



GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 6670/1
Permit Holder:	Commissioner of Main Roads Western Australia
Duration of Permit:	18 May 2016 – 18 May 2021

ADVICE NOTE

The funds referred to in condition 8 of this permit are intended for contributing towards the purchase of 47 hectares of native vegetation with similar environmental values containing Carnaby's cockatoo habitat within the Avon Wheatbelt Bioregion.

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 widening.

2. Land on which clearing is to be done

Northam Pithara Road reserve (PIN 11709537), Pithara
Rail reserve (PIN 992410 and PIN 1050974), Pithara
Lot 2 on Deposited Plan 26251, Marne
Lot 2305 on Deposited Plan 88475, Marne
Lot 1517 on Deposited Plan 127396, Marne
Lot 2226 on Deposited Plan 139663, Marne
Lot 2174 on Deposited Plan 229471, Marne
Lot 2309 on Deposited Plan 142770 (Reserve 16272), Marne
Northam Pithara Road reserve (PIN 11429307, PIN 11709508, PIN 11709536 and PIN 11709855),
Marne
Rail reserve (PIN 1052104, PIN 1052105 and PIN 1323363), Marne
Marne West Road reserve (PIN 11709534), Marne
McKay Road reserve (PIN 11707291), Marne
Un-named road reserve (PIN 11429306), Marne
Lot 1073 on Deposited Plan 201999, East Ballidu
Lot 420 on Deposited Plan 229966, East Ballidu
Northam Pithara Road reserve (PIN 11412686, 11709853 and PIN 11709856), East Ballidu
Rail reserve (PIN 989827, PIN 989831, PIN 1052109), East Ballidu
Lot 3230 on Deposited Plan 168428, West Ballidu
Lot 351 on Deposited Plan 301620, West Ballidu
Lots 420 on Deposited Plan 229966, West Ballidu
Lot 1093 on Deposited Plan 229966, West Ballidu
Northam Pithara Road reserve (PIN 11709852), West Ballidu
Lot 234 on Deposited Plan 240132 (Reserve 35900), Ballidu
Rail reserve (PIN 1052111), Ballidu
Un-named road reserve (PIN: 11728664), Ballidu
McNeill Street road reserve (PIN 11472853), Ballidu
Carter Road reserve (PIN 11412691, PIN 11728663 and PIN 11728666), Ballidu
Ballidu – Bindi Bindi Road reserve (PIN 11728662), Ballidu

3. Area of Clearing

The Permit Holder must not clear more than 15.65 hectares of native vegetation within the area shaded yellow on attached Plan 6670/1.

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. 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*:

- (a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- (b) ensure that no *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared; and
- (c) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

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 21 April 2017, the Permit Holder shall provide documentary evidence to the CEO that funding of \$188,000 has been transferred to the Department of Environment Regulation for the purpose of establishing or maintaining native vegetation.

9. Revegetation Offset Plan

- (a) The Permit Holder must prepare a Revegetation Offset Plan for re-establishing *Dampiera glabrescens* and submit to the CEO for the CEO's approval.
- (b) If it is necessary to modify the Revegetation Offset Plan under 9(a) then the Permit Holder must provide that modified Revegetation Offset Plan to the CEO for the CEO's approval prior to implementing the modified Revegetation Offset Plan.
- (c) The Permit Holder shall implement the latest version of the Revegetation Offset Plan approved by the CEO.

10. Environmental Management Plan

- (a) The Permit Holder must implement and adhere to the approved document Environmental Management Plan. Northam Pithara Widening SLK 129.12 to 152.25. March 2016. TRIM Document Number D15#150481.
- (b) If it is necessary to modify the Environmental Management Plan under 10(a) then the Permit Holder must provide that modified Environmental Management Plan to the CEO for the CEO's approval prior to implementing the modified Environmental Management Plan.

- (c) The Permit Holder shall implement the latest version of the Environmental Management Plan approved by the CEO.

PART III - RECORD KEEPING AND REPORTING

11. 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 Revegetation Offset Plan.

12. 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 11 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 21 February 2021, the Permit Holder must provide to the CEO a written report of records required under condition 11 of this Permit where these records have not already been provided under condition 12(a) of this Permit.

DEFINITIONS

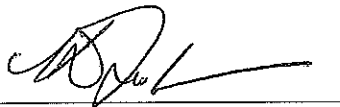
The following meanings are given to terms used in this Permit:

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;

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.

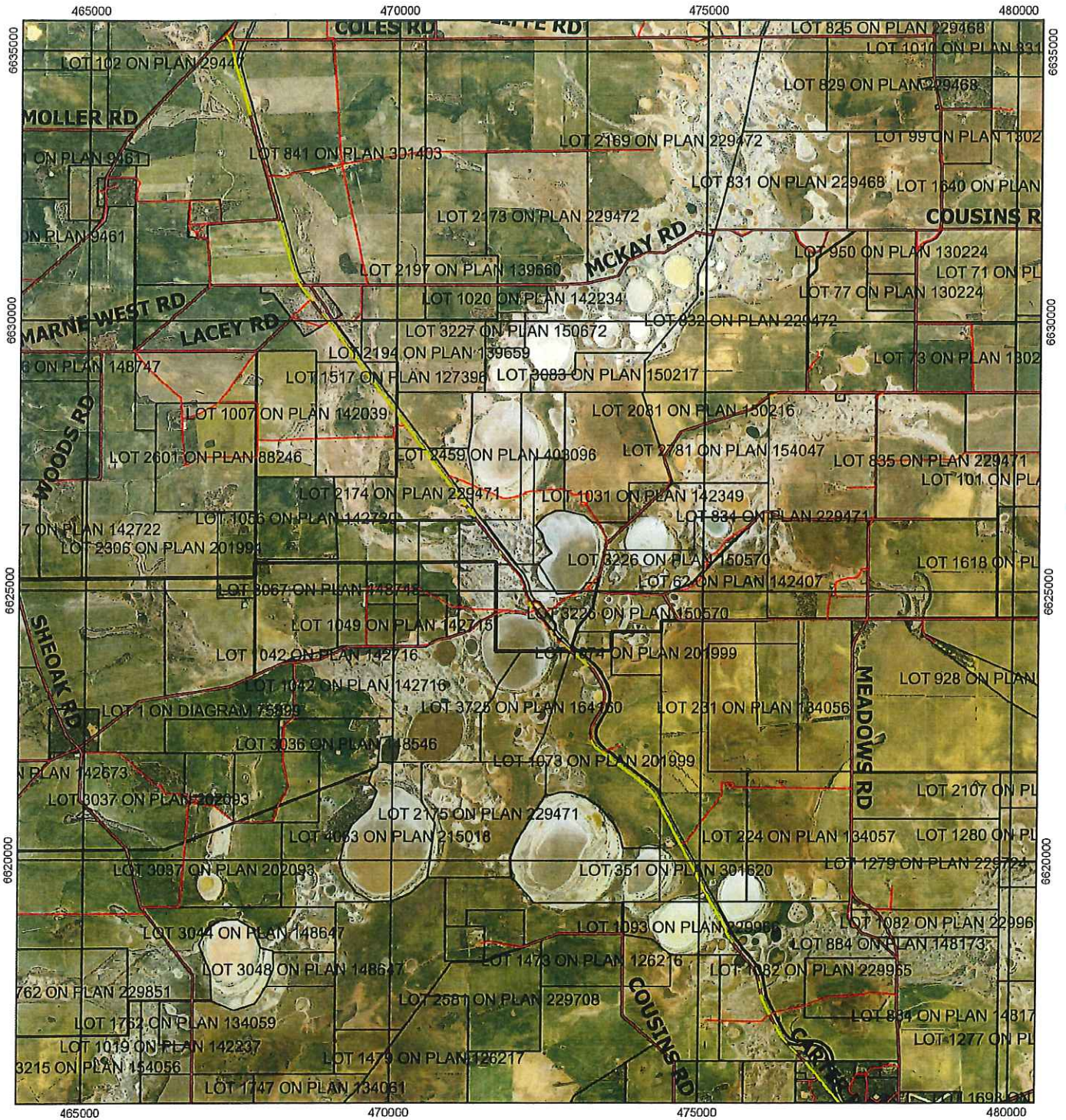


Kelly Faulkner
EXECUTIVE DIRECTOR
LICENSING AND APPROVALS

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

18 April 2016

Plan 6670/1



Legend

- Areas approved to clear Virtual Mosaic (LGATE-V001)
- Cadastre



1:68,537

MGA 94
Geocentric Datum of Australia 1994

[Signature]
Kelly Faulkner

Date: 28/4/16.

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



GOVERNMENT OF WESTERN AUSTRALIA



This report has been prepared to fulfil the requirements of an accredited environmental assessment process between the Commonwealth and State governments, pursuant to a bilateral agreement established under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

This report is set out in three parts:

- Part 1: Application and site details;
- Part 2: Assessment against matters of national environmental significance (pursuant to the EPBC Act); and
- Part 3: Assessment against the clearing principles (pursuant to the *Environmental Protection Act 1986* (EP Act)). Appeal rights pursuant to section 101A of the EP Act are relevant to this section of the report.

