



GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: CPS 8500/2
File Number: DWERVT2847
Duration of Permit: From 28 May 2021 to 28 May 2036

PERMIT HOLDER

AMG (WA) Pty Ltd

LAND ON WHICH CLEARING IS TO BE DONE

Lot 3 on Diagram 35920, Waroona

AUTHORISED ACTIVITY

The permit holder must not clear more than 11.25 hectares of native vegetation within the areas cross-hatched yellow in Figure 1 of Schedule 1.

CONDITIONS

1. Period during which clearing is authorised

The permit holder must not clear any native vegetation after 28 May 2026.

2. Avoid, minimise, and reduce impacts and extent of clearing

In determining the native vegetation authorised to be cleared under this permit, the permit holder must apply the following principles, set out in descending 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.

3. Wind erosion management

The Permit Holder must commence construction no later than three months after undertaking clearing authorised under this Permit, to reduce the risk of soil erosion by minimising the exposure time of soils prior to construction.

4. Weed and dieback management

When undertaking any clearing authorised under this permit, or *revegetation/rehabilitation* actions in accordance with condition 7 of this permit, the permit holder must take the following measures to minimise the risk of introduction and spread of *weeds* and *dieback*:

- (a) clean earth-moving machinery and other vehicles of soil and vegetation prior to entering and leaving the area to be cleared;
- (b) clean earth-moving machinery and other vehicles of soil and vegetation prior to entering the areas to be *revegetated/rehabilitated*;
- (c) shall only move soils in *dry conditions*;
- (d) ensure that no known dieback or weed-affected soil, *mulch, fill*, or other material is brought into the areas to be cleared or *revegetated/rehabilitated*;
- (e) restrict the movement of machines and other vehicles to the limits of the areas to be cleared or *revegetated/rehabilitated*;
- (f) demarcate *dieback infested areas* with flagging tape and appropriate signage prior to clearing;
- (g) ensure that all vehicles are cleaned of soil and vegetation prior to moving between known *dieback infested areas* and *dieback free areas*; and
- (h) ensure that drainage, resulting from clearing authorised under this permit, is directed away from *dieback free areas*.

5. Directional clearing

The permit holder must:

- (a) conduct clearing authorised under this permit from east to west or south to north; and
- (b) allow a reasonable time for fauna present within the area being cleared to move into adjacent native vegetation ahead of the clearing activity.

6. Offsets – conservation covenant

By no later than 8 April 2023, the permit holder must:

- (a) give a conservation covenant under section 30B of the *Soil and Land Conservation Act 1945* setting aside the areas hatched red in Figure 2 of Schedule 1, for the protection and management of vegetation in perpetuity; and
- (b) provide to the CEO a copy of the executed conservation covenant.

7. Revegetation, offset

Within 12 months of undertaking clearing authorised under this permit, and no later than 28 May 2023, for the area hatched red in Figure 1 of Schedule 1, the permit holder must implement and adhere to the ‘Revegetation Management Plan, Lot 3 Buller Road, Waroona’ dated December 2021, including but not limited to the following actions:

- (a) commence *revegetation* and *rehabilitation* by;
 - (i) deliberately *planting* and/or *direct seeding* native vegetation that will result in similar species composition, structure and density of native vegetation to *reference sites 1*; and

- (ii) ensuring only *local provenance* seeds and propagating material are used to *revegetate* and *rehabilitate*.
- (b) establish a minimum of three 10 x 10 metre quadrat monitoring sites;
- (c) water *planted* vegetation between December and April during the first year following *planting*;
- (d) undertake weed control activities prior to *planting*, and annually thereafter until completion criteria have been met and maintained for two years;
- (e) achieve the following completion criteria after a five year monitoring period for areas *revegetated* and *rehabilitated* under condition 7 of this permit:

Aspect	Completion Criteria	Monitoring
Species richness	Species richness is at least 60 per cent of that recorded in reference sites 1.	Annually in Spring until completion criteria has been met and maintained for two years.
Dominant tree species	Dominant tree species must be <i>Corymbia calophylla</i> , <i>Eucalyptus marginata</i> and <i>Banksia attenuata</i> .	Annually in Spring until completion criteria has been met and maintained for two years.
Vegetation structure	Vegetation structure, species density (stems per hectare), weed cover and bare ground cover of the revegetation/rehabilitation area must be consistent with those values recorded in reference sites 1.	Annually in Spring until completion criteria has been met and maintained for two years.
Species density (stems per hectare)		
Weed cover		
Bare ground cover		
Declared weeds	No declared weeds regulated under the <i>Biosecurity and Agriculture Management Act 2007</i> .	Annually in Spring until completion criteria has been met and maintained for two years.
Vegetation condition	Vegetation must be in a very good (Keighery, 1994) or higher condition.	Annually in Spring until completion criteria has been met and maintained for two years.
Survival rate	A survival rate of at least 60 per cent of the density planted is achieved.	Annually in Spring until completion criteria has been met and maintained for two years.

- (f) undertake remedial actions for areas *revegetated* and *rehabilitated* under condition 7, where monitoring indicates that *revegetation/rehabilitation* has not met the completion criteria outlined in condition 7(e) of this permit, including;
- (i) *revegetate/rehabilitate* the area by deliberately *planting* and/or *direct seeding* native vegetation that will result in the minimum completion criteria detailed in condition 7(e) and ensuring only *local provenance* seeds and propagating material are used;
 - (ii) additional weed control activities; and
 - (iii) annual monitoring of the *revegetated* and *rehabilitated* areas by an *environmental specialist*, until the completion criteria, outlined in 7(e) are met.

PART III - RECORD KEEPING AND REPORTING

8. Records that must be kept

The permit holder must maintain records relating to the listed relevant matters in accordance with the specifications detailed in Table 1.

Table 1: Records that must be kept

No.	Relevant matter	Specifications
1.	In relation to the authorised clearing activities generally	<ul style="list-style-type: none"> (a) the species composition, structure, and density of the cleared area; (b) 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; (c) the date that the area was cleared; (d) the size of the area cleared (in hectares); (e) actions taken to avoid, minimise, and reduce the impacts and extent of clearing in accordance with condition 2; (f) actions undertaken in accordance with condition 3; (g) actions taken to minimise the risk of the introduction and spread of weeds and dieback in accordance with condition 4; (h) actions undertaken in accordance with condition 5; (i) actions taken to give a conservation covenant in accordance with condition 6;
2.	In relation to the <i>revegetation</i> and <i>rehabilitation</i> of areas pursuant to condition 7 of this permit	<ul style="list-style-type: none"> (a) a description of the <i>revegetation</i> and <i>rehabilitation</i> activities undertaken each year, once commenced, outlined in a report produced by an <i>environmental specialist</i>; (b) the location and size of the areas <i>revegetated</i> and <i>rehabilitated</i> (in hectares) recorded using a GPS unit set to GDA94, expressing the geographical coordinates in Eastings and Northings or decimal degrees; (c) the date that <i>revegetation</i> and <i>rehabilitation</i> works began; (d) the baseline data recorded for <i>reference sites 1</i>, including species richness, species density, vegetation structure, bare

No.	Relevant matter	Specifications
		<p>ground cover, weed cover and vegetation condition;</p> <p>(e) at least two photographs of the areas <i>revegetated/rehabilitated</i> recorded annually at the same location each year;</p> <p>(f) the species composition, structure, density of the areas <i>revegetated/rehabilitated</i> recorded annually;</p> <p>(g) a description of the extent of bare ground cover, weed cover and vegetation condition of the areas <i>revegetated/rehabilitated</i>, recorded annually;</p> <p>(h) a species list identifying those species <i>planted</i> or <i>direct seeded</i>;</p> <p>(i) a copy of the <i>environmental specialist</i> report and activities undertaken during monitoring; and</p> <p>(j) other actions taken in accordance with condition 7 of this permit.</p>

9. Reporting

- (a) The permit holder must provide to the *CEO* on or before 30 June of each year, a written report:
- (a) of records required under condition 8 of this permit; and
 - (b) 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 has been undertaken, a written report confirming that no clearing under this permit has been undertaken, must be provided to the *CEO* on or before 30 June of each year.
- (c) Prior to 28 February 2036, the permit holder must provide to the *CEO* a written report of records required under condition 8 of this permit where these records have not already been provided under condition 9(a) of this permit.

DEFINITIONS

In this permit, the italicised terms have the meanings defined in Table 2 below.


Table 2: Definitions

Term	Definition
CEO	Chief Executive Officer of the department responsible for the administration of the clearing provisions under the <i>Environmental Protection Act 1986</i> .
clearing	has the meaning given under section 3(1) of the EP Act.
completion criteria	means a measurable outcome based on suitable <i>reference sites</i> , used to determine <i>revegetation/rehabilitation</i> success
condition	a condition to which this clearing permit is subject under section 51H of the EP Act.
department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
dieback	means the effect of <i>Phytophthora</i> species on native vegetation.
dieback infested areas	means those areas identified as dieback (<i>Phytophthora cinnamomi</i>) infested in the document titled 'Lot 3, Buller Road Waroona. Phytophthora Dieback occurrence assessment – Version 2.0'.

