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Department of Health
C/- Busselton Hospital
Locked Bag 3
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Attention: Jan Cook

Dear Jan,

Western Ringtail Possum Monitoring – Busselton Health Campus, Autumn 2017

This letter report details the results of the Autumn 2017 survey for Western Ringtail Possums (WRPs) at the Busselton Health Campus. The survey was conducted as part of a monitoring program undertaken on behalf of the Department of Health in accordance with the WRP Management Plan (Coffey, 2013a).

The preparation and implementation of the WRP Management Plan was a condition of approval for the Busselton Health Campus redevelopment under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC 2011/6011) and *Environmental Protection Act 1986* (NVCP 4433/2). The WRP Management Plan was revised and approved by the Department of Environment Regulation (formerly Department of Environment and Conservation - DEC) on 3 September 2013 and the Department of the Environment (formerly Department of Sustainability, Environment, Water Population and Communities - DSEWPAC) on 31 October 2013.

The WRP Management Plan outlines the requirement for a WRP monitoring program to be conducted at the Busselton Health Campus and includes the following management measures:

> *M17: Monitor the WRP population twice a year during construction, twice per year for two years following construction and then annually until year five (post construction) and again at year ten (post construction) using ground-based methods. If during the period of twice yearly monitoring there is a greater than 20% reduction in the baseline population, twice yearly monitoring will be extended for a period agreed between DEC, DSEWPAC and Department of Health.*
>
> - *Undertake a WRP survey within two months of the completion of the translocation program to establish a baseline population remaining on the site.*
> - *Following each WRP monitoring survey the results will be compared with the baseline survey described above (with consideration of seasonal variation) and where there is a reduction in the number of individuals recorded, the DSEWPAC and DEC will be notified by the Department of Health. The information will be made available on the Department of Health's website for transparency purposes. Summary of the monitoring data will be reported annually to DEC and DSEWPAC.*

- *Monitoring will be consistent with baseline monitoring completed by Coffey Environments (Coffey Environments, 2009). It will involve traversing the site by foot during the day time hours searching for possum dreys, and nocturnal spotlighting over two evenings using head torches. The location of dreys and WRPs will be recorded using hand-held GPS. Monitoring will be conducted twice per year (nominally in February/March and November/ December) and undertaken by personnel with demonstrated experience in conducting WRP surveys.*

Surveys have been conducted biannually at the site since February 2009, with surveys completed in autumn (February – March) and spring (October – December). While the WRP Management Plan indicates surveys to be conducted in November/December, these surveys are now conducted in October to be consistent with the survey that was completed in October 2012, following translocation and clearing.

Construction of the new Busselton Health Campus has now been completed. This is the last survey undertaken after construction works have been completed.

Objective

The objectives of the autumn 2017 monitoring survey were:

- To conduct monitoring of WRPs using a method consistent with the baseline monitoring previously conducted at the site (Coffey, 2013b).
- To compare the survey results with the baseline survey data (post clearing and post translocation).

Method

The survey was conducted by Michelle Holliday (Ecologist) and Clinton van den Bergh (Ecologist) on 28 February and 1 March 2017.

Spotlight searches for WRPs were conducted over two consecutive evenings. The Busselton Health Campus was traversed after dark and all the areas of remnant or planted vegetation were searched, using a head torch to detect eye shine or other signs of possums. Locations of WRPs were recorded using a GPS. The weather was hot, clear and dry on both nights and considered to be suitable for undertaking the survey.

A daytime search was completed on 1 March 2017 to detect any possum dreys or WRPs that could be observed in the canopy. All dreys were recorded with a GPS and additional information was collected including the height of the drey, the tree species and the presence or absence of a WRP in the drey.

Dreys were assigned to one of the following four categories:

1. Flat bed of vegetative material.
2. Slightly concave nest of vegetative material.
3. Dome shape nest with an open top.
4. Completely conical nest that is fully-enclosed.

Results

A total of 74 and 78 WRPs were recorded on the two survey nights, respectively. The locations of all the WRPs recorded during the survey are shown in Attachment 1.

