



mainroads
WESTERN AUSTRALIA

Revegetation Plan

Bussell Highway (Capel to Hutton
Section 26.38 – 32.15 SLK)

State Forest No. 2 Offset Site

City of Busselton

B19#9986
March 2019

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Amendments

Author / Reviewer	Name and Position	Revision Number	Revision Date
Author	N McCarthy Senior Environmental Officer	Draft	20/03/2019
Review	T Batt Senior Contract Co-ordinator Vegetation	Draft	22/03/2019
Author	N McCarthy Senior Environmental Officer	Rev 0	22/03/2019
Review	K Williams Department of Biodiversity Conservation and Attractions	Rev 0	28/03/2019
Author	N McCarthy Senior Environmental Officer	Rev 1	28/03/2019

1 BACKGROUND AND INTRODUCTION

1.1 Project and Environmental Background

Main Roads WA (Main Roads) is planning to duplicate (construct a second carriageway) on a 4.8 km section of the Bussell Highway (26.38 – 32.15 SLK) in the Shire of Capel, approximately 195 km south of Perth. The Project is part of Main Roads strategy to upgrade the remaining 17 km of single carriageway between Capel and Busselton.

1.1 Commonwealth Environmental Approval

The Project was determined to be as a 'controlled action' by the Commonwealth Department of the Environment and Energy (DotEE) under the *Environmental Protection Biodiversity Act 1999* and was assessed as such (EPBC 2015 / 7626). The Project was conditionally approved by DotEE in January 2017 (with the requirement for Main Roads to provide an environmental offset (see Appendix A). The negotiated offset is to address the following condition :

“Condition 2

To offset the loss of 6.59 ha of western ringtail possum supporting habitat, the person taking the action must:

- (a) Prior to the commencement of the action provide written evidence to the Minister that the person taking the action has provided WA DER Offset Fund \$305, 250 (this being the amount set in Clearing permit CPS 7016/1) for the purchase of an offset site of at least 20.35 ha of western ringtail possum supporting habitat.
- (b) Within 12 months after the commencement of the action (or as otherwise agreed by the Minister in writing) the person taking the action must provide the Department with the offset attributes and a shapefile of the offset site required by Condition 2(a).”

1.2 State Clearing Permit

Main Roads also sought a Purpose Clearing Permit for the Project under the *WA Environmental Protection Act 1986* (EP Act) through the Department of Environment Regulation (DER) (now Department of Water and Environmental Regulation (DWER)). DER issued a conditional clearing permit (CPS 7016/1) in August 2016 (see Appendix B). Condition 8 of CPS 7016/1 also related to the provision of the financial environmental offset and required:

“Condition 8 Monetary contributions to a fund maintained for the purpose of establishing or maintaining vegetation (offset).

Prior to undertaking any clearing authorised under this Permit and no later than 30 November 2016, the Permit Holder shall provide documentary evidence to the CEO that funding of \$305, 250 has been transferred to the Department of Environment Regulation for the purpose of establishing or maintaining native vegetation.”

Main Roads subsequently provided the required \$305, 250 funding to DWER in early November, 2016.

1.3 Revised Offset

DWER were unable to acquire the land required under Condition 2 of EPBC 2015 / 7626. Main Roads has since re-negotiated an alternative offset with DotEE, which was approved in January 2019 (Appendix C). The revised offset requires:

“Condition 2

To offset the loss of 6.59 hectares of western ringtail possum supporting habitat, the person taking the action must, by March 31 2019, submit to the Department a Revegetation Plan for approval by the Minister. The Revegetation Plan must:

- a) include the objectives of establishing, by January 2032, a continuous canopy cover of at least 20.35 hectares within the portion of State Forest #2 Ludlow shown at Attachment B for the benefit of western ringtail possum (*Pseudocheirus occidentalis*);
- b) specify the species to be planted, and planting, vegetation protection and performance monitoring methods to be used to achieve the objective in Condition 2(a);
- c) ensure at least 50% of the offset site is planted during 2020 and 100% is planted by December 2021;
- d) include the shapefile for the 20.35 hectares required in Condition 2(a);
- e) commit to annual reporting to the Department on plan implementation, risk management, success and any corrective measures implemented; and
- f) be agreed by the DBCA”

Main Roads is currently awaiting advice of a revised offset with DWER for the Project. It is intended that this Revegetation Plan will fulfill the requirements of the revised environmental offset conditions of EPBC 2015 / 7626 and CPS 7016/1.

2 REVEGETATION SITE

The revegetation site is located approximately 10.5 km east of the Busselton town centre as shown at Figure 1 and comprises a 20.35 degraded portion of SF No. 2.

The Site previously supported plantation timber that has since been harvested with the stumps remaining. Site vegetation comprises isolated scattered Tuart, Peppermint and Marri, with a mid-storey of scattered Acacia and Bull Banksia, and an understorey of weed species with isolated patches of sedge and rushes. The site vegetation is considered to be Vegetation Condition 3 (degraded) (Keighery, 1994). The Site occurs within Ecosystem Management Zone 2a (FMP ID 123 and FMP ID 124) as defined in the Tuart Forest National Park Management Plan (TFNPMP) (DPaW, 2014).

The proposed rehabilitation works are congruent with the objectives of the TFNPMP within Ecosystem Management Zone 2a which are to:

- Protect and enhance the eastern wetland/tall tuart community transition zone.
- Protect and increase habitat for fauna that are highly represented in zones 5 and 6 (for example, western ringtail possum and brushtail possum).
- Enhance the resilience of this zone to disturbance and threatening processes.

Proposed management actions to achieve these objectives include:

“Re-establishing native vegetation in cleared areas, adapting management according to results of experimental trials.”

3 REVEGETATION PLAN

3.1 Objectives

The objectives of this Revegetation Plan are to detail how Main Roads will:

- Achieve a continuous canopy cover of at least 20.35 ha, and
- A minimum 50% representation of the species in each vegetation structural group present and persistent in each of the monitoring quadrats at the time of handover

3.2 Revegetation Methodology

The following section summarises the proposed methodology and timing for each stage of the revegetation works.

The revegetation methods will:

- Target linking existing remnant native upper-storey species with seedling plantings
- Include infill planting around native remnant vegetation patches
- Encourage natural regeneration through weed control in existing native vegetation patches
- Include direct seeding in large bare areas.

Table 1 State Forest No. 2 Revegetation Works – Proposed Actions and Timing

Topic	Action	Timing
Fencing	Conduct fencing of revegetation areas with fauna exclusion fencing and rabbit wire apron. Fencing will include installation of “1-way kangaroo gates” in at least two corners of each fenced revegetation area.	July-December 2019
Weed control	Define weed control requirements.	April 2019
	Conduct quarterly weed control prior to planting and direct seeding.	June 2019 – December 2022
	Implement ongoing weed control works as required to achieve completion criteria.	January 2023 – December 2032
Revegetation	Determine planting density and spatial arrangement for species groups in liaison with DBCA	January – March 2020
	Determine plant propagation requirements for seedling planting and direct seeding.	May – August 2019
	Engage contractor to undertake seed collection from surrounding vegetation.	2019-2024
	Engage contractor to undertake seedling propagation using collected seed.	2019-2025
	Complete soil analysis and define soil nutrient status.	March – Sept 2019
	Implement soil improvement works as required.	March 2020
	Undertake seedling planting and direct seeding of a minimum 10.20 ha area as per Appendix D.	April - June 2020
	Undertake seedling planting and direct seeding of up to 10.15 ha as per Appendix D.	April – June 2021
	Undertake infill seedling planting as per Appendix D.	April 2022 – June 2025
	Implement pest control program to minimise damage from kangaroos, and rabbits as required.	As required

Topic	Action	Timing
Pest and other fauna control	Main Roads to develop a kangaroo management strategy to address protocols for animal entrapment and animal welfare issues in liaison with DBCA if required.	As required
Revegetation monitoring and reporting	Monitoring and reporting of revegetation condition during spring and autumn as required.	March/April 2021 – March/April 2032
	Annual meeting with DBCA to review progress and annual works program.	January – February annually
Maintenance and management actions	Implement maintenance and on-going management actions.	December 2021 - December 2032
Handover	Handover of management to DBCA. Handover will be brought forward if completion criteria achieved prior to 2032.	March 2033

3.3 Revegetation Species

The revegetation works will be completed through seeding and seedling planting. The revegetation plant species list for the works has been prepared based on:

- those detailed in the Tuart Forest Revegetation Management Plan (Natural Areas Consulting, 2014) prepared for the Department of Health and the Department of Finance for an existing revegetation offset site within SF 2;
- additional advice from the DBCA Parks and Wildlife Service (Kim Williams, pers comm).

