

Preliminary Western Ringtail Possum and Brush-tailed Phascogale Habitat Assessment and Survey

Percy St, Cowaramup



Litoria Ecoservices
Environmental Assessment, Planning & Management

Prepared May 2020
by Litoria Ecoservices
for the Shire of Augusta
Margaret River

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1.0 INTRODUCTION

1.1 Background

Litoria Ecoservices (LE) was commissioned by the Shire of Augusta Margaret River to undertake a preliminary assessment of the potential for *Pseudocheirus occidentalis* (Western Ringtail Possum) (WRP) (listed as Critically Endangered under the Biodiversity Conservation Act 2016) and *Phascogale tapoatafa wambenger* (Brush-tailed Phascogale) (BTP) (listed as Conservation dependent Fauna under the Biodiversity Conservation Act 2016) to occur within a portion of the Percy St Road Reserve proposed for the road development/ extension.

The Shire of Augusta Margaret River applied to the Department of Water and Environmental Regulation (DWER) in January of 2020 to clear native vegetation. In assessing the application DWER determined the likely presence of WRP and BTP in or around the site and provided a request for further information in order to help assist in the assessment of the application.

1.2 Description of the proposal

The proposal involves the clearing of a small 8m wide portion (~ 0.028ha or 280m²) of native vegetation within the undeveloped portion of the Percy St/ Trainer St Road Reserve coupled with an adjoining 100m length of road widening and formalisation of the unsealed portion of Percy St resulting in the disturbance of vegetation within the existing road verge. The total area of the subject site is approximately 2100 m² most of which is completely devoid of native vegetation as it represents the existing developed portion of the Percy St Road Reserve.

1.3 Site Description

The site represents a mix of 100m of developed but unsealed road reserve and ~20m of undeveloped road reserve. The vast majority of the site represents an unsealed road devoid of vegetation. The remaining area contains a mix of Jarrah/ Marri forest and introduced plantings/ weed infestations coupled with isolated areas of diverse remnant understorey.

The site location is shown in Figure 1.

1.4 Assessment Objectives and Scope

The preliminary assessment was undertaken in May 2012, with the following objectives:

1. To provide an indication of the likelihood of WRP and BTP utilising the site;
2. An understanding of the WRP and BTP populations utilising the remnant bushland surrounding the subject site; and
3. To provide recommendations in relation to minimising impact on the species based on the findings of the preliminary Assessment.

1.5 Landform

The site is flat and subject to a high water table in Winter.

The site lies within the Cowaramup land system and the site as fall within the Cowaramup wet flats Phase (216CoCOw) – described as poorly drained flats and slight depressions with pale grey Mungite.

1.6 Hydrology

No water courses or springs were encountered during the survey although the existing verge of Percy street contains a minor drain. The area is poorly drained and subject to high groundwater levels during Winter.

1.7 Climate

Located in Western Australia's south-west, the area experiences a Mediterranean climate with hot dry summers and cool wet winters. The closest BOM Weather Observation site in Witchcliffe reports a (long term) average annual rainfall of 951mm with the majority of this rain falling between May and October.

1.8 Vegetation

The site vegetation is a mix of weed infested good to degraded condition native remnant Jarrah Marri forest and highly modified and degraded road verge with significant weed infestation with remnant individual native trees.

Augusta Margaret River Shire is situated within the South West Botanical Province of WA which is internationally recognised as a biodiversity hotspot. Within this, the site lies in the Boranup System of the Western Botanical subdistrict within the Darling Botanical District. The Western Botanical subdistrict spans from Cape Naturalist to Albany with Augusta/ Cape Leeuwin falling within the Boranup System. This broader system is described as Tall Forest of Karri (*Eucalyptus diversicolor*) on red earths and Forest of Jarrah (*Eucalyptus marginata*) and Marri (*Corymbia calophylla*) on the red and yellow podzolic soils. Extensive paperbark (*Melaleuca* spp.) and sedge swamps occur in the valleys and flood plains. (Beard 1990).

Locally the subject site's vegetation is mapped as:

Cowaramup wet (Cw2) – This complex is described as “Woodland of *Eucalyptus marginata* subsp. *marginata* - *Corymbia calophylla* and woodland of *E. marginata* - *C. calophylla* on slopes and low woodland of *Melaleuca preissana* - *Banksia littoralis* on depressions”. There is approximately 20.49% (1,364 ha) of the pre-European extent of this vegetation complex remaining.

This vegetation complex is considered **regionally significant** due to the limited extent remaining.

It should be noted that there is not low woodland of *Melaleuca preissana* - *Banksia littoralis* within the subject site as indicated by the broadscale mapping.

It should also be noted that high priority environmental weeds dominate much of the site. Blackwood (*Acacia melanoxylon*) and Flinders Range Wattle (*Acacia iteaphylla*) are quite dominant within the undeveloped portion of the Percy St Road Reserve. Sydney golden wattle (*Acacia longifolia*), Victorian teatree (*Leptospermum laevigatum*) and *Melaleuca quinquenervia* are common along the developed road verge.

