
**MINISTERIAL STATEMENT 1094 (COND. 6.1 - 6.3)
WESTERN RINGTAIL POSSUM SURVEY REPORT
(13 – 14 FEBRUARY 2023)**

**CAPECARE, URBAN AND COMMERCIAL NEW
DEVELOPMENT, AGED CARE NATURALISTE TERRACE,
DUNSBOROUGH, W.A.**

REPORT PREPARED FOR

**RAY VILLAGE AGED SERVICES INCORPORATED trading as CAPECARE
20 RAY AVENUE, BUSSELTON W.A. 6280**

ENDPLAN ENVIRONMENTAL

PO BOX 138, NORTH FREMANTLE, W.A. 6159

M: 0447 366460 / admin@endplanenvironmental.com.au

COPYRIGHT STATEMENT FOR:

MINISTERIAL STATEMENT 1094 (CONDITIONS 6.1 - 6.3)
WESTERN RINGTAIL POSSUM SURVEY REPORT (13 -14 FEBRUARY 2023)
Capecare, Urban and Commercial New Development, Aged Care
Naturaliste Terrace, Dunsborough, W.A.

Our Reference:

RVA294_06_V1

Copyright © 2007-2023

Wiske Pty Ltd trading as EndPlan Environmental
[ABN 23 684 573 524]

Except as permitted under the Commonwealth *Copyright Act 1968*, the whole or any part of this report may not be reproduced by any process, electronic or otherwise, without the specific written permission of the copyright owner, Wiske Pty Ltd trading as EndPlan Environmental. This includes micro-copying, photocopying or recording of any parts of the report. Neither may the information contained in this report be reproduced, transmitted or stored electronically in any form, such as in a retrieval system, without the specific written permission of Wiske Pty Ltd trading as EndPlan Environmental.

STATEMENT OF LIMITATIONS:

Scope of Services

This report has been prepared in accordance with the scope of work set out in the contract, or as otherwise agreed, between the Client and EndPlan Environmental* (EndPlan).

Reliance on Data

In preparing the report, EndPlan has relied upon data, surveys, analyses, designs, plans and other information provided by the Client and other individuals and organisations, most of which are referred to in the report ("the data"). Except as otherwise stated in the report, EndPlan has not verified the accuracy or completeness of the data. To the extent that the statements, opinions, facts, information, conclusions and/or recommendations in the report ("conclusions") are based in whole or part on the data, those conclusions are contingent upon the accuracy and completeness of the data. EndPlan will not be liable in relation to incorrect conclusions should any data, information or condition be incorrect or have been concealed, withheld, misrepresented or otherwise not fully disclosed to EndPlan.

Environmental Conclusions

Within the limitations imposed by the scope of work, the preparation of this report has been undertaken and performed in a professional manner, in accordance with generally accepted practices and using a degree of skill and care ordinarily exercised by reputable environmental consultants under similar circumstances. No other warranty, expressed or implied, is made.

Report for Benefit of Client

The report has been prepared for the benefit of the Client and no other party. EndPlan assumes no responsibility and will not be liable to any other person or organisation for or in relation to any matter dealt with or conclusions expressed in the report, or for any loss or damage suffered by any other person or organisation arising from matters dealt with or conclusions expressed in the report (including without limitation matters arising from any negligent act or omission of EndPlan or for any loss or damage suffered by any other party relying upon the matters dealt with or conclusions expressed in the report). Other parties should not rely upon the report or the accuracy or completeness of any conclusions and should make their own enquiries and obtain independent advice in relation to such matters.

DOCUMENT CONTROL

Document Title: Ministerial Statement 1094 (Conditions 6.1 – 6.3)
Western Ringtail Possum Survey Report (13 – 14 February 2023)
Capecare, Urban and Commercial Development, Naturaliste Terrace, Dunsborough

Revision	Date	Description	Prepared	Reviewed
RVA294_06_draft	23/03/2023	Draft for Capecare review	B. van der Wiele	A. van der Wiele
RVA294_06_V1	26/04/2023	Issued to Capecare/DWER	B. van der Wiele	A. van der Wiele

EXECUTIVE SUMMARY

Armstrong Reserve is situated within the City of Busselton (City) and is located approximately 500 m north of the Dunsborough business centre and bounded by Armstrong Place to the south, Gifford Road to the east, residential housing to the north and Naturaliste Terrace to the west.

Ray Village Aged Services Incorporated trading as Capecare (Capecare) has developed a 1.28 ha portion of Armstrong Reserve, Naturaliste Terrace, Dunsborough (the development footprint; now Lot 600), for the purpose of constructing and operating an aged care facility (*Capecare Dunsborough*), with the balance gazetted into three lots, specifically:

- City of Busselton retaining vesting of Reserve 25339 (Lots 3000 and 601) for the purpose of 'Landscape Protection'; and
- Water Corporation retaining vesting of Reserve 40445 (Lot 258) for the purpose of 'Drainage'.

Ministerial Statement 926, allowing the project to commence, was published on the 21 January 2013, and subsequently updated with Ministerial Statement 1094 in March 2019.

Condition 6.1 of Ministerial Statement 1094 requires the submission of an Environmental Management Plan (EMP) for the remaining portion of Armstrong Reserve outside the Development Envelope to mitigate significant residual impacts of the proposal on a priority ecological community Dunsborough Swamp Forest.

Condition 6.2 of Ministerial Statement 1094 requires the EMP be prepared in consultation with the City and identifies specific aspects for inclusion and Condition 6.3 requires that Capecare implement the approved EMP.

The approved EMP (Endplan Environmental 2019) includes several commitments made by Capecare as part of the project approval as outlined in the EMP for Armstrong Reserve including but not limited to the conduct of twice annual surveys for the presence of *P. occidentalis* for **three** years following commencement of vegetation clearing.

This report presents the results of the monitoring survey of Armstrong Reserve (post clearing **year 3, survey 1**) conducted during the 13-14 February 2023 that comprised:

1. Daytime targeted search for evidence of WRPs (e.g., dreys, tree hollows, scats, individuals);
2. Nocturnal counts (two consecutive nights) to determine the distribution and abundance of Western Ringtail Possums (WRPs) within Armstrong Reserve; and
3. Preparation of a factual report (this report).

In relation to the survey findings:

- In addition to the 28 dreys/hollows reported during the second (S2) survey conducted in November 2022, two nesting structures (one drey and a circular nesting box), possibly suitable for nesting, were identified during the 13 February 2023 day-time survey that preceded the initial night-time spotlighting survey. Prospective nesting sites comprise a mixture of dreys, hollows and nesting boxes;
- Twenty-one WRP's were recorded during the evening of 13 February 2023 during excellent observation conditions;

- A further 13 WRP's were recorded on the evening of 14 February 2023 when conditions were overcast with occasional light rain;
- WRP's were observed to be in very good condition, generally stationary and closely associated with regrowth Peppermint (*Agonis flexuosa*) located on the boundaries of the reserve;
- Peppermint and vegetation in general within the reserve was observed to be in sound condition with dense leaf canopies; and
- No Brushtail Possums (*Trichosurus vulpecula hypoleucus*) were observed.

