



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 8935/1
Permit Holder:	Capitary No. 3 Pty Ltd
Duration of Permit:	27 November 2020 – 27 November 2025

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

Extractive industries (clay extraction).

2. Land on which clearing is to be done

Lot 1326 on Diagram 5449, Muchea.

3. Area of Clearing

The Permit Holder must not clear more than 2.78 hectares of native vegetation within the area hatched yellow on attached Plan 8935/1.

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.

PART II – ASSESSMENT SEQUENCE AND MANAGEMENT PROCEDURES

5. Avoid, minimise and reduce the impacts and extent of 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:

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

6. Dieback and weed management

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

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

PART III - RECORD KEEPING AND REPORTING

7. Records must be kept

The Permit Holder must maintain the following records for activities done pursuant to this Permit, in relation to the clearing of native vegetation authorised under this Permit:

- (a) 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 or decimal degrees;
- (b) the date that the area was cleared;
- (c) the size of the area cleared (in hectares);
- (d) actions taken to avoid, minimise and reduce the impacts and extent of clearing in accordance with condition 5 of this Permit; and
- (e) actions taken to minimise the risk of the introduction and spread *weeds* and *dieback* in accordance with condition 6 of this Permit.

8. Reporting

The Permit Holder must provide to the *CEO* the records required under condition 7 of this Permit, when requested by the *CEO*.

DEFINITIONS

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

CEO: means the Chief Executive Officer of the Department responsible for the administration of the clearing provisions under the *Environmental Protection Act 1986*;


dieback: means the effect of *Phytophthora* species on native vegetation.

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 the Department of Environment and Conservation Regional Weed Assessments, regardless of ranking; or
- (c) not indigenous to the area concerned.

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Ryan Mincham
MANAGER
NATIVE VEGETATION REGULATION

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

4 November 2020

Plan 8935/1

116°0'36.000"E

116°0'54.000"E

116°1'12.000"E

31°34'48.000"S

31°35'6.000"S

31°35'24.000"S

31°34'48.000"S

31°35'6.000"S

31°35'24.000"S





116°0'36.000"E

116°0'54.000"E

116°1'12.000"E



Legend

-  CPS areas approved to clear
-  Land TenureL GATE - 226
-  Local Government Authorities
- Road Centrelines
-  Local Rd - Sealed

Image



0 0.1 0.2 0.3 km



1:7086

MGA Zone 50
Geocentric Datum of Australia 1994

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Officer delegated under section 20 of the
Environmental Protection Act 1986





Clearing Permit Decision Report

1. Application details and outcome

1.1. Permit application details

Permit number:	CPS 8935/1
Permit type:	Purpose permit
Applicant name:	Capitary No. 3 Pty Ltd
Application received:	4 June 2020
Application area:	2.78 hectares
Purpose of clearing:	Clay extraction
Method of clearing:	Mechanical
Property:	Lot 1326 on Diagram 5449
Location (LGA area/s):	Shire of Chittering
Localities (suburb/s):	Muchea

1.2. Description of clearing activities

The application area comprises of 2.78 hectares of native vegetation distributed across 12 separate areas (Figure 1, Section 1.5).

The application is to clear native vegetation to extract clay in accordance with an approved Extractive Industry Licence. The application was revised during the assessment process in response to the preliminary assessment which identified impacts to biological values, in particular potential impacts to black cockatoo breeding, foraging and roosting trees. In recognition of these potential impacts, the proponent removed all five potential black cockatoo habitat trees that were identified to have large hollows from the proposed clearing area and reduced the number of vegetation parcels proposed for clearing from 26 to 12.

1.3. Decision on application and key considerations

Decision:	Granted
Decision date:	4 November 2020
Decision area:	2.78 hectares (ha) of native vegetation, as depicted in Section 1.5, below.

1.4. Reasons for decision

This clearing permit application was made in accordance with section 51E of the *Environmental Protection Act 1986* (EP Act) and was received by the Department of Water and Environmental Regulation (DWER) on 4 June 2020. DWER advertised the application for public comment and no submissions were received.

In undertaking their assessment, and in accordance with section 51O of the EP Act, the Delegated Officer has given consideration to the Clearing Principles in Schedule 5 of the EP Act (see Appendix B), relevant planning instruments, and any other pertinent matters they deemed relevant to the assessment (see Section 3).