Table 1 below details the plant species and plant numbers that will be planted per hectare of rehabilitation works.

Table 2 State Forest No. 2 Revegetation Works Species List and Numbers

Species	Common Name	Plant Form	Minimum No./ha
<i>Acacia cochlearis</i>	Rigid Wattle	Shrub / Tree, middle storey	40
<i>Acacia rostellifera</i>	Summer Scented Wattle	Shrub / Tree, middle storey	50
<i>Acacia saligna</i>	Orange/Black Wattle	Shrub / Tree, middle storey	25
<i>Agonis flexuosa</i>	Peppermint	Tree, middle storey	350
<i>Banksia grandis</i>	Bull Banksia	Tree, middle storey	150
<i>Conostylis aculeata</i>	Prickly Conostylis	Clumping plant, understorey	250
<i>Corymbia calophylla</i>	Marri	Tree, upper storey	65
<i>Dianella revoluta</i>	Dianella	Clumping plant, understorey	150
<i>Dichopogon capillipes</i>		Clumping plant, understorey	150
<i>Eucalyptus gomphocephala</i>	Tuart	Tree, over storey	50
<i>Eucalyptus rudis</i>	Flooded Gum	Tree, over storey	50
<i>Exocarpus sparteus</i>	N/A	Shrub / Tree, middle storey	50
<i>Ficinia nodosa</i>	Knotted Club	Grass	100

	Rush		
<i>Grevillea vestita</i>	Shrub	middle storey	75
<i>Hakea prostrata</i>	Harsh Hakea	Shrub, middle storey	100
<i>Hardenbergia comptoniana</i>	Native Wisteria	Shrub, middle storey	100
<i>Hibbertia cuneiformis</i>	Cutleaf Hibbertia	Shrub, middle storey	75
<i>Hibbertia racemosa</i>	Stalked Guinea Flower	Shrub, middle storey	80
<i>Jacksonia furcellata</i>	Grey Stinkwood	Shrub, middle storey	100
<i>Kennedia prostrata</i>	Scarlet Runner	Shrub, middle storey	100
<i>Lepidosperma gladiatum</i>	Coastal Sword Sedge	Clumping plant, understorey	300
<i>Macrozamia reidleyi</i>	Zamia Palm	Clumping plant, understorey	20
<i>Melaleuca huegeli</i>	Chenille Honeymyrtle	Shrub / Tree, middle storey	100
<i>Melaleuca viminea</i>	Mohan	Shrub / Tree, middle storey	100
<i>Oleara Axillaris</i>	Coastal Daisybush	Shrub, middle storey	100
<i>Phyllanthus calycinus</i>	False Boronia	Shrub, middle storey	100
<i>Rhagodia baccata</i>	Berry Saltbush	Shrub, middle storey	150
<i>Solanum symonii</i>		Shrub, middle storey	75
<i>Sowerbaea laxiflora</i>	Purple Tassels	Clumping plant, understorey	50
<i>Spyridium globulosum</i>	Basket Bush	Shrub, middle storey	150
			Total: 3355

Seed for seedling propagation, , will be sourced, where possible, from the site and adjacent areas of State Forest No.2 and the Tuart Forest National Park. Where seed is unavailable from these areas it will be sourced as provenance from within the South West Botanical Region.

3.4 Revegetation Completion Criteria

The ultimate revegetation completion criteria are:

- A continuous canopy cover over the entire 20.35 ha revegetation area, and
- A minimum 50% representation of species in each vegetation structural group present and persistent in each of the monitoring quadrats at the time of handover.

3.5 Monitoring Program

Main Roads will monitor the progress of the revegetation works using the following criteria in order to assess progress towards achieving the ultimate completion criteria.

Monitoring will comprise:

- Assessment of two (5 x 5m) quadrats/ha to record:
 - species density
 - species diversity
 - plant health
 - weed coverage
- Two photo monitoring points per hectare

An indicative monitoring program of the revegetation works will be undertaken as detailed in Table 3.

Table 3 State Forest No. 2 Revegetation Works – Monitoring Program

Establishment Period	Monitoring Date
Year 1 (2021)	Autumn 2021
	Spring 2021
Year 2 (2022)	Autumn 2022
	Spring 2022
Years 3 (2023)	Autumn 2023
	Spring 2023
Year 4 (2024)	Autumn 2024
	Spring 2024
Years 4-12 (2024-2032)	Autumn 2024-2032

Monitoring will be conducted annually during Years 4-12, or until achievement of the completion criteria. Should the completion criteria be achieved prior to Year 10, Main Roads will provide monitoring data to, and request DPaW and DotEE sign-off on compliance with the completion criteria.

Main Roads is unable to guarantee the survival of the revegetation works in the event of a force majeure, such as a bushfire, occurring during the revegetation establishment period. Main Roads' obligations to comply with the offset requirement will be void should a force majeure occur.

3.6 Reporting

Main Roads will provide an annual report to DotEE and DWER on the status of the revegetation and activities undertaken in the previous 12 months. Annual reporting will include:

- Details of activities undertaken;
- Risks identified and risk management measures implemented; and
- Contingency actions undertaken.

Reports will be provided by 31 June of each year over the period June 2021 to June 2032.

3.7 Contingency and Management Actions

Contingency actions will be implemented if monitoring indicates that the completion criteria are at risk of being achieved. Contingency actions may include:

- Additional weed control
- Collecting additional seed for direct seeding or plant propagation
- Supplementary in-fill planting of seedlings
- Supplementary direct seeding
- Additional pest control
- Application of fertilisers, soil conditioners and / or wetting agents

3.8 Fire Management

Fire has the potential to have a significant negative impact on the revegetation works. For the duration of this Revegetation Strategy (ie until the completion criteria are met) Main Roads will:

- Maintain a 3m firebreak around the revegetation area
- Install two 3.6m wide gates within each fenced rehabilitation area

3.9 Rubbish Disposal

Any domestic and or commercial waste within the rehabilitation area will be removed off-site and disposed of at an approved waste disposal site.

Figure 1
Location of Revegetation Site

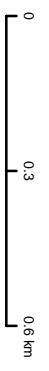
Bussell Highway (Capel to Hutton) State Forest No. 2 Proposed Offset Area

DESCRIPTION:
Bussell Highway (Capel to Hutton)
State Forest No. 2
Proposed Offset Area



- LEGEND**
- 2019 Proposed Offset Area
 - 2015 Offset Area

KEY MAP



AUTHOR: DOMAN01@200007
DATE: 22-March-2019
CREATED BY INTEGRATED MAPPING SYSTEM
GEOCENTRIC DATUM OF AUSTRALIA



Appendix A
EPBC 2015/7626 Decision on Approval Letter



Mr John Szeliga
Delivery Manager Roads
Main Roads
PO Box 5010
BUNBURY WA 6230



File... 11/582
Document No. B17#1240
Resp. Officer
..... DM Szeliga
Related: B15#45791
AH in: B17#773

Dear Mr Szeliga

**Decision on approval
Bussell Highway – Capel to Hutton Section (28.38 - 31.15 SLK), WA**

I am writing to you in relation to a proposal to construct a second carriageway on a 4.8 km section of the Bussell Highway, Capel to Hutton (26.38 – 31.15 SLK).

