Ref: 2020-0120-004-gt



29 March 2021

Bernadette van der Wiele Endplan Environmental Planning PO Box 138 North Fremantle WA 6159

Re: Survey of Western Ringtail Possums and their dreys in Armstrong Reserve, Dunsborough – March 2021

Dear Bernadette

Terrestrial Ecosystems is pleased to provide the results of the March 2021 survey for Western Ringtail Possums (WRP) and their dreys and other retreat sites in Armstrong Reserve, Dunsborough.

Introduction

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*.

The Western Ringtail Possum is a relatively small, arboreal marsupial with a slender, white-tipped prehensile tail. It is relatively abundant south from Bunbury to Augusta, with small populations in Dawesville, Yalgorup National Park, around Manjimup and Albany and with scattered small populations along the south coast (Department of Parks and Wildlife 2017). On the Swan Coastal Plain extending from Bunbury to Augusta it is typically found in peppermint (*Agonis flexuosa*) / tuart (*Eucalyptus gomphocephala*) forests (Department of Parks and Wildlife 2017). It is very agile in moving through the tree canopy but slow and relatively clumsy moving on the ground.

A Western Ringtail Possum survey of Armstrong Reserve (ATA Environmental 2006) based on nocturnal spotlighting 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) undertook a survey of Armstrong Reserve, and used five transects surveyed over four consecutive nights and then used DISTANCE to estimate the density of Western Ringtail Possums present. A total of nine Western Ringtail Possums were seen. Based on an analysis using DISTANCE, the central estimate for the number of possums present was 29.5 with a 95% probability of between 12 and 72.2 possums. No discussion was provided on whether adequate data were collected to meet the assumptions for using DISTANCE as an appropriate methodology to analyse these data.

EndPlan Environmental Planning on behalf of CapeCare requested a two-night count on consecutive evenings for Western Ringtail Possums in the reserve in November 2020 and March 2021, a count of dreys and an assessment of the suitability of the habitat for Western Ringtail Possums. Terrestrial Ecosystems (2020) completed a survey of the reserve in November 2020 and this letter provides the results of the March 2021 survey.

Methods

Dr Graham Thompson undertook nocturnal searches of Armstrong Reserve on 16 and 17 March and on 17 March 2021 searched the project area for dreys and other diurnal retreat sites. Searches were undertaken by walking transects and using a hand-held halogen torch.

Diurnal assessments for retreat sites included tree hollows and dreys. A Western Ringtail Possum was found in an upright dead stag with a very exposed opening facing upwards. This hollow had a side hole and offered very little protection for this possum when it slept during the day. It was therefore possible that other possums

www.terrestrialecosystems.com

were using similar hollows, so trees with hollows that might provide a diurnal retreat site are also included in this survey.

The location of each Western Ringtail Possum and drey were recorded using a hand-held GPS. The species of tree (where known), and the height of the drey were recorded for each observation. A photograph was taken of each drey or tree with a hollow, and each drey categorised based on the criteria in Table 1.

Туре	Description
1	Dense, well-made ball or slightly elongate form with a distinct entrance hole. In this type of drey
	the possum is completely enclosed
2	Dense, well-made cup-shaped nest with some material over the top, but the possum is not fully
	enclosed
3	Dense, well-made cup-shaped nest with an open top. The possum sits deep inside the cup of the
	drey and may not be visible from the ground
4	Platform of twigs, often in a tree or branch fork, with no more than a shallow depression where the
	possum rests

Table 1. Drey type classification criteria

Limitations

The presence of water in the drains and the swamp required that the spotlighting transects were not straight. The vegetation around the wet areas was very dense, often up to 750mm with many fallen trees spread throughout the dense ground cover. This dense vegetation needed to be traversed and negotiated at night and drains and water bodies circumnavigated which resulted in non-linear transect searches. Although non-linear, adequate searching was undertaken to completely assess the project area.

It was fine on both nights of searching with very little wind.

An accurate classification of a drey requires that the drey can be seen in three dimensions to determine whether it is ball shape and has a distinct entrance hole or is a cup-shaped nest with some material over the top. Some of the dreys were in tall trees and it was not possible to see the upper surface of a drey, so the classification is based on what could be seen from ground level. The tree canopy contained many dead sticks that had broken off and fallen, only to be caught in the lower vegetation.

Results

Western Ringtail Possums did not flee when spotted at night using a torch light and remained relatively still.

Seven Western Ringtail Possums (Plate 1) were recorded on 16 March 2021 and seven were recorded on 17 March 2021 (Table 2; Figure 1). No Brushtail Possums were recorded.