In particular, the Delegated Officer has determined that:

- the proposed clearing is not likely to have a significant impact on habitat for threatened black cockatoo species (see Section 3.2.1);

- the implementation of a suitable weed and dieback management condition is appropriate to mitigate the impact of spreading weeds and dieback into adjacent vegetation (see Section 3.2.1);
- the applicant has suitably demonstrated avoidance and minimisation measures (see Section 3.1).

In determining to grant a clearing permit subject to conditions, the Delegated Officer found that the proposed clearing is not likely to lead to an unacceptable risk to the environment.

1.5. Site map

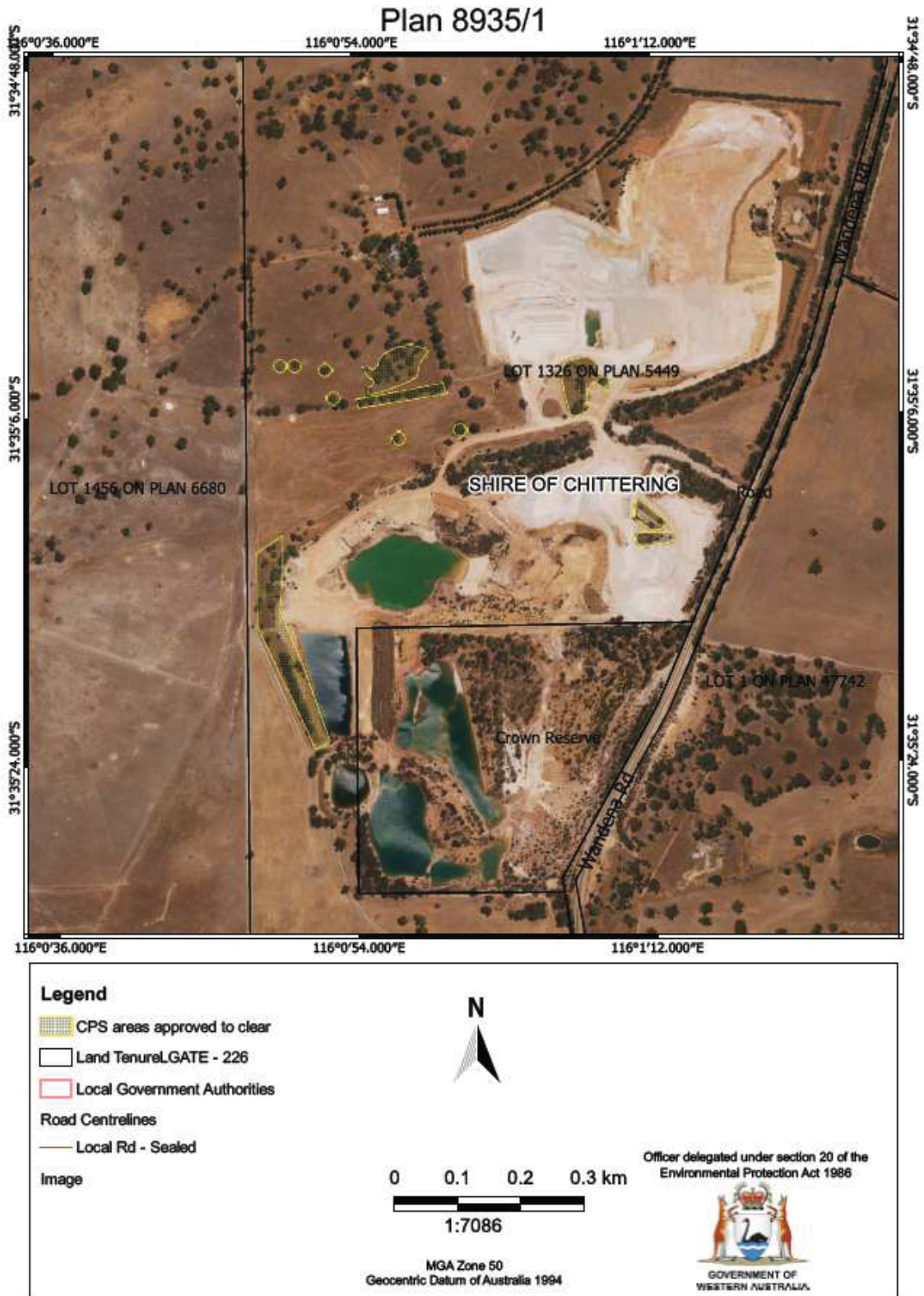


Figure 1. Map of the application area.