The density of WRPs within Busselton Health Campus is approximately 23 individuals per hectare of canopy, based on an estimated remaining canopy area of 3.35 ha (Coffey, 2013b).

WRPs were observed as individuals, in pairs and in groups of three. The majority of pairs consisted of an adult and a sub-adult that had not yet dispersed.

A total of 15 dreys were recorded during the daytime survey, with two dreys classified as Category 1, six dreys classified as Category 2 and seven dreys classified as Category 3. No dreys classified as Category 4 were recorded. Four of the dreys were positively identified as being occupied by WRPs during the day. Another three WRPs were recorded during the day in the fork of branches in two *Agonis flexuosa* (Peppermint) trees.

Discussion

The WRP population at Busselton Health Campus was 78 individuals during the autumn 2017 survey, slightly lower than the survey undertaken a year earlier in March 2016 (79 individuals). This is higher than the baseline (post clearing and post translocation) population of 68 individuals recorded in October 2012. The population remains above the 20% trigger value (54 WRP or fewer) set out in the WRP Management Plan.

Table 1 - Number and density of Western Ringtail Possums recorded during monitoring

Survey	Number	Density (Individual/ha of canopy)
February 2009	58	13.1
November 2009	61	13.8
February 2010	44	10.0
December 2010	77	17.4
March 2011	57	12.9
November 2011	77	17.4
March 2012	82	18.6
October 2012*	68	20.3
March 2013*	61	18.1
October 2013*	70	20.9
March 2014*	64	19.1
October 2014*	68	20.3
March 2015*	68	20.3
October 2015*	108	32.2
March 2016*	79	23.6
October 2016*	104	31.0
March 2017*	78	23.3

* Conducted since vegetation clearing and the translocation of 20 individuals to Tone-Perup Nature Reserve.

WRP abundance has previously been typified by an increase in WRP abundance during spring (October–December monitoring) followed by a decrease in numbers in autumn (February–March monitoring) (Table 1). The trend appears to follow seasonal breeding, with juveniles and sub-adults leading to a natural increase in the population in spring, and dispersal and mortality resulting in a decline by early autumn. The results of the March 2017 survey are aligned with this seasonal trend.

The increase in WRP abundance and density at Busselton Health Campus (from October 2014) may be associated with the completion of the construction activities. The numbers appear to be stabilising and may indicate that the population at Busselton Health Campus has reached its carrying capacity.

Conclusion

Two years of post construction biannual monitoring has now been completed, based on the official opening date of 4 March 2015. As set out in the WRP Management Plan, monitoring should continue on an annual basis until five years post construction, until year 2020. As the WRP population remains above the trigger value, contingency measures involving an increase in monitoring frequency, further population investigation or consultation with the Department of Environment and Regulation and the Department of the Environment and Energy (formerly Department of the Environment) is not required at this stage.

For and on behalf of Coffey

Michelle Holliday
Environmental Consultant (Ecologist)

References

Coffey 2013a. Western Ringtail Possum Management Plan, Department of Health Campus Redevelopment.

