Northern brown bandicoot			Escaped
1 east	Spring/summer	20/10/19	Small Elliot	Brown Antechinus	F	31g	Parous with 8 pouch young
1 west	Spring/summer	20/10/19	Cage	SEBtP x 2	F		Mother and back young
2 east	Spring/summer	20/10/19	Small Elliot	Brown Antechinus	F		Parous with 7 young
2 east	Spring/summer	20/10/19	Small Elliot	Bush Rat		146g	
2 east	Spring/summer	20/10/19	Cage	Northern brown bandicoot			
2 east	Spring/summer	20/10/19	Pit	C. ruficauda			Check ID
7 west	Spring/summer	21/10/19	Cage	SEBtPoss	M		
7 west	Spring/summer	21/10/19	Small Elliot	Brown Antechinus	F		With young
7 west	Spring/summer	21/10/19	Small Elliot	FF melomys	NA	85	
4 west	Spring/summer	21/10/19	Large Elliot	FF melomys	NA		
4 east	Spring/summer	21/10/19	Small Elliot	FF melomys	NA		

Table C 7: Results from adjacent habitat hair-funnel analysis (14 days) during spring/summer and winter during year two of operational phase monitoring WC2NH, 2020.

Site	Side and bait (O=oats S=Sardines)	Winter 2020		
		Install Date	Collect date	Fauna
1	E-O	15/06/2020	22/06/2020	<i>Trichosurus sp.</i>
	E-S	15/06/2020	22/06/2020	
	W-O	15/06/2020	22/06/2020	<i>Trichosurus vulpecula, Mus musculus</i>

Site	Side and bait (O=oats S=Sardines)	Winter 2020		
		Install Date	Collect date	Fauna
	W-S	15/06/2020	22/06/2020	
2	E-O	15/06/2020	22/06/2020	<i>Antechinus spp, Vulpes vulpes</i>
	E-S	15/06/2020	22/06/2020	
	W-O	15/06/2020	22/06/2020	<i>Rattus sp.</i>
	W-S	15/06/2020	22/06/2020	<i>Rattus sp.</i>
3	E-O	15/06/2020	22/06/2020	
	E-S	15/06/2020	22/06/2020	
	W-O	15/06/2020	22/06/2020	<i>Mus musculus</i>
	W-S	15/06/2020	22/06/2020	
4	E-O	15/06/2020	22/06/2020	<i>Rattus sp.</i>
	E-S	15/06/2020	22/06/2020	
	W-O	15/06/2020	22/06/2020	<i>Rattus fuscipes(probable)</i>
	W-S	15/06/2020	22/06/2020	<i>Rattus sp.</i>
6	E-O	15/06/2020	22/06/2020	
	E-S	15/06/2020	22/06/2020	
	W-O	15/06/2020	22/06/2020	
	W-S	15/06/2020	22/06/2020	
7	E-O	15/06/2020	22/06/2020	<i>Antechinus spp</i>
	E-S	15/06/2020	22/06/2020	
	W-O	15/06/2020	22/06/2020	<i>Antechinus sp., Rattus sp.</i>
	W-S	15/06/2020	22/06/2020	
8	E-O	15/06/2020	22/06/2020	<i>Trichosurus vulpecula, Rattus sp.</i>
	E-S	15/06/2020	22/06/2020	
	W-O	15/06/2020	22/06/2020	<i>Mus musculus</i>
	W-S	15/06/2020	22/06/2020	
9/10	E-O	15/06/2020	22/06/2020	<i>Trichosurus vulpecula, Antechinus sp.</i>
	E-S	15/06/2020	22/06/2020	<i>Trichosurus sp.</i>
	W-O	15/06/2020	22/06/2020	<i>Rattus sp.</i>
	W-S	15/06/2020	22/06/2020	
11/12	E-O	15/06/2020	22/06/2020	<i>Mus musculus</i>
	E-S	15/06/2020	22/06/2020	
	W-O	15/06/2020	22/06/2020	<i>Mus musculus</i>
	W-S	15/06/2020	22/06/2020	
1	E-1	14/11/2019	28/11/2019	<i>Trichosurus sp.</i> (Brush-tail Possum)
	E-2	14/11/2019	28/11/2019	
	W-1	14/11/2019	28/11/2019	<i>Trichosurus sp.</i> (Brush-tail Possum)
	W-2	14/11/2019	28/11/2019	
2	E-1	14/11/2019	28/11/2019	<i>Antechinus sp. Melomys cervinipes</i> (Fawn-footed Melomys)
	E-2	14/11/2019	28/11/2019	
	W-1	14/11/2019	28/11/2019	
	W-2	14/11/2019	28/11/2019	<i>Rattus fuscipes</i> (Southern Bush-rat)
3	E-1	14/11/2019	28/11/2019	<i>Wallabia bicolor</i> (Swamp Wallaby)
	E-2	14/11/2019	28/11/2019	
	W-1	14/11/2019	28/11/2019	
	W-2	14/11/2019	28/11/2019	<i>Perameles nasuta</i> (Long-nosed Bandicoot)
4	E-1	14/11/2019	28/11/2019	<i>Isodon macrourus</i> (Northern Brown Bandicoot)
	E-2	14/11/2019	28/11/2019	
	W-1	14/11/2019	28/11/2019	<i>Rattus fuscipes</i> (Southern Bush-rat) <i>Isodon obesulus</i> (Southern Brown Bandicoot)
	W-2	14/11/2019	28/11/2019	<i>Rattus fuscipes</i> (Southern Bush-rat)
6	E-1	14/11/2019	28/11/2019	<i>Melomys cervinipes</i> (Fawn-footed Melomys)
	E-2	14/11/2019	28/11/2019	
	W-1	14/11/2019	28/11/2019	<i>Rattus fuscipes</i> (Southern Bush-rat)
	W-2	14/11/2019	28/11/2019	<i>Rattus fuscipes</i> (Southern Bush-rat)
7	E-1	14/11/2019	28/11/2019	<i>Melomys cervinipes</i> (Fawn-footed Melomys)
	E-2	14/11/2019	28/11/2019	
	W-1	14/11/2019	28/11/2019	