The areas cross-hatched yellow indicate the areas authorised to be cleared under the granted clearing permit.

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 1.3), the Delegated Officer has also had regard to the objects and principles under section 4A of the EP Act, particularly:

1. the precautionary principle;
2. the principle of intergenerational equity;
3. 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)
- *Conservation and Land Management Act 1984* (WA) (CALM Act)
- *Planning and Development Act 2005* (WA) (P&D Act)

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (December 2013)
- *Procedure: Native vegetation clearing permits* (DWER, October 2019)
- Technical guidance – *Terrestrial Fauna Surveys for Environmental Impact Assessment* (EPA, 2016)

3. Detailed assessment of application

3.1. Avoidance and mitigation measures

DWER's preliminary assessment identified that a number of fauna species protected under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) were likely to be found in, or in proximity to, the application area. These included Carnaby's Black Cockatoo (*Calyptorhynchus latirostris*), Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*) and potentially Baudin's Black-Cockatoo (*Calyptorhynchus baudinii*).

DWER requested further information be provided by the applicant identifying appropriate onsite impact mitigation strategies and/or satisfactory avoidance commitments with regard to black cockatoo habitat, namely foraging and roosting trees, as well as trees with potential breeding hollows.

In response, the applicants consultant Land Insights (2020b) submitted updated avoidance and mitigation information, provided a map showing a reduction in the number of potential habitat trees proposed for clearing and removed all trees with large hollows that may be suitable for black cockatoo breeding from the application area. The map showing the locations of the trees with large hollows that have been removed from the application area can be seen in (Appendix E). The proponent also committed to the following avoidance and mitigation measures:

- the applicant removed all five potential black cockatoo habitat trees with large hollows from the clearing permit application area;
- the applicant reduced the number of parcels of vegetation proposed to be cleared from 26 to 12 locations thereby minimising the overall impact to native vegetation.
- the future excavation area to the west of the existing pit has been modified to avoid all trees with large hollows.
- trees with large hollows will be marked with coloured tape to make it clear to workers where these are so they can be avoided and the approved clearing area will be clearly marked out.

3.2. Assessment of environmental impacts

In assessing the application in accordance with section 51O of the EP Act, the Delegated Officer has examined the application and site characteristics (Appendix C) and considered whether the clearing poses a risk to environmental values. The assessment against the Clearing Principles is contained in Appendix D.

This assessment identified that the clearing may pose a risk to habitat for conservation significant fauna which required further consideration. The detailed consideration and assessment of the clearing impacts against the specific environmental values of the area is provided below.

Where the assessment found that the clearing presents an unacceptable risk to environmental values, conditions aimed at controlling and/or ameliorating the impacts have been imposed under sections 51H and 51I of the EP Act. These are also identified below.

3.2.1. Environmental value: biological values (fauna) – Clearing Principle (b)

Assessment:

The vegetation condition across the entire application area is in a Completely Degraded condition. However, the application area is within the modelled distribution of all three black cockatoo species and a confirmed breeding tree is within 2.8 kilometres of the application area.

Although the loss of potential breeding hollows is known to contribute to a decline in black cockatoo population viability (WAM, 2017), the trees with hollows within the application area are considered to be predominantly unsuitable for Black Cockatoo breeding and do not represent significant habitat trees for black cockatoo's (Red Dog Environmental, 2020). A total of five trees were found to have hollows suitable for black cockatoo breeding within the original application area. Although these hollows were considered to be less than ideal breeding hollows (Red Dog Environmental, 2020), the applicant has nonetheless removed all these trees from the application area. No evidence of nesting was noted during the black cockatoo hollow inspection (Red Dog Environmental, (2020).

Evidence of foraging by black cockatoos (chewed marri nuts) was recorded within the application area during a targeted black cockatoo survey (Western Wildlife, 2019). The survey found that all the native vegetation in the study area is likely to be black-cockatoo foraging habitat, as wandoo, jarrah and marri trees all provide preferred foraging seeds for black-cockatoos and Carnaby's Black-Cockatoo is likely to forage in the study area. The Forest Red-tailed Black Cockatoo potentially forages in the area throughout the year as well, whenever Marri and Jarrah fruits are available. Additionally, the vegetation may be used by birds for roosting on occasion.