2. METHODOLOGY

2.1 Scope of Work

This preliminary assessment has included the following elements:

- Desktop study to collate historical knowledge and existing and ongoing relevant reports;
- A site/ habitat assessment of the area proposed for clearing;
- Camera trapping within portions of the site; and
- Targeted spotlighting.

Limitations in the survey are acknowledged in that it is limited in scope, duration, detail and seasonality. If a detailed survey was undertaken or the site assessed at different seasons throughout the year, utilised invasive trapping methodologies, the fauna recorded for the property could be significantly expanded.

2.2 Desktop Review

The purpose of the desktop review was to gather existing information for the site and information on fauna records in the locality. In this instance this involved the following:

- DBCA Threatened and Priority Fauna Database (this utilised an approximate 10km buffer surrounding the survey area); and
- A review of the database of records from the Nature Conservation Margaret River Region's Citizen Science Western Ringtail Possum surveys which includes a transect immediately east of the site.

The Nature Conservation Western Ringtail Possum Citizen Science project involves 12 trained teams of two volunteer surveyors heading out and surveying twelve ~1km transects located between Cowaramup and Flinders Bay under a set methodology. The project involves four monitoring months across the year spread across the four seasons. Each monitoring month involves three one hour surveys of each 1km transect by a different pairing of volunteer surveyors.

These sources were used to gain an understanding of the existing WRP and BTP records and population size around the site.

2.3 Reconnaissance Survey and Habitat Assessment

An initial site visit including habitat feature observations and records of indications of *Pseudocheirus occidentalis* (Western Ringtail Possum or WRP) (primarily drey presence and observations of scat) and *Phascogale tapoatafa wambenger* (Brush-tailed Phascogale or BTP) (the two species which are the focus of this targeted assessment) was made on 1st May 2020. This assessment covered the entire subject area and given the small nature of the subject site allowed assessment of it in detail.

2.4 Camera trapping

The camera trapping utilised one one Ltl Acorn PIR (Passive Infra-Red) cameras) over a combined 8 trapnights/ days. The trap was set up on the western edge of the subject site in the undeveloped portion of the Percy Street Road Reserve.

2.5 Spotlighting

Three nights of spotlighting survey were undertaken using a H14R.2 1000lm LED Lenser headtorch on the nights of 1, 7 and 11 May 2020. The surveys utilised a transect covering the site and adjoining remnant vegetation to the east, north, south and west of the site. The total transect length was approximately 1.5km. It was surveyed by an experienced surveyor with over 150 hours experience undertaking similar surveys. The survey was undertaken at a speed of approximately 1km per hour covering both sides of the transect where suitable vegetation exists. Observations of possums were recorded noting GPS coordinates, possum species, number of individuals, approximate height of record, species of tree found in and activity when initially spotted.

3. FAUNA AND HABITAT ASSESSMENT

3.1 Variables influencing the assessment

The following variables which may influence the assessment are documented in table 1.

Table 1. Variables Associated with the Assessment

Variable	Details
Experience levels and resources	The scientist that undertook the assessment was regarded as suitably qualified for the nature of assessment undertaken: Drew McKenzie – Ecologist Has over 16 years experience undertaking ecological assessments in both South East Queensland and South West WA including Level 1 assessment. Over 13 years of experience has focused on ecological assessment and management within the Capes region.
Scope: sampling methods/ intensity	No limitations with regard to scope. Given the extremely small nature of the subject site, the entire site was able to be surveyed and assessed thoroughly.
Sources of Information	Documented information regarding the site and nearby surrounds was not considered limiting with respect to the assessment. The Capes region has been the focus of a number of targeted biological surveys and the assessment was able to utilise a number of relevant databases and local records.
Timing, weather, season	The survey was undertaken during Autumn 2020. The survey was undertaken during a mix of wet and clear weather typical of Autumn conditions within the Capes. Surveying throughout the year would be preferable as population sizes can fluctuate seasonally as can their habitat utilisation.
Disturbances	No disturbances such as fire or clearing had recently occurred on or adjacent to the site.
Access	No limitations were encountered with respect to access to and through the site.

3.2 Desktop Review

The following provides results of the desktop review.

3.2.1 Database Searches and existing information

A search of the DBCA threatened species database accessed via the Shire of Augusta Margaret River highlighted the following records of target species within a 2km radius of the sight:

- 13 records of Brush-tailed Phascogale (*Phascogle tapoatafa wambenger*) dating back to 1960; and
- 22 records of Western Ringtail Possum (*Pseudocheirus occidentalis*) dating back to 2012.

3.2.2 Citizen Science Survey Records

At the time of the preparation of this assessment the Nature Conservation Western Ringtail Possum Citizen Science project had conducted seven quarterly surveys across a 21 month period. One of the twelve transects surveyed as part of this project is of particular relevance and is referred to as the ‘Cowaramup’ transect and is located on the Wadandi Trail immediately east of and extending both north and south of the subject site. Seventeen individual 1km surveys have been conducted of this transect and the locations of possums recorded during these surveys are shown in Figure 4. The results can be summarised as follows:

Table 2. Summary of the Citizen Science observations made during the 17 surveys of the adjacent ‘Cowaramup’ transect.

