



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 7904/1
Permit Holder:	Hanson Construction Materials Pty Ltd
Duration of Permit:	18 October 2018 to 18 October 2023

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

PART I – CLEARING AUTHORISED

1. Purpose for which clearing may be done

Clearing for the purpose of powerline relocation and construction.

2. Land on which clearing is to be done

Lot 11 on Diagram 3047, Red Hill

Lot 500 on Plan 62314, Red Hill

3. Area of Clearing

The Permit Holder must not clear more than 3.72 hectares of native vegetation within the area shaded yellow on attached Plan 7904/1.

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 – MANAGEMENT CONDITIONS

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 control

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

- 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.

7. Direction of clearing

The Permit Holder shall conduct clearing in a progressive manner from one direction to the other (e.g. west to east) to allow fauna to move into adjacent native vegetation ahead of the clearing activity.

8. Fauna management

- (a) Prior to undertaking any clearing authorised under this Permit, the Permit Holder shall engage a *fauna specialist* who shall identify *black cockatoo nesting tree(s)* suitable to be utilised by fauna species listed below:
- (i) *Calyptorhynchus lateriosus* (*Carnaby's cockatoo*);
 - (ii) *Calyptorhynchus baudins* (*Baudin's cockatoo*); and
 - (iii) *Calyptorhynchus banksii naso* (*Forest Red-tailed Black Cockatoo*).
- (b) Prior to clearing, any habitat/ *black cockatoo nesting tree(s)* identified by condition 2(a) shall be inspected by a *fauna specialist* for the presence of fauna listed in condition 8(a).
- (c) Where a *black cockatoo nesting tree(s)* being utilised by Carnaby's cockatoo, Baudin's cockatoo or forest red-tailed black cockatoo is identified, the Permit Holder shall monitor the *black cockatoo nesting tree(s)* to determine when the chick(s) has fledged, as determined by the *fauna specialist*; and
- (d) The Permit Holder shall not clear a *black cockatoo nesting tree* identified as being utilised by Carnaby's cockatoo, Baudin's cockatoo or forest red-tailed black cockatoo until the chick(s) has fledged, as determined by the *fauna specialist*.

PART III – MONITORING, RECORD KEEPING AND REPORTING

9. Records to be kept

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

- (a) In relation to the clearing of native vegetation authorised under this Permit:
- (i) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
 - (ii) the date that the area was cleared;
 - (iii) the size of the area cleared (in hectares);
 - (iv) actions taken to avoid, minimise and reduce the impacts and extent of clearing in accordance with condition 5 of this Permit;
 - (v) actions taken to minimise the risk of the introduction and spread of *weeds* and *dieback* in accordance with condition 6 of this Permit; and
 - (vi) the direction the vegetation was cleared.
- (b) In relation to fauna management pursuant to condition 8 of this Permit:
- (i) the location of the *black cockatoo nesting tree(s)* identified as being utilised by Carnaby's cockatoo, Baudin's cockatoo or forest red-tailed black cockatoo 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;
 - (ii) the evidence by which it was determined the *black cockatoo nesting tree(s)* was being utilised including the date of that determination; and
 - (iii) the evidence by which it was determined the chick(s) had fledged including the date of that determination.

10. Reporting

- (a) The Permit Holder must provide to the *CEO* on or before 30 June of each year, a written report:
- (i) of records required under condition 9 of this Permit; and
 - (ii) concerning activities done by the Permit Holder under this Permit between 1 January to 31 December of the preceding calendar year.
- (b) If no clearing authorised under this Permit was undertaken between 1 January to 31 December of the preceding calendar year, a written report confirming that no clearing under this permit has been carried out, must be provided to the *CEO* on or before 30 June of each year.

- (c) Prior to 13 July 2023, the Permit Holder must provide to the *CEO* a written report of records required under condition 10 of this Permit where these records have not already been provided under condition 10(a) of this Permit.