Term	Definition
dieback free areas	means those areas identified as dieback (<i>Phytophthora cinnamomi</i>) free in the document titled 'Lot 3, Buller Road Waroona. Phytophthora Dieback occurrence assessment – Version 2.0'.
direct seed/ed/ing	means a method of re-establishing vegetation through the establishment of a seed bed and the introduction of seeds of the desired plant species.
dry conditions	means when soils (not dust) do not freely adhere to rubber tyres, tracks, vehicle chassis or wheel arches
environmental specialist	means a person who holds a tertiary qualification in environmental science or equivalent, and has experience relevant to the type of environmental advice that an environmental specialist is required to provide under this Permit, or who is approved by the CEO as a suitable environmental specialist.
EP Act	<i>Environmental Protection Act 1986</i> (WA)
fill	means material used to increase the ground level, or to fill a depression.
local provenance	means native vegetation seeds and propagating material from natural sources within 100 kilometres and the same Interim Biogeographic Regionalisation for Australia (IBRA) subregion of the area cleared
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.
native vegetation	has the meaning given under section 3(1) and section 51A of the EP Act.
plant/ed/ing	means the re-establishment of vegetation by creating favourable soil conditions and planting seedlings of the desired species
quadrat	Means a sample plot established for the purpose of data collection and monitoring vegetation characteristics, for example species composition, structure, density and condition
reference sites 1	means the nearby sites identified as "Indicative Reference Sites" in the 'Revegetation Management Plan, Lot 3 Buller Road, Waroona' dated December 2021. Measurements from fixed reference points or plots where biodiversity components are measured are used to set measurable completion criteria for revegetation projects. The <i>reference sites</i> contain the following values: (a) Suitable foraging and potential roosting and breeding habitat for Carnaby's cockatoo (<i>Calyptorhynchus latirostris</i>), Baudin's cockatoo (species name) and forest red-tailed black cockatoo (<i>Calyptorhynchus banksii naso</i>) (b) Vegetation representative of the 'Banksia Woodlands of the Swan Coastal Plain' (Banksia woodlands) ecological community (c) Vegetation in very good (Keighery, 1994) condition
rehabilitate/ed/ion/ing	means actively managing an area containing native vegetation in order to improve the ecological function of that area
revegetate/ed/ion	means the re-establishment of a cover of local provenance native vegetation in an area using methods such as natural regeneration, direct seeding and/or planting, so that the species composition, structure and density is similar to pre-clearing vegetation types in that area
vegetation condition	means the rating given to native vegetation which refers to the impact of disturbance on each of the layers and the ability of the community to regenerate (Keighery 1994)
weeds	means any plant – (a) that is a declared pest under section 22 of the <i>Biosecurity and</i>

Term	Definition
	<p><i>Agriculture Management Act 2007</i>; or</p> <p>(b) published in a Department of Biodiversity, Conservation and Attractions species-led ecological impact and invasiveness ranking summary, regardless of ranking; or</p> <p>(c) not indigenous to the area concerned.</p>

END OF CONDITIONS


 Ryan Mincham
 2022.04.08
 13:20:17 +08'00'

Ryan Mincham
 MANAGER
 NATIVE VEGETATION REGULATION

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

8 April 2022



Clearing Permit Decision Report

1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 8500/2
Permit type:	Area permit
Applicant name:	AMG Pty Ltd
Application received:	22 May 2019
Application area:	An additional 1.21 hectares (the application area) has been applied for. The total area now comprises 11.25 hectares.
Purpose of clearing:	Sand extraction and landfill site
Method of clearing:	Mechanical
Property:	Lot 3 on Diagram 35920 (Lot 3 Buller Road)
Location (LGA area/s):	Shire of Waroona
Localities (suburb/s):	Waroona

1.2. Decision on application

Decision:	Grant
Decision date:	8 April 2022
Decision area:	11.25 hectares of native vegetation as depicted in Section 1.5, below.

1.3. Reasons for decision

This application was accepted, assessed, and determined in accordance with sections 51E and 51O of the *Environmental Protection Act 1986* (EP Act).

On 5 May 2021, Clearing Permit CPS 8500/1 was granted to clear up to 10.04 hectares of native vegetation within Lot 3 Buller Road, for the purpose of sand extraction.

Since the grant of CPS 8500/1, the applicant has planned an additional end land use post-sand extraction, proposing to use the site as a landfill facility. As a result of this end land use change, the applicant has applied to amend clearing permit CPS 8500/1 to:

- increase the authorised clearing area by 1.21 hectares, to a total area comprising 11.25 hectares of native vegetation
- remove a conditional requirement to revegetate the approved clearing area immediately post-extraction, noting the proposed landfill end land use.

The Department of Water and Environmental Regulation (DWER) advertised the application for 21 days and no public submissions were received.

The assessment identified that the additional area proposed for clearing (herein referred to as the '**application area**') comprises 1.21 hectares of vegetation recorded as *Corymbia calophylla*, *Eucalyptus marginata*, *Banksia* spp. and *Allocasuarina fraseriana* woodland in a degraded to completely degraded (Keighery, 1994) condition (Harewood,

2021). The application area occurs on the edge of a previously cleared sand extraction pit, subject to historical clearing permit CPS 6701/1 (still active).

The assessment identified that the vegetation recorded in the application area comprises preferred foraging habitat for black cockatoos (Carnaby's, Baudin's and forest red-tailed black cockatoos) and the proposed clearing will increase the extent of impact to black cockatoo foraging habitat by 1.21 hectares (11.25 hectares total). By virtue of being suitable black cockatoo foraging habitat, the application area also represents a significant remnant within an extensively cleared landscape and contributes to a larger vegetative patch that provides landscape linkage values.

Except for the abovementioned impacts, the assessment did not identify any additional environmental impacts to those identified within the assessment of CPS 8500/1, as set out within Decision Report CPS 8500/1.

Consistent with CPS 8500/1, the assessment identified that the additional proposed clearing may also result in the following impacts:

- the introduction and spread of weeds and dieback into adjacent native vegetation with high biodiversity values
- minor wind erosion
- direct impacts to fauna utilising the application area during the time of clearing

After considering the available information, the Delegated Officer determined that the following changes will be made to the amended clearing permit CPS 8500/2:

- required offset –
 - increase the area of nearby remnant vegetation required to be conserved in perpetuity under a conservation covenant by 16.19 hectares, from 28.81 hectares to 45 hectares. The vegetation to be conserved under a conservation covenant comprises (see section 4 for further information)-
 - significant foraging habitat for black cockatoos
 - ecological linkage values
 - majority (36.8 ha) is representative of the Banksia Woodland TEC
- remove the requirement to revegetate the approved clearing area immediately post-extraction
- remove the requirement to inspect trees for south-western brush-tailed phascogales (phascogales), noting that
 - an inspection was undertaken prior to the applicant clearing under CPS 8500/1 and no phascogales were identified
 - no trees with hollows occur within the additional 1.21 hectare application area.

Noting landfill is now proposed post-extraction, the applicant would have been unable to comply with the former requirement to revegetate the approved clearing area immediately post-extraction. Subsequently, this condition was removed.

The applicant was previously provided mitigation credit for this revegetation. This credit reduced the extent of offset required to address the significant residual impacts to black cockatoos. Subsequently, the required offset has been increased to account for this, and the additional impact to 1.21 hectares of black cockatoo foraging habitat.

The Delegated Officer considered the potential to require revegetation and provide mitigation credit for revegetation commitments post-landfill. However, the Delegated Officer determined that this would not be appropriate given the delay in ecological benefit of any such revegetation, and concerns with the potential to successfully establish specific flora species (black cockatoo foraging habitat) post-landfill.

In removing the revegetation condition, the Delegated Officer had regard for the Shire of Waroona's Development Approval which includes a condition that requires revegetation of the site post-landfill (see Section 3.1 for further information).

The following conditional requirements already captured within clearing permit CPS 8500/1 will be carried over to the amended permit:

- avoid and minimise measures to reduce the impacts and extent of clearing
- take hygiene steps to minimise the risk of the introduction and spread of weeds and dieback
- extraction must occur within three months of clearing to minimise wind erosion risks
- undertake slow, progressive one directional clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity
- offset measures to conserve in perpetuity and rehabilitate an adjacent area of 8.2 hectares, from a degraded to very good (Keighery, 1994) condition, with suitable habitat for black cockatoos.