Species	No. of Sightings	Individuals
Western Ringtail Possum	30	37
Brushtail Possum	12	15
Possum sp. (Unidentifiable)	1	2
Brush tailed Phascogale	1	1

3.2.3 Connectivity

It is noted that the site is directly connected to a small patch of good to very good condition remnant vegetation to the west and a linear patch of remnant vegetation forming the Wadandi Trail reserve to the east. The South West Regional Ecological Linkages project classified the connectivity value of vegetation throughout the South West. Under the mapping produced through this project, the remnant vegetation through the site has also been identified as 1a – with an edge touching or <100m from a linkage (the highest level of proximity to an axis line).

3.3 Results of the Reconnaissance Survey/Habitat Assessment

The reconnaissance survey on 1st May identified the following features of the site:

- *Pseudocheirus occidentalis* (Western Ringtail Possum) scat was observed on site in at least two locations (locations shown within Figure 3); ;
- A *Pseudocheirus occidentalis* (Western Ringtail Possum) drey was observed within a Victorian Tea Tree (*Leptospermum laevigatum*). Whilst not occupied at the time of the assessment it was in good/fair condition and it was considered that it may still be utilised intermittently. (location shown within Figure 3);
- The presence of multiple preferred food trees of WRP within the subject site including *Agonis flexuosa*, *Corymbia callophylla*, *Eucalyptus marginata*, *Acacia longifolia**, *Leptospermum laevigatum** and *Melaleuca quinqueneriva**;
- A large potentially hollow bearing marri (*Corymbia callophylla*) tree occurs on the north western corner of the undeveloped Percy St Road Reserve – it is understood that this will be retained and is not part of the clearing proposal;
- *Degraded to good condition* remnant vegetation within the undeveloped portion of Percy St;
- *Largely degraded to completely degraded vegetation* along the developed Percy St verge with some isolated pockets of good vegetation.

3.4 Camera Trapping Results

The camera trapping did not record any observations of BTP or WRP.

It is noted that additional survey effort or surveying during different seasons or using a baited camera trap may provide different results.

3.5 Spotlighting Results

The results from the spotlighting undertaken on the nights of 1st, 7th and 11th May 2020 are provided as Appendix 1 and summarised in the Table 2 below.

Table 3. Summary of the records made over the entire ~1.5km transect within and around the subject site during the 3 surveys nights.

Species	No. of Sightings	Individuals*
Western Ringtail Possum	17	20
Brushtail Possum	9	12
Brush -tailed Phascogale	0	0

*Note: This number is highly unlikely to represent the actual number of different individuals recorded during the survey as in some instances it is likely that the same possum was recorded three times on each of the survey nights.

Table 4. Summary of the records made within the subject site during the 3 surveys.

Species	No. of Sightings	Individuals*
Western Ringtail Possum	4	5
Brushtail Possum	2	4
Brush-tailed Phascogale	0	0

The locations of these observations across the transect are mapped in Figure 3.

4. DISCUSSION

4.1 Significant Species

Western Ringtail Possum

The assessment highlighted the presence of Western Ringtail Possums (WRP) in and around the subject site. This was evidenced by the presence of scat, dreys, and spotlighting records. The observation of juveniles within the survey transect and within subject area suggests that the area is likely to represent breeding habitat. It is also noted Sighting 1 of the spotlighting on the 11th May observed a WRP individual moving through the site from east to west.

Brush-tailed Phascogale

The site and habitat assessment concluded that the site and its vegetation structure and floristics would be suitable to support Brush-tailed Phascogale (BTP), however, no sightings or direct evidence of BTP were recorded during the site work. Given the wealth of previous recorded sightings on the DBCA database within 2km, the recent citizen science record within 500m of the site and anecdotal (unconfirmed) accounts from landholders neighbouring the subject site it considered highly likely that the site supports a population of BTP albeit probably low density.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1 Findings

Key findings of the assessment and spotlighting effort are as follows:

1. The critically endangered Western Ringtail Possum was confirmed to utilise the subject site through scat, drey and spotlighting records;
2. Although the field work and duration of the assessment were insufficient to assess population size, it is noted that relative to the surrounding areas and other sites within the Capes region:
 - the vegetation within the subject site and the contiguous native vegetation to the west and north recorded a moderate number of WRP sightings; and
 - the contiguous remnant vegetation east of the subject site through to the Wadandi Trail reserve north of Sunset Drive recorded a very low number of WRP sightings; and
 - the contiguous remnant vegetation east of the subject site through to the Wadandi Trail reserve north of Sunset Drive recorded a moderate number of WRP sightings.
3. Although not recorded during the course of this assessment it is considered highly likely that the Conservation Dependent Brush tailed Phascogale utilises the subject site;
4. Whilst the proposal will reduce confirmed WRP habitat within the area and potentially impact connectivity across small remnants, given:
 - the small scale of the proposed clearing;
 - the potential for minimising the clearing footprint through pruning and retention of adjacent large trees; and
 - extensive confirmed WRP habitat within the local vicinity (e.g. Wadandi Track), it is considered that the proposal is unlikely to have a significant impact on WRP or BTP populations in the area.