Although some vegetation within the application area is likely to have value for black cockatoo foraging and roosting, given the relatively small size of the application area, Completely Degraded condition of the vegetation and the close proximity of large areas of foraging and roosting habitat within the nearby Bush Forever Site 2 (approximately 58.4 hectares) and Bullsbrook Nature Reserve (approximately 130 hectares), it is considered unlikely that the clearing of this vegetation will have a significant impact upon the conservation status or continued viability of any black cockatoo species.

Outcome: Based on the above assessment, the Delegated Officer has determined that the proposed clearing is considered acceptable in relation to this environmental value.

Conditions: No fauna management conditions required.

3.3. Relevant planning instruments and other matters

The Shire of Chittering did not raise any objections to the clearing during the submission period.

The Shire of Chittering issued development approval on 3 January 2018 and an Extractive Industries Licence on 14 June 2018 which is valid until 30 June 2024.

The proponent referred the application under the *Environment Protection and Biodiversity Conservation Act 1999* to the Department of Agriculture, Water and Environment and the proponent was advised that the proposed action was not a controlled action (EPBC Ref: 2019/8522).

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.

Appendix A – Additional information provided by applicant

Summary of comments	Consideration of comment
<p>The applicant removed potential black cockatoo habitat trees with large hollows from the application area</p> <p>The applicant also reduced the number of clearing parcels from a total of 26 locations to 12 locations and provided updated shapefiles on 12 October 2020 showing this (Figure 1, Section 1.5).</p>	<p>No additions or increases in the clearing permit application area were included in the changes and the overall impact to environmental values was considered likely to be reduced.</p>

Summary of comments	Consideration of comment
The applicant provided additional application areas shapefiles.	Altered application was accepted and readvertised 13 August 2020.

Appendix B – Site characteristics

The information provided below describes the key characteristics of the area proposed to be cleared and is based on the best information available to DWER at the time of this assessment. This information was used to inform the assessment of the clearing against the Clearing Principles, contained in Appendix C.

1. Site characteristics

Site characteristic	Details
Local context	The proposed clearing areas consists of sperate patches of native vegetation within Lot 1326 on Diagram 5449. The vegetation is in close proximity to the existing quarry and with some patches of vegetation being within a predominantly cleared paddock which has been previously used for agricultural purposes. Aerial imagery and spatial data indicates the local area (10 km radius of the proposed clearing area) retains approximately 13,036.6 hectares of remnant vegetation which is approximately 40% of the pre-European vegetation.
Vegetation description	<p>Photographs of vegetation within the application area supplied by the applicant indicate the vegetation within the proposed clearing area consists of predominantly single mature trees in cleared paddocks (Land Insights, 2020a). Representative photos are available in Appendix E.</p> <p>This is inconsistent with the mapped vegetation type:</p> <ul style="list-style-type: none"> Reagan Complex: low open woodland to closed heath
Vegetation condition	<p>Photographs supplied by the applicant (Land Insights, 2020a) indicate the vegetation within the proposed clearing area is in Completely Degraded (Keighery, 1994) condition, described as:</p> <ul style="list-style-type: none"> 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. <p>The full Keighery condition rating scale is provided in A, below.</p> <p>Representative photos are available in Appendix E.</p>
Soil description	<p>The soil is mapped as:</p> <ul style="list-style-type: none"> Reagan 12 Subsystem - Gentle slopes from the Dandaragan plateau to the Pinjarra plain. Loamy sands overlying sandy loams to sandy clay loam at ~ 1m. Woodland of <i>E. calophylla</i> with occasional <i>E. marginata</i>. Reagan 5 Subsystem - Level to very gently inclined swampy drainage lines with poorly drained grey siliceous and pale yellow-brown sands. Low woodland of <i>E. calophylla wandoo</i>, some <i>E. marginata</i>. <i>Melaleucas</i>, <i>E. rudis</i> and reeds in wet areas. Regan 11 Subsystem - Drainage depressions on the Dandaragan Plateau. Light soils of sandy to sandy loam texture often with underlying humic pans. Low woodland of <i>E. calophylla</i>, <i>melaleuca ssp.</i> and reeds. Reagan disturbed land, mine phase - Mine. Disturbed land.
Land degradation risk	<p>All three undisturbed soil types have a high risk of acidification.</p> <p>Reagan 5 Subsystem has a moderate risk of water repellence, flood risk and phosphorus loss, all other land degradation risks are considered to be low.</p>