Given the above, and noting that the offset required counterbalances the significant residual impacts, the Delegated Officer determined that the proposed clearing is unlikely to lead to an unacceptable risk to the environment.

1.4. Site map

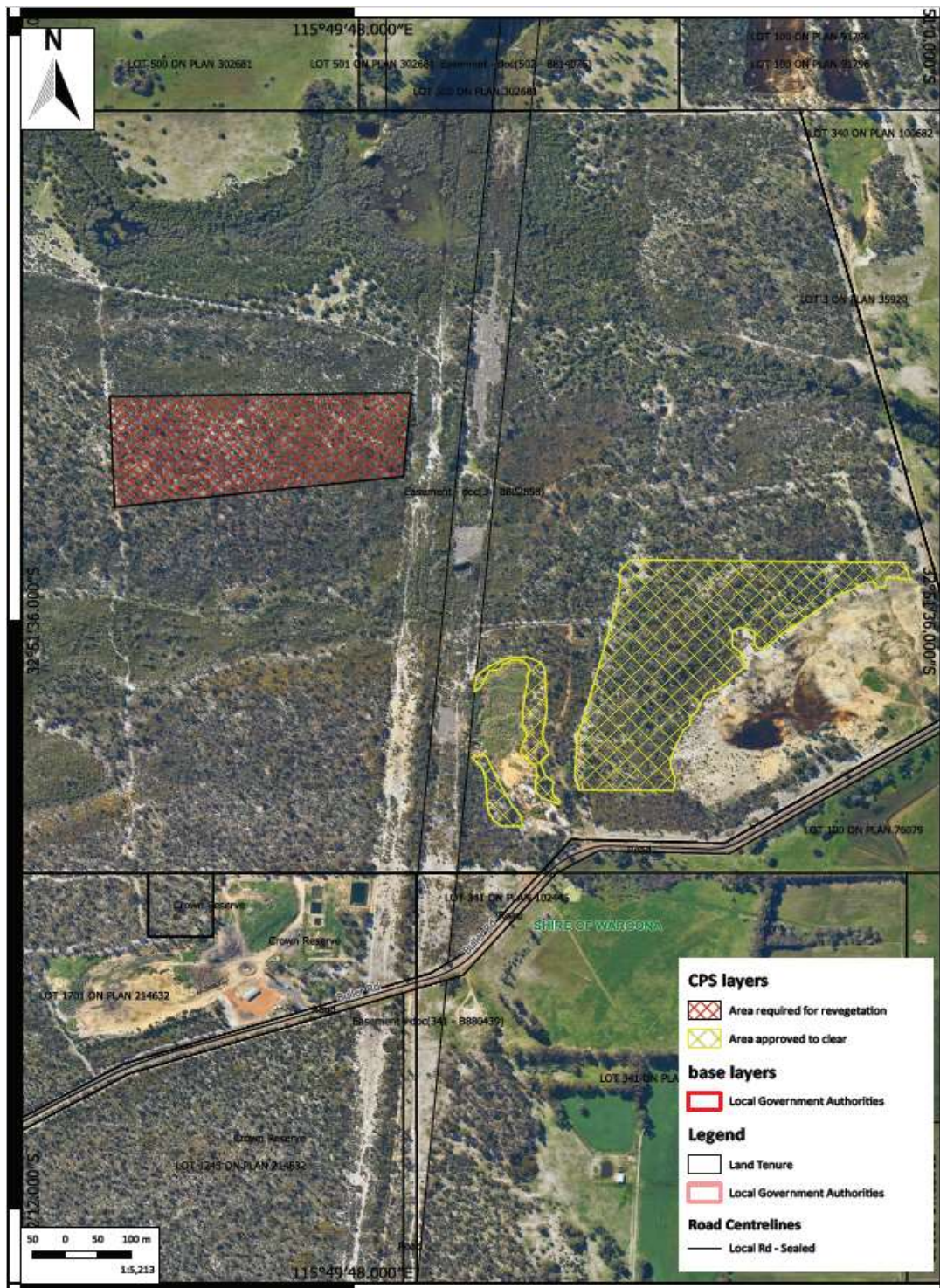


Figure 1. Map of the revised (current) application area and required rehabilitation area

The area cross-hatched yellow indicates the area authorised to clear under the amended clearing permit. The area cross-hatched red indicates the area required to be rehabilitated from a degraded to very good (Keighery, 1994) condition with black cockatoo habitat.

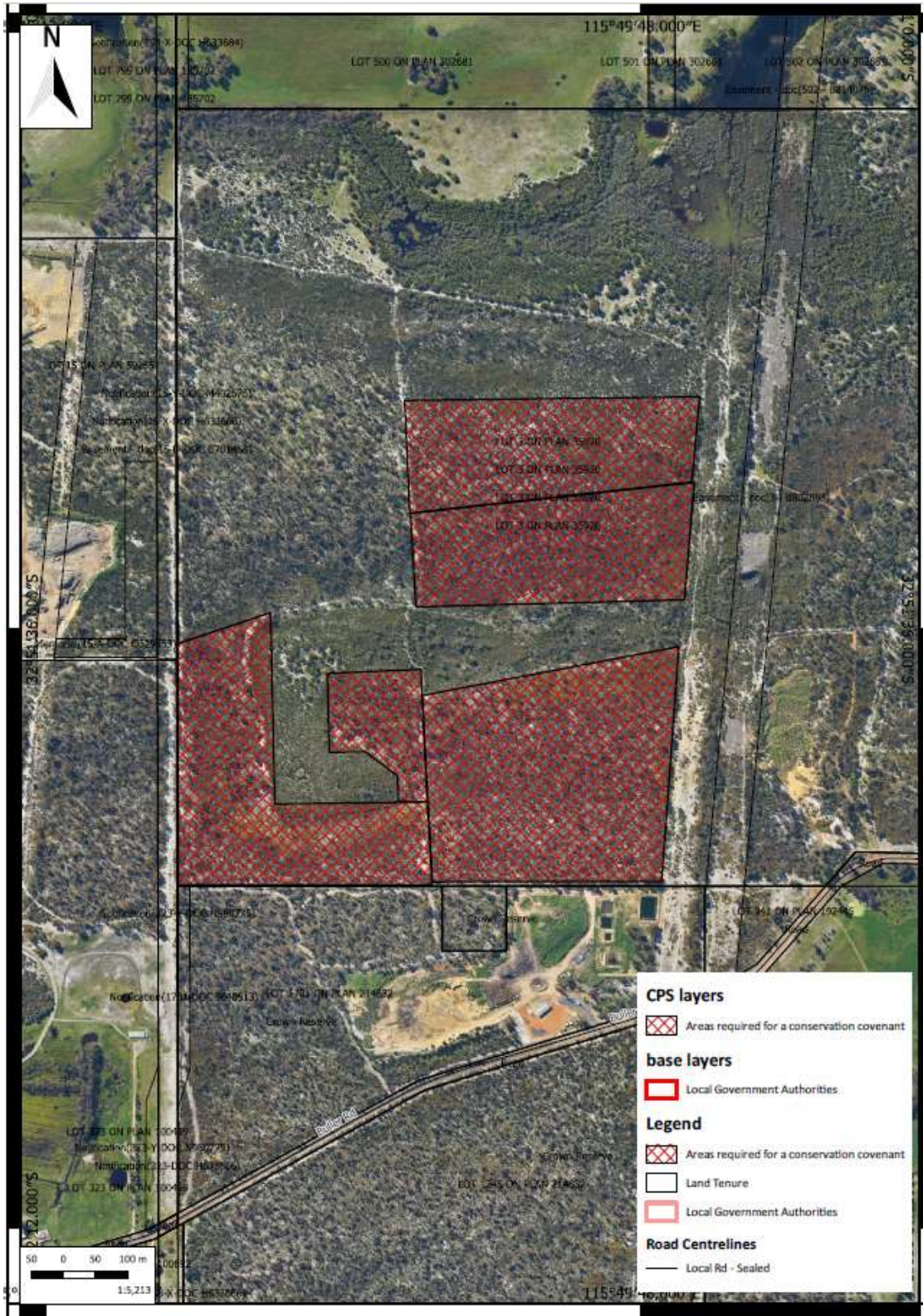


Figure 3. Map of the offset (conservation covenant required) areas

The areas cross-hatched red indicate the offset areas which are required to be placed under a conservation covenant for long-term protection. The irregular shape of the western most offset area relates to the suitability of habitat required for conservation to address specific impacts to black cockatoo habitat and Banksia Woodland TEC.

It is noted the surrounding areas of riparian vegetation outside those areas hatched red above are required to be conserved under the applicant's approval under the *Environment Protection and Biodiversity Conservation Act 1999*.

2 Legislative context

The clearing of native vegetation in Western Australia is regulated under the EP Act and the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* (Clearing Regulations).