Part 1: Application and site details

1. Application details

1.1. Permit application details

Permit application No.: 6670/1
Permit type: Purpose Permit

1.2. Applicant details

Applicant's name: Main Roads Western Australia

1.3. Property details

Property:

LOT 420 ON PLAN 229966, EAST BALLIDU
 LOT 351 ON PLAN 301620, WEST BALLIDU
 LOT 3230 ON PLAN 168428, WEST BALLIDU
 LOT 2 ON PLAN 26251, MARNE
 LOT 234 ON PLAN 240132, BALLIDU
 LOT 2309 ON PLAN 142770, MARNE
 LOT 2305 ON PLAN 88475, MARNE
 LOT 2226 ON PLAN 139663, MARNE
 LOT 2174 ON PLAN 229471, MARNE
 LOT 1517 ON PLAN 127396, MARNE
 LOT 1093 ON PLAN 229966, WEST BALLIDU
 LOT 1073 ON PLAN 201999, EAST BALLIDU
 ROAD RESERVE - 11728666, BALLIDU
 ROAD RESERVE - 11472853, BALLIDU
 RAILWAY RESERVE, BALLIDU
 ROAD RESERVE - 11728664, BALLIDU
 ROAD RESERVE - 11412691, BALLIDU
 ROAD RESERVE - 11728662, BALLIDU
 ROAD RESERVE - 11728663, BALLIDU
 ROAD RESERVE - 11709853, EAST BALLIDU
 ROAD RESERVE - 11412686, EAST BALLIDU
 RAILWAY RESERVE, EAST BALLIDU
 ROAD RESERVE - 11709852, WEST BALLIDU
 ROAD RESERVE - 11709856, EAST BALLIDU
 ROAD RESERVE - 11709855, MARNE
 ROAD RESERVE - 11709508, MARNE
 RAILWAY RESERVE, MARNE
 ROAD RESERVE - 11429307, MARNE
 ROAD RESERVE - 11429306, MARNE
 ROAD RESERVE - 11707291, MARNE
 ROAD RESERVE - 11709536, MARNE
 RAILWAY RESERVE, PITHARA
 ROAD RESERVE - 11709537, PITHARA
 ROAD RESERVE - 11709534, MARNE

Colloquial name: Northam Pithara Road
 Local Government Authority: SHIRES OF WONGAN-BALLIDU and DALWALLINU
 DER Region: Greater Swan
 DPaW District: CENTRAL WHEATBELT
 LCDC: EAST BALLIDU and PITHARA -DALWALLINU
 Localities: MARNE and EAST BALLIDU and PITHARA and WEST BALLIDU and EAST DAMBORING and BALLIDU

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
15.65	0	Mechanical Removal	Road construction or upgrades

1.5. Decision on application

Decision on Permit Application: Grant

Decision Date: 18 April 2016

Reasons for Decision: The clearing application has been assessed against the clearing principles, planning instruments and other matters in accordance with s51O of the *Environmental Protection Act 1986* (EP Act), and it has been concluded that the proposed clearing is at variance to clearing principles (a), (b), (e) and (f) and is not likely to be at variance to the remaining clearing principles.

An assessment determined that the proposed clearing will lead to the loss of 15.65 hectares of native vegetation that includes:

- eight individuals of priority 1 flora *Damperia glabrescens*, totalling 0.1 hectares;
- 13.56 hectares of foraging habitat and 56 potential nesting trees for Carnaby's cockatoo; and
- 15.65 hectares of native vegetation considered to be a significant remnant of native vegetation in an area that has been extensively cleared.

On 29 May 2015 the project was determined to be a controlled action under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) for the following controlling provision: Listed Threatened Species and Communities. The controlled action is likely to have a significant impact on Carnaby's cockatoo (*Calyptorhynchus latirostris*) and on rare flora *Frankenia conferta*, both of which are listed as endangered under the EPBC Act. In respect to *Frankenia conferta*, the Delegated Officer considered that provided the management measures outlined in the applicant's Environmental Management Plan are adhered to and the existing hydrology of the site is not altered, it is considered that the proposed clearing is unlikely to result in significant residual impacts to this species and therefore an offset is not required.

Consistent with the WA Environmental Offset Policy (2011) and WA Environmental Offsets Guidelines (2014), and pursuant to section 51(2)(b) of the EP Act, in order to mitigate the significant environment impacts described above the Permit Holder is required to provide an offset that comprised the following components:

- documented evidence that a monetary contribution towards the purchase of 47 hectares of remnant vegetation that includes habitat for Carnaby's cockatoo has been transferred to the Department of Environment Regulation; and
- develop a Revegetation Plan for the re-establishment of *Dampiera glabrescens*.

The proposed offset described above is consistent with the EPBC Act Environmental Offsets Policy (October 2012) and Offsets Assessment Guide.

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description	Clearing Description	Vegetation Condition	Comment
The application area has been mapped as the following Beard vegetation associations: - 142: Medium woodland; York gum and salmon gum - 125: Bare areas; salt lakes - 988: Succulent steppe with thicket; <i>Melaleuca thyoides</i> over samphire - 1024: Shrublands; mallee and casuarina thicket (Shepherd et al, 2001)	The application proposes to clear 15.65 hectares of native vegetation within various road reserves, rail reserves and properties within the localities of Pithara, Marne, East Ballidu, West Ballidu and Ballidu, for the purpose of widening Northam-Pithara Road.	Excellent; Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994) To Completely Degraded: No longer intact; completely/almost completely without native species (Keighery, 1994).	A total of 13 vegetation units were described and mapped from 22 sites within the survey area during the field assessment in May 2012 (AECOM, 2012). This includes: - <i>Allocasuarina-Melaleuca</i> Scrub - <i>Acacia-Santalum</i> Shrubland - <i>Darwinia</i> Heath - <i>Eucalyptus</i> Tree Mallee - <i>Eucalyptus loxophleba</i> Woodland - <i>Grevillea-Santalum</i> Scrub - <i>Grevillea-Melaleuca</i> Shrubland - <i>Melaleuca</i> Scrub - <i>Tecticomia</i> Heath The vegetation within the survey area ranges in condition from completely degraded to excellent. The majority of the vegetation is in a good (Keighery, 1994) condition (DER, 2016). The description and condition of the vegetation was determined via a site inspection conducted by the Department of Environment Regulation (DER) on 30 September 2015 and through a biological assessment conducted by AECOM (2012).

Part 2: Assessment against matters of national environmental significance

3. Assessment of application against Matters of National Environmental Significance

Background

Main Roads Western Australia (MRWA; the applicant) proposes to clear 15.65 hectares of native vegetation within various road reserves, rail reserves and properties within the localities of Pithara, Marne, East Ballidu, West Ballidu and Ballidu, for the purpose of widening the Northam-Pithara Road. The application area is located within the Shire of Dalwallinu and the Shire of Wongan-Ballidu. The northern section of the application area is located approximately 2.5 kilometres south of the town of Pithara and the southern section within the town of Ballidu.

The Northam Pithara Road is currently a single lane dual carriage road that services a number of small towns along its length. The applicant advised that the Northam-Pithara Road reserve, between SLK 129.12 and 152.25, requires widening to comply with safety standards. The existing road is a single lane with a pavement width of five metres and an existing cleared area of 11 metres (MRWA, 2015a). The road is proposed to be widened to a two lane road, with a total width of 24 metres. The road is proposed to be widened on one side only from SLK 129.12 to 131.26, and on both sides from SLK 131.26 to 152.25 (MRWA, 2015a). The road is also proposed to be realigned in two sections that contain substandard curves, from SLK 136.82 to 139.57 (realignment 1) and SLK 140.27 to 141.33 (realignment 2) (MRWA, 2015a).

The vegetation within the application area ranges in condition from completely degraded to excellent (Keighery, 1994). A survey of the application area identified 13 vegetation units, which are described in Table 1.

Table 1. Vegetation units of the survey area (AECOM, 2012)