Site characteristic	Details
	<p>Reagan 12 Subsystem has a high risk of subsurface compaction, all other land degradation risks are considered to be low.</p> <p>Regan 11 Subsystem has a moderate risk of subsurface compaction, all other land degradation risks are considered to be low.</p>
Waterbodies	The desktop assessment and aerial imagery indicated that one mapped, minor, non-perennial watercourse, that may be a tributary to Ellenbrook, transects the application area.
Conservation areas	<p>Bush Forever (Site 2) (2.38 kilometres)</p> <p>Bullsbrook Nature Reserve- Conservation Commission Of WA (3.393 kilometres) (part of Bush Forever Site 292)</p> <p>DER/DPaW Managed Land – Conservation commission of WA (3.403 kilometres)</p> <p>Barracca Nature Reserve - Conservation Commission Of WA (6.619 kilometres)</p>
Climate and landform	<p>Rainfall: 800</p> <p>Evapotranspiration: 700</p> <p>Geology: Marine and continental sedimentary rocks</p> <p>Acid Sulfate Soil Risk: No</p> <p>Groundwater Salinity (Total Dissolved Solids): 1000-3000 mg/L</p>

2. Flora, fauna and ecosystem analysis

Currently available databases indicate there are 52 conservation significant flora species recorded in the local area, including ten Threatened flora species. Eight floristic ecological communities of conservation significance are recorded within the local area. Sixteen threatened fauna species including three Vulnerable, four Endangered and two Critically Endangered fauna species are recorded within the local area.

With consideration for the site characteristics set out above, relevant datasets (see Appendix F), and biological survey information, the following conservation significant flora and fauna species, and ecological communities have potential to occur within the application area.

Species / Ecological Community	Distance of closest record to application area (kilometres)	Suitable soil type? (flora, ecological community)	Suitable vegetation type? (flora, ecological community)	Suitable habitat features (fauna)	Are surveys adequate to identify? (Y, N, N/A)
Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	150 metres east. Separated by existing quarry.	Y	N	N/A	N/A
Banksia woodland of the Gingin area restricted to soils dominated by yellow to orange sands	9.63 kilometres north.	N	N	N/A	N/A
Communities of Tumulus Springs (Organic Mound Springs, Swan Coastal Plain)	6.62 kilometres southwest.	N	N	N/A	N/A
<i>Corymbia calophylla</i> - <i>Kingia australis</i> woodlands on heavy soils, Swan Coastal Plain (floristic community type 3a as originally described in Gibson et al. (1994))	7.6 kilometres south east.	N	N	N/A	N/A

Species / Ecological Community	Distance of closest record to application area (kilometres)	Suitable soil type? (flora, ecological community)	Suitable vegetation type? (flora, ecological community)	Suitable habitat features (fauna)	Are surveys adequate to identify? (Y, N, N/A)
<i>Corymbia calophylla</i> - <i>Xanthorrhoea preissii</i> woodlands and shrublands, Swan Coastal Plain (floristic community type 3c as originally described in in Gibson et al. (1994))	6.78 kilometres south.	N/A	N	N/A	N/A
Shrublands and woodlands on Muchea Limestone of the Swan Coastal Plain	7.53 kilometres south.	N	N	N/A	N/A
Carnaby's cockatoo	1.85 kilometres northeast.	N/A	N/A	Y	Y
Forest red-tailed black cockatoo	4.21 kilometres west.	N/A	N/A	Y	Y
Baudin's cockatoo	23.9 kilometres southwest.	N/A	N/A	Y	Y
White tailed black cockatoo.	2.8 kilometres.	N/A	N/A	Y	Y

3. Vegetation extent

	Pre-European extent (ha)	Current extent (ha)	% remaining	Current extent in all DBCA managed land (ha)	% current extent in all DBCA managed land (proportion of pre-European extent)
IBRA bioregion					
Dandaragan Plateau	126,398.83	57,994.71	45.88	20,448.98	16.18
Vegetation complex					
Reagan Complex	9,180.69	3,106.85	33.84	612.75	6.67

Appendix C – Assessment against the Clearing Principles

There are 36 flora species of conservation significance recorded within the buffer area (10 kilometres radius from the application area).