Observed WRPs ranged from juveniles or small females to mature breeding males. Territorial behaviour was observed among a number of mature males.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	II
1. INTRODUCTION	1
1.1 Background	1
1.2 Objectives	2
1.3 Scope of Works	2
2. METHODOLOGY	3
2.1 Field Survey Methodology	3
2.2 Survey Constraints	3
3. RESULTS	4
3.1 Vegetation Types	4
3.2 Weather Observations	4
3.3 Results	5
3.3.1 Drey Survey	5
3.3.2 Possum Survey Results	8
3.3.3 Other Observations	9
4. DISCUSSION	10
4.1 Summary of Previous Survey Findings	10
4.1.1 Surveys Conducted Prior to Capecare Development	10
4.1.2 Surveys Conducted Following Capecare Development	10
4.2 Survey Findings – February 2023	11
5. REFERENCES	13
FIGURES	
TABLES	
PLATES	
APPENDICES	

LIST OF FIGURES

Figure 1	Regional Location
Figure 2	Cadastre and Reserve Designations (in text)
Figure 3	Vegetation Mapping
Figure 4	February 2023 Survey Observed Drey and Possum Locations

LIST OF TABLES

Table 1	Survey Daily Weather, Cape Leeuwin (BOM Site- 009519)
Table 2	Listing and Summary Description of Dreys and Nesting Hollows 13-14 February 2023
Table 3	Listing and Summary Description of WRP Observed 13-14 February 2023

LIST OF PLATES

Plate 1	Large drey located at observation point D28
Plate 2	Stag located at observation point D04 prevalent in Marri Mixed Open Forest
Plate 3	Circular nest box (observation point D29)

LIST OF APPENDICES

Appendix 1	Authorisation to Take or Disturb Threatened Species (TFA 2022-0007)
-------------------	---

1. INTRODUCTION

1.1 Background

Ray Village Aged Services Incorporated trading as Capecare (Capecare) has developed a 1.28 ha portion of Armstrong Reserve, Naturaliste Terrace, Dunsborough (the development footprint) now designated as Lot 600.

The aged care facility, known as *Capecare Dunsborough*, is situated within the municipal boundary of the City of Busselton and is located approximately 500 m north of the business centre of Dunsborough. The facility is bounded by Armstrong Place to the south, Gifford Road to the east, residential housing to the north and Naturaliste Terrace and the remaining vegetated portion of Armstrong Reserve to the west (**Figure 1**).

The remaining vegetated portion of Armstrong Reserve has subsequently been gazetted into three separate Lots with City of Busselton retaining vesting of Reserve 25229 (Lots 3000 and 601) for the purpose of 'Landscape Protection' and the Water Corporation retaining vesting of Reserve 40445 (Lot 258) for the purpose of 'Drainage' (**Figure 2**).

Ministerial Statement 926, allowing the project to commence, was published on the 21 January 2013, and subsequently updated with Ministerial Statement 1094 in March 2019.

Condition 6.1 of Ministerial Statement 1094 requires the preparation of an Environmental Management Plan (EMP) for the remaining portion of Armstrong Reserve outside the Development Envelope to mitigate significant residual impacts of the proposal on a priority ecological community Dunsborough Swamp Forest. Specific concerns relating to fauna included impacts on:

1. ¹*Pseudocheirus occidentalis* (Western Ringtail Possum); and
2. *Ctenotus ora* (Coastal Plains Skink)

Condition 6.2 of Ministerial Statement 1094 requires the EMP be prepared in consultation with the City and identifies specific aspects for inclusion and Condition 6.3 requires that the approved EMP be implemented by Capecare.

Bushland outside of the development envelope is to be retained and managed in accordance with the Armstrong Reserve Environmental Management Plan (EMP) (Endplan Environmental 2019). The EMP has been prepared in consultation with the Department of Water and Environmental Regulation's (DWER) EIA Planning Branch, the City of Busselton and the Department of Biodiversity Conservation and Attractions (DBCA).

As part of the project's State environmental approvals, the approved EMP includes several commitments made by Capecare for Armstrong Reserve including, but not limited to, conducting twice yearly surveys for the presence of *P. occidentalis* (Western Ringtail Possum – WRP) for three years following commencement of vegetation clearing.

¹ The Western Ringtail Possum (*Pseudocheirus occidentalis*) is listed as Critically Endangered under the *Environment Protection and Biodiversity Conservation Act 1999* and the *WA Biodiversity Conservation Act 2016*

This report presents the results of the first sampling event (post-clearing **year 3, survey 1**) of Armstrong Reserve consistent with approval requirements. The survey was conducted over the period 13 - 14 February 2023

1.2 Objectives

To protect and conserve the Critically Endangered *P. occidentalis* by monitoring post-construction population status, specifically to determine within the limits of the survey the number and distribution of WRPs utilising Armstrong Reserve.

1.3 Scope of Works

The scope of work includes undertaking:

1. Daytime targeted search for evidence of WRPs (e.g., dreys, tree hollows, scats, individuals);
2. Nocturnal counts (two consecutive nights) to determine the distribution and abundance of WRPs within Armstrong Reserve; and
3. Preparation of a report (this report).

2. METHODOLOGY

2.1 Field Survey Methodology

The adopted methodology closely follows the recommended procedures and requirements of the 'Development Planning Guidelines' for a preliminary survey of WRPs' (Department of Environment and Conservation 2009) and is informed by methodology previously applied by fauna specialists operating on-site. A copy of the approval to conduct the survey is shown in **Appendix 1**.

A pre-survey identification of dreys and potential hollows was undertaken prior to night surveying, and locations mapped for subsequent reference. The nesting habitat survey comprised a review of sites previously identified during the post-clearing **year 2, survey 2** (Endplan Environmental, 2022 unpublished report: IBSA-2023-0029). Additional prospective sites identified during the identification of nesting habitats were added to the listing. Where known, the species of tree and tree height was recorded for each observation. A photograph was taken of each drey or tree with a hollow, and each drey categorised.

The diurnal search conducted on the 13 February 2023, involved a series of closespaced grid traverses (minimum 20m spacing) carried out on foot using a GPS enabled tablet and computer-based mapping programme (www.ozexplorer.com.au) for guidance and as a data recorder.

Nocturnal counts were undertaken on the 13 and 14 February 2023. The sampling procedure involved systematic searching of the entire Reserve by way of close spaced traverses and perimeter searches on foot, using a narrow-beamed halogen hand torches (Ikelite Super 8: www.ikelite.com/collections/pc-flashlights) to sight individual WRPs or their eye reflection. Torches were held at eye level and swept slowly side to side. Data and observations were recorded directly to the tablet.