Vegetation Unit Code	Vegetation Type	Description
AeSaTSMhS	Acacia, Santalum Shrubland	Tall Shrubland of <i>Acacia eremaea</i> and <i>Santalum acuminatum</i> over a Shrubland of <i>Melaleuca hamata</i> over a Low Shrubland of <i>Leptospermum erubescens</i> , <i>Calytrix</i> sp. and <i>Cryptandra</i> sp. over a Very Open Grassland of <i>Austrostipa nitida</i> on pale brown sand.
AcSaCTS	<i>Allocasuarina</i> , <i>Melaleuca</i> Scrub	Scattered Open Tree Mallee of <i>Eucalyptus horistes</i> over a Tall Open Shrubland to Tall Closed Scrub of <i>Allocasuarina campestris</i> and <i>Allocasuarina acutivalvis</i> subsp. <i>acutivalvis</i> with <i>Santalum acuminatum</i> with occasional dominance by <i>Melaleuca atroviridis</i> over a Low Open Shrubland to Low Open Heath of <i>Melaleuca cordata</i> , <i>Astroloma serratifolium</i> and Myrtaceae spp. over a Sedgeland of <i>Gahnia drummondii</i> , <i>Ecdeiocola monostachya</i> and <i>Lepidobolus preissianus</i> over scattered <i>Borya constricta</i> on light brown sandy loam.
ATSDdCLH	<i>Darwinia</i> Heath (Saline)	Tall Shrubland of <i>Acacia</i> sp. with scattered <i>Acacia acuminata</i> and <i>Melaleuca thyoidea</i> over a Closed Low Heath of <i>Darwinia diosmoides</i> over scattered <i>Gunniopsis ?quadrifida</i> on pale brown sand in association with salt lake.
EILOWAMTOS	<i>Eucalyptus loxophleba</i> subsp. <i>supralaevis</i> Low Woodland	Low Woodland to Low Open Woodland of <i>Eucalyptus loxophleba</i> subsp. <i>supralaevis</i> with occasional <i>Eucalyptus erythronema</i> var. <i>marginata</i> over a scattered Tall Shrubland of <i>Acacia eremaea</i> and <i>Melaleuca</i> spp. over a Low Shrubland to Low Open Heath of <i>Sarcocornia quinqueflora</i> , <i>Tecticornia indica</i> subsp. <i>bidens</i> and <i>Rhagodia drummondii</i> on light brown sandy loam in association with salt lakes.
EILOWATOS	<i>Eucalyptus loxophleba</i> subsp. <i>supralaevis</i> Low Woodland	Low Open Woodland of <i>Eucalyptus loxophleba</i> subsp. <i>supralaevis</i> over a Tall Open Shrubland of <i>Acacia acuminata</i> over Scattered Shrubs to a Low Shrubland of <i>Rhagodia drummondii</i> and <i>Maireana brevifolia</i> over a Very Open Grassland of <i>Austrostipa ?nitida</i> and <i>Amphipogon caricinus</i> var. <i>caricinus</i> on light brown sandy loam.
EWAIS	<i>Eucalyptus loxophleba</i> subsp. <i>supralaevis</i> Low Woodland	Low Open Woodland of <i>Eucalyptus loxophleba</i> subsp. <i>supralaevis</i> over a Tall Shrubland of <i>Acacia ?ligustrina</i> with occasional <i>Acacia acuminata</i> over an Open Shrubland of <i>Dodonaea ?inaequifolia</i> over a Low Open Shrubland of <i>Sclaerolena ?diacantha</i> on light brown clay loam with surface concretions and lichens.
EcTMMS	Eucalyptus Tree Mallee	Tree Mallee of <i>Eucalyptus ?celastroides</i> subsp. <i>virella</i> over a Tall Shrubland of <i>Melaleuca acuminata</i> subsp. <i>websteri</i> over an Open Shrubland of <i>Melaleuca coroncarpa</i> over a Low Open Shrubland of <i>Olearia muelleri</i> over a Very Open Herbland of <i>Borya constricta</i> on pale brown sandy clay with surface concretion and lichens.
EhTMATS	Eucalyptus Tree Mallee	Tree Mallee of <i>Eucalyptus horistes</i> over scattered patches of tall shrubs of <i>Acacia ?coolgardiensis</i> over an Open Heath of <i>Acacia ?dissona</i> var. <i>indoloria</i> (P3) and <i>Melaleuca laxiflora</i> over a Very Open Sedgeland of <i>Dianella revoluta</i> and <i>Gahnia drummondii</i> on pale brown sandy loam.
EIOTMMcLOS	Eucalyptus Tree Mallee	Open Tree Mallee of <i>Eucalyptus leptopoda</i> subsp. <i>arctata</i> over Low Open Shrubland of <i>Melaleuca cordata</i> over an Open Sedgeland of <i>Ecdeiocola monostachya</i> and <i>Lepidobolus preissianus</i> on pale brown sandy loam.
GTSAcOH	<i>Grevillea</i> , <i>Melaleuca</i> Shrubland	Tall Shrubland of <i>Grevillea</i> sp. with scattered <i>Melaleuca acuminata</i> subsp. <i>websteri</i> over an Open Heath of <i>Allocasuarina campestris</i> , <i>Grevillea ?levis</i> and <i>Hakea scoparia</i> subsp. <i>scoparia</i> over an Open Grassland of <i>Austrostipa ?nitida</i> with scattered <i>Ecdeiocola monostachya</i> on pale brown sandy clay with ironstone and quartz mantle and surface concretions.

Végétation Unit Code	Vegetation Type	Description
GSTOS	<i>Grevillea</i> , <i>Santalum</i> Scrub	Tall Open Scrub of <i>Grevillea ?armigera</i> and <i>Santalum acuminatum</i> over a Low Open Shrubland of <i>?Aluta aspera</i> over a Very Open Grassland of <i>Austrostipa ?nitida</i> on light brown-orange clay loam.
MITOS	<i>Melaleuca</i> Scrub (saline)	Tall Shrubland to Tall Open Scrub of <i>Melaleuca lateriflora</i> with <i>Acacia eremaea</i> and patches where <i>Melaleuca hamata</i> becomes co-dominant over a scattered Low Shrubland of <i>Sclerolaena ?diacantha</i> , <i>Atriplex bunburyana</i> and <i>Rhagodia drummondii</i> over a Low Succulent Shrubland to Low Open Heath of <i>Tecticornia indica</i> subsp. <i>bidens</i> , <i>Tecticornia pergranulata</i> subsp. <i>pergranulata</i> and <i>Tecticornia ?halocnemoides</i> over brown sandy loam with surface salt crusting.
SH	<i>Tecticornia</i> Heath (saline)	Closed Low Succulent Heath of <i>Tecticornia indica</i> subsp. <i>bidens</i> , <i>Tecticornia ?halocnemoides</i> and <i>Tecticornia pergranulata</i> subsp. <i>pergranulata</i> with occasional scattered tall shrubs of <i>Acacia eremaea</i> on pale brown sandy loam with surface salt crusting on fringes of salt lakes.

Description of controlling provision

On 29 May 2015 the project was determined to be a controlled action under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) for the following controlling provisions: Listed Threatened Species and Communities. The controlled action is likely to have a significant impact on threatened fauna Carnaby's cockatoo (*Calyptorhynchus latirostris*) and on rare flora *Frankenia conferta*, both of which are listed as endangered under the EPBC Act.

Carnaby's cockatoo

Currently, the overall population trend for the Carnaby's cockatoo is one of decline due to the loss and fragmentation of habitat as a result of clearing of native vegetation (Saunders 1990; Johnstone and Storr 1998; Saunders and Ingram, 1998; Garnett et al, 2011). Carnaby's cockatoo is endemic to the south-west of Western Australia. Breeding takes place between late July and December and occurs mostly in the inland wheatbelt region of its distribution, in areas receiving between 300 and 750 millimetres of annual average rainfall (Saunders, 1974). During the non-breeding season (January to July) the majority of the birds move to the higher rainfall coastal regions of their range including the midwest coast, Swan Coastal Plain and south coast (Saunders, 1980, 1990; Berry, 2008; Saunders et al, 2011; Johnstone et al, 2011). There has been an apparent expansion in the breeding range to include areas further west and south since the middle of last century with a more rapid increase into the Jarrah (*Eucalyptus marginata*) and Marri (*Corymbia calophylla*) forests of the south west (Johnstone and Storr 1998; Johnstone et al, 2011). This expansion in breeding range is due to threatening processes such as clearing of breeding habitat and competition for suitable breeding hollows.

Carnaby's cockatoo preferred habitat is remnant native eucalypt woodlands, especially those of salmon gum (*Eucalyptus salmonophloia*) and wandoo (*Eucalyptus wandoo*), and in shrubland or kwongan heathland dominated by plants of the Proteaceae family. It also occurs in forests containing marri, jarrah, karri (*Eucalyptus diversicolor*) and tuart (*Eucalyptus gomphocephala*) (Parks and Wildlife, 2013).

Carnaby's cockatoo nests in large hollows in tall, living or dead eucalypts. It nests most commonly in smooth-barked wandoo and salmon gum, but have also been recorded breeding in red morrell (*Eucalyptus longicornis*), York gum (*Eucalyptus loxophleba*), tuart (*Eucalyptus gomphocephala*), flooded gum (*Eucalyptus rudis*), swamp yate (*Eucalyptus occidentalis*), gimlet (*Eucalyptus salubris*) and marri, and are said to nest in any species of eucalypt with a suitable hollow (Parks and Wildlife, 2013).

The Carnaby's Cockatoo Recovery Plan (Parks and Wildlife, 2013) summarises habitat critical to the survival of Carnaby's cockatoos as:

- the eucalypt woodlands that provide nest hollows used for breeding, together with nearby vegetation that provides feeding, roosting and watering habitat that supports successful breeding;
- woodland sites known to have supported breeding in the past and which could be used in the future, provided adequate nearby food and/or water resources are available or are re-established; and
- in the non-breeding season the vegetation that provides food resources as well as the sites for nearby watering and night roosting that enable the cockatoos to effectively utilise the available food resources.

The recovery plan also states that success in breeding is dependent on the quality and proximity of feeding habitat within 12 kilometres of nesting sites (Parks and Wildlife, 2013). Along with the trees that provide nest hollows, the protection, management and increase of this feeding habitat that supports the breeding of Carnaby's cockatoo is a critical requirement for the conservation of the species (Parks and Wildlife, 2013).

Frankenia conferta

Frankenia conferta is a small shrub with the stems, leaves and calyx covered with short, sort hairs (DEC, 2009).

Frankenia conferta is widely distributed between between Koorda, Dalwallinu, Perenjori and Coorow, Western Australia, growing in clayey soils on the edge of salt lakes (DEC, 2009). Sites are localised and sparsely scattered within lake chains and major drainage lines in the Yarra Yarra, Ninghan and Avon catchments. The species is located around the high water mark of lake shorelines to the tops of low berms within saline pans. Plants also occur on the floor of major drainage lines within localised swales where they are subject to seasonal inundation (DEC, 2009).

Habitat critical to the survival of this species includes (DEC, 2009):

- the area of occupancy of important populations;

- areas of similar habitat surrounding important populations providing potential habitat for natural range extensions and are necessary to provide habitat for pollinators;
- the local catchment of the surface and possibly ground waters that maintain the habitat of the species; and
- additional occurrences of similar habitat that may contain the species or be suitable sites for future translocations.

The main threat to this species is rising salinity and waterlogging arising from changes to hydrology. Rising salinity resulting from broad scale clearing of the catchment for agriculture may impact on all populations by leading to degradation of the species' habitat (DEC, 2009).