5.2 Recommendations

Management recommendations to protect and enhance the identified fauna and habitat values of the property include:

1. Minimise the clearing footprint where ever possible utilising pruning over clearing.
2. Where possible maintain canopy connectivity across Percy St by retention of large trees on the edge of the road'
3. Schedule any clearing activities outside of breeding periods for conservation significant fauna in order to reduce potential disturbance or stress to breeding animals;
4. Ensure hygiene management protocols are followed to address the potential spread and introduction of diseases such dieback and environmental weeds into the site. (Especially at the currently undeveloped portion of Percy St which contains a number of dieback susceptible species); and
5. Ensure that any clearing occurs in strict accordance with the DBCA Procedures to Minimise the Risk to Western Ringtail Possums during vegetation clearing and building demolition clearing protocols including the presence of a fauna spotter and handler on site to manage any disturbed animals (See Appendix 3).

6. REFERENCES

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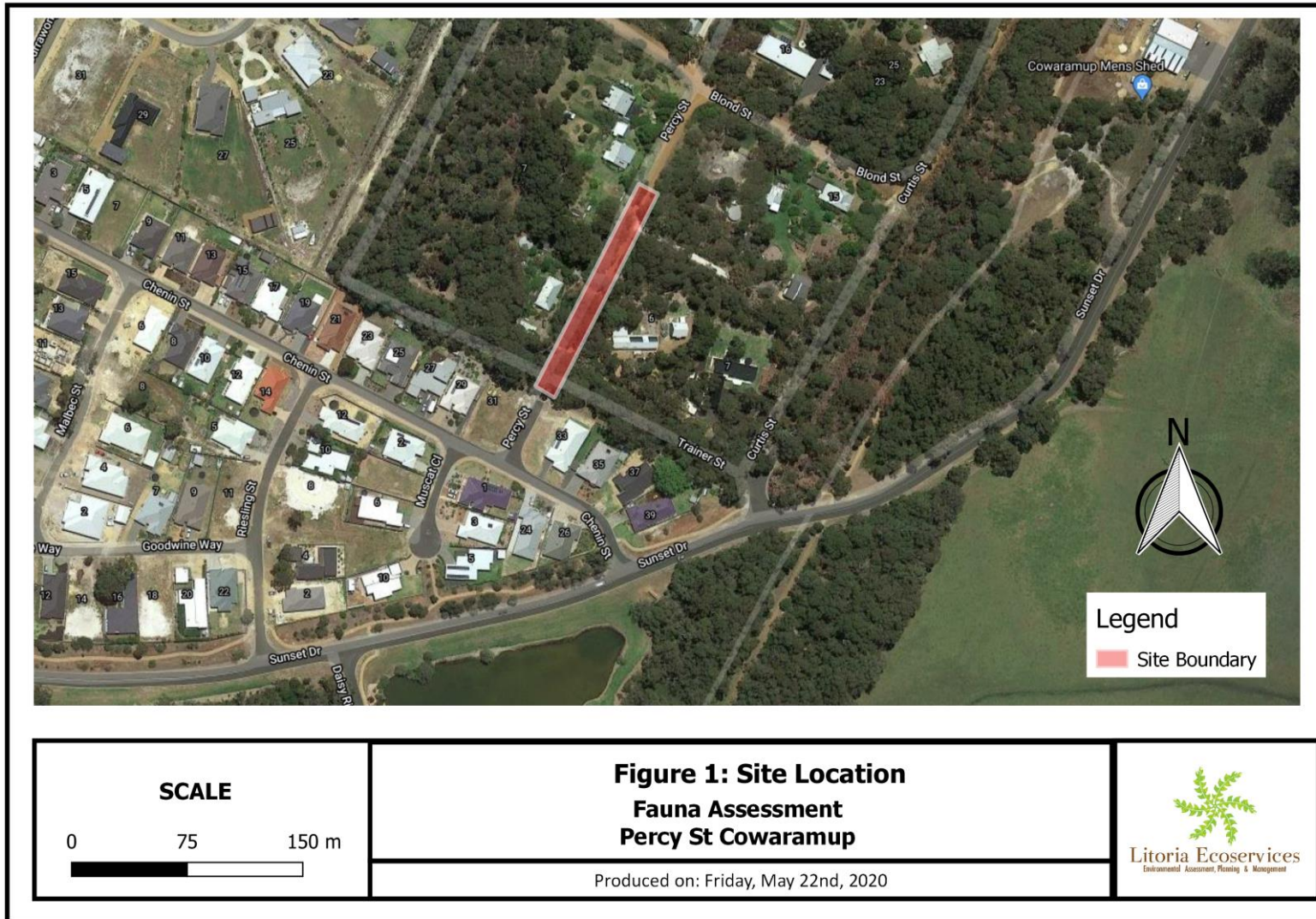