2.2 Survey Constraints

The effectiveness of targeted WRP field surveys at Armstrong Reserve is impacted by topography, access, vegetation structure and composition. These factors, together with seasonal water within drainage features, limit spotlighting along defined lines especially in the central portion of the site. Western Ringtail Possum surveys within the Reserve are further complicated by contiguous tree canopies crossing lot boundaries and with it the home range of animals that may influence continuity of records.

Spotlighting surveys are of more limited use in dense vegetation that makes up the north, central and western portions of the Reserve as there is limited light penetration through the canopy.

During the period of this survey, drainage lines were dry. Results of the good growing conditions were evidenced by large quantities of vegetative (leaf) material within overstorey species, especially Coastal Peppermint (*Agonis flexuosa*). Significant quantities of leaf litter were observed to be accumulating, on the north-east boundary along Gifford Road, and in the *Melaleuca* dominated areas in the central north-west area of the Reserve.

Despite these limitations, it is considered that adequate searching was undertaken to assess the WRP population within the Reserve.

3. RESULTS

3.1 Vegetation Types

A detailed description of flora and vegetation within Armstrong Reserve is provided in specialist surveys conducted in Spring 2005, 2006 and 2007 (Coffey Environment 2008) and 2009 (Ecoscape 2010) and will not be repeated here. Knowledge of vegetation types is important in that the ability to detect the relative abundance of WRP within the Reserve is likely to vary between the different vegetation communities. As noted in the initial pre-clearing WRP survey report (Onshore Environmental 2019), and experienced in this monitoring event, the ease of detection of WRP within the Reserve is likely to vary between the different vegetation communities with more dense vegetation making detection more difficult (e.g., in the low-lying *Melaleuca raphiophylla* Low Open Forest).

In summary, the Reserve contains the following three distinct vegetation types²:

1. **CcAfMxOF** - *Corymbia calophylla*, *Agonis flexuosa* and mixed species Open Forest to Low Woodland occasionally over *Jacksonia furcellata* Tall Open Shrubland occasionally over *Acacia divergens*, *Acacia pulchella* and *Daviesia divaricata* Open Heath over *Xanthorrhoea preissii*, *Hibbertia hypericoides* and mixed species Open Low Heath to Low Shrubland over mixed Open Herbland and mixed Open to Very Open Sedgeland on dryland soils in a thin strip along the northern boundary as well as in the south-west corner of the site.
2. **AfCcErBILOF** - *Agonis flexuosa*, *Corymbia calophylla*, *Eucalyptus rudis* and *Banksia littoralis* Low Open Forest to Open Woodland over *Hakea varia*, *Jacksonia furcellata* and *Viminaria juncea* Tall Open Shrubland over Mixed Open Shrubland over *Hibbertia hypericoides* and *Xanthorrhoea* spp. Low Open Shrubland over *Mesomalaena tetragona* and mixed species Sedgeland over *Caesia micrantha* and *Conostylis aculeata* Very Open Herbland occurring at the transition from dryland to wetland soils in a thin strip near the northern boundary as well as in the south-east corner of the site.
3. **MrErAfLOF** - *Melaleuca raphiophylla*, *Eucalyptus rudis*, *Agonis flexuosa* Low Open Forest or Woodland over *Viminaria juncea*, *Hakea varia* Tall Open Shrubland over *Xanthorrhoea preissii* Low Open Shrubland to Low Open Heath over *Lepidosperma squamatum*, *Cyathochaeta avenacea*, *Tetraria capillaris* and mixed species Sedgeland on waterlogged (dampland) soils in the centre of the site extending from Naturaliste Terrace to Gifford Road.

The location of each vegetation type is shown on **Figure 3**.

3.2 Weather Observations

Annual rainfall measured at Cape Naturalist was above average during calendar year 2022. A prominent summer drought is evident, with below average to mean maximum and minimum temperatures during the summer period. Key meteorological measurements during the survey period are summarised in **Table 1** (over the page).

² Vegetation types are identified in Offshore Environmental (2019).

TABLE 1: Survey Daily Weather, Cape Leeuwin (BOM Site- 009519)

Date	Day	Temps		Rain	Evap	Sun	Max wind gust			9 am			3 pm		
		Min	Max				Dir	Spd	Time	Temp	RH	Cld	Dir	Spd	MSLP
		°C	°C	mm	mm	hours		km/h	local	°C	%	g th		km/h	hPa
11	Sa	14.8	25.0	0			S	59	16:25	21.8	43		ESE	20	1015.6
12	Su	13.4	26.0	0			SE	50	01:29	19.7	60		E	28	1017.0
13	Mo	14.6	28.4	0			SE	46	00:03	21.8	55		ESE	26	1014.5
14	Tu	16.6	25.5	0.2			SSW	41	07:56	21.5	59		SSW	22	1008.2
15	We	13.8	25.3	0.2			SSW	33	16:36	18.8	68		ESE	11	1011.3
16	Th	15.1	26.3	0			WSW	37	15:13	19.8	72		N	13	1014.1
17	Fr	18.3	26.3	0			SSW	52	18:39	21.6	72		ENE	13	1017.2

Source: BOM <http://www.bom.gov.au/climate/current/month/wa/archive/202202.summary>
 (accessed 19 Feb 2023)

Conditions during the survey were warm to hot days and moderate night conditions, with generally strong winds reflecting a summer pattern. Calm wind conditions dominated the night survey of 13 February 2023. Cloudy condition and light drizzle with gusting winds were present during the evening of 14 February 2023.

3.3 Results

3.3.1 Drey Survey

Twenty-eight WRP dreys or trees / stags with hollows and nesting boxes that could be used as a diurnal retreat were identified during the Year 2 S2 (1-2 November 2022) previously reported. In relation to the review of these sites and additional observations made during this survey:

- An additional drey was identified centrally in dense Peppermint adjacent the Gifford Road boundary (D29);
- A circular nesting box established on the south-central boundary within the development site was observed (D30).

While no bees were observed in the nesting box at D13, there was no evidence of WRP usage.

Western Ringtail Possum dreys, nesting boxes or trees / stags with hollows that may function as diurnal retreats during this sampling event are summarised in **Table 2** (over the page) and indicated in **Figure 2**.