I have considered the proposal in accordance with Part 9 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and have decided to grant an approval to Main Roads The details of my decision are attached. The proposal must be undertaken in accordance with the conditions specified in the approval.

I would appreciate your assistance by informing me when you commence the action and who will be the contact person responsible for the administration of the approval decision. Please note, any plans required as conditions of approval will be regarded as public documents unless you provide sufficient justification to warrant commercial-in-confidence status.

You should also note that this EPBC Act approval does not affect obligations to comply with any other laws of the Commonwealth, state or territory that are applicable to the action. Neither does this approval confer any right, title or interest that may be required to access land or waters to take the action.

The Department has an active audit program for proposals that have been referred or approved under the EPBC Act. The audit program aims to ensure that proposals are implemented as planned and that there is a high degree of compliance with any associated conditions. Please note that your project may be selected for audit by the Department at any time and all related records and documents may be subject to scrutiny. Information about the Department's compliance monitoring and auditing program is enclosed.

I have also written to the Department of Environment Regulation to advise them of this decision. If you have any questions about this decision, please contact the project manager, Angela Gillman, by email to angela.gillman@environment.gov.au or telephone 02 6274 2450 and quote the EPBC reference number shown at the beginning of this letter.

Yours sincerely

Bruce Edwards
Assistant Secretary
Assessments (WA, SA, NT) and Air Branch

5 January 2017



Approval

Bussell Highway (Capel to Hutton Section 26.38 to 32.15 SLK), WA (EPBC 2015/7626)

This decision is made under sections 130(1) and 133 of the *Environment Protection and Biodiversity Conservation Act 1999*.

person to whom the approval is granted	Main Roads
proponent's ACN (if applicable)	ABN 50 860 676 021
proposed action	To construct a second carriageway on a 4.8 km section of the Bussell Highway, Capel to Hutton (26.38 – 31.15 SLK) [See EPBC Act referral 2015/7626]).

Approval decision

Controlling Provision	Decision
Listed threatened species and communities (sections 18 & 18A)	Approved

Conditions of approval

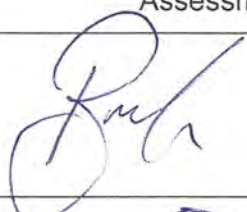
This approval is subject to the conditions specified below.

expiry date of approval

This approval has effect until 31 December 2022.

Decision-maker

name and position Bruce Edwards
Assistant Secretary
Assessments (WA, SA, NT) and Air Branch

signature 

date of decision 5 January 2017

Conditions

1. For the protection of EPBC listed western ringtail possum (*Pseudocheirus occidentalis*) the person taking the action must not **clear** more than 6.59 ha of **western ringtail possum supporting habitat** within the disturbance footprint shown in Sheets 1 to 3 of Figure 3 (Attachment A).
2. To offset the loss of 6.59 hectares of **western ringtail possum supporting habitat**, the person taking the action must:
 - (a) prior to the **commencement** of the action, provide written evidence to the **Minister** that the person taking the action has provided to the WA **DER Offsets Fund** \$305,250 (this being the amount set in Clearing Permit **CPS 7016/1**) for the purchase of an **offset site** of at least 20.35 hectares of **western ringtail possum supporting habitat**.
 - (b) within 12 months of the **commencement** of the action (or as otherwise agreed by the **Minister** in writing) the person taking the action must provide the **Department** with the **offset attributes** and a **shapefile** for the **offset site** required by condition 2(a).
3. To manage and mitigate impacts on the western ringtail possum (*Pseudocheirus occidentalis*) at the site of the action, the person taking the action must abide by Condition 9 of **CPS7016/1**, which requires that a **DER** approved western ringtail possum management plan is to be implemented and adhered to by the person taking the action prior to **commencement**.
4. Within 30 days after the **commencement** of the action, the person taking the action must advise the **Department** in writing of the actual date of **commencement**.
5. The person taking the action must maintain accurate records substantiating all activities associated with or relevant to the conditions of approval, including measures taken to implement the offset required by this approval, and make them available upon request to the **Department**. Such records may be subject to audit by the **Department** or an independent auditor in accordance with section 458 of the EPBC Act, or used to verify compliance with the conditions of approval. Summaries of audits will be posted on the **Department's** website. The results of audits may also be publicised through the general media.
6. Upon the direction of the **Minister**, the person taking the action must ensure that an independent audit of compliance with the conditions of approval is conducted and a report submitted to the **Minister**. The independent auditor must be approved by the **Minister** prior to the commencement of the audit. Audit criteria must be agreed to by the **Minister** and the audit report must address the criteria to the satisfaction of the **Minister**.
7. If, at any time after five years from the date of this approval, the person taking the action has not substantially **commenced** the action, then the person taking the action must not substantially **commence** the action without the written agreement of the **Minister**.

Definitions:

Clear: includes the cutting down, felling, thinning, logging, removing, killing, destroying, poisoning, ringbarking, uprooting or burning of native vegetation.

Commenced or Commencement: Clearing, or the construction of any infrastructure, excluding fences and signage, associated with the proposed action. Construction includes any preparatory works required to be undertaken including clearing vegetation, the erection of any onsite temporary

structures and the use of heavy duty equipment for the purpose of breaking the ground for buildings or infrastructure.

CPS 7016/1: The clearing permit granted by **DER** on 18 August 2016, or as varied from time to time.

Department: The Australian Government Department or any other agency administering the *Environment Protection and Biodiversity Conservation Act 1999* from time to time.

DER: The Western Australian Department of Environment Regulation (or equivalent).

DER Offsets Fund: The offset fund administered by **DER** for the purpose of establishing, and conserving offset sites.