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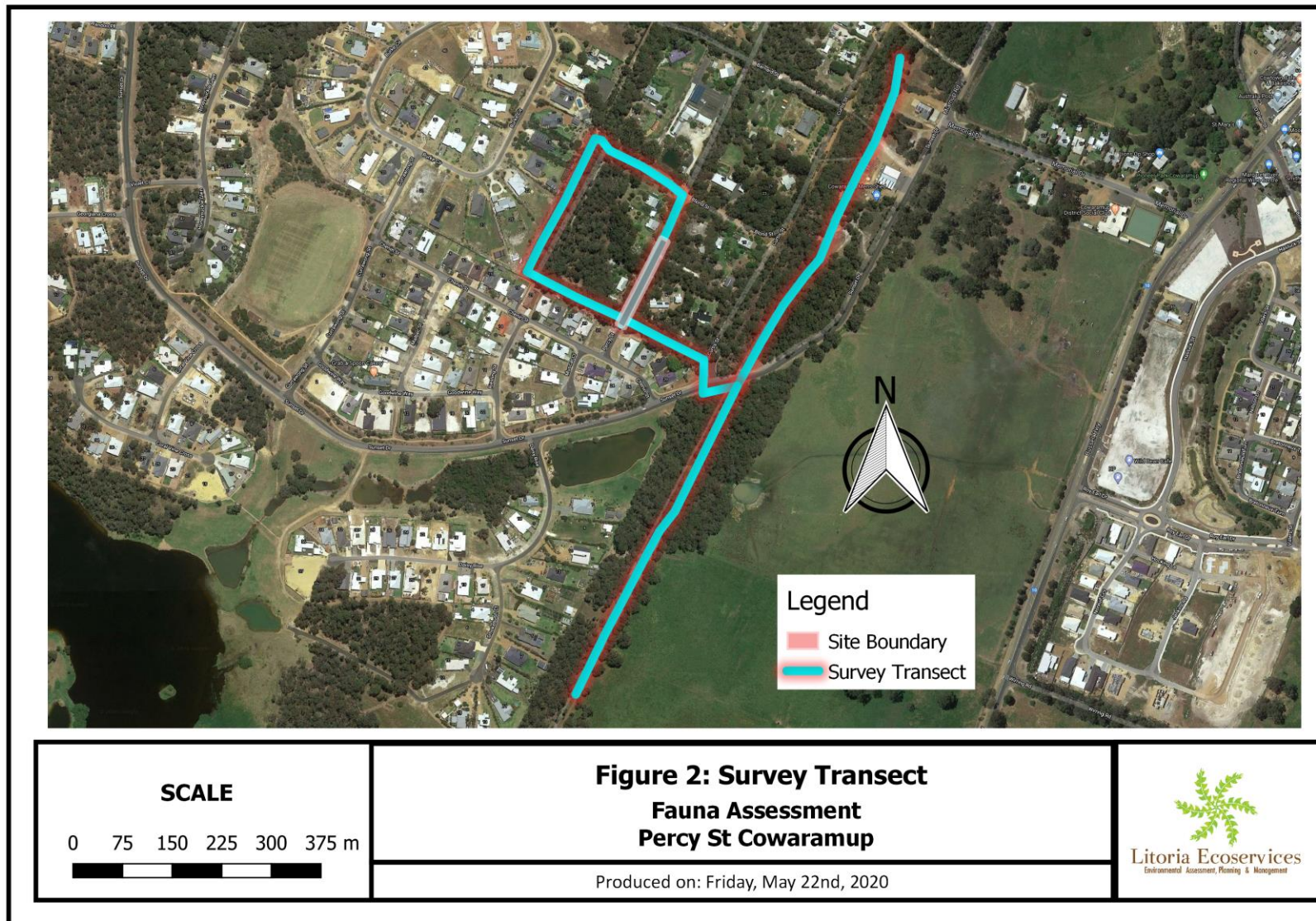
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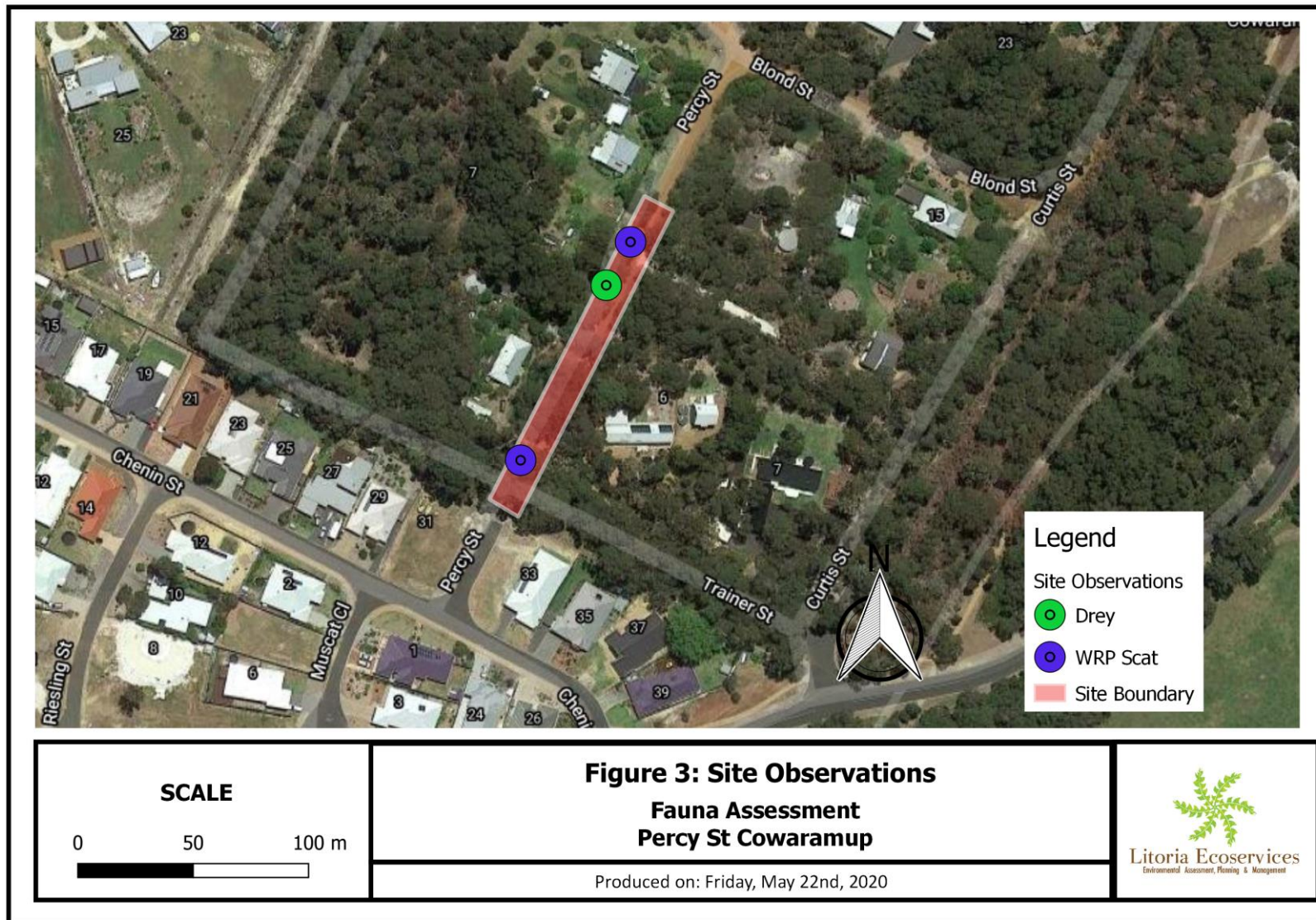
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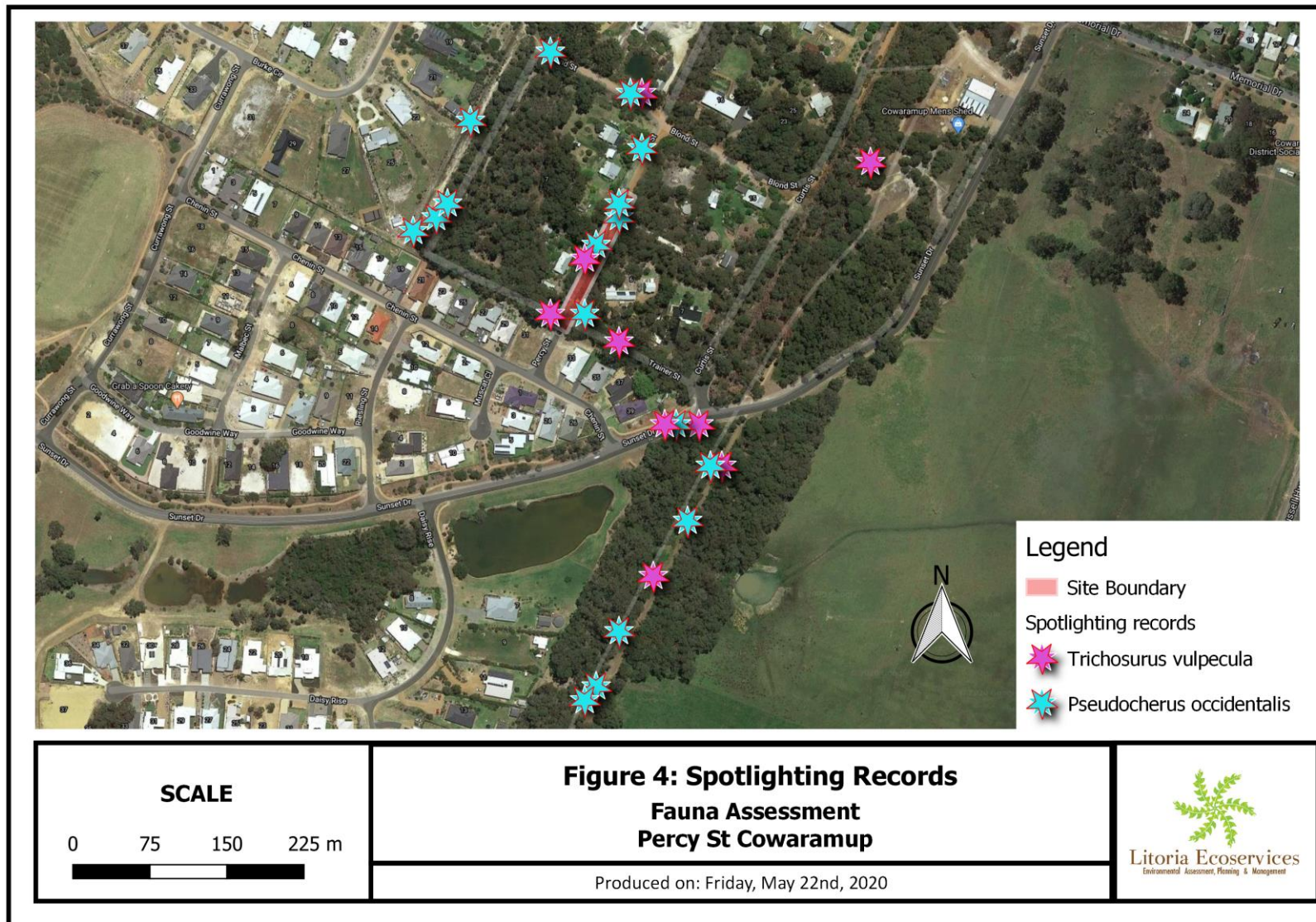
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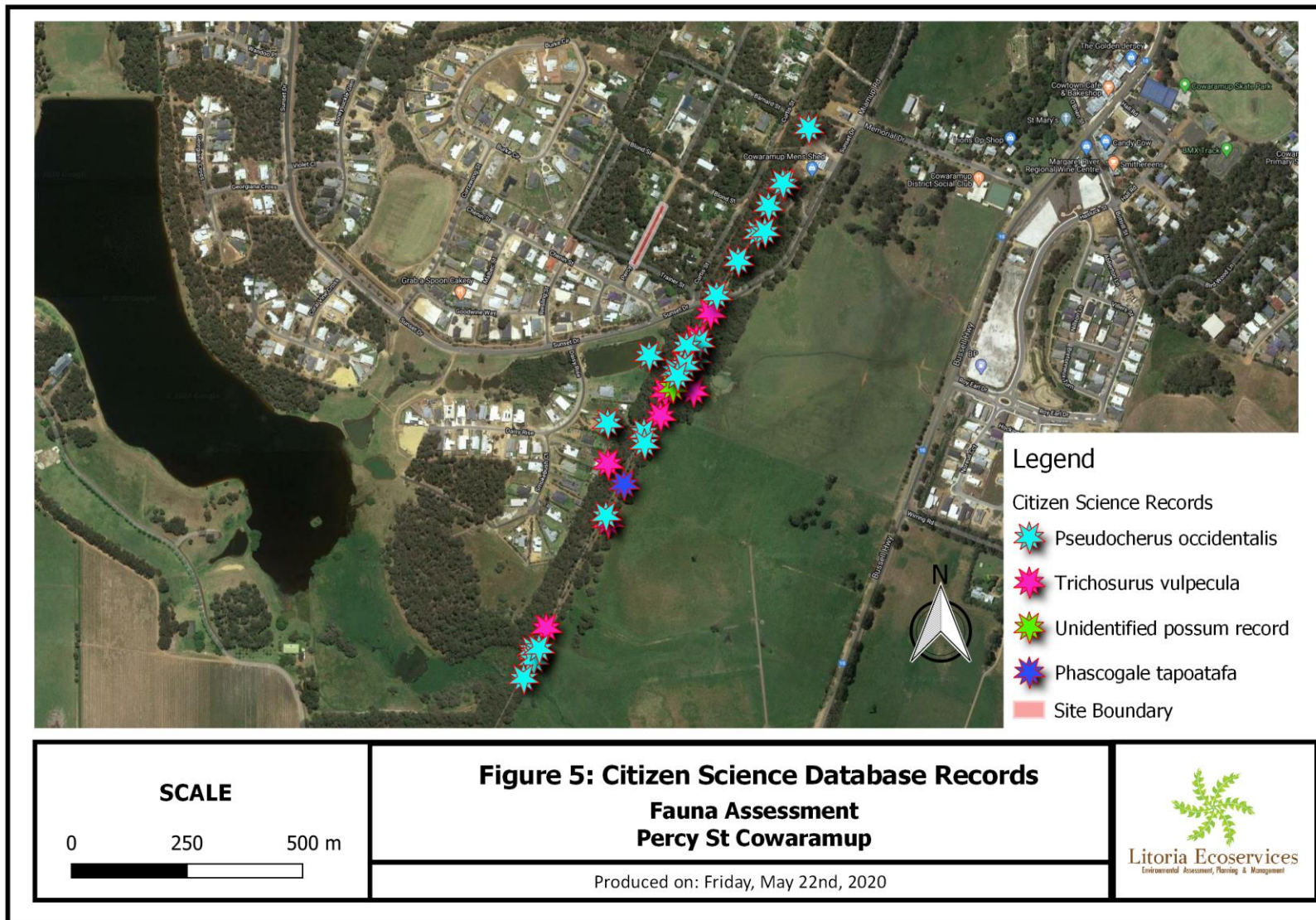
FIGURES