DEFINITIONS

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

black cockatoo nesting tree/s means trees that have a diameter, measured at 1.5 metres from the base of the tree, of 50 centimetres or greater (or 30 centimetres or greater for *Eucalyptus salmonophloia* or *Eucalyptus wandoo*) that contain hollows suitable for nesting by Carnaby's cockatoo or forest red-tailed or Baudin's black cockatoo;

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;

fauna specialist: means a person:

- (a) Who holds a tertiary qualification specializing in environmental science or equivalent, has a minimum of two years work experience in fauna identification and surveys of fauna native to the region being inspected or surveyed and holds a valid fauna licence issued under the *Wildlife Conservation Act 1950*; or
- (b) Who does not have appropriate professional qualifications, but has a minimum of seven years work experience in fauna identification and surveys of fauna native to the region being inspected or surveyed and holds a valid fauna licence issued under the *Wildlife Conservation Act 1950*.

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

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

weed/s mean any plant -

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



Mathew Gannaway

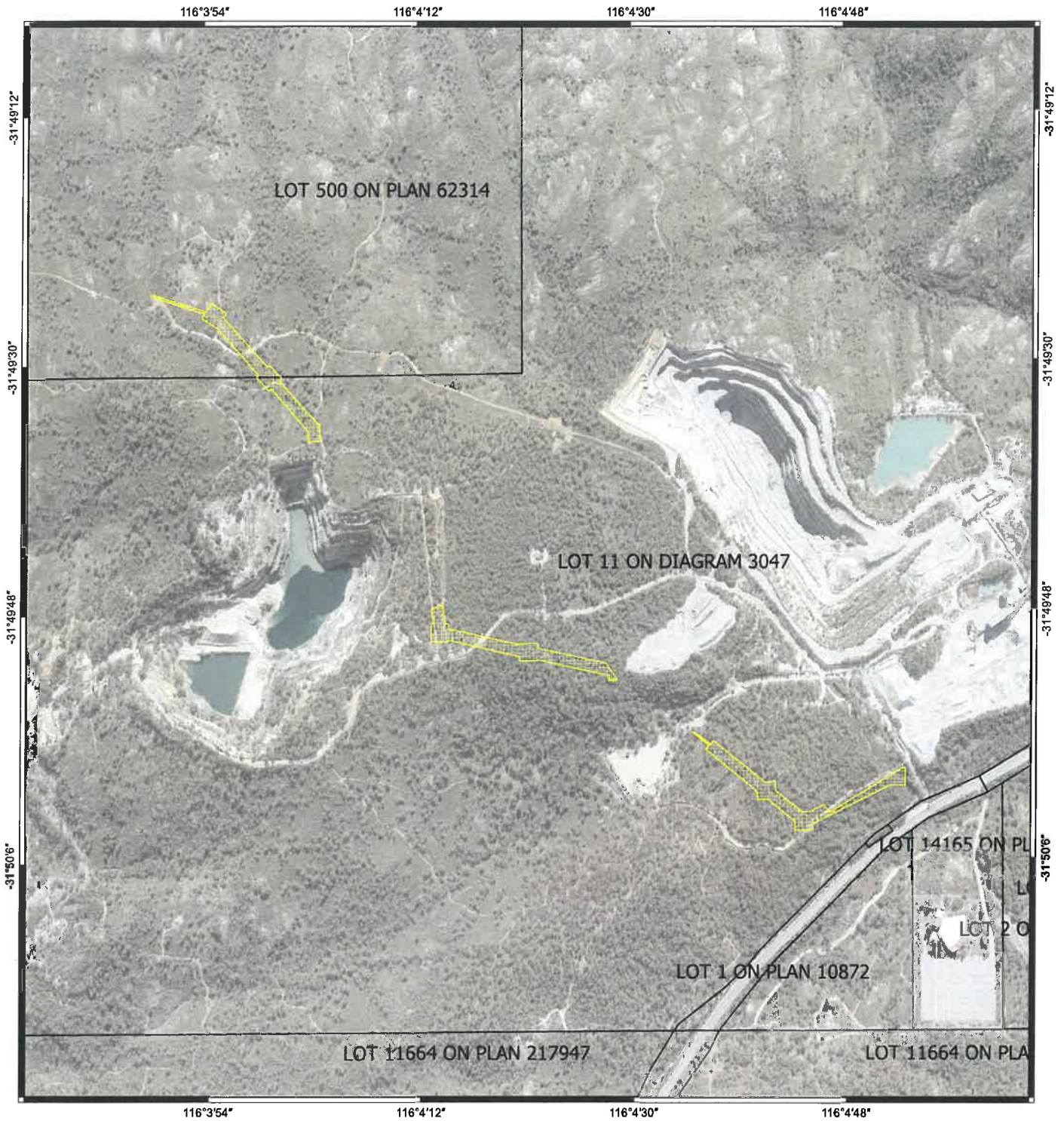
MANAGER

NATIVE VEGETATION REGULATION


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

18 September 2018

Plan 7904/1




Legend

-  CPS areas approved to clear
- Virtual Mosaic - WA Now



MGA 94
Geocentric Datum of Australia 1994


.....Date. 18/09/2018
Mathew Gannaway

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



GOVERNMENT OF
WESTERN AUSTRALIA



1. Application details

1.1. Permit application details

Permit application No.: 7904/1
Permit type: Purpose Permit

1.2. Applicant details

Applicant's name: Hanson Construction Materials Pty Ltd
Application received date: 06 December 2017

1.3. Property details

Property: Lot 11 on Diagram 3047
Lot 500 on Plan 62314
Local Government Authority: City of Swan
Localities: Red Hill

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	Purpose category:
3.72	-	Mechanical Removal	Power installation

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 18 September 2018
Reasons for Decision: The clearing permit application has been assessed against the clearing principles, planning instruments and other matters in accordance with section 51O of the *Environmental Protection Act 1986*. It has been concluded that the proposed clearing is not likely to be at variance to any of the clearing Principles.