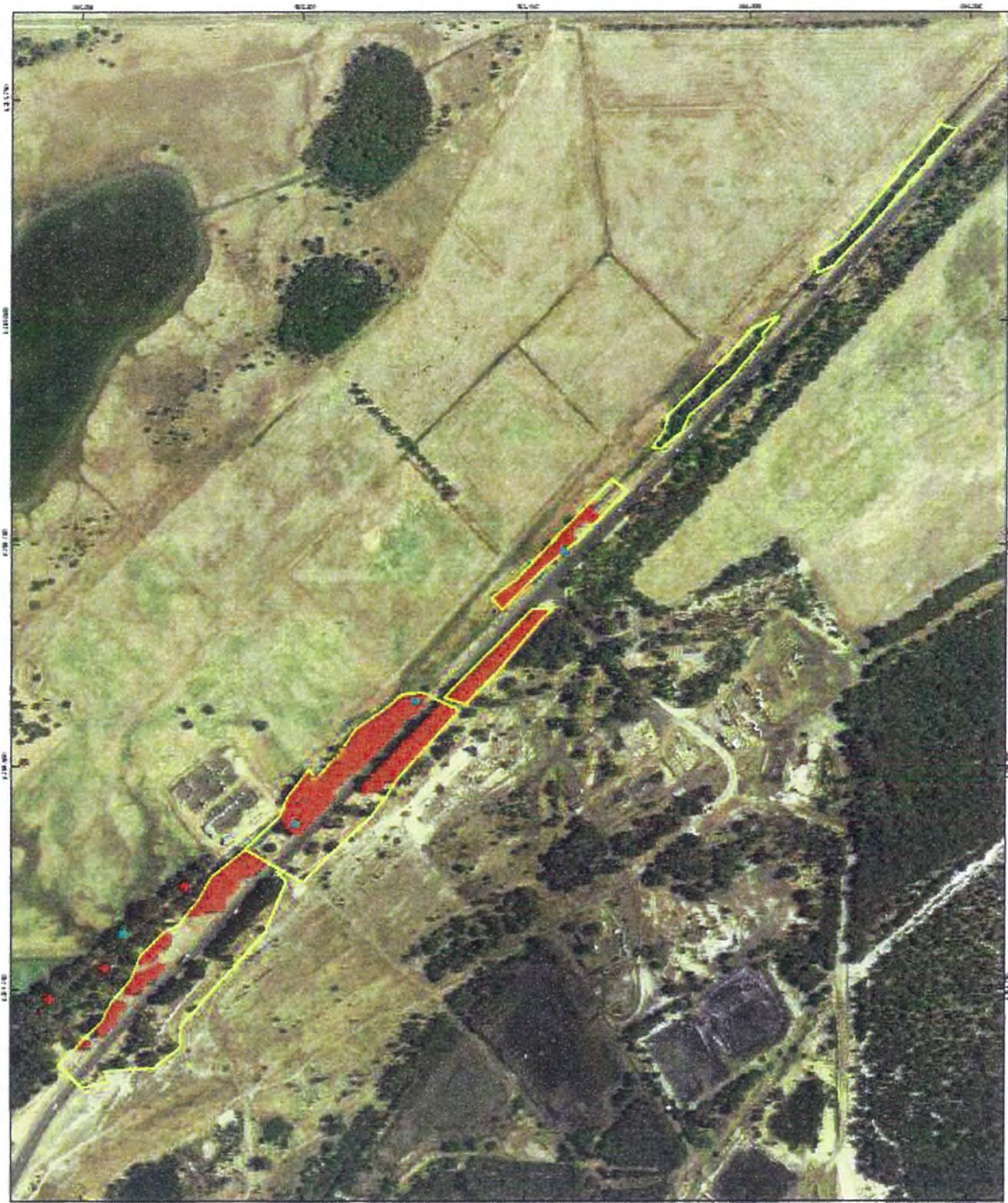
Minister. The Minister administering the *Environment Protection and Biodiversity Conservation Act 1999*, and includes a delegate of the Minister.

Offset attributes: An excel file (‘.xls’) capturing relevant attributes of the **offset site**, including the EPBC Act reference ID number, the physical address of the offset site, coordinates of the boundary points in decimal degrees, the EPBC Act protected matters that the offset compensates for, any additional EPBC Act protected matters that are benefitting from the offset, the size of the offset in hectares and the mechanism used to protect and conserve the offset area.

Offset site: An area that contains **western ringtail possum supporting habitat** and which will be purchased and retained by the WA Government for the purpose of protection and conservation of the western ringtail possum.

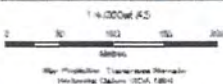
Shapefile: An ESRI shapefile containing ‘.shp’, ‘.shx’ and ‘.dbf’ files and other files capturing attributes of the **offset site**, including the shape, EPBC Act reference ID number and EPBC Act protected matters present at the relevant site. Attributes should also be captured in ‘.xls’ format.

Western ringtail possum supporting habitat: is as defined in EPBC Act policy statement 3.10 - *Significant impact guidelines for the vulnerable western ringtail possum (Pseudocheirus occidentalis) in the southern Swan Coastal Plain, Western Australia (2009)*.



LEGEND

- Suitable Habitat
- Disturbance Footprint
- Tree with Hollow
- Possum Records
- WRP Individual
- WRP Drey



Main Roads Western Australia
Bussell Hwy - Capel to Hulton Section
EPBC Act Referral

Job Number: 81-21023
Revision: 0
Date: 26 Nov 2015

Western Ringtail Possum Habitat

Sheet 2 of 3
Figure 3

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Appendix B
Clearing Permit CPS 7016/1



Government of **Western Australia**
Department of **Environment Regulation**

Your ref: **A14** 11/582 (B16#7303)
Our ref: CPS 7016/1
Enquiries: Samara Rogers
Phone: 9333 7541
Email: nvp@der.wa.gov.au

Mr Ben Hollyock
Main Roads Western Australia
PO Box 6202
EAST PERTH WA 6892

Attn: Mr Neil McCarthy



Dear Mr Hollyock

PERMIT TO CLEAR NATIVE VEGETATION UNDER THE *ENVIRONMENTAL PROTECTION ACT 1986*

I refer to Main Roads Western Australia's (MRWA) application to clear 5.53 hectares of native vegetation within various properties and road reserves within and adjacent to Bussell Highway SLK 26.38-32.15, within Capel and Ludlow, for the purpose of road reconstruction (reference CPS 7016/1).

Please find enclosed MRWA's permit to clear native vegetation granted under section 51E of the *Environmental Protection Act 1986*. This permit authorises MRWA to clear, subject to certain terms, conditions or restrictions. A copy of the permit is now available for the public to view, as required by the regulations.

A copy of the Decision Report is attached for your information. The Decision Report is also available for the public to view.

Please read MRWA's permit carefully. If MRWA wish to discuss the permit, please contact the Department of Environment Regulation (DER). Be aware that there are penalties for failing to comply with the requirements of your permit.

If you disagree with this decision an appeal may be lodged with the Minister for Environment. If you choose to appeal, it must be in writing, setting out the grounds of your appeal, and be received by the Minister within 21 days of being notified of the decision. More information on lodging an appeal is available from the Office of the Appeals Convenor on telephone 6467 5190. Completed appeals should be posted or delivered to:

Office of the Appeals Convenor
Level 22 Forrest Centre
221 St George's Terrace, PERTH WA 6000
Tel: 6467 5190 Fax: 6467 5199
Email: admin@appealsconvenor.wa.gov.au
Web: www.appealsconvenor.wa.gov.au

Third parties may also appeal against the grant of this permit or its conditions.

Please note that clearing must not commence until after the date stated on the permit and compliance with pre-clearing conditions have been met, or in the event of an appeal, after the appeal has been determined and MRWA have been notified that MRWA may proceed.

Please also note that in undertaking the clearing authorised under this permit, the Permit Holder is to have regard to avoiding clearing, minimising clearing, and reducing the impacts of clearing on any environmental value.

Compliance with the terms, conditions or restrictions of this permit does not absolve the Permit Holder from responsibility for compliance with the requirements of all Commonwealth, State and Local Government legislation.

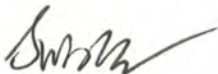
Please note Condition 8 of this permit requires the payment of \$305,250 to DER prior to clearing and no later than 30 November 2016. An invoice for this amount will be forwarded to you at your request after the statutory appeal period provided in the EP Act has expired and any appeals received have been determined.

In relation to the fauna management condition on your permit, as it relates to fauna declared as specially protected under the *Wildlife Conservation Act 1950*, please be aware that no such fauna are to be impacted (taken/relocated) unless a Department of Parks and Wildlife (Parks and Wildlife) fauna licence issued pursuant to Regulation 15 of the *Wildlife Conservation Regulations 1970* has been obtained. For further information on this matter please contact Parks and Wildlife's Licensing Section on telephone (08) 9219 9831, email wildlifelicensing@dpaw.wa.gov.au or view the Wildlife Licensing Section's website at www.dpaw.wa.gov.au

Please note, as your permit requires the submission of a report, this should be provided electronically via email to: nvp@der.wa.gov.au.