In addition to the matters considered in accordance with section 51O of the EP Act (see Section 1.4), the Delegated Officer has also had regard to the objects and principles under section 4A of the EP Act, particularly:

- the precautionary principle
- the principle of intergenerational equity
- the polluter pays principle
- the principle of the conservation of biological diversity and ecological integrity.

Other legislation of relevance for this assessment include:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)
- *Planning and Development Act 2005* (WA) (P&D Act)

Relevant policies considered during the assessment include:

- *Environmental Offsets Policy* (2011)

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER, December 2013)
- *Procedure: Native vegetation clearing permits* (DWER, October 2019)
- *Environmental Offsets Guidelines* (August 2014)
- technical guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016)
- technical guidance – *Terrestrial Fauna Surveys for Environmental Impact Assessment* (EPA, 2016)

3 Detailed Assessment of Application

3.1. Avoidance and mitigation measures

The applicant provided extensive avoid and minimise measures as part of the extractive industry proposal relating to the clearing of 10.04 hectares of native vegetation, which are outlined within Decision Report CPS 8500/1. The mitigation measures proposed by the applicant as they relate to the additional 1.21 hectares of proposed clearing and landfill end land use, are shown below. The applicant notes that the additional 1.21 hectare area is required for the landfill given that these areas currently form part of the levees for the current pit, and are likely to be inadvertently damaged through the landfill operations.

General

The following mitigation measures were proposed for the extractive industry operation, and will apply to the additional 1.21 hectare area proposed for clearing (Accendo, 2019):

- the clearing area is to be marked with white flagging tape attached to either pegs or tied to vegetation with each peg/marker clearly visible from the last
- a fence will be constructed around the clearing footprint to avoid foot and traffic incursions into the remnant vegetation within Lot 3 Buller Road
- no unauthorised movement of vehicles or personnel within the vegetation retention areas will be allowed
- no stockpiling of topsoil or other material is to occur outside of the clearing boundary
- a two metre separation distance to groundwater will be maintained during sand excavation and all surface water will be contained within the extraction area
- extraction will be undertaken progressively in stages in a south to north direction to reduce the potential for stormwater erosion and dust by limiting the open pit area as far practical

Revegetation

Under the Shire of Waroona's Development Approval (DA) for the landfill facility, the applicant is required to submit a rehabilitation management plan (the plan) for Shire approval prior to the commencement of works. With respect to the plan, the DA requires the following:

- the plan must consider the type and depth of soil to be used to cap the landfill to maximise the success of the native vegetation rehabilitation and the staging of the progressive landfill and rehabilitation

- the plan must include progressive rehabilitation measures
- prior to commencing works, the applicant is to enter into an agreement with and to the satisfaction of the local government to implement the plan
- prior to commencing works, the applicant is provide a bond or bank guarantee to the local government to secure the successful implementation of the approved plan
- the bond or bank guarantee is to be no less than 30 per cent of the cost of implementing the plan, including the site preparation, planting and maintenance for two summers.

Management actions

The applicant has submitted a site management plan to support the DA. The DA requires the applicant to implement the measures within the site management plan, which includes dieback, vermin, litter, surface and groundwater management measures.

The DA also requires the applicant to undertake the following management actions (Shire of Waroona, 2021):

- prior to the commencement of works, lodge a plan for approval that demonstrates how the edge impacts of the landfill works will be managed to avoid impacting adjacent retained native vegetation. The plan is to address the intrusion of litter, weeds, people/vehicles, dieback and fill materials.
- a Landscape Assessment and Management Plan is to be lodged for approval prior to works. The plan must consider the staging of the development, the existing and proposed ground levels
- the site is to be managed to effectively stabilise dust on site
- the landfill site is to be fenced to prevent unauthorised access or dumping of materials
- a Dieback Management Plan is to be submitted for approval
- a Weed Management Plan is to be submitted for approval.

As part of the applicant's approval from the former Department of the Environment and Energy ((DotEE), now the Department of Agriculture, Water and the Environment (DAWE)), under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), the applicant was required to develop a Buller Road Environmental Management Plan (BREMP). The EPBC Act approval requires that at a minimum, the BREMP details measures to control:

- site access
- weeds and dieback
- prevent injury or mortality to black cockatoos during clearing
- delineate the clearing footprint to prevent unauthorised clearing
- water management measures to prevent intersection of groundwater during sand extraction.

Conclusion

The Delegated Officer is satisfied that the applicant has made adequate effort to avoid and minimise potential impacts of the proposed clearing on environmental values, and that the mitigation measures proposed by the applicant, required under the clearing permit and other legislation above, are adequate when considering the applicant's commitment to offset measures (outlined in Section 4).

3.1.1. Environmental value: Biological values (fauna, flora and ecological communities) – Clearing Principles (a), (b) and (c)

Background

The amendment proposes to increase the proposed clearing from 10.04 hectares, as approved under CPS 8500/1, by 1.21 hectares to a total area of 11.25 hectares of native vegetation.

Noting that a recent assessment was undertaken for Clearing Permit CPS 8500/1, and that a review of current environmental information against CPS 8500/1 did not identify any additional environmental impacts, the following assessment is specific to the additional 1.21 hectare area proposed for clearing (the application area).

The assessment of the larger 10.04 hectare area previously approved to clear can be found within Decision Report CPS 8500/1, located here: [Index of /permit/8500/Permit \(dwer.wa.gov.au\)](https://www.dwer.wa.gov.au/index-of/permit/8500/Permit).

The applicant commissioned the following flora and fauna surveys over the larger site:

- MBS Environmental (2015), level 1 flora and vegetation assessment, covered the entirety of the application area
- Woodman Environmental (2015), detailed level 2 flora and vegetation assessment, covered the entirety of the application area
- Terrestrial ecosystems (2015), fauna risk assessment, covered the entirety of the application area
- Harewood (2018), black cockatoo habitat review, covered 0.834 hectares of the 1.21 hectare application area
- Plant Ecology (2018a), vegetation condition survey, covered the entirety of the application area
- Plant Ecology (2018b), Banksia Woodland threatened ecological community assessment, covered 0.834 hectares of the additional 1.21 hectare application area

A further site inspection to inform a general vegetation and fauna habitat assessment was undertaken within the application area by Harewood (2021), which recorded vegetation condition, vegetation type and suitability of black cockatoo breeding habitat.

The Harewood (2021) assessment noted that the vegetation within the additional 1.21 hectare application area was consistent with that recorded in the MBS (2015) flora and vegetation survey, described as 'low woodland of *Corymbia calophylla*, *Eucalyptus marginata*, *Banksia* spp. and *Allocasuarina fraseriana*'. This is also largely consistent with that recorded in the Woodman (2015) flora and vegetation assessment which recorded mid open woodland of *Allocasuarina fraseriana*, *Eucalyptus marginata* and *Corymbia calophylla* over low open woodland dominated by *Banksia* sp.

The Harewood (2021) assessment noted that the vegetation within the application area is in a degraded to completely degraded (Keighery, 1994) condition.

Conservation significant flora and ecological communities

There are no historical records of threatened or priority flora species within the application area. The MBS Environmental (2015) and Woodman (2015) flora assessments did not identify any threatened or priority flora species within the application area. Noting this, and the degraded to completely degraded (Keighery, 1994) condition of the vegetation within the application area (Harewood, 2021), the proposed clearing is not likely to impact on any threatened or priority flora species.

The application area is mapped as the 'Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region' (Banksia Woodlands), which is federally listed as a threatened ecological community (endangered) and state listed as a priority ecological community (priority 3). The approved conservation advice for this TEC sets out vegetation condition thresholds for vegetative patches that may be representative of this community (DotEE, 2016). The application area, being in a degraded to completely degraded (Keighery, 1994) condition, does not meet the specified vegetation condition threshold (DotEE, 2016), and on this basis, it is not considered to be representative of this community.

Dieback and weeds risks to biodiversity

Glevan Consulting (2015) conducted a dieback (*Phytophthora cinnamomi*) assessment of a 36.8 hectare area within Lot 3 Buller Road, which included the application area. The assessment identified that most of the application area is uninfested but unprotectable and was bordered to the east by dieback infested areas (associated with the larger CPS 8500/1 area approved to clear). The current dieback status of the application area is not known, and this area may now be dieback infested.

The Woodman (2015) survey recorded 46 weed species across the larger survey area encompassing the application area. This includes *Zantedeschia aethiopica* (arum lily) which the Department of Primary Industries and Regional Development has classified as a declared pest. A vegetation condition survey undertaken by Plant Ecology in 2018 noted that portions of the application area are dominated by weeds (Plantecology, 2018a).

The proposed clearing will increase the risk of weeds and dieback spreading into adjacent areas of native vegetation, including areas of higher quality native vegetation within the adjacent remnant west of the application area.