The Delegated Officer determined that the proposed clearing may increase the spread of weeds and dieback into adjacent vegetation. To minimise this impact, a condition has been placed on the permit requiring the implementation of weed and dieback management measures.

To ensure that black cockatoos are not impacted during the clearing process, a condition has been added to the permit requiring the Permit Holder to check habitat trees for the presence of black cockatoos prior to clearing and not to clear trees where black cockatoos have been identified until a fauna specialist has verified that the habitat trees are no longer being utilised by black cockatoos.

To mitigate potential impacts to ground dwelling fauna, a directional clearing condition has been placed on the permit to enable fauna to escape into adjacent habitat.

In determining to grant a clearing permit subject to conditions, the Delegated Officer found that the proposed clearing is unlikely to lead to an unacceptable risk to the environment.

2. Site Information

Clearing Description The application is to clear 3.72 hectares of native vegetation within Lot 11 on Diagram 3047 and Lot 500 on Plan 62314, Red Hill, for the purpose of installing a powerline.

The installation of the powerline is part of a larger plan to expand the Red Hill quarry and to realign operations on Red Hill to reduce visual impacts on the Darling Scarp.

Vegetation Description

The application area is mapped within the following South West Vegetation association's (Government of Western Australia, 2017):

- Dwellingup complex. Described as Open forest of *Eucalyptus marginata* subsp. *marginata-Corymbia calophylla* on lateritic uplands in subhumid and semiarid zones.
- Darling Scarp (DS2). Described as Mosaic of open forest of *Eucalyptus marginata* subsp. *marginata-Corymbia calophylla*, with some admixtures with *Eucalyptus laeiae* in the north (subhumid zone), with occasional *Eucalyptus marginata* subsp. *elegantella* (mainly in subhumid zone) and *Corymbia haematoxylon* in the south (humid zone) on deeper soils adjacent to outcrops, woodland of *Eucalyptus wandoo* (subhumid and semiarid zones), low woodland of *Allocasuarina huegeliana* on shallow soils over granite outcrops, closed heath of Myrtaceae-Proteaceae species and lithic complex on or near granite outcrops in all climate zones.