TABLE 2: Listing and Summary Description of Dreys and Nesting Hollows 13 -14 February 2023

Obs. No.	Location ³		Description
	E	N	
D01	324273	6279333	Drey, good condition. 8 m AGL
D02	324266	6279339	Drey in <i>Corymbia calophylla</i> (Marri) at 10m AGL
D03	324221	6279374	Hollow Marri 10mAGL
D04	324245	6279408	Stag Hollow Marri 5mAGL. Stag partially collapsed (S2 survey, Nov 2022) and no longer viable
D05	324218	6279448	Hollow on Marri 7mAGL
D06	324112	6279403	Drey in <i>Melaleuca raphiophylla</i> (Swamp Paperbark) at 9mAGL
D07	324099	6279395	Drey in <i>Agonis flexuosa</i> (Peppermint) at 10mAGL
D08	324063	6279372	Drey in Swamp Paperbark 4mAGL
D09	324047	6279391	Hollow in standing Marri trunk
D10	324186	6279478	Hollows in Marri trunk (stag)
D11	324249	6279351	Hollow in Marri 10mAGL
D12	324025	6279440	Drey in Peppermint 10mAGL
D13	324115	6279463	Possum box in Peppermint 4mAGL.
D14	324100	6279489	Drey in Peppermint 12mAGL
D15	324137	6279494	Drey in Peppermint 14mAGL
D16	324238	6279450	Drey in Marri 10mAGL
D17	324243	6279408	Hollow in Marri 10mAGL
D18	324281	6279375	Hollow in Marri 5mAGL
D19	324305	6279333	Hollow in Marri 5mAGL
D20	324094	6279390	Hollow in Swamp Paperbark 1.5mAGL
D21	324043	6279400	Drey in Swamp Paperbark (6m AGL)
D22	324234	6279367	Drey Peppermint (4m AGL)
D23	324265	6279382	Drey in Swamp Paperbark (7m AGL)
D24	324191	6279459	Drey in Swamp Paperbark (6m AGL)
D25	324071	6279393	Drey in Swamp Paperbark (4m AGL)
D26	324157	6279435	Hollow in Swamp Paperbark (4m AGL)
D27	324210	6279460	Drey in Peppermint (6 m AGL)
D28	324161	6279500	Drey in Marri (xx m AGL)
D29	324100	6279371	Circular nesting box at about 5m A H D
D30	324267	6279400	Large drey 5m AGL in Peppermint

Examples of dreys, dead hollows (stags) and nest boxes observed within Armstrong Reserve are presented in **Plates 1 - 3** respectively. Extensive Quenda diggings were observed in the central-eastern portion of the Reserve.

³ All locations are in Zone 50 GDA94

PLATE 1: Large drey located at observation point D30



PLATE 2: Stag located at observation point D04 prevalent in Marri Mixed Open Forest

PLATE 3: Circular nest box (observation point D29)



3.3.2 Possum Survey

A total of 34 WRPs were observed over the sampling event, with 21 (P01 – P21) observed during the night of 13 February 2023 and 13 (P22 – P34) observed on the 14 February 2023 (refer to **Table 3**).

TABLE 3: Listing and Summary Description of WRP Observed 13 -14 February 2023

Obs.No.	Location ⁴		Description
	E	N	
S123-D1-P01-02	324213	6279351	2 WRP in <i>Agonis</i> (Peppermint) at approx. 5m. Feeding. Small adult. Light winds from south-east. Overstorey veg in good condition. Dense leaf following good winter rains.
S123-D1-P03	324267	6279399	WRP in large drey approx. 5m AGL in Peppermint.
S123-D1-P04	324248	6279415	Large WRP in Eucalypt at approx. 4m.
S123-D1-P05	324207	6279489	Large WRP in Peppermint at approx. 3m. Resting. Very good condition.
S123-D1-P06-07	324201	6279493	Large WRP in Peppermint at approx. 4m. Moving through branches. Second large WRP arrives and moves aggressively on the former. Fur flies!
S123-D1-P08	324193	6279503	Small WRP in Peppermint at approx. 5 m. Feeding.
S123-D1-P09	324167	6279522	Small WRP in spindly Peppermint at approx. 6 m. Feeding when first observed.
S123-D1-P10	324096	6279449	Mature WRP feeding in multi stem Peppermint at approx. 5m.
S123-D1-P11	324100	6279371	WRP adjacent to circular nesting box at approx. 5m AGL. Located in Peppermint.
S123-D1-P12	324142	6279384	Located 10 m N (corrected). Small WRP located at approx. 3m AGL in Peppermint
S123-D1-P13	324249	6279332	Small WRP in Peppermint at approx. 6 m. Feeding.
S123-D1-P14	324219	6279379	WRP adjacent to large drey in Peppermint at approx. 6 AGL.
S123-D1-P15	324212	6279385	Small WRP in dense Peppermint at approx. 6 m. Feeding when first observed.
S123-D1-P16	324061	6279387	WRP in dense <i>Melaleuca</i> adjacent to drainage line. Approx. 5 m AGL.
S123-D1-P17	324088	6279452	Small WRP in dense tall Peppermint at approx. 8 m.
S123-D1-P18	324179	6279492	Mature WRP in spindly Peppermint at approx. 3 m AGL. Feeding when first observed.
S123-D1-P19	324214	6279458	Small WRP travelling through a <i>Melaleuca</i> at approx. 6 m AGL.
S123-D1-P20	324213	6279452	WRP in dense Peppermint near drainage line. Height approx. 5 m AGL.
S123-D1-P21	324259	6279386	Mature WRP in dense Peppermint at approx. 4 m AGL.
S123-D2-P22-23	324171	6279405	Cool, gusting winds from south-west. Light drizzle and overcast. Two small WRP in spindly Peppermint at approx 3 m bordering development.
S123-D2-P24	324179	6279407	5 m North (corrected). Small WRP in spindly Peppermint at approx. 4m AGL. Feeding.
S123-D2-P25	324270	6279388	Small WRP in small Peppermint at approx. 4m AGL.
S123-D2-P26	324223	6279461	Small WRP in Peppermint at approx. 4 m AGL.
S123-D2-P27	324213	6279482	Small WRP in Peppermint at approx. 3m AGL.
S123-D2-P28	324052	6279349	10 m N (corrected). large WRP in grove of Peppermint at approx. 6m AGH. Male in good condition.
S123-D2-P29	324223	6279371	WRP travelling through tall Marri at about 8m AGL.
S123-D2-P30	324199	6279400	Small WRP in Peppermint at about 5 m AGL.
S123-D2-P31	324045	6279419	WRP in spindly Peppermint amongst a grove of tall <i>Melaleuca</i> 's at approx. 4 m AGL.
S123-D2-P32	324195	6279492	5m N (corrected). Small WRP in spindly Peppermint at approx. 4m AGL. Feeding.
S123-D2-P33	324201	6279488	Small WRP in Peppermint at about 4 m AGL.
S123-D2-P34	324220	6279452	WRP in dense Peppermint 10 m N (corrected) near drainage line. Height approx. 4 m AGL.

The locations of WRP observations are identified in **Figure 4**.

⁴ All locations are in Zone 50 GDA94

3.3.3 Other Observations

As evidenced by abundant diggings on bunds within seasonally inundated areas in the central eastern portion of the Reserve, abundant populations of Quenda (*Isoodon fusciventer*) are present. Dense understorey provides foraging opportunities and protection from predators.