Methodology **References:**
 Berry (2008)
 DEC (2009)
 Garnett et al (2011)
 Johnstone and Kirkby (1999)
 Johnstone and Storr (1998)
 Johnstone et al (2011)
 Parks and Wildlife (2013)
 Saunders (1974)
 Saunders (1980)
 Saunders (1990)
 Saunders and Ingram (1998)

Summary of Impacts

Carnaby's cockatoo

According to the Commonwealth Department of the Environment's EPBC Act referral guidelines for Western Australia's three threatened black cockatoo species, the proposed clearing falls within the known breeding range for Carnaby's cockatoo (SEWPAC, 2012).

Black cockatoos generally forage within six kilometres of a night roost site and, while nesting, within a 12 kilometre radius of their nest site (SEWPAC, 2012). Two confirmed Carnaby's cockatoo breeding sites have been recorded within 10 kilometres (six kilometres south west and eight kilometres west) of the application area (Parks and Wildlife, 2015c).

In May 2012 AECOM undertook a field assessment for fauna values which primarily focused on recording visual observation or evidence of fauna. Physical examination of hollows, logs and fallen timber was also conducted to identify fauna usage. Significant trees were visually examined to determine the presence of nests and hollows (AECOM, 2012).

The field assessment identified potential foraging habitat for Carnaby's cockatoos occupies 39 per cent of the total surveyed area. Approximately 13.56 hectares of the application area contains foraging habitat for Carnaby's cockatoo, comprising of:

- 0.83 hectares of Eucalyptus Tree Mallee (EhTMATS);
- 2.911 hectares of *Eucalyptus loxophleba* subsp. *supralaevis* Low Woodland (EILOWAMTOS);
- 7.49 hectares of *Eucalyptus loxophleba* subsp. *supralaevis* Low Woodland (EILOWATOS);
- 0.182 hectares of Eucalyptus Tree Mallee (EIOTMMcLOS);
- 0.156 hectares of *Eucalyptus loxophleba* subsp. *supralaevis* Low Woodland (EWAIS);
- 0.345 hectares of *Grevillea*, *Santalum* Scrub (GSTOS); and
- 1.64 hectares of *Grevillea*, *Melaleuca* Shrubland (GTSACOH) (MRWA, 2015a).

A total of 164 black cockatoo potential nesting trees (trees of species known to support breeding within the range of the species which either have a suitable nest hollow or are of a suitable diameter at breast height (DBH) to develop a nest hollow. For most tree species, suitable DBH is 500 millimetres. For salmon gum and wandoo, suitable DBH is 300 millimetres) were recorded in the survey area, including 15 trees that contain hollows. Fifty six of these trees were identified within the application area, of which, only one contained a hollow. The hollow identified (116.670858; -30.455323) was not of suitable size for use as a nest (MRWA, 2015a). No Carnaby's cockatoos were observed in any of the field visits or surveys.

The Carnaby's Cockatoo Recovery Plan notes that there are multiple reasons for the decline of Carnaby's cockatoo, however the decline to-date has primarily been brought about by the extensive clearing of nesting and feeding habitat (Parks and Wildlife, 2013). Loss of nesting habitat, together with foraging areas and watering sites within foraging distance of breeding sites is one of the key threatening processes contributing towards the decline of the species. A further significant threat is the clearing, fragmentation and degradation of foraging and night roosting habitat in the non-breeding parts of Carnaby's cockatoo range in the southwest of Western Australia and particularly on the Swan Coastal Plain (Parks and Wildlife, 2013). The long-term survival of Carnaby's cockatoo depends on the availability of suitable breeding habitat and foraging habitat capable of providing enough food to sustain the population (Parks and Wildlife, 2013).

Given the application area contains 13.56 hectares of foraging habitat, 56 potential nesting trees and is located within eight kilometres of two known breeding sites, it is considered that the application may contain critical habitat for Carnaby's cockatoo.

Frankenia conferta

The recovery plan for *Frankenia conferta* lists habitat critical to the survival of the species as areas of occupancy of important populations; areas of similar habitat surrounding important populations (i.e. among other halophytic shrubs on clay sands with gypsum or white-grey shallow sand over clay) provide potential habitat for natural range extension and are necessary to provide

habitat for pollinators; the local catchment of the surface and possibly ground waters that maintain the habitat of the species; and additional occurrences of similar habitat that may contain the species or be suitable sites for future translocations (DEC, 2009).

A targeted survey was conducted in September 2014, within the application area from SLK 129.12 to SLK 152.25. The width of the application area was 15 metres either side of the road centreline, making the clearing footprint a total width of 30 metres (AECOM, 2015). A 200 metre survey buffer around the road centreline was applied. The survey also covered two sections of Northam Pithara Road requiring realignment due to substandard curves and site lines.

The September 2014 survey recorded a total of 232 *Frankenia conferta* plants, extending over 200 metres outside the application area, occurring along salt lake fringes above the high water mark. Fifty of these plants were recorded within three metres of the application area in the AECOM 2014 survey. A return to the application area by the applicant's Environment Officers the following year identified an additional 100 individuals of *Frankenia conferta* surrounding the salt lake at SLK 140.51, making a total of 150 plants in this population. No *Frankenia conferta* will be removed under this application, however 150 individuals may be indirectly impacted by the project. The applicant's Environmental Management Plan proposes management actions that will be undertaken to minimise impacts to *Frankenia conferta*:

- the clearing area will be pegged to prevent impacts to the adjacent rare flora that are outside the limitations of clearing;
- fencing will be erected to prevent accidental impacts to this species;
- the batters will be steepened to prevent impacts during construction; and
- a 'no go' zone of 20x3 metres will be applied to *Frankenia conferta* to prevent impacts during construction.

The definition of critical habitat for *Frankenia conferta* in the recovery plan includes areas of similar habitat surrounding important populations, and it is therefore considered that the application area may contain critical habitat for this species.

Methodology	References
	AECOM (2012)
	AECOM (2015)
	DEC (2009)
	MRWA (2015a)
	Parks and Wildlife (2013)
	Parks and Wildlife (2015a)
	SEWPAC (2012)

Public consultation

The clearing application was advertised for public comment in *The West Australian* on 24 August 2015. The public comment period ended on 15 September 2015. No public submissions were received during this comment period.

Avoidance, mitigation and offset

Avoidance and Mitigation

The applicant advised that the application area was minimised as far as practicable during project development, and is limited to the design footprint plus a one metre buffer for the movement of machinery (MRWA, 2015a).

Fifteen additional trees suitable as future black cockatoo nesting habitat are located within three metres of the application area. These were excluded from the application area, and will not be impacted by the proposed clearing (MRWA, 2015a).

The applicant advised that the design has been further altered to steepen batters and prevent direct impacts to endangered flora *Frankenia conferta*. It is advised that the final design is a balance between environmental and safety considerations. In addition, the existing alignment of the road has been utilised where possible, with only two realignments proposed to straighten steep unsafe curves. The applicant's Environmental Management Plan proposes management actions that will be undertaken to mitigate clearing impacts, including:

- installation of barriers around the *Frankenia conferta* population during works. A 'no go' zone 20x3 metres by three metres will be applied to *Frankenia conferta* to prevent impacts during construction;
- inspection of clearing lines by Environment Officer prior to clearing;
- a 'soft start' will be implemented prior to clearing to allow animals in the area to move away before clearing activities commence; and
- topsoil and seed bank will be retained to aid in regeneration after works (MRWA, 2015a).

Offset

The applicant identified the following significant residual environmental impacts associated with the proposed clearing:

- 13.56 hectares of Carnaby's cockatoo (Endangered) foraging habitat;
- 56 potential future Carnaby's cockatoo breeding trees;
- 150 *Frankenia conferta* (Declared Rare Flora; Vulnerable) plants totalling 0.06 hectares;
- eight *Dampiera glabrescens* (Priority 1) plants totalling 0.01 hectares;
- 10.5 hectares of Priority ecological community 'Eucalyptus Woodlands of the Western Australian Wheatbelt'; and
- 0.52 hectares and 3.22 hectares of Beard vegetation associations 125 (Bare areas; salt lakes) and 1024 (Shrublands; mallee and casuarina thicket) respectively.

To counterbalance the above impacts associated with matters of national environmental significance (Carnaby's cockatoo and *Frankenia conferta*) the applicant proposed an offsets package that consists of a monetary contribution of \$188,000 towards the

purchase of 47 hectares of remnant vegetation to offset impacts to Carnaby's cockatoo, plus \$5,976.88 towards the purchase of 0.25 hectares of land to offset the impacts to *Frankenia conferta*. These figures are based on land values and the Commonwealth's Offsets Assessment Guide (2012).

The applicant has determined that a total of 0.06 hectares of habitat for *Frankenia conferta* may be impacted by the proposed clearing, assuming that all plants within 50 metres of the project will suffer from changes to hydrology (MRWA, 2015b). The applicant has determined that this impact requires an offset of 0.25 hectares. The applicant has identified a parcel of land that would provide habitat protection for *Frankenia conferta*. The property proposed to be purchased is a triangle of uncleared land adjacent to Marchagee Nature Reserve, south of Midlands Road. This property is not known to contain *Frankenia conferta*, however is located adjacent to a population. It is proposed that the funds provided to DER would be utilised to purchase this property, which is 2.56 hectares in size. The remainder of the offset funds would be used towards the purchase of a strategic offset in Wongan Hills that contains known Carnaby's cockatoo habitat (MRWA, 2015b).