Flora surveys of the application area conducted by GHD (2015) recorded the following vegetation types within the application area:

- Woodland of *Corymbia calophylla* and scattered *Eucalyptus wandoo* over dense low shrubland *Acacia pulchella*, *Calothamnus quadrifidus*, *Babingtonia camphorosmae*, *Lechenaultia biloba* and *Xanthorrhoea preissii*.
- Woodland of *Eucalyptus wandoo* and *Eucalyptus accedens* over low shrubland of *Banksia armata*, *Acacia pulchella*, *Calothamnus quadrifidus*, *Hibbertia commutata* and *Xanthorrhoea preissii*.
- Moderately dense to closed heathland/mosaic of granite lithic complex mixed species including *Calothamnus quadrifidus*, *Acacia pulchella*, *Melaleuca trichophylla*, *Hakea erinacea*, *Xanthorrhoea preissii*, *Calothamnus rupestris*, *Borya sphaerocephala* and *Trymalium ledifolium*.
- Woodland/open forest of *Eucalyptus marginata* and *Corymbia calophylla* over moderately dense shrubland of *Tetraria* sp. Jarrah Forest, *Xanthorrhoea preissii*, *Xanthorrhoea gracilis*, *Hakea undulata*, *Banksia sessilis* and *Hibbertia hypericoides*.

Vegetation Condition Flora surveys of the application area conducted by GHD (2015) recorded the vegetation under application in an excellent to good (Keighery, 1994) condition.

Comment The local area is defined as a 10 kilometre radius measured from the perimeter of the application area.

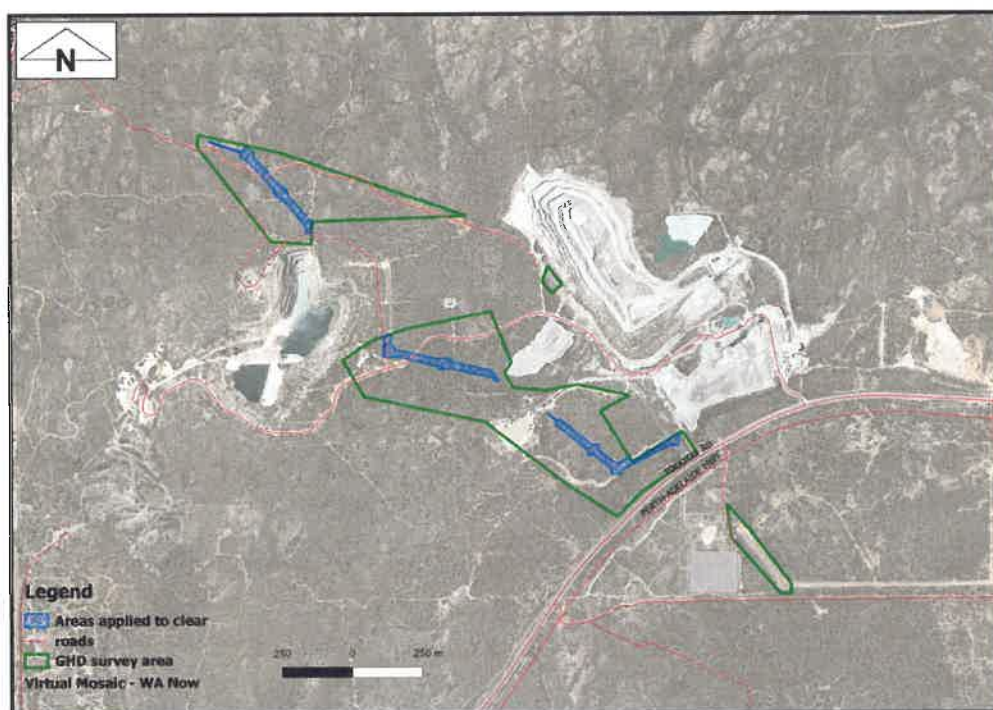


Figure 1: Area applied to clear.