If you have any queries regarding this approval, please contact Senior Clearing Regulation Officer Ms Samara Rogers on 9333 7541.

Yours sincerely



James Widenbar
MANAGER
CLEARING REGULATION

*Officer delegated under Section 20
of the Environmental Protection Act 1986*

18 August 2016

Attached: Clearing Permit (CPS 7016/1), Plan 7016/1a, Plan 7016/1b, Plan 7016/1c and
Decision Report.
Fact Sheet 4: Complying with your Clearing Permit



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 7016/1
Permit Holder:	Commissioner of Main Roads Western Australia
Duration of Permit:	17 September 2016 to 17 September 2021

ADVICE NOTE

The funds referred to in condition 8 of this permit are intended for contributing towards the purchase of 20.35 hectares of native vegetation with similar environmental values containing black cockatoo and western ringtail possum habitat within the local area.

The Permit Holder is authorised to clear native vegetation subject to the following conditions of this Permit.

PART I—CLEARING AUTHORISED

1. Purpose for which clearing may be done

Clearing for the purpose of road reconstruction.

2. Land on which clearing is to be done

LOT 7 ON DIAGRAM 26769, CAPEL
LOT 74 ON PLAN 63783, CAPEL
LOT 660 ON PLAN 250387, CAPEL
LOT 5881 ON PLAN 18616, CAPEL
LOT 5880 ON PLAN 18616, CAPEL
LOT 55 ON PLAN 18907, CAPEL
LOT 54 ON PLAN 18907, CAPEL
LOT 53 ON PLAN 18907, CAPEL
LOT 52 ON PLAN 18907, CAPEL
LOT 51 ON PLAN 18907, CAPEL
LOT 305 ON PLAN 18907, LUDLOW
LOT 304 ON PLAN 18908, LUDLOW
LOT 20 ON PLAN 23348, CAPEL
LOT 2039 ON PLAN 140224, CAPEL
ROAD RESERVE (PIN 1142492), CAPEL
ROAD RESERVE (PIN 11609964), CAPEL
ROAD RESERVE (PIN 11510779), CAPEL
ROAD RESERVE (PIN 11609965), CAPEL
ROAD RESERVE (PIN 11510781), CAPEL

3. Area of Clearing

The Permit Holder must not clear more than 5.53 hectares of native vegetation within the combined areas shaded yellow on attached Plan 7016/1a, Plan 7016/1b and Plan 7016/1c.

4. Application

This Permit allows the Permit Holder to authorise persons, including employees, contractors and agents of the Permit Holder, to clear native vegetation for the purposes of this Permit subject to compliance with the conditions of this Permit and approval from the Permit Holder.

5. Type of clearing authorised

This Permit authorises the Permit Holder to clear native vegetation for the project activities described in condition 1 of this Permit to the extent that the Permit Holder has the power to carry out works involving clearing for those project activities under the *Main Roads Act 1930* or any other written law.

PART II – MANAGEMENT CONDITIONS

6. Avoid, minimise etc clearing

In determining the amount of native vegetation to be cleared authorised under this Permit, the Permit Holder must have regard to the following principles, set out in order of preference:

- (a) avoid the clearing of native vegetation;
- (b) minimise the amount of native vegetation to be cleared; and
- (c) reduce the impact of clearing on any environmental value.

7. Dieback and weed control

When undertaking any clearing or other activity authorised under this Permit, the Permit Holder must take the following steps to minimise the risk of the introduction and spread of *weeds* and *dieback*:

- (a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- (b) ensure that no *dieback* or *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared;
- (c) restrict the movement of machines and other vehicles to the limits of the areas to be cleared;
- (d) only move soils in *dry conditions*; and
- (e) where *dieback* or *weed*-affected soil, *mulch*, *fill* or other material is to be removed from the area to be cleared, ensure it is transferred to areas of comparable *soil disease status*.

8. Monetary contributions to a fund maintained for the purpose of establishing or maintaining vegetation (offset)

Prior to undertaking any clearing authorised under this Permit and no later than 30 November 2016, the Permit Holder shall provide documentary evidence to the CEO that funding of \$305,250 has been transferred to the Department of Environment Regulation for the purpose of establishing or maintaining native vegetation.

9. Western Ringtail Possum Management Plan

- (a) The Permit Holder must prepare a Western Ringtail Possum Management Plan.
- (b) The Western Ringtail Possum Management Plan must be submitted to the CEO at least 30 days prior to commencing works, for the CEO's approval.
- (c) Prior to clearing the Permit Holder must implement and adhere to the approved Western Ringtail Possum Management Plan.

10. Flora management

Prior to undertaking any clearing authorised under this Permit, the Permit Holder must demarcate any *Verticordia attenuata* recorded within ten metres of the area authorised to be cleared.

11. Fauna management

- (a) Prior to clearing *black cockatoo habitat tree(s)* identified in the fauna assessment (Fauna Assessment, Bussell Highway, Capel to Hutton Road Upgrade, Harewood 2012), as containing suitable hollows for Carnaby's cockatoo (*Calyptorhynchus latirostis*), Baudin's cockatoo (*Calyptorhynchus baudinii*) and forest red-tailed black cockatoo (*Calyptorhynchus banksii* subsp. *naso*) the Permit Holder shall engage a *fauna specialist* to check hollows fauna.
- (b) Where fauna are identified under condition 11(a) of this Permit, the Permit Holder shall ensure that:
 - (i) no clearing of the *black cockatoo habitat tree(s)* occurs, unless first approved by the CEO; and
 - (ii) no taking of identified fauna occurs, unless first approved by the CEO.

PART III - RECORD KEEPING AND REPORTING

12. Records must be kept

The Permit Holder must maintain the following records for activities done pursuant to this Permit:

- (a) In relation to the clearing of native vegetation authorised under this Permit:
 - (i) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings;
 - (ii) the date that the area was cleared; and
 - (iii) the size of the area cleared (in hectares).
- (b) In relation to condition 9 of this Permit the Permit Holder must maintain records of activities undertaken in accordance with the approved Western Ringtail Possum Management Plan.

13. Reporting

- (a) The Permit Holder must provide to the CEO on or before 30 June of each year, a written report:
 - (i) of records required under condition 12 of this Permit; and
 - (ii) concerning activities done by the Permit Holder under this Permit between 1 January to 31 December of the preceding calendar year.
- (b) If no clearing authorised under this Permit was undertaken between 1 January to 31 December of the preceding calendar, a written report confirming that no clearing under this permit has been carried out, must be provided to the CEO on or before 30 June of each year.
- (c) Prior to 30 August 2021, the Permit Holder must provide to the CEO a written report of records required under condition 12 of this Permit where these records have not already been provided under condition 13(a) of this Permit.

DEFINITIONS

The following meanings are given to terms used in this Permit:

black cockatoo habitat tree/s: means trees that have a diameter, measured at 1.5 metres from the base of the tree, of 50 centimetres or greater;

dieback means the effect of *Phytophthora* species on native vegetation;

dry conditions means when soils (not dust) do not freely adhere to rubber tyres, tracks, vehicle chassis or wheel arches;

fauna specialist: means a person who holds a tertiary qualification specializing in environmental science or equivalent, and has a minimum of 2 years work experience in fauna identification and surveys of fauna native to the region being inspected or surveyed, or who is approved by the CEO as a suitable fauna specialist for the bioregion, and who holds a valid fauna licence issued under the *Wildlife Conservation Act 1950*;

fill means material used to increase the ground level, or fill a hollow;

mulch means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation;

soil disease status means soil types either infested, not infested, uninterpretable or not interpreted with a pathogen; and

weed/s means any plant -

- (a) that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*; or
- (b) published in a Department of Parks and Wildlife Regional Weed Rankings Summary, regardless of ranking; or
- (c) not indigenous to the area concerned.