DER considered the adequacy of the proposed offset in conjunction with the Commonwealth's Offsets Assessment Guide (2012) and the WA Offset Policy (2011):

- In respect to the impacts to Carnaby's cockatoo, DER determined that the proposed offset for Carnaby's cockatoo is adequate to offset the loss of 13.56 hectares of foraging habitat and 56 potential nesting trees. DER's determination is based on the assumption that the proposed offset site is in a very good (Keighery, 1994) condition and will be transferred to the conservation estate.
- In respect to the impacts to *Frankenia conferta*, DER determined that provided the management measures outlined in the applicant's Environmental Management Plan are adhered to and the existing hydrology of the site is not altered, it is considered that the proposed clearing is unlikely to result in significant residual impacts to this species and therefore an offset is not required. On this basis DER has not assessed the adequacy of the proposed offset for this species.

Methodology References:
 Keighery (1994)
 MRWA (2015a)
 MRWA (2015b)

Other relevant considerations

The following information was included in the applicant's referral documentation (MRWA, 2015c) provided to the Commonwealth.

Economic and Social Matters

The social benefits of the project are high, as the road will be widened from a single lane to a double (one in each direction) which will increase road user safety and road usability. Currently the road has substandard geometry and is in disrepair in many sections. Cars, caravans and trucks use this road regularly, with cars and caravans forced off the road when trucks are oncoming. The road upgrade will allow better servicing of the road between rural communities and safer freight movement. The social costs are considered to be nil due to the remote location of the road.

The economic costs of the project are approximately \$18 million. The project is likely to be funded in sections over several financial years. Improved road safety and usability is expected to positively influence the movement of freight and crops. The project will also improve the capacity and efficiency of the existing road network by providing a heavy vehicle route from Northam to the State's north which will support economic development within the Wheatbelt region. The construction phase will employ between 30 and 75 persons, dependent upon funding and proposed construction timelines.

Applicant's Environmental History

The applicant is a State agency and has a sound record of responsible environmental management and environmental management systems. The applicant seeks to achieve balanced and sustainable outcomes for the community with responsible environmental stewardship in developing and maintaining the road network critical to its success. The applicant is committed to:

- protecting and enhancing the environmental values of road reserves
- minimising the impact on the natural environment of roads and road use
- conserving natural resources and minimising energy consumption and waste.

The applicant holds Certificate No. EMS 530437 and operates an Environmental Management System which complies with the requirements of ISO 14001:2004 for the following scope: Main Roads Total Management System comprising Planning, Delivery, Maintenance, Network Operations and Supporting Services. Officially registered since 14 July 2005 under Certificate 149459. The Environmental Management System facilitates management of environmental risks and performance improvement. The independently certified and audited system is integrated into all key processes including planning, delivery, maintenance, network operations and supporting services.

Part 3: Assessment against the clearing principles

4. Assessment of application against clearing principles

(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

Comments

Proposed clearing is at variance to this Principle

Main Roads Western Australia (MRWA; the applicant) proposes to clear 15.65 hectares of native vegetation within various road reserves, rail reserves and properties within the localities of Pithara, Marne, East Ballidu, West Ballidu and Ballidu, for the purpose of widening the Northam-Pithara Road.

The vegetation within the application area ranges in condition from completely degraded to excellent (Keighery, 1994).

A biological survey of the application area during May 2012 identified 13 vegetation units, and up to 113 floristic species (of which 98 per cent were indigenous species) from 58 genera and 27 families (AECOM, 2012). The survey identified that a number of rare and priority flora were likely to occur within the application area, and recommended a Level 2 flora and vegetation assessment.

A Level 2 flora and vegetation assessment of the application area was undertaken in September 2014 (AECOM, 2015). The desktop assessment and previous surveys identified 48 rare and priority flora species that could potentially occur within the application area. The Level 2 survey identified that two rare flora species (*Eremophila viscida* and *Frankenia conferta*) and five priority flora species (*Dampiera glabrescens* (P1), *Acacia lirellata* subsp. *compressa* (P2), *Acacia dissona* var. *indoloria* (P3), *Acacia scalene* (P3), and *Podotheca unisetata* (P3)) occur in close proximity to the application area.

Eremophila viscida is known from 16 populations containing 816 mature plants currently known between Merredin and Mullewa (AECOM, 2015). One population of *Eremophila viscida* was recorded during the targeted flora survey, which is likely to be one of the 16 known populations (AECOM, 2015). This population was located approximately 250 metres from the application area, and it is therefore considered that the proposed clearing is not likely to directly impact this species.

Frankenia conferta is currently known from at least 13 populations and over 140 000 individuals. This species has a known range of approximately 160 kilometres east-west and 140 kilometres north-south. The proposed clearing is within the known range of this species. Based on the information provided, 232 plants were recorded in the 2014 survey, extending over 200 metres outside the application area, and a further 100 plants were subsequently recorded the following year. There is a high probability that the habitat of this species extends further around the salt lake, including the portion within the Damboring Nature Reserve. No plants were recorded within the application area, however 50 plants occur within three metres of it. Provided that the hydrology of the site is not altered, it is considered that impacts from the proposed clearing are unlikely to be significant to the conservation of the species at either the local or regional scale (Parks and Wildlife, 2015a).

Dampiera glabrescens is known from three locations and has a range of approximately 70 kilometres north-south and 60 kilometres east-west. Based on WA herbarium data, a small population of two to five plants was recorded within a road reserve to the northwest of the application area and a population was recorded approximately two kilometres southwest of Manmanning in 1978 to the southeast of the application area, but all other populations have been recorded from along the Northam Pithara Road and adjacent area, in proximity to the application area (Parks and Wildlife, 2015a). WA Herbarium data suggests that the population sizes recorded along the Northam Pithara Road range from 40-100 plants. Based on the surveys provided, 427 plants were recorded in the survey area, 19 of which were removed for a separate project. A further eight plants are proposed to be cleared under this application. Given the small number of known populations and the small number of plants of this species, any reduction in the number of individuals of this species may potentially be significant with regard to the conservation of this species (Parks and Wildlife, 2015a). Protection of this species from further loss of plants/populations is a high priority. The proponent should ensure that any plants in proximity to the development are clearly marked for avoidance and measures taken to ensure that these plants are not affected by indirect impacts, such as from dust during construction or altered hydrology (Parks and Wildlife, 2015a).

Acacia lirellata subsp. *compressa* is known from 31 populations six of which are located in close proximity to the application area in the locality of Ballidu (AECOM, 2015). Sixteen populations, containing one to six individuals, were recorded south of the application area during the targeted survey between SLK 127 and 128 (AECOM, 2015). It is unlikely that this species will be impacted by the proposed clearing.

Acacia dissona var. *indoloria* is known from 10 locations and has a range of 300 kilometres north-south and 60 kilometres east-west (Parks and Wildlife, 2015a). WA Herbarium data suggests that it has been recorded in low numbers at many of these locations. Of the 23 kilometre of road surveyed, the taxon was recorded along a stretch of less than 300 metres of road verge. The total population size of 31 plants is the largest recorded. This represents the most western-recorded population, and it is therefore considered to be a significant population. It is noted that no plants occur within the clearing footprint, however six plants occur within 10 metres of the proposed clearing. If these plants were to be indirectly impacted by the proposed clearing then it could potentially have implications on the conservation status of this taxon (Parks and Wildlife, 2015a). The Department of Parks and Wildlife (Parks and Wildlife) advised that the proponent should ensure that the plants in proximity to the proposed clearing are clearly marked for avoidance and the habitat be fenced off during the

works (Parks and Wildlife, 2015a).

Acacia scalene and *Podotheca uniseta* are broadly distributed, with numerous populations, some of which contain a large number of plants (WA Herbarium descriptions suggest that some population sizes of 100-200 plants) (Parks and Wildlife, 2015a). Both of these species have been recorded in nature reserves. Impacts to these two species from the proposed clearing are unlikely to be significant in respect to the conservation of these species (Parks and Wildlife, 2015a).

The Eucalyptus Woodland vegetation community (ELOWATOS) mapped within the application area may be aligned with floristic community type 20 Eucalypt Woodland of the Western Australian Wheatbelt which is a state listed priority three ecological community (PEC). It was advised that this assessment was based on the presence of *Eucalyptus loxophleba* subsp. *supralaevis* in the canopy layer and that the vegetation community's structure is woodland, which are the key criteria for this PEC (AECOM, 2015).

Parks and Wildlife advised that it is not clear what data was used to determine that this area is a representation of this PEC. Shapefiles provided for the wheatbelt woodlands in the application area do not appear to match Parks and Wildlife's mapping of the PEC extracted from Beard's original vegetation mapping (Parks and Wildlife, 2015b). Based on this information it is advised that the estimate of 10.5 hectares of the PEC occurring in the application area is not likely to be accurate (Parks and Wildlife, 2015b). If it is assumed that a maximum of 10.5 ha of the PEC is proposed to be cleared, then the proposal is unlikely to have a significant impact on the PEC at a regional level. However, given the extremely high level of historical vegetation clearing in the local area (10 kilometre radius), the clearing of this relatively small area of the wheatbelt woodlands PEC has potential for significant impacts at a local level (Parks and Wildlife, 2015b).

On 4 December 2015 the Eucalypt Woodland of the Western Australian Wheatbelt was listed as a critically endangered threatened ecological community (TEC) under the *Environment Protection Biodiversity Conservation Act 1999* (EPBC Act).

Carnaby's cockatoo (*Calyptorhynchus latirostris*) is listed as endangered under the EPBC Act and as rare or likely to become extinct under the *Wildlife Conservation Act 1950*. This species feeds on seeds, nuts and flowers of a large variety of plants including Proteaceous species (e.g. *Banksia*, *Dryandra* and *Grevillea*), *Corymbia calophylla* nuts, and a range of introduced species and nests in large hollows in tall, living or dead eucalypts (Shah, 2006). Approximately 13.56 hectares of the application area comprises of foraging habitat for Carnaby's cockatoo. In addition, 56 potential breeding trees were identified within the application area.