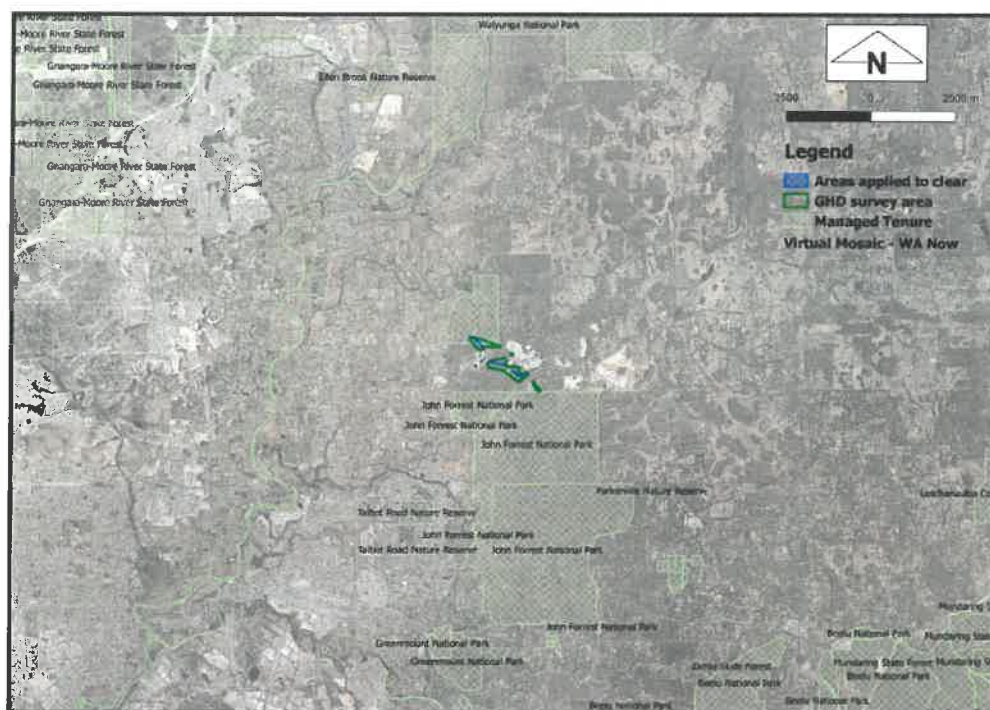


Figure 2: Area applied to clear in relation to Department of Biodiversity, Conservation and Attractions (DBCA) managed land.

3. Minimisation and mitigation measures

The installation of the powerline is part of a larger plan to realign operations on Red Hill to reduce visual impacts on the scarp and expand the quarry.

In order to minimise the impact to threatened black cockatoo species, the potential powerline alignment has been surveyed for black cockatoo habitat trees and an alignment minimising a majority of the potential impact chosen (see Principle (b)).

4. Assessment of application against clearing principles

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

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

As assessed within section 2 (site information), four vegetation types have been recorded within the application area. As assessed within Principles (e) and (h), the application area is part of a broadly continuous band of native vegetation that extends along the Darling Scarp, extending through John Forest National Park, Red Hill Nature Reserve, Wandoo Heights Nature Reserve and large tracks of native vegetation located on private land (Figure 2). The local area retains 34.6 per cent native vegetation.

A total of 1.11 hectares of the application area occurs within Red Hill Nature Reserve, managed by DBCA as an A class nature reserve. A total of 0.15 hectares of permanent clearing and 0.96 hectares of temporary clearing (corridor clearing) within the reserve is proposed.

As assessed with Principle (c), a flora survey within and surrounding the application area undertaken by GHD from 17-18 November 2015 did not record any rare flora species (Strategen, 2017). The survey area is outlined in Figure 1. A targeted threatened orchid survey was undertaken in November 2016 to coincide with the flowering times of threatened orchids from the local area. No rare flora were recorded within the proposed clearing area (Strategen, 2017).

The flora survey of the application area did not record Priority flora species within the application area or survey area. A population of a P3 species and a threatened flora species were previously recorded within the broader quarry site (Strategen, 2017). These species were not identified within the proposed clearing area and the population will not be impacted by the proposed clearing.

As assessed within Principle (d), no Threatened Ecological Communities (TEC's) are present within the application area. The Priority 4 Priority Ecological Community (PEC) 'Central Northern Darling Scarp Granite Shrubland Community' is however, mapped within the application area.

DBCA advised that (DBCA, 2018a; DBCA 2018b):

- given the area to be cleared is quite small and the clearing is located towards the mapped edges of this community, the impacts are not likely to be significant;
- the P4 community is likely to be reasonably extensive in distribution and this proposal is relatively limited in extent. The community is however, threatened by repeated fires, weed invasion and dieback;
- if proposed to be approved, conditions such as dieback and weed hygiene, future monitoring of weed invasion and weed control are required; and
- careful consideration of track design to avoid potential impacts should be applied.