4. DISCUSSION

Western Ringtail Possums are typically found in Coastal Peppermint (*A. flexuosa*)/Tuart (*Eucalyptus gomphocephala*) forests on the Swan Coastal Plain within the area Bunbury to Augusta (Department of Parks and Wildlife 2017), particularly where they exhibit limited anthropogenic disturbance and have low indices of fragmentation.

4.1 Summary of Previous Survey Findings

4.1.1 Surveys Conducted Prior to Capecare Development

The area surveyed prior to construction of the Capecare development commencing was approximately 4.22 ha, being the entire lot between Naturaliste Terrace to Gifford Road known collectively as Armstrong Reserve.

A WRP survey of Armstrong Reserve (ATA Environmental 2006) based on nocturnal spotlighting for WRP and diurnal searches for dreys recorded 21 possible dreys and 11 tree hollows and 19 possums on 5 October 2005 and 21 possums on 7 October 2005.

In 2011, Ecoscape (2012) conducted a WRP survey of Armstrong Reserve and used five transects surveyed over four consecutive nights. A total of nine Western Ringtail Possums were observed.

A pre-clearing Targeted WRP Survey was conducted during 23 - 24 October 2019 and followed a similar methodology to that reported here. A total of 11 dreys and two suitable hollows were recorded within the Reserve during daytime searches, with totals of 17 and 21 WRPs recorded within the Reserve during the associated two nights of nocturnal searches (Onshore Environmental 2019).

4.1.2 Surveys Conducted Following Capecare Development

Clearing of the Capecare development envelope comprising 1.28 ha occurred over the period 28 October - 2 November 2019.

Following commencement of the project, WRP surveys were conducted on the balance of land, being City Reserve 252299 (Lots 3000 and 601) for the purpose of 'Landscape Protection'; and Water Corporation retaining the vesting of Reserve 40445 (Lot 258), an area of 2.84 Ha.

A Spring survey of WRP and dreys within Armstrong Reserve was conducted on the 27 – 28 November 2020. Seven dreys and 14 WRP observations were recorded during the two-night survey. The weather on the first night was rainy and on the second night heavy cloud was experienced (Terrestrial Ecosystems 2020).

An Autumn survey of WRP and dreys within Armstrong Reserve was conducted on the 16 – 17 March 2021. Seven WRP observations were recorded on each of the survey nights, and 16 dreys observed during the diurnal search (Terrestrial Ecosystems 2021).

A further late summer (end February) survey of WRP using a similar method was conducted on the 27 – 28 February 2022. During the survey, 20 WRP in total were observed, with nine WRP observed during the evening of 27 February 2022 and 11 WRP observed on the 28 February 2022 (Endplan Environmental 2022).

4.2 Survey Findings – February 2023

Approval to conduct the survey was obtained from the Department of Biodiversity, Conservation and Attractions (refer to **Appendix 1**) was sought and a late summer WRP survey conducted comprising:

1. Daytime targeted search for evidence of WRPs (e.g., dreys, tree hollows, scats, individuals); and
2. Nocturnal counts (two consecutive nights) to determine the distribution and abundance of WRPs,

undertaken at Armstrong Reserve (Reserves 25229 and 40445) adjoining the Capecare facility.

It is considered the effectiveness of targeted WRP field surveys at Armstrong Reserve during the event was impacted by vegetation structure and composition, and to a lesser extent topography and access. The following points are relevant:

- Above average rainfall during 2022 has resulted in a dense leaf canopy and accordingly reduced visibility and thick leaf litter layer;
- Observation conditions were otherwise excellent on the night of the 13 February 2023, being cool, clear with minimal winds; and
- Cloud cover, light rains and stronger winds experienced on the night of the 14 February 2023 survey limited visibility.

Notwithstanding, it is considered that good perimeter access and a relatively small search area supported the outcome as adequately reflecting the WRP population status within the survey area.

In relation to the survey findings:

- One additional drey and a further nesting box, possibly suitable for WRP nesting, were identified in addition to the 28 identified during the previous November 2022 survey. These comprised a mixture of dreys, hollows, stags, and nesting boxes;
- Twenty-one WRPs were recorded during the ideal observation conditions of 13 February 2023;
- Western Ringtail Possums generally exhibited limited mobility and were principally observed in immature and regenerating *Agonis* on the southern and eastern perimeter of the Capecare development and along Gifford Road;
- A further 13 WRPs were recorded during the more constrained observation conditions of the 14 February 2023;
- Western Ringtail Possums were observed to be sedentary and appeared to be in good condition; and
- Territorial behaviour amongst large males was observed.

Observed WRPs ranged from juveniles or small females to mature possible breeding males. Lower representation was noted in the central portion of the site comprising mixed species Sedgeland on seasonally waterlogged (dampland) soils in the centre of the site extending from Naturaliste Terrace to Gifford Road. *Agonis* in this area are generally more mature than those present on the perimeter of the Reserve and demonstrate greater canopy spacing.

The February 2023 WRP survey undertaken within Reserves 25339 and 40445 adjoining *Capecare Dunsborough* confirms that the remnant vegetation remain in very good condition and continues to support a stable and healthy population of WRP.

The number of WRPs observed during early February represents the minimum number of WRPs that were utilising the 2.94 ha survey area during this survey conducted following completion of construction of the aged care facility.

5. REFERENCES

ATA Environmental (2006). Fauna Assessment, Armstrong Reserve, Dunsborough. Unpublished Report No. 2005/176. Prepared for Ray Village Aged Services (Inc.), April 2006.

ATA Environmental (2007). Regional Western Ringtail Possum Assessment, Armstrong Reserve, Dunsborough. Unpublished Report No. 2007/088. Prepared for Ray Village Aged Services (Inc.), October 2007.

ATA Environmental (2008). Flora and Vegetation Survey, Armstrong Reserve, Dunsborough. Unpublished Report No. 2005/208 (Version 3). Prepared for Ray Village Aged Services (Inc.).

Department of Parks and Wildlife (2017). *Western Ringtail Possum (Pseudocheirus occidentalis)* Recovery Plan. Wildlife Management Program No. 58. Department of Parks and Wildlife, Perth, WA.

Ecoscape (Australia) Pty Ltd (2012). Armstrong Reserve Level 2 Fauna Survey. Unpublished report No. 7925-2582-11R prepared for Ray Village Aged Services (Inc.) trading as Capecare. May 2012

Onshore Environmental (2019), Armstrong Reserve Targeted Western Ringtail Possum Survey. Report prepared for Capecare, 28 November 2019.

Terrestrial Ecosystems (2020). Survey of Western Ringtail Possums and their dreys in Armstrong Reserve, Dunsborough – November 2021. Unpublished report 2020-0120-002-gt dated 16 December 2020 prepared for EndPlan Environmental.