These areas provide important linkage and fauna habitat values, including conservation category wetlands, and are mapped as, and likely representative of the Banksia Woodlands TEC.

Conservation significant Fauna

The fauna habitat within the application area is in a degraded to completely degraded (Keighery, 1994) condition (Harewood, 2021) and has undergone historical disturbance through:

- January 2016 fires which left the application area badly burnt (the site is recovering)
- dieback (*Phytophthora cinnamomi*) infestation
- edge effects from nearby cleared areas (extractive industry)

The following conservation significant fauna species have been identified as potentially occurring within the application area:

- Carnaby's cockatoo (*Calyptorhynchus latirostris*) (state listed as endangered)
- forest red-tailed black cockatoo (*Calyptorhynchus banksia naso*) (vulnerable)
- Baudin's cockatoo (*Calyptorhynchus baudinii*) (endangered)
- chuditch (*Dasyurus geoffroii*) (vulnerable)
- south-west brush-tailed phascogale (*Phascogale tapoatafa wambenger*) (conservation dependant)
- coastal plains skink (*Ctenotus ora*) (Priority (P) 3)
- quenda (*Isodood fusciventer*) (P4)
- western brush wallaby (*Notamacropus irma*) (P4)

This assumption is based on the habitat requirements, distribution, mapped vegetation types, and findings of the Fauna Assessment (Terrestrial Ecosystems, 2015), Black Cockatoo Habitat Review (Black Cockatoo Assessment) Harewood (2018) and reconnaissance site inspection (Harewood, 2021).

Black cockatoos

No suitable black cockatoo breeding hollows were identified in the application area (Harewood, 2021; Harewood, 2018; Terrestrial Ecosystems, 2015).

The Terrestrial Ecosystem (2015) and Harewood (2018; 2021) assessments did not identify any evidence of roosting within the application area, and no trees with a diameter at breast height of greater than 500 millimetres were identified in this area.

Carnaby's cockatoo forage on the seeds, nuts and flowers of a large variety of plants including Proteaceous species (*Banksia*, *Hakea* and *Grevillea*), as well as *Allocasuarina* and *Eucalyptus* species, *Corymbia calophylla* and a range of introduced species (Valentine and Stock, 2008). The records of foraging activity for Carnaby's cockatoo on the SCP show that Banksia species account for nearly 50 percent of the diet for this species (Shah, 2006).

Baudin's cockatoos forage within Eucalypt woodlands and forest, and proteaceous woodland and heath. During the breeding season this species feeds primarily on marri, and to a lesser extent proteaceous trees and shrubs (Commonwealth of Australia, 2012).

Forest red-tailed black cockatoo forages within jarrah and marri woodlands and forest, and edges of karri forests including wandoo and blackbutt, within the range of the subspecies. This species mostly feeds on seeds of marri and jarrah (Commonwealth of Australia, 2012).

Given that the application area comprises 1.21 hectares of vegetation described as "low woodland of *Corymbia calophylla*, *Eucalyptus marginata*, *Banksia* spp. and *Allocasuarina fraseriana*" (Harewood, 2021; MBS, 2015), it provides suitable habitat for all three black cockatoo species.

The Terrestrial Ecosystem (2015) assessment identified evidence of black cockatoo foraging in the form of chewed *Banksia* and marri cones within the larger application area (Terrestrial Ecosystems, 2015). Harewood (2018) identified evidence of forest red-tailed black-cockatoo foraging in the form of chewed marri fruits at several locations.

The forest red tailed-black cockatoo and Baudin's cockatoo recovery plan notes that habitat critical to the survival of these species includes all marri, karri and jarrah forests, woodlands and remnants in the south-west of Western

Australia receiving, on average, more than 600 millimetres of annual rainfall (Department of Environment and Conservation (DEC), 2008). The application area fits this description of critical habitat.

Carnaby's cockatoo EPA technical advice notes that *Banksia* species provide the most important natural food resource on the Swan Coastal Plain (SCP), given this species exploits all areas of available *Banksia* food resources on the SCP (EPA, 2019). The importance of foraging habitat for Carnaby's cockatoo increases when it occurs within foraging distance of nesting sites (12 kilometres), as it supports breeding effort (Department of Parks and Wildlife, 2013). The closest known breeding site occurs around 8.6 kilometres from the application area. The distance of nearby water sources also increases foraging habitat value, and there are several wetlands mapped within 12 kilometres, including sumplands located 80 metres north and 120 metres west of the application area.

The Black Cockatoo Assessment noted that on a regional scale there appears to be considerable areas of black cockatoo habitat with over 7,400 hectares of remnant native within 12 kilometres of the survey area, almost half of which is under DBCA management (Harewood, 2018).

The degraded to completely degraded (Keighery, 1994) condition of the application area and extent of black cockatoo foraging habitat in the local area is acknowledged, however the application area provides significant foraging habitat for black cockatoos given the following:

- the application area includes preferred foraging habitat for all species in a highly fragmented area of the SCP
- there are known Carnaby's cockatoo breeding sites within 12 kilometres of the application area
- there are multiple known water resources within one kilometre of the application area
- potential evidence of historical foraging from all three species was identified within the larger survey area encompassing the application area.

Other fauna

The application area is not likely to include significant habitat for the coastal plains skink, western brush wallaby, south-west brush-tailed phascogale, quenda or chuditch, based on the following:

- the presence of higher quality native vegetation immediately west
- lack of dense riparian habitat within the application area
- lack of horizontal hollow logs within the application area
- lack of direct evidence of confirmed use within the application
- degraded to completely degraded (Keighery, 1994) condition of the vegetation within the application area
- lack of large hollow bearing trees within the application area.

However, these species may transiently visit the site, and individuals may be impacted should they occur at the time of clearing.

Ecological Linkage

It is noted that the application area is part of a larger remnant that contributes to ecological linkage values, formally recognised as part of the South West Regional Ecological Linkage. While the proposed clearing of the application area will not sever the linkage, it does contribute towards the larger remnant which facilitates fauna movement throughout the landscape.

Conclusion

Based on the above assessment, the additional 1.21 hectares of proposed clearing will result in:

- the loss of an additional 1.21 hectares of significant foraging habitat for Carnaby's cockatoo, forest red-tailed black cockatoo and Baudin's cockatoo
- potential direct impacts to south-western brush-tailed phascogale, quenda, coastal plains skink, chuditch and western brush wallaby, should they occur within the application area at the time of clearing
- potential impacts to biodiversity values within adjacent native vegetation through the spread of weeds and dieback
- the loss of vegetation that forms part of a much larger remnant recognised as an ecological linkage

Outcome

The Delegated Officer determined that the additional proposed clearing requires management and offset conditions in relation to the above environmental values. Therefore, the following management/offset measures will be required as conditions on the clearing permit:

- undertake weed and dieback hygiene management measures to prevent weeds and dieback spreading into adjacent native vegetation (as previously required on clearing permit CPS 8500/1)
- slow, directional clearing to allow quenda, coastal plains skink, chuditch and western brush wallaby individuals to move into adjacent vegetation ahead of the clearing activity (as previously required on clearing permit CPS 8500/1)
- the requirement to provide a conservation covenant over a larger area than required under clearing permit CPS 8500/1 as an offset measure. The amended clearing permit requires an additional 16.19 hectares of nearby native vegetation to be conserved in perpetuity. The 16.19 hectares of native vegetation provides suitable habitat for black cockatoos, is representative of the Banksia Woodland TEC and provides ecological linkage values.

3.2. Relevant planning instruments and other matters

Clearing application history

Clearing permit 6701/1

On 12 August 2015, AMG (WA) Pty Ltd applied for a permit to clear 6.02 hectares of vegetation in a degraded (Keighery, 1994) condition within Lot 3 Buller Road. This area is adjacent to the current application area. The former DER's (now DWER) assessment did not identify any significant environmental impacts associated with the proposed clearing, and on 15 October 2015, DER granted a permit to clear, subject to conditions. This area is adjacent to the current application area and has also been proposed as a future landfill site. Subsequently, the applicant has also applied to amend clearing permit CPS 6701/1.

EPBC Act Approval

On 9 February 2018, the applicant applied for approval to clear under the *EPBC Act 1999*. On 17 January 2019, the former Department of the Environment and Energy (DotEE, now DAWE) approved the proposal (reference EPBC 2018/8138), subject to conditions. The conditions required the provision of a suitable offset, which involves the conservation of remnant vegetation immediately west of the application area. The approval also required the applicant to provide an Environmental Management Plan for approval of the Commonwealth Minister prior to clearing.

A subsequent variation of conditions attached to the approval was undertaken and approved by DAWE on 27 July 2021. The variation approval covers an area of 10.04 hectares, consistent with that approved under CPS 8500/1.