Given the advice received by DBCA, the extent of the PEC within adjoining reserves and the comparatively small area to be cleared, impacts to the 'Central Northern Darling Scarp Granite Shrubland Community' are not likely to be significant. Implementation of weed and dieback management conditions is likely to minimise the impact to this PEC.

As assessed within Principle (b), a fauna survey of the application area and surrounding area (Figure 1) determined that (Strategen, 2017):

- 3.17 hectares of threatened black cockatoo foraging habitat occurs within the proposed clearing area, of which 0.49 hectares will be subject to permanent clearing and 2.68 hectares will be subject to temporary clearing and slashing;
- the proposed clearing will result in the removal of up to eight potential breeding trees;
- the eight potential breeding trees occur in the slashing zone and therefore, may be retained;
- 40.4 hectares of black cockatoo foraging habitat and 153 potential breeding trees were recorded within the survey area (immediately adjoining the application area); and
- the alignment of the clearing minimises impacts to potential breeding trees identified within the survey area by following a path impacting on the least amount of breeding trees.

As assessed within Principle (b), although the vegetation under application may contain potential breeding trees and foraging habitat for threatened black cockatoos, given the number of potential breeding trees immediately adjacent to the clearing and presence of large adjoining reserves, the proposed clearing is not likely to provide significant habitat for these species. Fauna management conditions are likely to ensure that any potential black cockatoos present at the time of clearing are not impacted and impacts to potential habitat is minimised.

The fauna survey of the application area also identified the priority 4 fauna species Western Brush Wallaby (*Macropus Irma*) within the application area. As assessed within Principle (b), given the comparatively small area of clearing in comparison to adjoining reserves, the vegetation under application is not likely to be significant to this species.

Although the application area forms habitat for Black cockatoos and may be representative of a PEC, given the extent of adjoining, conservation reserved vegetation within the local area, it is not likely to contain a high biodiversity. Given this, the proposed clearing is not likely to be at variance to this Principle.

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

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

A fauna survey of the application area identified three fauna habitat types (GHD, 2015):

- Mosaic of Jarrah (*Eucalyptus marginata*), Marri (*Corymbia calophylla*) and Wandoo (*Eucalyptus wandoo*) Woodlands;
- Low heath and shrublands with scattered granite outcrops; and
- Highly modified (access tracks and power line easements).

The local area surrounding the application area retains 34.6 percent native vegetation. The application area occurs on the Darling Scarp (Figure 1). Within the context of the local area, the Swan Coastal Plain to the west contains little to no remnant native vegetation, agricultural land to the east containing approximately 50 percent native vegetation and the scarp itself retaining a majority of its pre-European vegetation.

As assessed within Principles (e) and (h), the application area is part of a broadly continuous band of native vegetation that extends along the Darling Scarp, extending through John Forest National Park, Red Hill Nature Reserve and Wandoo Heights Nature Reserve (Figure 2). As the proposed clearing and end land use is linear, relatively small in size and will not form a barrier to fauna movement, it is not likely to impact on movement of fauna across the landscape.

A total of 45 fauna species, consisting of 30 birds, six reptiles, three amphibians and six mammals were recorded during the GHD survey of the Project Area, including 42 native species and three introduced species (GHD, 2015).

A total of ten terrestrial/arboreal fauna species listed as rare or likely to become extinct under the *Wildlife Conservation Act 1950* (WC Act) have been recorded within the local area (DBCA, 2007-). Given the age of the records and lack of suitable habitat, six of these are not likely to be present within or surrounding the application area (being the Australian lesser noddly, black-stripe minnow, bilby, western swamp tortoise, western ringtail possum and carter's freshwater mussel). The following four species have the potential to be impacted by the proposed clearing:

- forest red-tailed black cockatoo (*Calyptorhynchus banksii* subsp. *naso*), 188 records in local area;
- Baudin's cockatoo (*Calyptorhynchus baudinii*), 38 records in local area;
- Carnaby's cockatoo (*Calyptorhynchus latirostris*), 1778 records in the local area; and
- Chuditch (*Dasyurus geoffroii*), 41 records in the local area.