James Widenbar
MANAGER
CLEARING REGULATION

*Officer delegated under Section 20
of the Environmental Protection Act 1986*

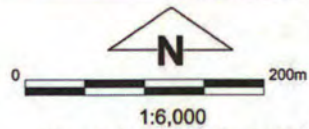
18 August 2016

Plan 7016/1a



Legend

-  Cadastre
-  Cadastre (Search)
-  Imagery
-  Clearing Instruments Activities
-  Roads
-  Local Government Authority



(Approximate when reproduced at A4)
GDA 94 (Lat/Long)
Geocentric Datum of Australia 1994

James Widenborg Date *18/8/16*

JAMES WIDENBORG
Officer with delegated authority under Section 20 of the Environmental
Protection Act 1986



GOVERNMENT OF
WESTERN AUSTRALIA
WA Crown Copyright 2016

Plan 7016/1b



Legend

-  Cadastre
-  Cadastre (Search)
-  Imagery
-  Clearing Instruments Activities
-  Roads
-  Local Government Authority



1:6,000
 (Approximate when reproduced at A4)
 GDA 94 (Lat/Long)
 Geocentric Datum of Australia 1994

James Woembar
 Date 1.8.18.1.1.6
 JAMES WOEMBAR

Officer with delegated authority under Section 20 of the Environmental Protection Act 1986



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 WESTERN AUSTRALIA
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Plan 7016/1c



Legend

-  Cadastre
-  Cadastre (Search)
-  Imagery
-  Clearing Instruments Activities
-  Roads
-  Local Government Authority



1:10,000
 (Approximate when reproduced at A4)
 GDA 94 (Lat/Long)
 Geocentric Datum of Australia 1994

James Wroblewski
 Date *18/5/16*
 JAMES WROBLEWSKI

Officer with delegated authority under Section 20 of the Environmental Protection Act 1986



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Appendix C
EPBC 2015 / 7626 Variation and Extension Letter



Ms Martine Scheltema
Manager Environment, Main Roads Western Australia
PO Box 5010
BUNBURY WA 6231

EPBC 2015/7626: Bussell Highway (Capel to Hutton Section 26.38 to 32.15 SLK), WA.

Dear Ms Scheltema,

Thank you for your letters of 23 July 2018 and 21 December 2018 requesting for EPBC 2015/7626, respectively, variation to the conditions of approval, and to extend the period of effect of approval. I understand the variation request resulted in an alternate offset proposal being agreed with the Department, and that an extension to the period of effect of approval is required to deliver the alternate offset.

Officers of this Department have advised me on the variation proposal and extension to the period of approval for EPBC 2015/7626. On this basis, and as a delegate of the Minister for the Environment and Energy, I have decided:

- in accordance with section 143 of the EPBC Act, to vary the conditions of approval to EPBC 2015/7626 to provide for the alternate offset site; and
- in accordance with section 145D of the EPBC Act, to extend the period of effect of approval for EPBC 2015/7626 to 22 December 2028 to provide sufficient time to report on satisfactory implementation of the alternate offset site.

A copy of my decisions are attached for your information. Please note that the decisions will soon be published on the Department's referral notices webpage.

Please note that the conditions of approval for EPBC 2015/7626 require Main Roads to submit, by 31 March 2019, a Revegetation Plan for approval by the Minister. The draft plan must include a series of features, including agreement to the plan by the Department of Biodiversity Conservation and Attractions.

The Department has an active monitoring program which includes monitoring inspections, and desktop document reviews and audits. Please ensure that you maintain accurate records of all activities associated with the conditions of approval.

Should you require further information regarding my decision please contact Vaughn Cox on 02 6274 2005, or by email: post.approvals@environment.gov.au.

Yours sincerely

Chris Videroni
Acting Assistant Secretary
Assessment (WA, SA, NT) & Post Approvals Branch
Environment Standards Division

11 January 2019

Attachments: Variation to conditions of approval.
Notice of Extension of Period of Effect of Approval.



VARIATION OF CONDITIONS ATTACHED TO APPROVAL

Bussell Highway (Capel to Hutton Section 26.38 to 32.15 SLK), WA (EPBC 2015/7626)

This decision to vary conditions of approval is made under section 143 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

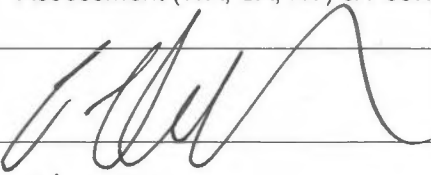
Approved action

Person to whom the approval is granted	Main Roads ABN: 50 860 676 021
Approved action	To construct a second carriageway on a 4.8 km section of the Bussell Highway, Capel to Hutton (26.38 – 31.15 SLK) [See EPBC Act referral 2015/7626].

Variation

Variation of conditions attached to approval	The variation is: Add Attachment B. Delete condition 2 attached to the approval and substitute with condition 2 specified in the table below. Delete the definitions 'DER Offsets Fund' and 'Offset site' and insert the definitions 'DBCA' and 'Offset Area'.
Date of effect	This variation has effect on the date the instrument is signed

Person authorised to make decision

Name and position	Chris Videroni Acting Assistant Secretary Assessment (WA, SA, NT) & Post Approvals Branch
Signature	
Date of decision	11 January 2019

Date of decision	Conditions attached to approval
Original dated 5/01/2017	<p>1. For the protection of EPBC listed western ringtail possum (<i>Pseudocheirus occidentalis</i>) the person taking the action must not clear more than 6.59 ha of western ringtail possum supporting habitat within the disturbance footprint shown in Sheets 1 to 3 of Figure 3 (<u>Attachment A</u>).</p>
As varied on the date this instrument was signed	<p>2. To offset the loss of 6.59 hectares of western ringtail possum supporting habitat, the person taking the action must, by 31 March 2019, submit to the Department a Revegetation Plan for approval by the Minister. The Revegetation Plan must;</p> <ul style="list-style-type: none"> a) include the objective of establishing, by January 2032, a continuous canopy cover of at least 20.35 hectares within the portion of State Forest #2 Ludlow shown at Attachment B for the benefit of western ringtail possum (<i>Pseudocheirus occidentalis</i>); b) specify the species to be planted, and planting, vegetation protection and performance monitoring methods to be used to achieve the objective in Condition 2(a); c) ensure at least 50% of the offset site is planted during 2020 and 100% is planted by December 2021; d) include the shapefile for the 20.35 hectares required in Condition 2(a); e) commit to annual reporting to the Department on plan implementation, risk management, success and any corrective measures implemented; and f) be agreed by the DBCA.
Original dated 5/01/2017	<p>3. To manage and mitigate impacts on the western ringtail possum (<i>Pseudocheirus occidentalis</i>) at the site of the action, the person taking the action must abide by Condition 9 of CPS7016/1, which requires that a DER approved western ringtail possum management plan is to be implemented and adhered to by the person taking the action prior to commencement.</p>
Original dated 5/01/2017	<p>4. Within 30 days after the commencement of the action, the person taking the action must advise the Department in writing of the actual date of commencement.</p>
Original dated 5/01/2017	<p>5. The person taking the action must maintain accurate records substantiating all activities associated with or relevant to the conditions of approval, including measures taken to implement the offset required by this approval, and make them available upon request to the Department. Such records may be subject to audit by the Department or an independent auditor in accordance with section 458 of the EPBC Act, or used to verify compliance with the conditions of approval. Summaries of audits will be posted on the Department's website. The results of audits may also be publicised through the general media.</p>
Original dated 5/01/2017	<p>6. Upon the direction of the Minister, the person taking the action must ensure that an independent audit of compliance with the conditions of approval is conducted and a report submitted to the Minister. The independent auditor must be approved by the Minister prior to the commencement of the audit.</p>

Date of decision	Conditions attached to approval
	Audit criteria must be agreed to by the Minister and the audit report must address the criteria to the satisfaction of the Minister .
Original dated 5/01/2017	7. If, at any time after five years from the date of this approval, the person taking the action has not substantially commenced the action, then the person taking the action must not substantially commence the action without the written agreement of the Minister .