Site	Side and bait (O=oats S=Sardines)	Winter 2020		
		Install Date	Collect date	Fauna
8	W-2	14/11/2019	28/11/2019	<i>Perameles nasuta</i> (Long-nosed Bandicoot)
	E-1	14/11/2019	28/11/2019	
	E-2	14/11/2019	28/11/2019	<i>Trichosurus sp.</i> (Brush-tail Possum)
	W-1	14/11/2019	28/11/2019	
9/10	W-2	14/11/2019	28/11/2019	<i>Trichosurus sp.</i> (Brush-tail Possum)
	E-1	14/11/2019	28/11/2019	
	E-2	14/11/2019	28/11/2019	<i>Trichosurus sp.</i> (Brush-tail Possum)
	W-1	14/11/2019	28/11/2019	<i>Rattus sp.</i>
11/12	W-2	14/11/2019	28/11/2019	<i>Trichosurus sp.</i> (Brush-tail Possum) <i>Rattus rattus</i> (Black Rat)
	E-1	14/11/2019	28/11/2019	<i>Melomys cervinipes</i> (Fawn-footed Melomys)
	E-2	14/11/2019	28/11/2019	
	W-1	14/11/2019	28/11/2019	<i>Rattus rattus</i> (Black Rat)
	W-2	14/11/2019	28/11/2019	

Table C 8: Exclusion fence inspection data collected during winter 2020.

Date	Issue number	Observer	Side	Issue identified	Easting	Northing	Priority	Comments
17/06/2020	1	OT	W	Flap not lining up/minor gaps	494429	6604870	Low	
17/06/2020	2	OT	W	Flap not lining up/minor gaps	494478	6605344	Low	
17/06/2020	3	OT	W	Flap not lining up/minor gaps	494478	6605963	Low	
17/06/2020	4	OT	W	Flap not lining up/minor gaps	494740	6605963	Low	
17/06/2020	5	OT	W	Tree overhanging	494828	6606124	Medium	

17/06/2020	6	OT	W	Flap	495539	6607023	Low	
17/06/2020	7	OT	W	Tree overhanging	495330	6607430	Medium	
17/06/2020	8	OT	W	Vine growing over fence	496079	6608187	Medium	
17/06/2020	9	OT	W	Tree leaning over	496150	6608288	Medium	
17/06/2020	10	OT	W	Gap at drop down	496152	6608299	Medium	
17/06/2020	11	OT	W	Gap at gate	496450	6608788	Medium	
17/06/2020	12	OT	W	Branch on fence	496463	6608842	Medium	
17/06/2020	13	OT	W	Fence base not secure	496517	6609031	Low	
17/06/2020	14	OT	W	gate gap	496517	6609225	Medium	
17/06/2020	15	OT	W	Gaps around drain/dropdown	496562	6609436	Low	
17/06/2020	16	OT	W	Gap around drain	496574	6609461	Low	
17/06/2020	17	OT	W	Unlocked gate under bridge	492218	6598858	High	Gate closed
17/06/2020	18	SR	E	small gap under drain flap	494568	6605414	Low	
17/06/2020	19	SR	E	small tree over fence	494798	6605926	Low	
17/06/2020	20	SR	E	gap around drain flap	494798	6605926	Low	
17/06/2020	21	SR	E	small holes in fence either side of pipe	495236	6606743	Low	
17/06/2020	22	SR	E	tree overhanging fence	495585	6607311	Medium	
17/06/2020	23	SR	E	small gap next to drain flap	495598	6607408	Low	
17/06/2020	24	SR	E	small gap under gate	495651	6607507	Low	
17/06/2020	25	SR	E	Frog fence not in contact with ground	495859	6607825	High	
17/06/2020	26	SR	E	Substantial regrowth from point going 100m north	496069	6608159	High	
17/06/2020	27	SR	E	Gap between gates	496194	6608159	Low	
17/06/2020	28	SR	E	Fence above C7 damaged due to car crash	496501	66087211	High	
17/06/2020	29	SR	E	Hole dug under fence	493338	6601774	High	
17/06/2020	30	SR	E	small tree over fence	492482	6599196	Medium	