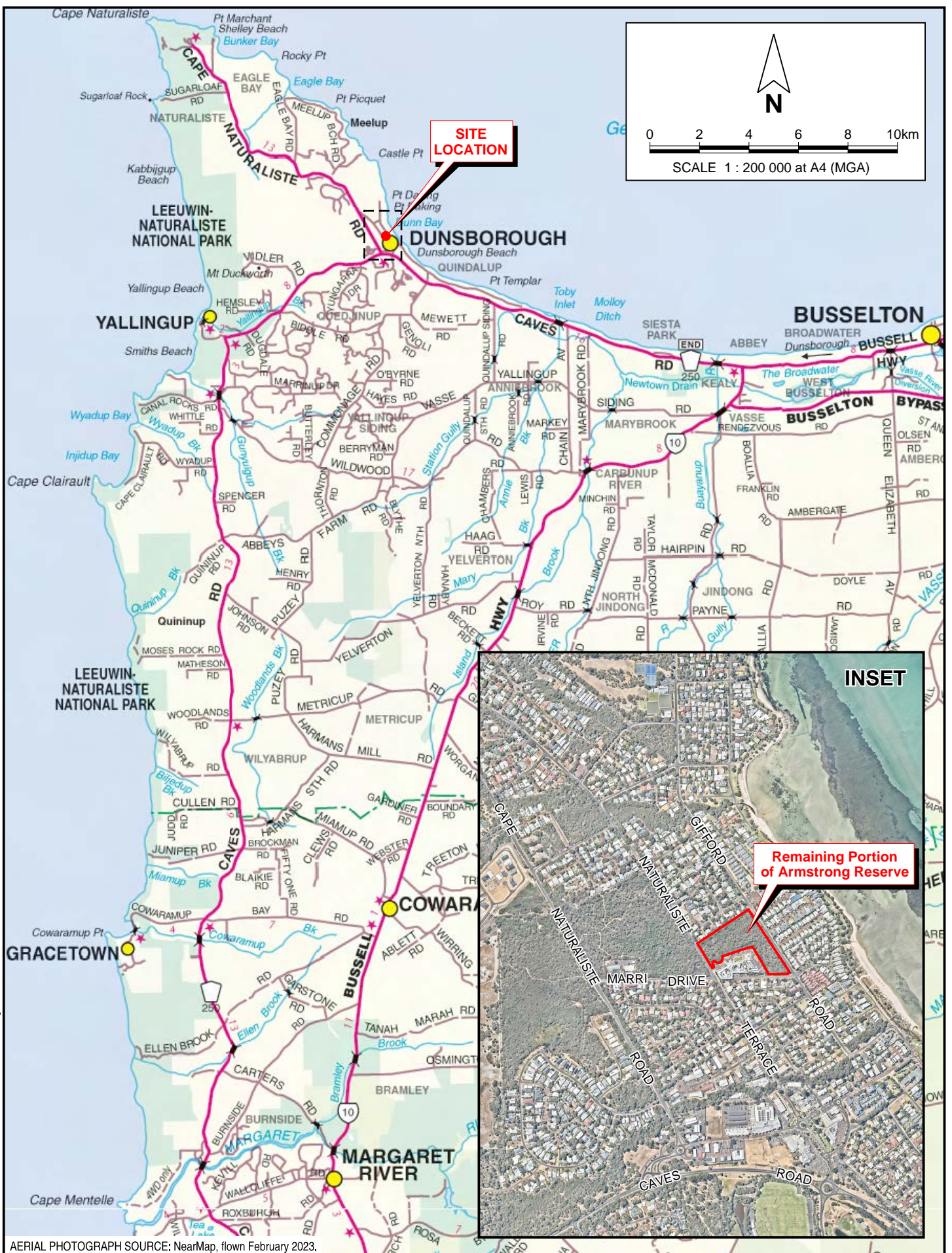
Terrestrial Ecosystems (2021). Survey of Western Ringtail Possums and their dreys in Armstrong Reserve, Dunsborough – March 2021. Unpublished report 2020-0120-004-gt dated 29 March 2021 prepared for EndPlan Environmental.

Endplan Environmental (2022). Ministerial Statement 1094 (Conditions 6.1 - 6.3) Western Ringtail Possum Survey Report (27 -28 February 2022). Unpublished report RVA294_002_V1 dated 12 March 2022 prepared for Capecare.

FIGURES

MINISTERIAL STATEMENT 1094 (COND. 6.1 - 6.3) WESTERN RINGTAIL POSSUM SURVEY REPORT, (13 – 14 FEBRUARY 2023)

**CAPECARE, URBAN AND COMMERCIAL NEW DEVELOPMENT, AGED CARE
NATURALISTE TERRACE, DUNSBOROUGH, W.A.**



EndPlan
Environmental

Ray Village Aged Care Services Inc t/a Capecare
MINISTERIAL STATEMENT 1094 (CONDITIONS 6.1 - 6.3)
WESTERN RINGTAIL POSSUM SURVEY REPORT (13-14 FEB 2023)