Date of decision	Definitions attached to approval
As varied on the date this instrument was signed	<p>Clear: includes the cutting down, felling, thinning, logging, removing, killing, destroying, poisoning, ringbarking, uprooting or burning of native vegetation.</p> <p>Commenced or Commencement: Clearing, or the construction of any infrastructure, excluding fences and signage, associated with the proposed action. Construction includes any preparatory works required to be undertaken including clearing vegetation, the erection of any onsite temporary structures and the use of heavy duty equipment for the purpose of breaking the ground for buildings or infrastructure.</p> <p>CPS 7016/1: The clearing permit granted by DER on 18 August 2016, or as varied from time to time.</p> <p>Department: The Australian Government Department or any other agency administering the <i>Environment Protection and Biodiversity Conservation Act 1999</i> from time to time.</p> <p>DBCA: The Western Australian Department of Biodiversity Conservation and Attractions (or equivalent).</p> <p>DER: The Western Australian Department of Environment Regulation (or equivalent).</p> <p>Minister. The Minister administering the <i>Environment Protection and Biodiversity Conservation Act 1999</i>, and includes a delegate of the Minister.</p> <p>Offset site: is the portion of State Forest #2 Ludlow, shown at <u>Attachment B</u>, in which 20.35 hectares will be revegetated for the benefit of western ringtail possum (<i>Pseudocheirus occidentalis</i>).</p> <p>Shapefile: An ESRI shapefile containing '.shp', '.shx' and '.dbf' files and other files capturing attributes of the offset site, including the shape, EPBC Act reference ID number and EPBC Act protected matters present at the relevant site. Attributes should also be captured in '.xls' format.</p> <p>Western ringtail possum supporting habitat: is as defined in EPBC Act policy statement 3.10 - <i>Significant impact guidelines for the vulnerable western ringtail possum (Pseudocheirus occidentalis) in the southern Swan Coastal Plain, Western Australia (2009)</i>.</p>

Original dated 19/01/2018



- LEGEND**
- Suitable Habitat
 - Disturbance Footprint
 - Possum Records
 - Tree with Hollow
 - WRP Individual
 - WRP Drey

<p>1:5,000d A3</p> <p>0 50 100 150 200 Metres</p> <p>Map Projection: Transverse Mercator National Datum: GDA 1984 Map: SDA 1000 8000 Zone 52</p>				<p>Main Roads Western Australia Bussell Hwy - Capel to Hubbon Section EPBC Act Referral</p>	<p>Job Number: 01-31823 Revision: 0 Date: 26 Nov 2015</p>
<p>Western Ringtail Possum Habitat</p>				<p>Sheet 3 of 3 Figure 3</p>	
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**Bussell Highway (Capel to Hutton)
EPBC2015/7626
Potential Offset Area**

DESCRIPTION:
Bussell Highway (Capel to Hutton)
EPBC2015/7626
Potential Offset Area

Attachment B



LEGEND
SF_2_Bussell_Hwy_Offset_

KEY MAP



Notice of Extension of Period of Effect of Approval

Bussell Highway (Capel to Hutton Section 26.38 to 32.15 SLK), WA (EPBC 2015/7626)

This decision is made under section 145D of the *Environment Protection and Biodiversity Conservation Act 1999*.

Approved action

person to whom the approval is granted	Main Roads
approved action	To construct a second carriageway on a 4.8 km section of the Bussell Highway, Capel to Hutton (26.38 – 31.15 SLK) [See EPBC Act referral 2015/7626].

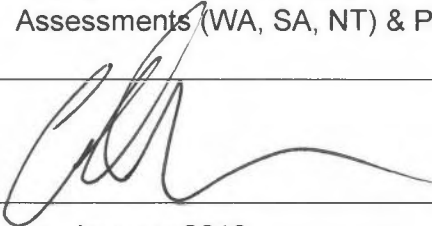
Approval

Controlling Provision	Decision
Listed threatened species and communities (sections 18 and 18A)	Approved

Extension of Period of Effect of Approval

Period for which approval is extended	The approval has been extended until 22 December 2028.
Date of effect	The extension has effect on the date the instrument is signed.

Decision-maker

name and position	Chris Videroni Acting Assistant Secretary Assessments (WA, SA, NT) & Post Approvals Branch
signature	
date of decision	11 January 2019

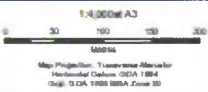
Date of decision	Conditions attached to approval
Original dated 5/01/2017	<p>1. For the protection of EPBC listed western ringtail possum (<i>Pseudocheirus occidentalis</i>) the person taking the action must not clear more than 6.59 ha of western ringtail possum supporting habitat within the disturbance footprint shown in Sheets 1 to 3 of Figure 3 (<u>Attachment A</u>).</p>
As varied on the date this instrument was signed	<p>2. To offset the loss of 6.59 hectares of western ringtail possum supporting habitat, the person taking the action must, by 31 March 2019, submit to the Department a Revegetation Plan for approval by the Minister. The Revegetation Plan must;</p> <ul style="list-style-type: none"> a) include the objective of establishing, by January 2032, a continuous canopy cover of at least 20.35 hectares within the portion of State Forest #2 Ludlow shown at Attachment B for the benefit of western ringtail possum (<i>Pseudocheirus occidentalis</i>); b) specify the species to be planted, and planting, vegetation protection and performance monitoring methods to be used to achieve the objective in Condition 2(a); c) ensure at least 50% of the offset site is planted during 2020 and 100% is planted by December 2021; d) include the shapefile for the 20.35 hectares required in Condition 2(a); e) commit to annual reporting to the Department on plan implementation, risk management, success and any corrective measures implemented; and f) be agreed by the DBCA.
Original dated 5/01/2017	<p>3. To manage and mitigate impacts on the western ringtail possum (<i>Pseudocheirus occidentalis</i>) at the site of the action, the person taking the action must abide by Condition 9 of CPS7016/1, which requires that a DER approved western ringtail possum management plan is to be implemented and adhered to by the person taking the action prior to commencement.</p>
Original dated 5/01/2017	<p>4. Within 30 days after the commencement of the action, the person taking the action must advise the Department in writing of the actual date of commencement.</p>
Original dated 5/01/2017	<p>5. The person taking the action must maintain accurate records substantiating all activities associated with or relevant to the conditions of approval, including measures taken to implement the offset required by this approval, and make them available upon request to the Department. Such records may be subject to audit by the Department or an independent auditor in accordance with section 458 of the EPBC Act, or used to verify compliance with the conditions of approval. Summaries of audits will be posted on the Department's website. The results of audits may also be publicised through the general media.</p>
Original dated 5/01/2017	<p>6. Upon the direction of the Minister, the person taking the action must ensure that an independent audit of compliance with the conditions of approval is conducted and a report submitted to the Minister. The independent auditor must be approved by the Minister prior to the commencement of the audit. Audit criteria must be agreed to by the Minister and the audit report must address the criteria to the satisfaction of the Minister.</p>

Date of decision	Conditions attached to approval
Original dated 5/01/2017	<p>7. If, at any time after five years from the date of this approval, the person taking the action has not substantially commenced the action, then the person taking the action must not substantially commence the action without the written agreement of the Minister.</p>