ID	Date	Easting	Northing
1	16/3/2081	324257	6279380
2	16/3/2081	324253	6279327
3	16/3/2081	324065	6279391
4	16/3/2081	324065	6279392
5	16/3/2081	324047	6279424
6	16/3/2081	324220	6279471
7	16/3/2081	324219	6279470
8	17/3/2021	324176	6279498
9	17/3/2021	324225	6279375
10	17/3/2021	324204	6279375
11	17/3/2021	324204	6279375
12	17/3/2021	324087	6279445

Table 2. Location of Western Ringtail Possums (Zone 50, GDA94)

ID	Date	Easting	Northing
13	17/3/2021	324238	6279438
14	17/3/2021	324215	6279467

Sixteen Western Ringtail Possum dreys or trees with hollows that could be used as a diurnal retreat were recorded (Table 3; Figure 1).

Drey #	Tree type	Drey height (m)	Classification	Easting	Northing
1	Dead stage	3.0	Dead stag	324247	6279352
2	Tuart	4.0	Tree hollow	324239	6279367
3	Dead stag	1.2	Dead stag with hollow	324128	6279431
4	Peppermint	7.0	4	324091	6279481
5	Nest box	2.0	Nest box	324097	6279487
6	Peppermint	8.8	2	324108	6279493
7	Banksia	3.0	3	324139	6279486
8	Banksia	2.5	4	324135	6279487
9	Dead stag	5.0	Dead stag with hollow	324190	6279477
10	Unknown	2.5	4	324204	6279480
11	Peppermint	3.5	Dead stag with hollow	324217	6279449
12	Peppermint	2.0	2	324262	6279405
13	Paperbark	2.0	4	324293	6279360
14	Dead stage	4.4	Tree hollow	324295	6279336
15	Peppermint	3.5	4	324201	6279483
16	Dead stag	1.8	Dead stag with hollow	324050	6279391

Table 3. Location and classification of dreys (Zone 50, GDA94)

Habitat

The November 2020 survey recorded nine Western Ringtail Possums on the first night and five on the second night. This compares with the seven possums recorded on both nights during the March 2021 survey.

The recording of a Western Ringtail Possum in a very open, upward facing dead stag hollow (Plates 4 and 5) resulted in other hollows in trees being recorded as possible retreat sites. Western Ringtail Possums are well known to use tree hollows as diurnal retreat sites, but it is unusual to find a possum asleep in such an exposed location.

The habitat in the reserve was unchanged since the November 2020 assessment.

Quenda

There was an abundance of Quenda (*Isoodon fusciventer*) diggings in many sections of the reserve, particularly around the wetter sections (Plate 19). The dense understorey provides quality habitat for this medium sized marsupial as there is an abundance of foraging opportunities and the dense low vegetation offers protection from predators such as unowned cats and foxes.

Fox

A fox scat (Plate 20) was found containing predominantly mammal fur, which could have been from Quenda or Western Ringtail Possums. There is substantial bushland across Naturaliste Tce to the west of Armstrong Reserve and also across Cape Naturalist Road, so the movement of foxes through bushland is relatively easy, and the abundance of Quenda and a small population of Western Ringtail Possums provides a prey source for this carnivorous predator.

Conclusion

A population of Western Ringtail Possums continues to persist in Armstrong Reserve. The habitat in the reserve is variable and influenced by the drains and the standing water in the central area. Areas around surface water were densely vegetated and this vegetation would limit possum movement on the ground. Areas of continuous and connected tree canopy with a limited understorey and reduced access for predators provide the best habitat for this possum in Armstrong Reserve.

Please do not hesitate to contact the undersigned on 0438 491 227 should you have any queries.

Yours sincerely

Dr Graham Thompson Partner and Principal Zoologist

References

ATA Environmental. 2006. Fauna Assessment Armstrong Reserve, Dunsborough. Perth.

Department of Parks and Wildlife. 2017. Western Ringtail Possum (*Pseudocheirus occidentalis*) Recovery Plan. Perth.

Ecoscape. 2012. Armstrong Reserve Level 2 Fauna Survey. Perth.

Terrestrial Ecosystems. 2020. Survey of Western Ringtail Possums and their dreys in Armstrong Reserve, Dunsborough. Perth.



Plate 1. Western Ringtail Possum



Plate 3. Tree hollow 2



Plate 5. Possum in dead stag #3



Plate 2. Dead stag 1



Plate 4. Dead stag 3



Plate 6. Drey 4



Plate 7. Nest box



Plate 9. Drey 7



Plate 11. Dead stag 9





Plate



Plate 12. Drey 10



Plate 13. Dead stag 11



Plate 15. Drey 13



Plate 14. Drey 12



Plate 16. Tree hollow 14



Plate 17. Drey 15



Plate 19. Quenda diggings



Plate 18. Dead stag 16



Plate 20. Fox scats

PINPOINT CARTOGRAPHICS (08) 9562 7136

2020-0120-f01-Mar2021.dgn