Date: 23 Apr 2023
Drawn: B. Van der Wiele

REGIONAL LOCATION

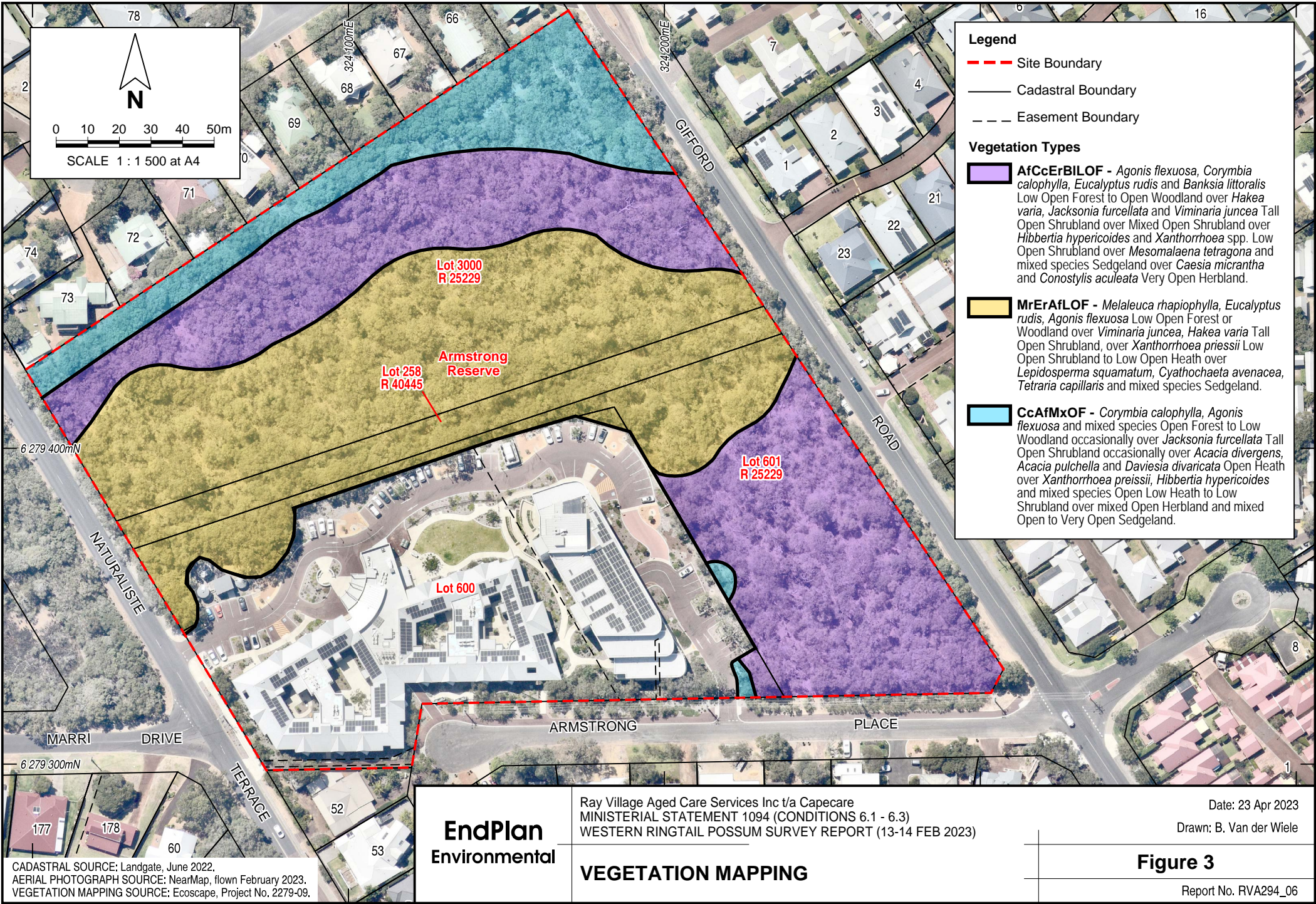
Figure 1

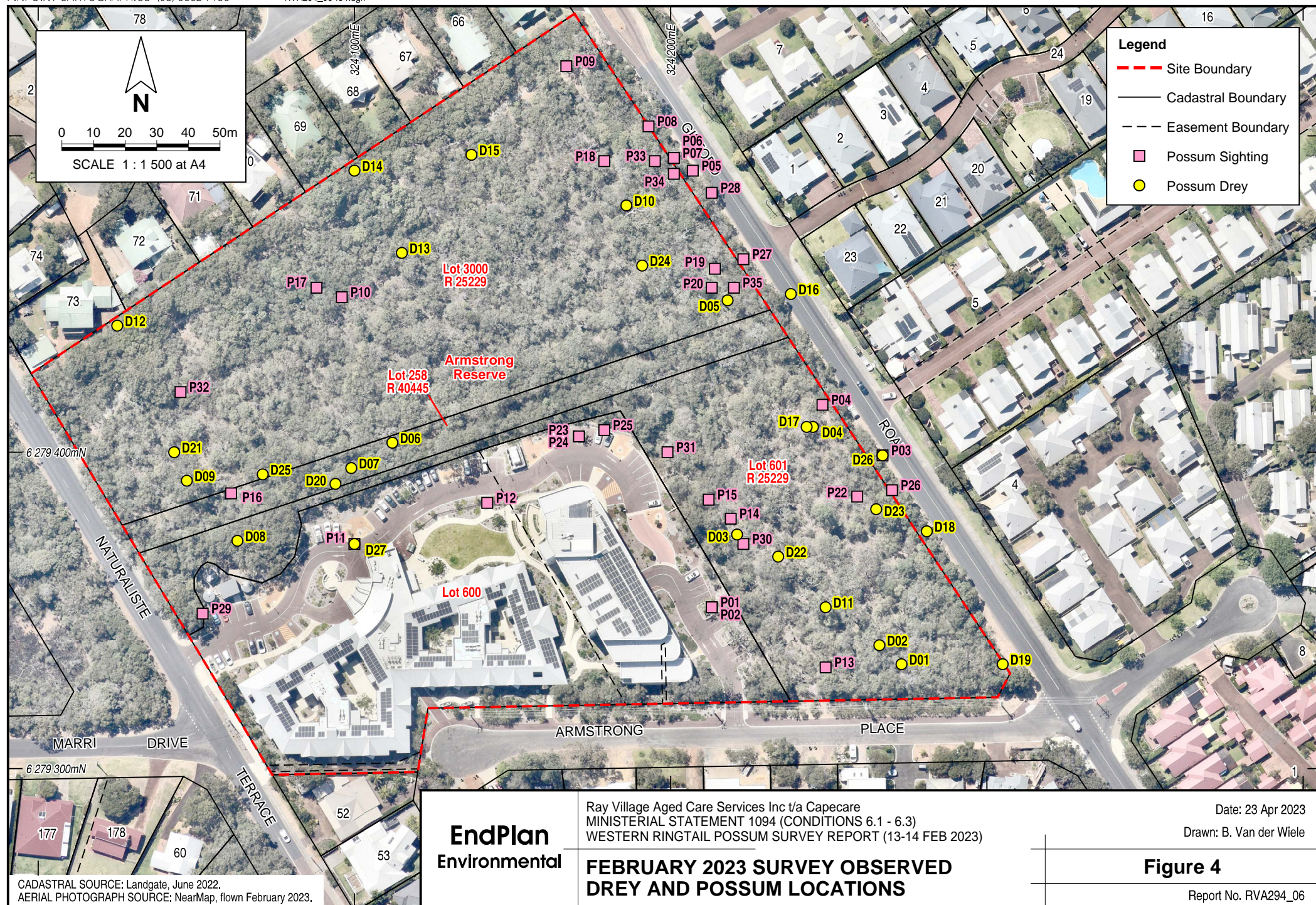
Report No. RVA294_06



PINPOINT CARTOGRAPHICS (08) 9562 7136 RVA294_06-02.dgn

<p>EndPlan Environmental</p>	<p>Ray Village Aged Care Services Inc t/a Capecare MINISTERIAL STATEMENT 1094 (CONDITIONS 6.1 - 6.3) WESTERN RINGTAIL POSSUM SURVEY REPORT (13-14 FEB 2023)</p> <p>CADASTRE AND RESERVE DESIGNATIONS</p>	<p>Date: 23 Apr 2023 Drawn: B. Van der Wiele</p> <p>Figure 2</p> <p>Report No. RVA294_06</p>
---	---	--





APPENDIX

MINISTERIAL STATEMENT 1094 (COND. 6.1 - 6.3) WESTERN RINGTAIL POSSUM SURVEY REPORT, (13 – 14 FEBRUARY 2023)

**CAPECARE, URBAN AND COMMERCIAL NEW DEVELOPMENT, AGED CARE
NATURALISTE TERRACE, DUNSBOROUGH, W.A.**

APPENDIX 1

COPY AUTHORISATION TO TAKE OR DISTURB THREATENED SPECIES (TFA 2022-0007)

**CAPECARE, URBAN AND COMMERCIAL NEW DEVELOPMENT, AGED CARE
NATURALISTE TERRACE, DUNSBOROUGH, W.A.**



Department of **Biodiversity,
Conservation and Attractions**

AUTHORISATION TO TAKE OR DISTURB THREATENED SPECIES

Section 40 of the Biodiversity Conservation Act 2016

AUTHORISATION DETAILS

Authorisation type: Fauna

Authorisation number: TFA 2022-0007

Authorisation duration: From date signed by Minister's delegate, below, until 28 February 2023.