The local area (10 kilometre radius) has been highly cleared, retaining approximately five per cent pre-European vegetation. In addition, all four of the mapped Beard vegetation associations (142, 125, 988 and 1024) retain less than the recommended 30 per cent threshold level, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001).

On the basis that the application area contains priority flora, is adjacent to rare flora, contains significant habitat for Carnaby's cockatoo, is likely to contain a TEC and occurs within an area that has been extensively cleared, it is considered that the application area comprises a high level of biological diversity.

Given the above, the proposed clearing is at variance to this principle.

To counterbalance the significant residual impacts the proposed clearing will have on Carnaby's cockatoo the applicant has proposed an offset which consists of providing a monetary contribution towards the purchase of 47 hectares of land within the Shire of Wongan-Ballidu. A suitable offset site will include vegetation in a very good condition, underrepresented vegetation types and vegetation consistent with the Eucalypt Woodland of the Western Australian Wheatbelt community.

In regards to impacts to *Dampiera glabrescens*, the applicant has previously cleared 0.4 hectares of its habitat for a separate project within the same road reserve. This application proposes to clear a further eight individuals, totalling 0.1 hectares. An offset of two hectares has been proposed for both projects (0.5 hectares) (MRWA, 2015b and 2016). The applicant proposed to propagate this species, collecting specimens in October from the plants that are proposed to be removed for this application. Material is to be collected and propagated by several local nurseries to increase the likelihood of success. These plants will then be planted at a location where *Dampiera glabrescens* have recently been recorded. The location was selected as it is the applicant's land that is located behind a railway and a water pipeline, making it unlikely that this land will be used for any other purpose. The site was proposed to be fenced, and hockey sticks placed to alert maintenance crews to the presence of the species in the reserve (MRWA, 2015b). Parks and Wildlife advised that the proposed offset site is not ideal for the purposes of establishing a sustainable population in the long-term. The proposed offset site is narrow and would be subject to significant edge effects, such as weed invasion (Parks and Wildlife, 2015a).

A condition has been placed on the permit requiring the applicant to develop an alternative offset proposal for submission to the CEO for approval.

Methodology

References:
AECOM (2012)
AECOM (2015)
Commonwealth of Australia (2001)

MRWA (2015b)
MRWA (2016)
Parks and Wildlife (2015a)
Parks and Wildlife (2015b)
Shah (2006)

GIS Datasets:
- SAC Bio Datasets – accessed October 2015

(b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.

Comments Proposed clearing is at variance to this Principle

A search of NatureMap identified four fauna species listed as rare or likely to become extinct under the *Wildlife Conservation Act 1950 (WC Act)* within a 20 kilometre radius of the application area, being the western spiny-tailed skink (*Ergernia stokesii* subsp. *badia*), shield-backed trapdoor spider (*Idiosoma nigrum*), malleefowl (*Leipoa ocellata*) and western whipbird (*Psophodes nigrogularis* subsp. *nigrogularis*) (Parks and Wildlife, 2007-). The rainbow bee-eater (*Merops ornatus*) is protected under international agreement and has also been recorded within a 20 kilometre radius of the application area (Parks and Wildlife, 2007-).

AECOM conducted a Level 1 fauna survey over the application area and identified six fauna habitats:

- Shrublands and Scrub (*Allocasuarina*, *Melaleuca*, *Acacia* and *Santalum*);
- York Gum Woodland;
- Succulent Heath;
- Salt Lake;
- *Eucalyptus* Tree Mallee; and
- *Melaleuca* Thicket over Succulent Heath (AECOM, 2012).

The western spiny-tailed skink is listed as endangered under the *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)*. This species occurs in open eucalypt woodlands and *Acacia*-dominated shrublands in semi-arid to arid areas of south-western WA (Geraldton Sandplains and Yalgoo IBRA) and, depending on taxonomic clarification, around Shark Bay including Peron Peninsula, Edel Land and Dirk Hartog Island (Geraldton Sandplain and Carnarvon IBRA). It tends to shelter in logs, in cavities in the trunks and branches of shrubs, as well as in houses and ruins, especially in accumulations of old corrugated iron (DEC, 2012). AECOM advised that although suitable habitat for this species occurs within the application area, no suitable hollows were observed during the fauna assessment. The applicant's Environmental Management Plan states that a 'soft start' will be implemented prior to clearing to allow animals in the area to move away before clearing activities commence (AECOM, 2012).

Shield-backed trapdoor spider is listed as vulnerable under the EPBC Act. This species are primarily terrestrial burrowing spiders which occasionally make tubular silk nests on tree trunks. The shield-back spider typically inhabits clay soils of eucalypt woodlands and *Acacia* vegetation, and relies heavily on leaf-litter and twigs to build its burrow (Main, 1996; 2003 in DotE, 2013). The species is currently known from 28 populations from Shark Bay in the north to Narembeen in the south. One of these populations has been located within a Nature Reserve in the Shire of Wongan-Ballidu (Avon Catchment Council, 2007). Suitable habitat for this species is not present in the application area (MRWA, 2015c), with soils being typically yellow earths on sandplain with ironstone gravels, hard setting loam soils on slopes and bottomlands and saline soils in depressions (Beard, 1990 in MRWA, 2015c).

Malleefowl is listed as vulnerable under the EPBC Act. The Malleefowl is found in semi-arid to arid shrublands and low woodlands, especially those dominated by mallee and/or *Acacias*. A sandy substrate and abundance of leaf litter are required for breeding. Densities of the birds are generally greatest in areas of higher rainfall and on more fertile soils where habitats tend to be thicker and there is an abundance of food plants (DotE, 2015a). The fauna survey conducted by AECOM (2012) determined that this species is unlikely to occur within the application area due to the lack of large connected remnant woodland areas.

Western whipbird is listed as vulnerable under the EPBC Act. This species inhabits dense mallee heath. Following the field investigation it was deemed unlikely that this species would occur within the survey area due to the lack of suitable habitat (AECOM, 2012).

The rainbow bee-eater occurs in numerous habitats including open forests and woodlands, shrublands, in cleared or semi-cleared habitats such as areas of human habitation and farmland. It prefers open, cleared or lightly-forested areas that are often, but not always in close proximity to permanent water (DotE, 2015b). The application area may include suitable habitat for this species given the vegetation type and its close proximity to watercourses. However, the proposed clearing is unlikely to significantly impact upon the conservation status of this species given the highly mobile nature of this species. In addition, there were no suitable breeding banks recorded during a biological survey undertaken by AECOM (2012).

Carnaby's cockatoo (*Calyptorhynchus latirostris*) is listed as endangered under the EPBC Act and as rare or likely to become extinct under the WC Act. This species has previously been recorded in 2003 in Dalwallinu, south of Walebing. Carnaby's cockatoo preferred habitat is remnant native eucalypt woodlands, especially those of salmon gum (*Eucalyptus salmonophloia*) and wandoo (*Eucalyptus wandoo*), and in shrubland or

kwongan heathland dominated by plants of the Proteaceae family. It also occurs in forests containing marri, (*Corymbia calophylla*), jarrah (*Eucalyptus marginata*), karri (*Eucalyptus diversicolor*) and tuart (*Eucalyptus gomphocephala*) (Parks and Wildlife, 2013).

Carnaby's cockatoo feed on seeds, nuts and flowers of a large variety of plants including Proteaceous species (e.g. *Banksia*, *Dryandra* and *Grevillea*), *Corymbia calophylla* nuts, and a range of introduced species, notably seeds from cones of *Pirius* spp. Potential foraging habitat for Carnaby's cockatoos occupies 39 per cent of the total surveyed area. Approximately 13.56 hectares of the application area compromises of foraging habitat for Carnaby's cockatoo. The condition of the foraging habitat varies, with the majority being in good (Keighery, 1994) condition (DER, 2016).

Carnaby's cockatoo nests in large hollows in tall living or dead eucalypts, most commonly in smooth-barked wandoo and salmon gum but has been recorded breeding in red morrell (*Eucalyptus longicornis*), York gum (*Eucalyptus loxophleba*), tuart, flooded gum (*Eucalyptus rudis*), swamp yate (*Eucalyptus occidentalis*), gimlet (*Eucalyptus salubris*) and marri, and are said to nest in any species of eucalypt with a suitable hollow (Parks and Wildlife, 2013). Two Carnaby's cockatoo nesting sites are recorded within 10 kilometres of the application area (six kilometres south west and eight kilometres west) and there are two recent records of Carnaby's flying over or foraging in roadside verges in the vicinity (20 kilometre radius) (Parks and Wildlife, 2015c). A total of 164 black cockatoo potential nesting trees (trees of species known to support breeding within the range of the species which either have a suitable nest hollow or are of a suitable diameter at breast height (DBH) to develop a nest hollow. For most tree species, suitable DBH is 500 millimetres. For salmon gum and wandoo, suitable DBH is 300 millimetres) were recorded in the survey area, including 15 trees that contain hollows. Fifty six potential breeding trees were identified within the application area, one of which contained a hollow. The hollow identified (116.670858; -30.455323) was not of suitable size for use as a nest (MRWA, 2015a).

The local area (10 kilometre radius) has been highly cleared, retaining approximately five per cent pre-European vegetation. In addition, all four of the mapped Beard vegetation associations (142, 125, 988 and 1024) retain less than the recommended 30 per cent threshold level, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001).