APPENDIX 1: SPOTLIGHTING OBSERVATION RECORDS

SPOTLIGHTING OBSERVATION RECORD 1:

Site: Percy St Transect Cowaramup **Date:** 1/05/2020 **Observer:** Drew McKenzie

Wind: CALM **Moon Phase:** First 1/4 **Cloud** (¹/₈): 50% **Rain:** No **Start:** 7:35 PM

Finish: 8:55 PM **Total Dist:** ~1.5 km **Speed:** ~1km/hr

Record No.	Time	Species	# Ads	Juv.	Plant sp occupied	Ht (m)	Comments
1	7:40	WRP		1	<i>Melaleuca quinquenervia*</i>	5	
2	7:45	WRP	1	1	<i>Agonis flexuosa</i>	5	
3	7:50	Brush-tail Possum	1		<i>Agonis flexuosa</i>	2	
4	8:00	WRP	1		<i>Eucalyptus marginata</i>	8	
5	8:37	Brush-tail Possum	1		<i>Eucalyptus marginata</i>	10	
6	8:45	WRP		1	<i>Eucalyptus marginata</i>	10	
7	9:00	Brush-tail Possum	1	1	<i>Corymbia calophylla</i>	5	

SPOTLIGHTING OBSERVATION RECORD 2:

Site: Percy St Transect Cowaramup **Date:** 7/05/2020 **Observer:** Drew McKenzie

Wind: 10- 15knots **Moon Phase:** New **Cloud** (¹/₈): 100% **Rain:** Heavy Shower

Start: 6:35 PM

Finish: 8:00 PM **Total Dist:** 1.5km km **Speed:** ~1km/hr

Record No.	Time	Species	# Ads	Juv.	Plant sp occupied	Ht (m)	Comments
1	6:48	WRP		1	<i>Corymbia calophylla</i>	8	
2	6:55	WRP	1	1	<i>Corymbia calophylla</i>	8	
3	7:00	WRP	1		<i>Corymbia calophylla</i>	15	
4	7:10	Brushtail Possum	1		<i>Corymbia calophylla</i>	12	
5	7:14	WRP		1	<i>Corymbia calophylla</i>	12	
6	7:16	Brushtail Possum	1		<i>Corymbia calophylla</i>	15	
7	7:34	Brushtail Possum	1		<i>Corymbia calophylla</i>	12	
8	7:48	WRP	1		<i>Corymbia calophylla</i>	15	
9	7:56	WRP	1		<i>Corymbia calophylla</i>	15	

SPOTLIGHTING OBSERVATION RECORD 3:

Site: Percy St Transect Cowaramup **Date:** 11/05/2020 **Observer:** Drew McKenzie

Wind: < 5knots **Moon Phase:** Full - 3rd 1/4 **Cloud** (¹/₈): <5% **Rain:** None **Start:**
6:35 PM

Finish: 7:55 PM **Total Dist:** 1.5km **Speed:** ~1km/hr

Record No.	Time	Species	# Ads	Juv.	Plant sp occupied	Ht (m)	Comments
1	6:35	WRP	1		<i>Corymbia calophylla</i>	20	Travelling across the subject site.
2	6:40	WRP	1	1	<i>Corymbia calophylla</i>	10	
3	6:43	Brushtail Possum	1	1	<i>Eucalyptus grandis</i> *	20	
4	6:45	Brushtail Possum	1		<i>Agonis flexuosa</i>	10	
5	6:50	WRP	1		<i>Exotic garden species</i> *	4	
6	6:55	WRP	1		<i>Eucalyptus marginata</i>	8	
7	7:00	WRP	1		<i>Eucalyptus marginata</i>	10	
8	7:30	WRP	1		<i>Corymbia calophylla</i>	12	
9	7:35	Brushtail Possum		1	<i>Corymbia calophylla</i>	4	
10	7:37	WRP	1	1	<i>Eucalyptus marginata</i>	5	

APPENDIX 2: PHOTOS



Undeveloped portion of Percy St



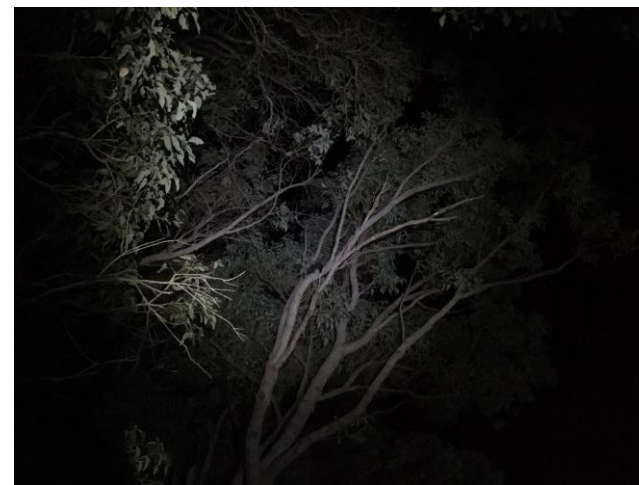
Percy St Road Verge



WRP Sighting, Adjoining Percy St Verge



Brush-tail Possum Sunset Dr



WRP Sighting west of Percy St