Assessment against the Clearing Principles	Variance level	Is further consideration required?
Environmental value: biological 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 proposed clearing area is unlikely to contain a biologically diverse assemblage of flora or fauna due to the Completely Degraded condition of the vegetation and historical disturbance, which is evident from historical aerial photography. This disturbance is likely to have reduced the biodiversity values of the vegetation over time. The absence of any significant ground cover reduces the value of the vegetation in terms of fauna habitat. Although some large trees do contain hollows, a targeted survey for black cockatoo hollows determined that none of these hollows showed any signs of use by black cockatoos and the five trees with hollows that showed some potential as breeding hollows have been removed from the application area.</p>	Not likely to be at variance.	No
<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> <p><u>Assessment:</u></p> <p>The area proposed to be cleared comprises of flora species which may provide foraging, roosting or breeding habitat for conservation significant fauna, namely Carnaby’s cockatoo (<i>Calyptorhynchus latirostris</i>), Baudin’s cockatoo (<i>Calyptorhynchus baudinii</i>) and forest red-tailed black cockatoo (<i>Calyptorhynchus banksii naso</i>).</p> <p>Due to the predominantly Completely Degraded condition of the vegetation proposed for clearing and the unique habitat requirements of the other conservation significant species recorded within the local area, it is not likely that the vegetation is significant for the maintenance and long term viability of any other conservation significant species.</p>	May be at variance.	Yes. Refer to Section 3.2.1 above.
<p><u>Principle (c):</u> “Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.”</p> <p><u>Assessment:</u></p> <p>The proposed clearing area is unlikely to contain habitat for threatened flora species listed under the <i>Biodiversity Conservation Act 2016</i> (BC Act). Due to the vegetation being in a Completely Degraded condition, including regrowth as well as non-native eucalyptus in close proximity to Completely Degraded quarry areas, the vegetation proposed for clearing is not likely to be necessary for the continued existence of threatened flora.</p>	Not likely to be at variance.	No
<p><u>Principle (d):</u> “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.”</p> <p><u>Assessment:</u></p>	Not likely to be at variance.	No

Assessment against the Clearing Principles	Variance level	Is further consideration required?
The proposed clearing area does not contain species, or assemblages of species that are representative of a Threatened Ecological Community (TEC) as listed under the BC Act		
Environmental values: 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 extent of the mapped vegetation type and native vegetation in the local area is above the national objective to prevent the clearing of ecological communities with an extent below 30 per cent of that present prior to European settlement (DEH, 2001).</p> <p>Vegetation in the proposed clearing area is not considered to be part of a significant ecological linkage in the local area.</p>	Not likely to be 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 nearest conservation area is a Bullsbrook Nature Reserve which is 3.393 kilometres from the application area with approximately 90% of the vegetation in Excellent condition (WA Gov, 2000). Given the lack of direct topographic connectivity of the application area to any conservation area, the proposed clearing is not likely to have an impact on the environmental values of any conservation areas.</p>	Not likely to be at variance.	No
Environmental values: 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>A minor, non-perennial and highly modified watercourse is mapped as beginning within the quarry area and it transects the northern portion of one of the clearing areas. This drainage line also transects the existing quarry pit and has been highly impacted by previous clearing. The vegetation in proximity to this drainage line is not considered riparian vegetation as the species that are present are not primarily associated with wetlands or watercourses.</p>	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>A minor non perennial and highly modified watercourse is mapped as beginning within the quarry area and it transects the northern portion of one of the clearing areas. This drainage line also transects the existing quarry pit and has been highly impacted by previous clearing.</p> <p>The mapped soils are not are highly susceptible to acidification and have a low to moderated risk of soil compaction, water repellence and flooding. Noting the condition of the vegetation (Completely Degraded), which provides little</p>	Not likely to be at variance.	No