On the basis that the application area includes significant habitat for Carnaby's cockatoo within an area that has been highly cleared, it is considered that the proposed clearing comprises significant habitat for indigenous fauna.

Given the above, the proposed clearing is at variance to this principle.

To counterbalance the significant residual impacts the proposed clearing will have on Carnaby's cockatoo habitat the applicant has proposed an offset which consists of providing a monetary contribution towards the purchase of 47 hectares of land within the Shire of Wongan-Ballidu, containing foraging and potential breeding habitat for Carnaby's cockatoo.

Methodology References:
AECOM (2012)
Avon Catchment Council (2007)
Beard (1990)
Commonwealth of Australia (2001)
DotE (2013)
DotE (2015a)
DotE (2015b)
Keighery (1994)
Main (1996)
Main (2003)
MRWA (2015a)
MRWA (2015c)
Parks and Wildlife (2007-)
Parks and Wildlife (2013)
Parks and Wildlife (2015c)

(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.

Comments Proposed clearing is not likely to be at variance to this Principle

According to available databases, two rare flora species have been recorded in close proximity to the application area, being *Frankenia conferta* and *Eremophila viscida*, both of which are listed as Endangered under the *Environment Protection Biodiversity Conservation Act 1999*.

A Level 2 flora and vegetation assessment of the application area was undertaken in September 2014 (AECOM, 2015). The Level 2 survey identified that rare flora species *Frankenia conferta* and *Eremophila viscida* occur in close proximity to the application area.

The preferred habitat of *Frankenia conferta* is clayey soils on the edge of salt lakes. According to data on the Threatened and Priority Flora database (TPFL), *Frankenia conferta* is currently known from at least 13

populations and over 140,000 individuals. However, a consultant recently estimated the population at Cowcowing Lakes to be in the order of several million plants based on an assessment of plant densities and suitable habitat at this location (Parks and Wildlife, 2015a). There are also numerous other potentially new populations which have been reported, but are yet to be confirmed and entered into TPFL. The species has a known range of approximately 160 kilometres east-west and 140 kilometres north south (Parks and Wildlife, 2015a). The main threat to this species is changes to hydrology from rising salinity and waterlogging (DEC, 2009).

The Level 2 survey identified a total of 232 individual *Frankenia conferta* plants extending over 200 metres outside the application area, occurring along salt lake fringes above the high water mark (AECOM, 2015). There is a high probability that the habitat would extend further around the salt lake, including the portion within the Damboring Nature Reserve (Parks and Wildlife, 2015a). Fifty plants were recorded three metres from the outside edge of the application area (AECOM, 2015). A return to the application area by the applicant's Environment Officers the following year identified an additional 100 individuals of *Frankenia conferta* surrounding the salt lake at SLK 140.51, making a total of 150 plants within 50 metres of the application area. No *Frankenia conferta* will be removed under this application however may be indirectly impacted by the proposed clearing. The applicant's Environmental Management Plan proposes management actions that will be undertaken to minimise impacts to *Frankenia conferta*:

- the clearing area will be pegged to prevent impacts to the adjacent rare flora that are outside the limitations of clearing;
- fencing will be erected to prevent accidental impacts to this species;
- the batters will be steepened to prevent impacts during construction; and
- a 'no go' zone of 20x3 metres will be applied to *Frankenia conferta* to prevent impacts during construction.

Provided that the hydrology of the site is not altered, it is considered that impacts from the proposed clearing are unlikely to be significant to the conservation of the species at either the local or regional scale (Parks and Wildlife, 2015a).

The preferred habitat for *Eremophila viscida* is brown, sandy loam or red brown clay-loam soils, in open woodland in association with *Eucalyptus loxophleba* and scrub vegetation (Mollemans et al 1993). It appears to prefer areas that are associated with granite and salt lake systems and plants are particularly frequent in runoff areas, including drainage lines or ephemeral creeks connected to granite outcrops.

There are currently 16 populations containing 816 mature *Eremophila viscida* plants currently known between Merredin and Mullewa. One population of *Eremophila viscida* was recorded during the targeted survey, which is most likely one of the 16 already known populations. This population was located approximately 250 metres outside the application area, adjacent to Damboring West Road (AECOM, 2015). The population contained a total of four individuals. *Eremophila viscida* is a large shrub growing to two metres, which makes it relatively easy to spot from a distance, and it is therefore considered that all populations were captured during the survey. *Eremophila viscida* was flowering at the time of survey (AECOM, 2015). Given the distance to this population it is unlikely that the proposed clearing will impact upon this species.

A third species of rare flora *Grevillea dryandroides* subsp. *dryandroides* has previously been recorded within Northam Pithara Road reserve. This species was extensively searched for during the 2014 targeted flora survey, however no populations were identified. Search efforts included around known locations and extending up to 200 metres from known locations, in all suitable habitats (plains of yellow gravelly sands and clay) (AECOM, 2015).

Given the above, the proposed clearing is not likely to be at variance to this principle.

Methodology

References:

AECOM (2015)
DEC (2009)
Mollemans et al (1993)
Parks and Wildlife (2015a)

GIS Datasets:

- SAC Bio Datasets - accessed October 2015

(d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.

Comments

Proposed clearing is at variance to this Principle

According to available databases, no State-listed threatened ecological communities (TEC) have been mapped within the application area or the local area (10 kilometre radius). However, the Eucalyptus Woodland vegetation community (ELOWATOS) may be aligned with floristic community type 20 Eucalypt Woodland of the Western Australian Wheatbelt which is a state listed priority three ecological community (PEC) and has recently (4 December 2015) been listed as a critically endangered TEC under the EPBC Act.

The TEC is defined as eucalypt woodlands that formerly were the most common type of vegetation across the wheatbelt landscape of south-western Western Australia (WA), i.e. inland between the Darling Range and western edge of the goldfields. The WA wheatbelt woodlands are dominated by a complex mosaic of eucalypt

species with a tree or mallet form over an understorey that is highly variable in structure and composition (TSSC, 2015).

The WA wheatbelt woodlands ecological community is endemic to south-western WA. It occupies a transitional zone between the wetter forests associated with the Darling Range and the southwest coast, and the low woodlands, mallee and shrublands of the semi-arid to arid interior. The ecological community is generally associated with the flatter, undulating relief, including drainage lines and saline areas. It does not typically occur on granite outcrops or hills of lateritic gravel but may extend to the base of outcrops, where they are replaced by non-eucalypt woodlands or shrublands (TSSC, 2015).

The WA wheatbelt woodlands ecological community occurs in one of the most intensively cleared regions of Australia. Those woodland patches that remain are typically small, highly fragmented and have been disturbed to some extent. Table 3 of the EPBC Act approved conservation advice (including listing advice) for the "Eucalypt woodlands of the Western Australian wheatbelt" (TSSC 2015) indicates the condition thresholds for the WA wheatbelt woodlands. The advice describes key diagnostic factors including structure, remnant size, composition and condition factors to determine if the TEC is present. The flora report provided for this application was undertaken prior to the listing of this TEC, and therefore an assessment against these key diagnostic factors has not been undertaken.

Based on the likelihood that a critically endangered TEC occurs within the application area, and noting that the WA wheatbelt woodlands TEC has been very extensively cleared any additional clearing of this TEC will impact on the community, it is considered that the application area comprises part of or is necessary for the maintenance of a TEC.

Given the above, the proposed clearing is at variance to this principle.

To counterbalance the significant residual impacts associated with Carnaby's cockatoo and underrepresented vegetation associations the applicant has proposed an offset which consists of providing a monetary contribution towards the purchase of 47 hectares of land within the Shire of Wongan-Ballidu. The 47 hectare area required to offset Carnaby's cockatoo and underrepresented vegetation associations will have to contain wheatbelt woodland which is likely to be representative of this TEC. It is therefore considered that the proposed offset will be sufficient to counterbalance the loss of vegetation likely to be representative of this TEC.

The Commonwealth Department of the Environment advised that it will not be assessing the clearing of this TEC as the EPBC Act listing occurred after the controlled action decision was made.

Methodology References:
TSSC (2015)

GIS Datasets:
- SAC Bio Datasets - accessed October 2015

(e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.

Comments Proposed clearing is at variance to this Principle

The application area is located within the Avon Wheatbelt Interim Biogeographic Regionalisation of Australia (IBRA) bioregion. This IBRA bioregion has approximately 19 per cent of its pre-European vegetation extent remaining (Government of Western Australia, 2014).

The application area is mapped as Beard vegetation associations 125, 142, 988 and 1024. These vegetation associations have approximately 10, 12, 29 and 11 per cent respectively of their pre-European extents remaining within the Avon Wheatbelt bioregion (Government of Western Australia, 2014).

The Shire of Dalwallinu and the Shire of Wongan-Ballidu retain approximately 23 per cent and seven per cent respectively of their pre-European extents of native vegetation cover.

Digital aerial imagery indicates that the local area (10 kilometre radius) retains approximately five per cent native vegetation.

The national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001).

On the basis that the application area contains priority flora and significant habitat for Carnaby's cockatoo, and that the extents of native vegetation and vegetation associations remaining are below the 30 per cent threshold within a local area that retains five per cent native vegetation cover, it is considered that the application area is significant as a remnant in an extensively cleared area.

Given the above, the proposed clearing is at variance to this principle.

To counterbalance the significant residual impacts the proposed clearing will have on underrepresented

vegetation associations the applicant has proposed an offset which consists of providing a monetary contribution towards the purchase of 47 hectares of land within the Shire of Wongan-Ballidu. This offset will be sufficient to counterbalance the loss of underrepresented vegetation types within the application area which are in good or better condition.