Planning Approvals

On 21 December 2020, the Shire of Waroona issued the applicant with an extractive industry licence and development approval over the CPS 8500/1 (10.04 hectare) application area, subject to conditions. These conditions included the following (Shire of Waroona, 2020):

- all stormwater and drainage run-off shall be contained onsite or be connected to a Shire of Waroona stormwater legal point of discharge to the satisfaction of the Shire
- fuel storage/refuelling areas shall be contained wholly within the 10.04 hectare application area, comprising a bunded hardstand area and drained to a pollutant receptor to the satisfaction of the Shire
- measures being implemented to the satisfaction of the Shire of Waroona to avoid the risk of spills or leaks of fuel, oils or other hydrocarbons or chemicals within the application area
- a minimum separation distance of two metres between the maximum excavation depth and the highest known groundwater level
- all stockpiles of sand and topsoil shall be located below the highest ridgelines of the application area, in an east west alignment (to reduce wind erosion) and be regularly watered to suppress dust from blowing on to adjoining lots
- within 60 days, a dieback management plan is to be prepared and implemented once approved by the Shire, prior to mining the application area

- materials imported for rehabilitation shall be certified dieback free
- the rehabilitation and decommissioning plan is to be revised to the satisfaction of the Shire of Waroona, detailing how the site will be revegetated to enable a self sustaining ecological community
- the applicant must enter into a deed of agreement with the Shire to implement revegetation, with no less than 30 per cent of the cost of actioning the plan being bonded to the Shire to ensure revegetation
- the spreading of topsoil over excavated areas is to be dressed to a minimum depth of five centimetres prior to seeding and planting the application area
- mining is to be undertaken in accordance with the site management plan.

The applicant since submitted an additional development application for proposed inert landfill. The Shire of Waroona Council determined to approve the application subject to conditions, which include the following (Shire of Waroona, 2021):

- prior to commencing works, a plan is to be lodged with the Shire for approval that demonstrates how the edge impacts of the land fill works will be effectively managed to avoid impacting the adjacent retained native vegetation. In particular this plan is to address the intrusion of litter, weeds, people/vehicles, dieback and fill materials
- a Landscape Assessment and Management Plan is to be lodged with the Shire prior to the commencement of works. The plan is to consider the staging of the development, the existing and proposed ground levels
- the site is to be managed to effectively stabilise dust on the site
- the landfill site is to be fenced to the satisfaction of the local government, sufficient to prevent unauthorised access or dumping of materials
- a Dieback Management Plan is to be submitted to the Shire for approval
- a Weed Management Plan is to be submitted to the Shire for approval

EP Act Approval, Industrial Emissions and Discharges

Industrial premises with the potential to cause emissions and discharges to air, land or water are 'prescribed premises' and trigger regulation under the EP Act. The EP Act requires a works approval to be obtained before constructing a prescribed industrial premises. The applicant has submitted a works approval application for the proposed landfill. This application has been assessed and the applicant was provided with a Draft Works Approval for comment. The Works Approval is expected to be issued after a decision is made on the clearing permit amendment applications.

It is considered that impacts associated with the end land use have been addressed through the Shire of Waroona's conditional development approval, the applicants site management plan, and will be further addressed under the Works Approval.

RIWI Act Approvals

The application area is mapped within the Murray groundwater area which is proclaimed under the *Rights in Water and Irrigation Act 1914* (RIWI Act). Under the RIWI Act, if a bore is to be drilled and water taken for purposes other than those purposes exempt from licensing, a licence application must be made to DWER. The applicant has advised that the proposed extractive industry and proposed landfill will remain above the groundwater level, and therefore will not require a RIWI licence to take groundwater.

Aboriginal heritage

There is one Aboriginal Site of Significance mapped within the application area, Buller Road Camp. It is the permit holder's responsibility to comply with the *Aboriginal Heritage Act 1972* (WA) and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

4 Suitability of offsets/mitigation

The offset considerations and outcomes associated with the larger 10.04 hectare clearing approved under CPS 8500/1 are contained within Decision Report CPS 8500/1.

Through the assessment of this amendment application, the Delegated Officer determined that the following additional residual impacts would occur:

- the loss of 1.21 hectares of significant foraging habitat for black cockatoos within an extensively cleared landscape, that forms part of a larger remnant comprising ecological linkage values.

The Delegated Officer considered the applicants request to remove a mitigation condition of CPS 8500/1, which required the applicant to revegetate the approved clearing area immediately post-extraction. The applicant had previously received mitigation credit for this revegetation, which reduced the extent of offset required to address the significant residual impacts.

The above revegetation requirement has been removed, noting that the applicant proposes to undertake landfill post-extraction, and would be unable to comply with the revegetation requirement. Subsequently, the revegetation mitigation credit no longer applies. In removing the revegetation requirement, the Delegated Officer had regard for the Shire of Waroona's Development Approval which includes a condition that requires for revegetation of the site post-landfill (see Section 3.1. for further information).

The Delegated Officer considered the potential to require revegetation of the proposed landfill area post-landfill, and to provide mitigation credit (against the required offset) for such works. However, the Delegated Officer determined that this would not be appropriate noting the extended time until ecological benefit of any such revegetation, and concerns with successfully establishing specific black cockatoo foraging habitat over a landfill site.

Given the above, the applicant was required to provide a conservation covenant over a larger area of nearby remnant native vegetation to account for:

- the exclusion of the conditional revegetation requirement of the pit post-extraction (mitigation measure)
- the additional 1.21 hectare impact to black cockatoo foraging habitat proposed as part of this amendment application.

The applicant has subsequently committed to placing a conservation covenant over an additional 16.19 hectares of adjacent native vegetation in largely a very good (Keighery, 1994) condition. Given this increase, the total area now required to be placed under a conservation covenant is 45 hectares. This includes 8.2 hectares required for rehabilitation as described under the CPS 8500/1 decision report.

The vegetation to be covenanted contains significant habitat for black cockatoos, the majority (36.8 ha) is representative of the Banksia Woodlands TEC, is representative of the Sothern River vegetation complex, and contributes to a regionally significant ecological linkage. The covenant will be registered on the Certificate of Title in perpetuity, in accordance with Section 30B of the *Soil and Land Conservation Act 1954*.

In assessing whether the proposed additional offset is adequate and proportionate to the significance of environmental values being impacted, a calculation using the EPBC Act Offset Calculator was undertaken. The calculation indicates that the proposed offset is sufficient to counterbalance these impacts.

End

Appendix A. Site characteristics

A.1. Site characteristics

***Note** - The below site characteristics are specific to the additional 1.21 hectare area being applied for, the 'application area'. The site characteristics of the remaining 10.04 hectares are contained within Decision Report CPS 8500/1. This is noting the assessment was undertaken recently and no additional environmental values were identified for that area during a subsequent desktop assessment and survey review.

Characteristic	Details
Local context	<p>The application area is in the Swan Coastal Plain Bioregion, and Shire of Waroona. It is bound by remnant vegetation to the north and west, and extractive industry and agricultural land uses east and south respectively.</p> <p>The application area comprises part of a larger remnant of native vegetation (around 650 hectares) which occurs in a band of highly cleared agricultural land within the southern Swan Coastal Plain.</p>
Climate and Landform	<p>The application area is located on the Bassendean Dunes landform, comprising gently undulating dunes made up of well-bleached white-grey sands. The landform of the larger remnant within Lot 3 Buller Road ranges from 24 mAHD on top of a sand rise in the southwest part of the area to around 15.5 mAHD within the adjacent eastern extraction areas (MBS Environmental, 2015).</p> <p>The climate of the area is warm and temperate (Mediterranean). The winter months have higher rainfall than summer months with an annual rainfall of around 950 millimetres.</p>
Vegetation description and condition	<p>The Woodman (2015) detailed flora survey indicated that the application area comprises the following vegetation type:</p> <p>VT1 - mid open woodland to open forest of <i>Allocasuarina fraseriana</i>, <i>Eucalyptus marginata</i> and <i>Corymbia calophylla</i> over low open woodland to woodland dominated by <i>Banksia attenuata</i>, <i>Banksia grandis</i> and <i>Banksia ilicifolia</i> over mid sparse to open shrubland dominated by <i>Xanthorrhoea preissii</i> over low to mid sparse shrubland to shrubland dominated by <i>Hibbertia hypericoides</i> over low sparse to open forbland dominated by <i>Dasypogon bromeliifolius</i> and <i>Desmocladius flexuosus</i> on grey sand on lower to upper slopes and flats (Woodman Environmental, 2015).</p> <p>This is consistent with the vegetation type recorded in the MBS (2015) survey which is described as described as low woodland of <i>Corymbia calophylla</i>, <i>Eucalyptus marginata</i>, <i>Banksia</i> spp. and <i>Allocasuarina fraseriana</i> over a low open shrubland dominated by <i>Hibbertia hypericoides</i> over a grassland of native and introduced species on very low relief sand dunes.</p> <p>The full survey descriptions and maps are available online.</p> <p>According to broad scale vegetation mapping of the Swan Coastal Plain, the application area is mapped as the Southern River Complex. This complex is described as open woodland of <i>Corymbia calophylla</i> (Marri), <i>Eucalyptus marginata</i> (Jarrah) and <i>Banksia</i> species with fringing woodland of <i>Eucalyptus rudis</i> (Flooded Gum), and <i>Melaleuca raphiophylla</i> (Swamp Paperbark) along creek beds (Heddle et al, 1980).</p> <p>A reconnaissance fauna assessment of the application area indicates that vegetation within the application area is in a degraded to completely degraded (Keighery, 1994) condition (Harewood, 2021).</p> <p>The full Keighery (1994) condition rating scale, with a description of each condition, is provided in Appendix C.</p>