Assessment against the Clearing Principles	Variance level	Is further consideration required?
preventative value with regard to land degradation, the proposed clearing is not likely to have an appreciable impact on land degradation.		
<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>As the vegetation within the application area is in a Completely Degraded condition and does not include any significant ground cover, it is considered unlikely that the proposed clearing will significantly impact upon onsite or offsite hydrology and water quality.</p>	Not likely to be at variance.	No
<p><u>Principle (j):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.”</i></p> <p><u>Assessment:</u></p> <p>The mapped soils types have a moderate to low risk of water repellence and flooding and the gentle topographic contours in the surrounding area are not likely to increase the risk of flooding. Given that the vegetation in the application area is in a Completely Degraded condition and provides very little ground cover, the proposed clearing is not likely to contribute to an increased incidence or intensity of flooding.</p>	Not likely to be at variance.	No

Appendix D – 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.

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 E – Supporting document photographs of the vegetation and black cockatoo habitat.

Land insights (2020a) - Clearing Permit Application Supporting Document, representative photos of vegetation.



Photograph showing scattered marri and wandoo trees on the western side of the application area.



Photograph showing vegetation comprising of regrowth jarrah and marri in a Completely Degraded condition with no understory.



Photograph showing trees located along the southern fence line running north to south. Predominantly Eastern state Eucalyptus.



Photographs showing marri trees located at the south-eastern corner of the application area (foreground) and the vegetated wetland on the other side of the fence in the background, which is outside the application area.



Photograph showing trees along the quarry bund wall.



Photograph showing vegetation on the quarry bund and vegetation within the quarry area.



Photograph showing vegetation on top of the quarry bund as well as vegetation within the quarry area.

Red Dog Environmental (2020) - Lot M1326 Muchea East Road, Muchea – Black Cockatoo Hollow Inspection.



Photograph showing potential black cockatoo habitat tree and completely degraded surrounding vegetation.

(Lat: -31.58326 Long: 116.01414)



Photograph showing potential black cockatoo breeding hollow in same tree.

(Lat: -31.58326 Long: 116.01414)



Photograph showing potential black cockatoo habitat tree and completely degraded surrounding vegetation.

(Lat: -31.58412 Long: 116.01499)



The same tree with a potential black cockatoo breeding hollow.

(Lat: -31.58412 Long: 116.01499)



Photograph showing potential black cockatoo habitat tree and completely degraded surrounding vegetation.

(Lat: -31.58398 Long: 116.01559)



The same tree with a potential black cockatoo breeding hollow.

(Lat: -31.58398 Long: 116.01559)



Photograph showing potential black cockatoo habitat tree.

(Lat: -31.58324 Long: 116.01690)



The same tree with a potential black cockatoo breeding hollow.

(Lat: -31.58324 Long: 116.01690)



Revised Clearing Permit Application Area.

This map shows the five trees with large hollows which have been removed from the original application (red circles with black dot in the centre) and other potential black cockatoo habitat trees removed from original application are shown as blue crosses. Potential black cockatoo habitat trees which remain within the clearing area (none with large hollows) are shown as orange circles with blue crosses in the centre.

Proposed Mitigation Strategies

The proposed mitigation strategies are outlined in the table below.

Mitigation Strategy	Timing
Clearly mark trees with large hollows within the approved permit area using coloured tape.	Pre-clearing
Peg out limits of clearing in accordance with the approved Clearing Permit to ensure that clearing outside of this area does not occur.	Pre-clearing
If clearing during Black Cockatoo breeding season (July-November), hollows in the trees identified as having 'large hollows' will be checked by a fauna specialist prior to clearing.	Immediately prior to clearing.
A fauna specialist will be on site during clearing to inspect hollows and to provide specialist advice if any cockatoos are found in hollows.	During clearing.

Appendix F - References and databases

1. GIS datasets

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

- Aboriginal Heritage Places (DPLH-001)
- Cadastre Address (LGATE-002)
- Contours (DPIRD-073)
- 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)
- Flood Risk (DPIRD-007)
- Groundwater Salinity Statewide (DWER-026)
- IBRA Vegetation Statistics
- Local Planning Scheme – Zones and Reserves (DPLH-071)
- Regional Parks (DBCA-026)
- Soil and Landscape Mapping – Best Available

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
- Threatened Ecological Communities and Priority Ecological Communities (Buffers)

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Western Wildlife (2019), Part Lot M1326 Muchea East Rd, Muchea, Targeted Black-Cockatoo Survey.