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Extent in Parks and Wildlife Managed Lands (%)
IBRA Bioregion*				
Avon Wheatbelt	9,517,110	1,765,881	19	10
Local government*				
Shire of Dalwallinu	722,663	167,559	23	5
Shire of Wongan-Ballidu	336,569	22,029	7	15
Beard Vegetation Association in Bioregion*				
125	167,448	16,291	10	20
142	637,708	79,306	12	3
988	94,338	27,554	29	13
1024	738,927	84,626	11	7

Methodology References:
Commonwealth of Australia (2001)
*Government of Western Australia (2014)

GIS Datasets:
- Pre European Vegetation

(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

Comments Proposed clearing is at variance to this Principle

The Northam Pithara Road currently intersects a chain of interconnected saline lakes and channels. Two minor, non-perennial watercourses also intersect the application area, which are associated with rare flora species *Frankenia conferta* (approximately 0.5 hectares in total). Vegetation associated with the saline lakes, channels and watercourses is proposed to be cleared to facilitate the widening of the Northam Pithara Road.

The chain of salt lakes that intersect the application area are an example of an ancient river valley that has been reduced to a chain of interconnected salt lakes. There are two chains of saline lakes that intersect Northam Pithara Road, the largest of which is Damboring Lake (MRWA, 2015a).

The majority of the area covered by the saline lakes and associated wetland vegetation is located outside the application area. This area has not been included in the application as the applicant is of the view that the proposed clearing of wetland vegetation associated with saline lakes is exempt from the requirement for a clearing permit pursuant to Regulation 5, Item 16 of the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004*, being clearing that is the result of carrying out works under a permit or other approval under, or referred to in, section 11, 16, 17 and 21A of the *Rights in Water and Irrigation Act 1914* (RIWI Act). The applicant holds a current 'permit to obstruct or interfere' under the RIWI Act, which authorises the modification of drainage features by upgrading existing culverts and installing new culverts to facilitate the widening and realignment of Northam Pithara Road SLK 129.12 to 152.25.

Based on the presence of watercourses within the application and vegetation associated with saline lakes in close proximity, it is considered that the application area includes vegetation that is growing in association with a watercourse or wetland.

Given the above, the proposed clearing is at variance to this principle.

The applicant's Environmental Management Plan proposes management actions that will be undertaken to address potential impacts to surface drainage, including:

- vegetation removal and soil disturbance will be minimised;
- disturbed areas will be stabilised soon after construction activities are completed. Stabilisation will be undertaken using bunding or sediment traps or similar, as required;
- existing natural drainage paths and channels along the road or the vicinity of the application area will not be unnecessarily blocked or restricted during project construction;
- existing drainage will be maintained with the upgrade of culverts along the road; and
- works will be undertaken during the dry season so as not to impact surface water flows.

Noting the applicant's proposed management actions, it is considered that impacts to the saline lakes and watercourses are unlikely to be significant.

Methodology References:
MRWA (2015a)

GIS Datasets:
- Hydrography linear
- Geomorphic Wetlands (Classification), Swan Coastal Plain
- Topographic contours statewide

(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

Comments Proposed clearing is not likely to be at variance to this Principle

The soils within the application area have been mapped by Northcote et al (1960-68) as soil types Va66, Va70, Ms8 and Sv1. These soil types are described as:

- Va66: Gently undulating to rolling terrain with some ridges and uneven slopes and with the variable presence of lateritic mesas and buttes and granitic tors and bosses. Chief soils are hard alkaline yellow mottled soils and hard alkaline red soils, either of which may be dominant locally.
- Va70: Valley plains and terraces. Chief soils are hard alkaline yellow mottled soils.
- Ms8: Gently sloping to gently undulating plateau areas or uplands with long and very gentle slopes and, in places, abrupt erosional scarps: chief soils are sandy yellow earths containing some ironstone gravels, and yellow earthy sands.
- Sv1: Saline valleys and salt lakes--salt-lake channels, mostly devoid of true soils, and their fringing areas; few freshwater lakes: common soils are gypseous and saline loams on riverine wash and usually underlain by clayey or sandy strata by about 12 inches.

The soil types listed above are prone to water erosion, however the applicant advised that the works will be undertaken during the dry season which will minimise this risk.

The clearing of native vegetation in the Wheatbelt region and its replacement with shallow rooted, annual cropping species has resulted in a rise in salinity and associated land degradation (DoW, 2005). The local area (10 kilometre radius) has been highly cleared (approximately 95 per cent), and it is therefore considered that additional clearing has the potential to increase land degradation in the form of salinity. However, the proposed clearing associated with this project in the context of the catchment would be unlikely to trigger significant land degradation as a result of increasing salinity (AECOM, 2012).

On the basis of the soil types present and the linear nature of the application area, and noting the applicant's advice in respect to the timing of works, it is considered that the proposed clearing is unlikely to cause appreciable land degradation in the form of wind erosion, water erosion and salinity.

Given the above, the proposed clearing is not likely to be at variance to this principle.

Methodology References:
AECOM (2012)
DoW (2005)
Northcote et al (1960-68)

GIS Datasets:
- Soils, Statewide

(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.

Comments Proposed clearing is not likely to be at variance to this Principle

Damboring Nature Reserve is located approximately 600 metres west of the Northam Pithara Road reserve. No other conservation areas are located within the local area (10 kilometre radius).

On the basis of the separation distance between the application area and Damboring Nature Reserve, it is considered that the proposed clearing is unlikely to have a detrimental impact on the environmental values of this reserve.

Given the above, the proposed clearing is not likely to be at variance to this principle.

Methodology GIS Datasets:
- Parks and Wildlife Tenure

(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.

Comments Proposed clearing is not likely to be at variance to this Principle

The clearing of native vegetation in the Wheatbelt region and its replacement with shallow rooted, annual cropping species has resulted in a reduction in water use by vegetation (evapotranspiration) (DoW, 2005). This

has in turn caused a rise in watertables and mobilisation of salt previously stored deep within the soil profile (DoW, 2005).

The topography of the site (broad flat valleys) is such that the groundwater would be expected to be close to the surface and evidence of this occurring is noted within the survey area where vegetation shows signs of stress and decline in areas adjacent to salt lakes (AECOM, 2012).

Groundwater salinity under the application area is mapped at 14000-35000 milligrams per litre (highly saline).

Northam Pithara Road currently intersects a chain of interconnected saline lakes and channels. Two minor non-perennial watercourses also intersect the application area.

The applicant's Environmental Management Plan proposes management actions that will be undertaken to address potential impacts to surface drainage, including:

- vegetation removal and soil disturbance will be minimised;
- disturbed areas will be stabilised soon after construction activities are completed. Stabilisation will be undertaken using bunding or sediment traps or similar, as required;
- existing natural drainage paths and channels along the road or the vicinity of the application area will not be unnecessarily blocked or restricted during project construction;
- existing drainage will be maintained with the upgrade of culverts along the road; and
- works will be undertaken during the dry season so as not to impact surface water flows.

On the basis of the relatively limited amount of clearing proposed, and noting the applicant's proposed management actions, it is considered that the proposed clearing is unlikely to cause a significant deterioration in surface or ground water quality.

Given the above, the proposed clearing is not likely to be at variance to this principle.

Methodology References
AECOM (2015)
DoW (2005)

GIS Datasets:
- Hydrography linear
- Geomorphic Wetlands (Classification), Swan Coastal Plain
- Groundwater Salinity, Statewide
- Topographic contours, Statewide

(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.

Comments **Proposed clearing is not likely to be at variance to this Principle**
The application is located in a low rainfall area, where the average rainfall is 400 millimetres per year.

Based on the low rainfall and the linear nature of the application area, it is considered that the proposed clearing is unlikely to cause or exacerbate the incidence or intensity of flooding.

Given the above, the proposed clearing is not likely to be at variance to this principle.

Methodology GIS Datasets:
- Rainfall, Statewide

Planning instruments and other relevant matters.

Comments The application was received by the Department of Environment Regulation on 24 June 2015, and was formally accepted on 21 August 2015.

The application was advertised for public comment in *The West Australian* newspaper on 24 August 2015 with a 21 day submission period. No public submissions were received in relation to this project.

The application was amended to include 0.04 hectares of salt-lake vegetation. This area was included as it occurs within 50 metres of *Frankenia conferta* and for the Bilateral Assessment to be undertaken this area needed to be assessed to determine the impacts to this species.

The application area is located within the Avon River Surface Water Area which is an area proclaimed under the *Rights in Water and Irrigation Act 1914* (RIWI Act). The applicant holds a current Permit to Obstruct or Interfere issued under the RIWI Act. This permit authorises the modification of drainage features by upgrading existing culverts and installing new ones, where required, to facilitate the widening and realignment of Northam Pithara Road SLK 129.12 to 152.25.

The total clearing associated with the project is 21.96 hectares, comprising 6.35 hectares of wetland vegetation associated with saline lakes and 15.61 hectares of terrestrial vegetation. The proposed clearing of wetland vegetation associated with saline lakes was not included in the application as the applicant is of the view that it is exempt from the requirement for a clearing permit pursuant to Regulation 5, Item 16 of the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004*, being clearing that is the result of carrying out works under a permit or other approval under, or referred to in, section 11, 16, 17 and 21A of the RIWI Act.

The application area does not intersect any Aboriginal Sites of Significance.

Direct interest emails were sent to the Shire of Wongan-Ballidu and Shire of Dalwallinu on 25 August 2015. No response was received from either local government within the requested timeframe.

Methodology References
MRWA (2015c)

GIS Datasets:

- Aboriginal Sites of Significance
- RIWI, Surface Water Area
- Local Government Authority

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