Characteristic	Details
Soil description	The application is mapped as the 'Bassendean B1 Phase' map unit, described as extremely low to very low relief dunes, undulating sandplain and discrete sand rises with deep bleached grey sands sometimes with a pale yellow B horizon or a weak iron-organic hardpan at depths generally greater than 2 m (DPIRD, 2019).
Conservation areas	The closest conservation area is Buller Nature reserve located around 240 metres from the application area.
Ecological linkage	The application area forms part of a South West Regional Ecological Linkage (SWREL).
Land degradation risk	<p>According to land degradation risk mapping, the highest risk on site is associated with wind erosion, as 50-70 per cent of the application areas mapped land unit has a high to extreme wind erosion risk (see all categories below).</p> <p>Groundwater salinity is mapped at between 500-1000 milligrams per litre total dissolved solids. This level is considered marginal.</p>
Waterbodies	<p>According to available datasets, there are no wetlands mapped within the application area.</p> <p>The closest wetlands to the application area are:</p> <ul style="list-style-type: none"> • UFI 5004 sumpland (seasonally inundated basin) – 80 metres north • UFI 4807 conservation category sumpland – 120 metres west • UFI 4636 conservation category sumpland – 400 metres west <p>There are no natural watercourses mapped within, or nearby the application area.</p>
Flora	<p>According to available datasets, there are records of four threatened and 20 priority flora species within the local area.</p> <p><i>Caladenia huegelii</i> is the closest known record of threatened flora to the application area, located 1.4 kilometres away.</p> <p><i>Caladenia speciosa</i> is the closest known record of priority flora to the application area, located around 1.1 kilometres away.</p> <p>Flora surveys did not identify any threatened or priority flora species within the application area (Woodman Environmental, 2015; MBS Environmental, 2015).</p> <p>The Woodman Survey identified one priority 4 flora species, <i>Acacia semitrullata</i>, around 700 metres from the application area.</p>
Ecological communities	<p>Most of the application area is mapped as the 'Banksia woodlands of the Swan Coastal Plain' (Banksia Woodland) threatened ecological community (TEC) (federally listed as endangered and state listed as priority 3)</p> <p>The application area is in a degraded to completely degraded (Keighery, 1994) condition and therefore does not meet the condition thresholds specified for a patch of vegetation to be considered representative of this community (DotEE, 2016).</p>
Fauna	According to available datasets, there are records of 13 conservation listed fauna species within the local area. Of these, a likelihood of analysis identified nine species that may occur within the application area based on habitat suitability (see Section 3).

Characteristic	Details
	<p>A Fauna and Black Cockatoo Habitat Assessment identified forest red-tailed black cockatoo and Carnaby's cockatoo foraging evidence within a larger survey area encompassing the application area.</p> <p>No evidence of other conservation listed species was identified within the application area (Terrestrial Ecosystems, 2015; Harewood, 2018).</p>

A.2. Vegetation extent

	Pre-European extent (ha)	Current extent (ha)	Extent remaining (%)	Current extent in all DBCA managed land (ha)	Current proportion (%) of pre-European extent in all DBCA managed land
IBRA bioregion*					
Swan Coastal Plain	1,501,222	579,814	38.6	153,955	10.3
Vegetation complex					
Hedde vegetation complex 'Southern River Complex' **	58,781	10,832	18.4	940	1.6
Local area					
10km radius	33,007	3,928	11.9	-	-

Government of Western Australia (2019a)*

Government of Western Australia (2019b)**

Appendix B. Assessment against the clearing principles

***Note** - this assessment is specific to the values of the additional 1.21 hectare area being applied for. The assessment of the remaining 10.04 hectares is contained within Decision Report CPS 8500/1. This is noting the assessment was undertaken recently and no additional environmental values were identified for that area during a subsequent desktop assessment and survey review.

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biodiversity values		
<p><u>Principle (a):</u> "Native vegetation should not be cleared if it comprises a high level of biodiversity."</p> <p><u>Assessment:</u></p> <p>The application area does not comprise a high level of biodiversity noting that it is in a degraded to completely degraded (Keighery, 1994) condition and is not likely to contain any threatened or priority flora, or be representative of any threatened or priority ecological communities.</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.1, above.</i>
<p><u>Principle (b):</u> "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."</p>	At variance	Yes <i>Refer to Section 3.2.1, above.</i>

Assessment against the clearing principles	Variance level	Is further consideration required?
<p><u>Assessment:</u></p> <p>The application area contains 1.21 hectares of preferred foraging habitat for black cockatoos, is within 12 kilometres of a known Carnaby's cockatoo breeding location, within a highly cleared area of the Swan Coastal Plain.</p> <p>The application area is therefore considered significant foraging habitat for black cockatoos.</p>		
<p><u>Principle (c):</u> <i>"Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora."</i></p> <p><u>Assessment:</u></p> <p>Flora surveys did not identify any threatened flora species within the application area. Noting this, and the degraded to completely degraded (Keighery, 1994) condition of the application area, it is not likely to contain any threatened flora species.</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.1, above.</i>
<p><u>Principle (d):</u> <i>"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."</i></p> <p><u>Assessment:</u></p> <p>The application area is mapped as the Banksia Woodlands of the Swan Coastal Plain federally listed threatened ecological community (TEC). Based on the vegetation condition thresholds specified for this TEC, the application area is not representative of this TEC.</p>	Not likely to be at variance	No
Environmental value: significant remnant vegetation and conservation areas		
<p><u>Principle (e):</u> <i>"Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared."</i></p> <p><u>Assessment:</u></p> <p>The national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30 percent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001).</p> <p>The local area retains around 11.9 per cent remnant native vegetation cover and the mapped vegetation type retains 18.4 per cent of its pre-European vegetation extent. The Swan Coastal Plain Bioregion retains 38.6 per cent of its pre-European vegetation extent.</p> <p>The extent of the mapped vegetation type and native vegetation in the local area is less than the national objectives and targets for biodiversity conservation in Australia.</p> <p>The application area provides significant habitat for black cockatoos, and is therefore considered a significant remnant within a highly cleared area.</p>	At variance	No
<p><u>Principle (h):</u> <i>"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."</i></p> <p><u>Assessment:</u></p> <p>The application area is around 360 metres from Buller Nature Reserve. The proposed clearing of a small area of 1.21 hectares of native vegetation in a degraded to completely degraded (Keighery, 1994) condition, adjacent to an</p>	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
existing extraction pit, is not likely to impact on Buller Nature Reserve, or any other conservation areas within the local area.		
Environmental value: land and water resources		
<p><u>Principle (f):</u> <i>“Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.”</i></p> <p><u>Assessment:</u></p> <p>There are no wetlands or watercourses mapped within the application area. The proposed clearing is not likely to impact on the closest water feature (wetland – basin) which is located around 80 metres north of the application area. The application area is separated from the vegetation adjoining this wetland through existing access tracks/firebreaks.</p> <p>Flora surveys did not identify any riparian vegetation within the application area. The closest patch of riparian vegetation was recorded around 150 metres west of the application area.</p>	Not likely to be at variance	No
<p><u>Principle (g):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.”</i></p> <p><u>Assessment:</u></p> <p>Due to the sandy soil types, the application area has an increased risk of wind erosion, although this is not expected to be significant given the small size of the application area and degraded to completely degraded condition (Keighery, 1994) of the vegetation.</p> <p>As part of the Development Approval for the proposed landfill and extractive industry, the applicant is required to implement dust and erosion control measures.</p> <p>The development approval for the extractive industry requires that stockpiles of sand and topsoil shall be located below the highest ridgelines of the application area, in an east west alignment (to reduce wind erosion) and be regularly watered to suppress dust from blowing on to adjoining lots.</p> <p>To further minimise the risk of wind erosion, the applicant will be required to commence construction within three months of clearing, to reduce the exposure of bare sandy soils.</p>	May be at variance	No
<p><u>Principle (i):</u> <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.”</i></p> <p><u>Assessment:</u></p> <p>Groundwater salinity levels are marginal, and there is not expected to be any surface expression of salinity due to clearing.</p> <p>There are no wetlands or watercourses mapped within the application area. The proposed clearing is not likely to impact on the closest water feature (multiple use wetland) which is located around 80 metres north of the application area. The application area is separated from the vegetation adjoining this wetland through access tracks/firebreaks.</p> <p>Noting the distance and extent of vegetation between the application area and the closest wetland/watercourse, the proposed clearing is unlikely to result in surface water quality impacts through sedimentation or otherwise.</p>	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
<p><u>Principle (j)</u>: “Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.”</p> <p><u>Assessment</u>: The mapped soils are highly permeable, and noting the lack of hydrological features on site, the proposed clearing is not likely to exacerbate flooding.</p>	Not likely to be at variance	No

Appendix C. Vegetation condition rating scale

Vegetation condition is a rating given to a defined area of vegetation to categorise and rank disturbance related to human activities. The rating refers to the degree of change in the vegetation structure, density and species present in relation to undisturbed vegetation of the same type. The degree of disturbance impacts upon the vegetation’s ability to regenerate. Disturbance at a site can be a cumulative effect from a number of interacting disturbance types.