AUTHORISATION HOLDER

Bernadette van der Wiele
EndPlan Environmental
7 Bushland Close
Dunsborough WA 6281

AREA TO WHICH THIS AUTHORISATION APPLIES

Armstrong Reserve (R25229 and R40445), Dunsborough (Blackwood District).

AUTHORISED ACTIVITY

Purpose of taking/disturbance:

Monitor western ringtail possums within Armstrong Reserve in accordance with Ministerial Statement 1094 (conditions 6.1 and 6.2) and the associated Environmental Management Plan to identify any long-term effects from the Ray Village Aged Services (Capecare) development.

Threatened species authorised to be taken/disturbed (including conservation status):

Western ringtail possum, *Pseudocheirus occidentalis* (Critically Endangered)

Quantity of threatened species authorised to be taken/disturbed:

Any number of individual animals of the above listed threatened fauna species may be disturbed during the monitoring program.

Authorised taking/disturbance methodology:

Disturb western ringtail possums during spotlighting surveys using a hand-held halogen torch with a narrow beam. Transects will be walked during surveys.

ADDITIONAL AUTHORISED PERSONS

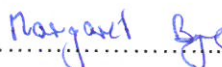
Additional personnel who are suitably qualified and experienced in the authorised activities working under the direction of the authorisation holder.

CONDITIONS

1. The written authorisation of the person in possession or occupation of the land accessed and upon which threatened fauna is taken or disturbed must:
 - a) state location details (including lot or location number, street/road, suburb and local government authority);
 - b) state land owner or occupier name, and contact phone number;
 - c) specify the time period that the authorisation is valid for;
 - d) be signed and dated; and
 - e) be attached to this Authorisation to take or disturb threatened species at all times.
2. This Authorisation to take or disturb threatened species, and any other written authorisation or lawful authority which authorises the take or disturbance of fauna on specified locations for the authorised activities must be carried at all times while conducting authorised activities and be produced on demand by a wildlife officer.
3. Additional authorised persons who are not suitably qualified and experienced in the authorised activities, and field assistants assisting with the authorised activities, must be working under direct supervision of experienced and competent named authorised persons.
4. Any inadvertently captured species of non-target threatened fauna or non-threatened fauna (threatened fauna as defined in *Biodiversity Conservation Act 2016* Section 19) is to be released immediately at the point of capture. Details of such fauna must be included in the fauna taking/disturbance return as required under this authorisation.
5. The authorisation holder, unless specified in the authorised activities, must not:
 - a) release any threatened fauna in any area where it does not naturally occur;
 - b) transfer threatened fauna to any other person or authority (other than the Western Australian Museum) unless the fauna is injured or abandoned fauna (condition 6); or
 - c) dispose of the remains of threatened fauna in any manner likely to confuse the natural or present-day distribution of the species.
6. All threatened fauna injuries, unexpected deaths, unplanned euthanasia, and abandoned young or eggs, must be reported by the authorisation holder to the DBCA Wildlife Protection Branch, Wildlife Licensing Section (wildlifelicensing@dbca.wa.gov.au) to notify of the incident and for advice on treatment or disposal. All deceased threatened fauna must be offered to the Western Australian Museum.
7. The authorisation holder must create, compile and maintain records and information as required in a DBCA approved "Return of Fauna Taken/Disturbed" of all fauna taking/disturbance activities as they occur.
8. A DBCA approved "Return of Fauna Taken/Disturbed" must be completed in full (including nil taking/disturbance details) and submitted to DBCA Wildlife Licensing Section (wildlifelicensing@dbca.wa.gov.au) prior to the end of the authorisation duration and, if the authorisation duration is greater than 12 months, prior to the end of each annual period of the authorisation (from the date signed by the Minister's delegate) (refer to "Additional Information" section below). Where a licence to take or disturb fauna is issued in conjunction with this Authorisation to take or disturb threatened species, a combined "Return of Fauna Taken/Disturbed" may be completed and submitted.
9. A written report detailing the undertaken authorised activities, outcome, unintended incidents, injuries and mortalities of threatened fauna, implemented monitoring, mitigation and management, and explaining the records and information as required in a DBCA approved "Return of Fauna Taken/Disturbed" must be submitted, in addition to a "Return of Fauna Taken/Disturbed" to DBCA Wildlife Licensing Section (wildlifelicensing@dbca.wa.gov.au).

ADDITIONAL INFORMATION

1. Before undertaking the Authorised Activity, permission must be obtained from: (a) the owner or occupier of private land; or (b) the Department or Authority controlling Crown land, on which the Threatened Fauna occur. This includes obtaining the written endorsement from Department of Biodiversity, Conservation and Attractions (DBCA) if the authorised activity is proposed for land managed by DBCA.
2. This Authorisation to take or disturb threatened species does not constitute lawful authority issued under regulations 4 and 8 of the *Conservation and Land Management Regulations 2002*. Contact the applicable Department District Officer for further information.
3. The approved DBCA "Return of Fauna Taken/Disturbed" template can be obtained from DBCA Wildlife Licensing Section (wildlifelicensing@dbca.wa.gov.au).
4. Any interaction involving nationally listed threatened fauna that may be harmful to the fauna and/or invasive may require approval from the Commonwealth Department of the Environment and Energy (<http://www.environment.gov.au/biodiversity/threatened/permits>). Interaction with such species is controlled by the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* and *Environment Protection and Biodiversity Conservation Regulations 2000*.
5. It is the responsibility of the authorisation holder to ensure that they comply with the requirements of all applicable legislation.
6. An Authorisation to take or disturb threatened species does not constitute an animal ethics approval or a licence to use animals for scientific purposes as required under the *Animal Welfare Act 2002*, *Animal Welfare (Scientific Purposes) Regulations 2003*. Enquiries relating to the Animal Welfare Act scientific purposes licence and animal ethics committee approvals are to be directed to the Western Australian Department of Primary Industries and Regional Development (<https://www.agric.wa.gov.au/animalwelfare>).



Dr Margaret Byrne

Executive Director of Biodiversity and Conservation Science

AS DELEGATE OF THE MINISTER

DATE: 18 / 2 / 2022

EndPlan Environmental is an Associate Member of the



EndPlan Environmental is the trading name of Wiske Pty Ltd
PO BOX 138 NORTH FREMANTLE, W.A. 6159
M: 0447366460
E: admin@endplanenvironmental.com.au