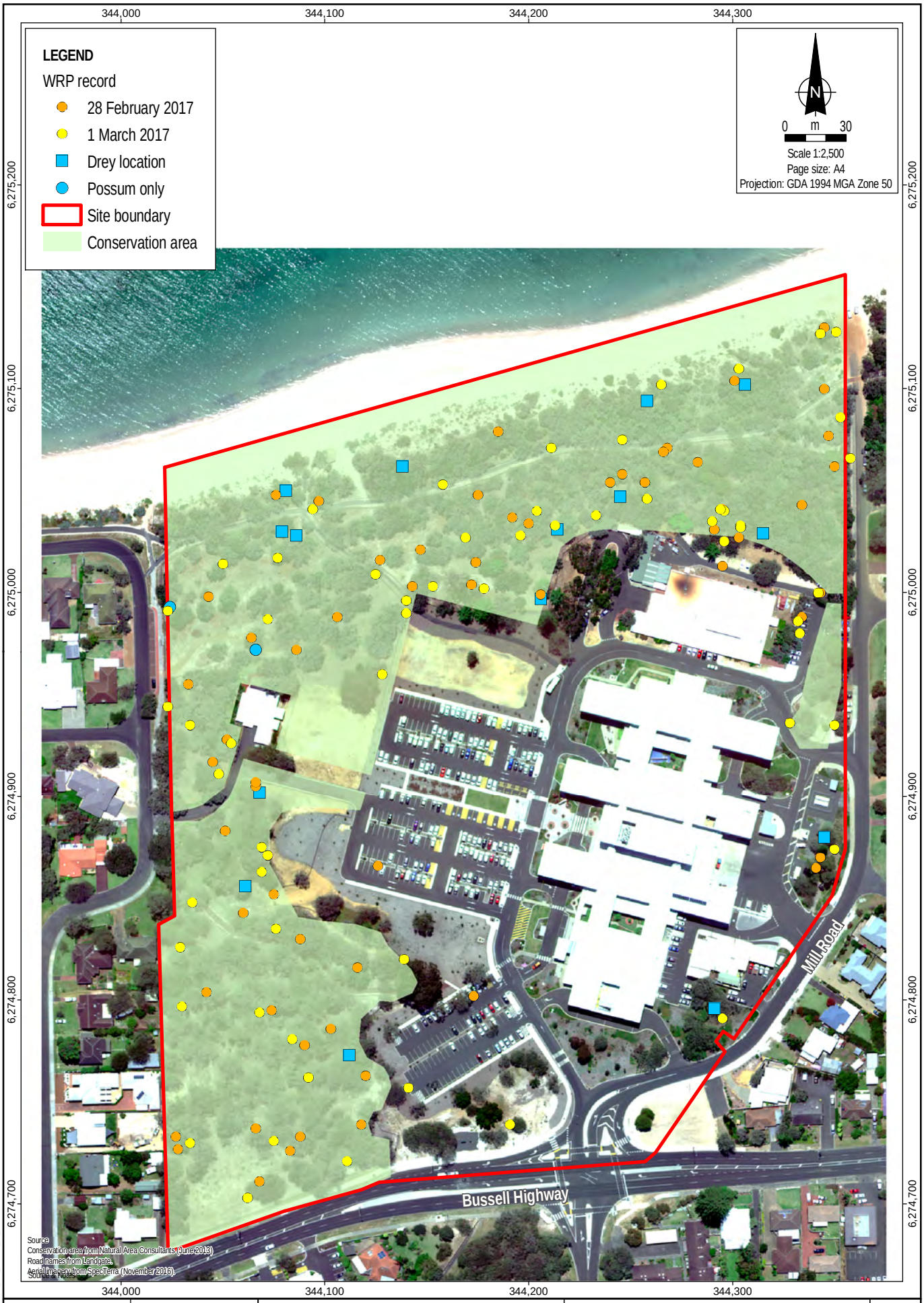
Coffey 2013b. Western Ringtail Possum Monitoring, October survey 2013, Department of Health: Busselton Health Campus.

Attachments

1. Western Ringtail Possum observation and drey locations (Autumn 2017).
2. Abundance of Western Ringtail Possums at the Busselton Health Campus 2009 – 2017.

Attachment 1

Western Ringtail Possum observation and drey locations (Autumn 2017)