Considering its location, the scale below was used to measure the condition of the vegetation proposed to be cleared. This scale has been extracted from: Keighery, B.J. (1994) *Bushland Plant Survey: A Guide to Plant Community Survey for the Community*. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Measuring vegetation condition for the South West and Interzone Botanical Province (Keighery, 1994)

Condition	Description
Pristine	Pristine or nearly so, no obvious signs of disturbance.
Excellent	Vegetation structure intact, with disturbance affecting individual species; weeds are non-aggressive species.
Very good	Vegetation structure altered, with obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and/or grazing.
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and/or grazing.
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and/or grazing.
Completely degraded	The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as ‘parkland cleared’ with the flora comprising weed or crop species with isolated native trees or shrubs.

Appendix F. Sources of information

F.1. GIS databases

Publicly available GIS Databases used (sourced from www.data.wa.gov.au):

- 10 Metre Contours (DPIRD-073)
- Aboriginal Heritage Places (DPLH-001)
- Cadastre (LGATE-218)
- Cadastre Address (LGATE-002)
- Consanguineous Wetlands Suites (DBCA-020)
- DBCA – Lands of Interest (DBCA-012)
- DBCA Legislated Lands and Waters (DBCA-011)

- Directory of Important Wetlands in Australia – Western Australia (DBCA-045)
- Environmentally Sensitive Areas (DWER-046)
- Groundwater Salinity Statewide (DWER-026)
- Hydrography – Inland Waters – Waterlines
- Hydrological Zones of Western Australia (DPIRD-069)
- IBRA Vegetation Statistics
- Imagery
- Local Planning Scheme – Zones and Reserves (DPLH-071)
- Native Title (ILUA) (LGATE-067)
- Offsets Register – Offsets (DWER-078)
- Pre-European Vegetation Statistics
- Public Drinking Water Source Areas (DWER-033)
- Ramsar Sites (DBCA-010)
- Remnant Vegetation, All Areas
- Soil Landscape Mapping – Best Available
- Soil Landscape Mapping – Systems
- Soil Landscape Land Quality – Flood Risk (DPIRD-007)
- Soil Landscape Land Quality – Wind Erosion Risk (DPIRD-016)
- Soil Landscape Land Quality – Water Erosion Risk (DPIRD-013)
- Soil Landscape Land Quality – Waterlogging Risk (DPIRD-015)
- Soil Landscape Land Quality – Water Repellence Risk (DPIRD-014)
- Soil Landscape Land Quality – Subsurface Acidification Risk (DPIRD-011)
- Soil Landscape Land Quality – Phosphorus Export Risk (DPIRD-010)
- South Coast Significant Wetlands (DBCA-018)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- RIWI Act, Groundwater Areas (DWER-034)

Restricted GIS Databases used:

- ICMS (Incident Complaints Management System) – Points and Polygons
- Threatened Flora (TPFL)
- Threatened Flora (WAHerb)
- Threatened Fauna
- Threatened Ecological Communities and Priority Ecological Communities

F.2. References

- Accendo Australia (2019) Application for Clearing Permit, Lot 3 Buller Road, Waroona (DWER Ref DWERDT164756)
- Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.
- Commonwealth of Australia (2012) EPBC Act referral guidelines for three threatened black cockatoo species. Department of Sustainability, Environment, Water, Populations and Communities, Canberra.
- Department of Environment and Conservation (DEC) (2008) Forest Black Cockatoo (Baudin's Cockatoo *Calyptorhynchus baudinii* and Forest Red-tailed Black Cockatoo *Calyptorhynchus banksii naso*) Recovery Plan.
- Department of Parks and Wildlife (2013) Carnaby's Cockatoo (*Calyptorhynchus latirostris*) Recovery Plan. Western Australian Wildlife Management Program No. 52.
- Department of Primary Industries and Regional Development (DPIRD) (2019). *NRInfo Digital Mapping. Department of Primary Industries and Regional Development*. Government of Western Australia. URL: <https://maps.agric.wa.gov.au/nrm-info/> (accessed November 2021).
- Department of the Environment and Energy (2016) Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) (s 266B). Approved Conservation Advice (incorporating listing advice) for the *Banksia* Woodlands of the Swan Coastal Plain ecological community.

- Environmental Protection Authority (EPA) (2019). *EPA Technical Report: Carnaby's Cockatoo in Environmental Impact Assessment in the Perth and Peel Region*. Advice of the Environmental Protection Authority under Section 16(j) of the *Environmental Protection Act 1986*.
- Gleван Consulting (2015) Lot 3 Buller Road, Waroona. Phytophthora Dieback occurrence assessment - version 2.0. Prepared for KD.1 Pty Ltd (DER Ref A922976).
- Government of Western Australia (2019a) *2018 South West Vegetation Complex Statistics. Current as of March 2019*. WA Department of Biodiversity, Conservation and Attractions, Perth, <https://catalogue.data.wa.gov.au/dataset/dbca>
- Government of Western Australia. (2019b) *2018 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of March 2019*. WA Department of Biodiversity, Conservation and Attractions. <https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics>
- Harewood. G (2018) Black cockatoo habitat review Lot 3 Buller Road Waroona August 2018. DWER Ref A1790749.
- Harewood. G (2021) Site Inspection to inform general vegetation and fauna assessment. DWER Ref A2070936.
- Hedde, E. M., Loneragan, O. W., and Havel, J. J. (1980) *Vegetation Complexes of the Darling System, Western Australia*. In Department of Conservation and Environment, Atlas of Natural Resources, Darling System, Western Australia.
- Keighery, B.J. (1994) *Bushland Plant Survey: A Guide to Plant Community Survey for the Community*. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- MBS Environmental (2015) Lot 3 Buller Road Waroona, Level 1 Flora and Vegetation Survey for Jackson Block. Prepared for KD.1 Pty Ltd. June 2015 (DER Ref: A922976).
- Molloy, S., Wood, J., Hall, S., Wallrodt, S. and Whisson, G. (2009). *South West Regional Ecological Linkages Technical Report*. Western Australian Local Government Association and Department of Environment and Conservation.
- Plantecology (2018a) Outline of survey results of vegetation condition undertaken on 12 November 2018. (DWER Ref A1829553).
- Plantecology (2018b) Outline of survey results of vegetation condition undertaken on 30 November 2018. (DWER Ref A1790749).
- Shah, B. (2006) *Conservation of Carnaby's Black-Cockatoo on the Swan Coastal Plain, Western Australia*. December 2006. Carnaby's Black-Cockatoo Recovery Project. Birds Australia, Western Australia.
- Shire of Waroona (2020) *Development Approval and Extractive Industry Licence, Lot 3 Buller Road* (DWER ref A1966887).
- Shire of Waroona (2021) *Development Approval for Landfill Facility, Lot 3 Buller Road* (DWER ref A2070683).
- Terrestrial Ecosystems (2015) *Level 1 Fauna Risk Assessment for the 'Jackson Block' of Lot 3 Buller Road, Waroona*. Prepared for MDW Environmental Services. Version 1. May 2015 (DER Ref: A922976).
- Valentine, L.E. and Stock, W. (2008) *Food Resources of Carnaby's Black Cockatoo (Calyptorhynchus latirostris) in the Gnaragara Sustainability Strategy Study Area*. Edith Cowan University and Department of Environment and Conservation. December 2008.
- Woodman Environmental (2015) Lot 3 Buller Road Waroona, Level 2 Flora and Vegetation Assessment. Prepared for KD.1 Pty Ltd. November 2015 (DER Ref: A1025615)