Date of decision	Definitions attached to approval
As varied on the date this instrument was signed	<p>Clear: includes the cutting down, felling, thinning, logging, removing, killing, destroying, poisoning, ringbarking, uprooting or burning of native vegetation.</p> <p>Commenced or Commencement: Clearing, or the construction of any infrastructure, excluding fences and signage, associated with the proposed action. Construction includes any preparatory works required to be undertaken including clearing vegetation, the erection of any onsite temporary structures and the use of heavy duty equipment for the purpose of breaking the ground for buildings or infrastructure.</p> <p>CPS 7016/1: The clearing permit granted by DER on 18 August 2016, or as varied from time to time.</p> <p>Department: The Australian Government Department or any other agency administering the <i>Environment Protection and Biodiversity Conservation Act 1999</i> from time to time.</p> <p>DBCA: The Western Australian Department of Biodiversity Conservation and Attractions (or equivalent).</p> <p>DER: The Western Australian Department of Environment Regulation (or equivalent).</p> <p>Minister. The Minister administering the <i>Environment Protection and Biodiversity Conservation Act 1999</i>, and includes a delegate of the Minister.</p> <p>Offset site: is the portion of State Forest #2 Ludlow, shown at <u>Attachment B</u>, in which 20.35 hectares will be revegetated for the benefit of western ringtail possum (<i>Pseudocheirus occidentalis</i>).</p> <p>Shapefile: An ESRI shapefile containing '.shp', '.shx' and '.dbf' files and other files capturing attributes of the offset site, including the shape, EPBC Act reference ID number and EPBC Act protected matters present at the relevant site. Attributes should also be captured in '.xls' format.</p> <p>Western ringtail possum supporting habitat: is as defined in EPBC Act policy statement 3.10 - <i>Significant impact guidelines for the vulnerable western ringtail possum (Pseudocheirus occidentalis) in the southern Swan Coastal Plain, Western Australia (2009)</i>.</p>



- LEGEND**
- Suitable Habitat
 - ▭ Disturbance Footprint
 - Possum Records
 - + WRP Individual
 - WRP Drey
 - Tree with Hollow



Main Roads Western Australia
 Bussell Hwy - Capel to Hutton Section
 EPBC Act Referral

Job Number: 01-015003
 Revision: 0
 Date: 28 Nov 2015

Western Ringtail Possum Habitat

Sheet 2 of 3
 Figure 3

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Original dated 19/01/2018



LEGEND

- Suitable Habitat
- Disturbance Footprint
- Possum Records
- + WRP Individual
- WRP Drey
- Tree with Hollow

<p>1:5,000 @ A3</p> <p>0 50 100 150 200</p> <p>Meters</p> <p>Map Projection: Transverse Mercator Horizontal Datum: GDA 1984 Spheroid: Everest Datum: 1956 Units: Meter</p>				<p>Main Roads Western Australia Bussell Hwy - Cape to Hutton Section EPSC Act Referral</p>	<p>Job Number: 61-31923 Revision: 0 Date: 28 Nov 2018</p>
				<p>Western Ringtail Possum Habitat</p>	<p>Sheet 3 of 3 Figure 3</p>

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**Bussell Highway (Capel to Hutton)
EPBC 2015/7626
Potential Offset Area**

DESCRIPTION:
Bussell Highway (Capel to Hutton)
EPBC 2015/7626
Potential Offset Area



LEGEND

 SF_2_Bussell_Hwy_Offset_

KEY MAP

Appendix D

Revegetation Planting and Seeding Procedures

Dieback Management

The site is expected to be dieback unprotectable based on past site activities and uncontrolled access.

Dieback management measures shall include:

- Prior to arrival on site all plant, machinery, equipment and tools are to be cleaned and
- Prior to departure from the project site all plant, machinery, equipment and tools are to be cleaned.

Revegetation Methodology

Planting methods will follow the Revegetation Planning and Techniques Doc. No. 6707/031 (MRWA 2004). Techniques for site preparation for seed and seedling planting are described below.

Seed & Seedling sources

Seed will primarily be sourced from the site and germinated by local nurseries where possible. Where necessary, additional seed will be sourced from within the South West Botanical Province, ensuring that the indigenous features of the local species are maintained.

Seedlings required for the project will be sourced from nurseries accredited under the Nursery Industry Accreditation Scheme of Australia. The nurseries are required to comply with the potting mix requirements of AS 7343 and to use industry approved containers for the seedlings. All containers are sterilised prior to any material being placed in them to avoid the introduction or spread of soil borne pathogens.

Only suitably mature tube stock with well-developed roots, 10-15 cm high foliage that has been hardened off and is in generally good health will be accepted. In-fill planting seedlings will be ordered on an annual basis (November) to allow sufficient time for seed collection and plant propagation.

Direct Seeding

The site will be prepared by ripping to 500mm deep and rotary hoeing the soil where possible (i.e. if not too rocky). Seed will be sown in late May / early June (depending on the season) and shallow raked to bed the seed in.

Seedling Planting

Planting will be undertaken during the winter season when the soil moisture is suitable for seedling establishment, usually between May and July. Depending upon the site conditions, planting will be undertaken using either the rip-mound-plant; rip furrow plant or infill planting using individual augur hole planting methods.

All seedlings are to be planted with an industry standard, 20g slow release native fertiliser tablet approximately 200 mm deep and 200 mm from the roots.

Rip Mound Planting

This method involves an initial herbicide application followed by ripping and rotary hoeing of the areas to be mounded to remove large soil aggregates and improve soil friability. This is followed by the ripping of soil to a minimum depth of 500 mm and the mounding of the soil into rows approximately 500 mm high (soil will settle to approximately 300 mm high). All mounds are then to be treated with a pre-emergent herbicide. Mulch is then spread over the mounds to an optimal depth of 70 mm and seedlings are planted on the top of these mounds.

In waterlogged soil conditions this method provides the advantage of creating a zone of aerated soil for root development. Additional advantages of creating this rip mound plant area are the definition of a maintenance zone for weed control. Mounded rows should traverse any slopes to discourage water movement and soil erosion.

Rip Furrow Planting

This method involves an initial herbicide application followed by scalping of the weedy topsoil to create a furrow approximately 100mm deep. This is then followed by the ripping of the soil in the centre of the furrow line to a minimum depth of 500 mm forming rows. All furrowed areas are then treated with a pre-emergent herbicide. Mulch is then spread along the furrows to an optimal depth of 70 mm and seedlings are planted along the rip lines.

In drier conditions or in non-wetting soils such as grey sands, the inverted furrows also need to follow existing contours to promote localised areas for water infiltration and avoid scour problems.

Auger Planting

This method is used in situations where creating a mound is undesirable for soil erosion reasons, where site access is too restrictive, where the area is relatively small or for in-fill planting. After weed control measures are undertaken, holes are augered to a minimum depth of 500 mm with a CSIRO tree auger or equivalent. Seedlings are planted into these holes and mulch is placed around the seedling for approximately 1 m² and 70 mm deep.

Weed Control

Weed control is undertaken the year prior to planting (e.g. herbicide application), when it is most suitable to eradicate the species present and any time after seedling planting, when required to control annual grasses.

Weed control shall be conducted prior to any new planting works as failure to control weeds will result in unsuccessful revegetation. Control of weeds will be undertaken using Roundup Bioactive®. Weed control will continue for up to three years after planting, or as necessary.

Pest control

New planting sites that are likely to be damaged by local fauna will have tree guards placed around seedlings as required to minimise damage from rabbits and kangaroos.

Control methods for rabbits may need to be implemented prior to any revegetation works and during the establishment period. Monitoring of this threat is to be undertaken on a regular basis to ensure the extent of infestations is known and the appropriate management is implemented.