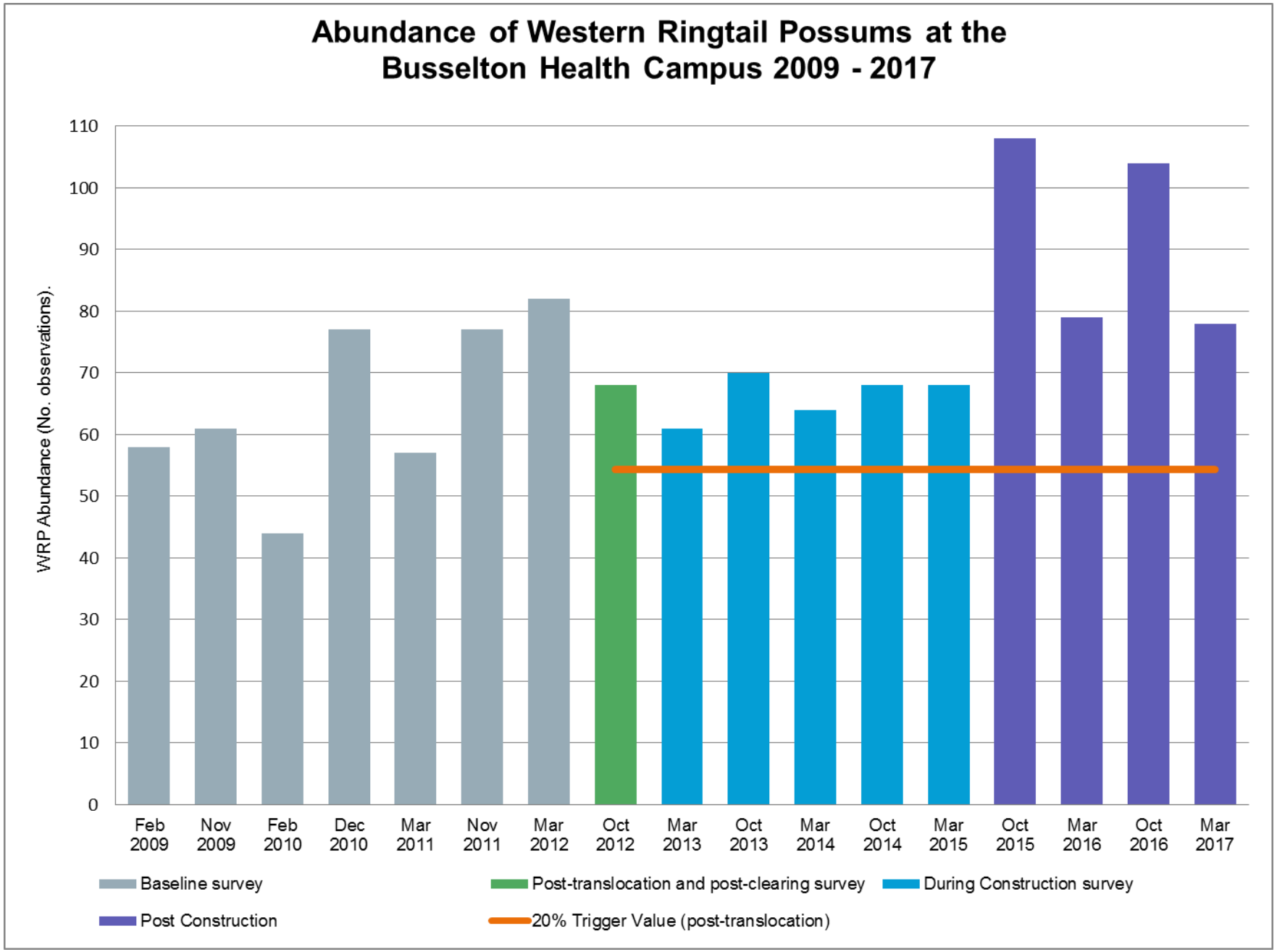
coffey A TETRA TECH COMPANY	Date: 08.03.2017 MXD: ENAUPERT04326AE File Name: 4326AE_016_F001_GIS	Department of Health Western Ringtail Possum Monitoring Busselton Health Campus, Autumn 2017	Western Ringtail Possum observations and drey locations (Autumn 2017)	Figure No: 1

MXD Reference: 4326AE_016_GIS001_v0_1

Attachment 2

Abundance of Western Ringtail Possum at Busselton Health Campus

2009 – 2017


Abundance of Western Ringtail Possums at the Busselton Health Campus 2009 - 2017
WRP Abundance (No. observations).
110
100
90
80
70
60
50
40
30
20
10
0
Feb 2009
Nov 2009
Feb 2010
Dec 2010
Mar 2011
Nov 2011
Mar 2012
Oct 2012
Mar 2013
Oct 2013
Mar 2014
Oct 2014
Mar 2015
Oct 2015
Mar 2016
Oct 2016
Mar 2017
Baseline survey
Post-translocation and post-clearing survey
During Construction survey
Post Construction
20% Trigger Value (post-translocation)