Black cockatoo's (Baudin's, Carnaby's and forest red-tailed black cockatoo) nest in large hollows of Eucalyptus trees and forage on the seeds, nuts and flowers of a large variety of plants including Proteaceous species (*Banksia*, *Hakea*, *Grevillea*), *Eucalyptus*, *Corymbia* and a range of introduced species (DBCA, 2013; Valentine and Stock, 2008). The Carnaby's cockatoo recovery plan states, "Success in breeding is dependent on the quality and proximity of feeding habitat within 12 kilometres of nesting sites. Along with the trees that provide nest hollows, the protection, management and increase of this feeding habitat that supports the breeding of Carnaby's cockatoo is a critical requirement for the conservation of the species" (DBCA, 2013). The application area occurs within mapped Carnaby's cockatoo breeding area, within mapped feeding habitat and three roosting locations have been mapped within the local area.

The fauna survey of the application area and immediate surrounds undertaken by GHD (2015) determined that:

- 3.17 hectares of foraging habitat occurs within the proposed clearing area, of which 0.49 hectares will be subject to permanent clearing and 2.68 hectares will be subject to temporary clearing and slashing;
- the proposed clearing will result in the removal of up to eight potential breeding trees. Potential breeding trees are defined as Marri and Jarrah trees with a diameter at breast height (DBH) of >500 mm or wandoo trees with a DBH of >300 mm;
- the eight potential breeding trees occur in the slashing zone and therefore, may be retained;
- 40.4 hectares of black cockatoo foraging habitat and 153 potential breeding trees were recorded within the survey area; and
- the alignment of the clearing minimises impacts to potential breeding trees identified within the survey area by following a path with the least amount of breeding trees.

Although the vegetation under application contains potential breeding trees and foraging habitat for threatened black cockatoos, given the number of potential breeding trees immediately adjacent to the clearing, extent of vegetation within the local area and presence of large adjoining reserves, the proposed clearing is not likely to provide significant habitat for these species.

Fauna management conditions have been imposed on the clearing permit to ensure that any potential black cockatoos present at the time of clearing are not impacted.

Chuditch populations occur in varying densities in jarrah forests and woodlands in the south west corner of Western Australia, and in woodlands, mallee shrublands and heaths along the south coast, east to the Ravensthorpe area (Department of Environment and Conservation, 2012). While the vegetation in the application area may contain potential dispersal habitat for this species, based on the extent of native vegetation cover within the local area and as the movement of fauna through the landscape will not be affected, the application area is not likely to form significant habitat for this species.

The fauna survey of the application area recorded a breeding pair of *Macropus irma* (Western Brush Wallaby) within the application area. This species is listed as Priority 4 by DBCA. Although the species utilises the application area, given the linear shape of the clearing, extent of adjoining vegetation and as the movement of fauna through the landscape will not be affected, the proposed clearing is not likely to impact on this species.

A fauna management condition requiring directional clearing to allow fauna to escape into adjacent habitat has been imposed on clearing permit to mitigate impacts to the Chuditch and Western Brush Wallaby.

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

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

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

A total of ten flora species listed as rare or likely to become extinct under the WC Act have been recorded within the local area. A flora survey within and surrounding the application area undertaken by GHD from 17-18 November 2015 did not record any rare flora species (Strategen, 2017). The survey area is outlined in Figure 1.

A targeted threatened orchid survey was undertaken in November 2016 to coincide with the flowering times of threatened orchids from the local area. No rare flora were recorded within the proposed clearing area during the survey (Strategen, 2017).

One rare flora species has previously been recorded within the larger quarry area. The flora survey did not record this species within the application area and the known location will not be impacted by the proposed clearing.

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

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

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

A total of seven TEC's have been recorded within the local area. Each of these TEC's are associated with the Swan Coastal Plain. The application area occurs on the Darling Scarp and is therefore not likely to contain vegetation representative of these TEC's.

A flora survey of the application area did not identify a TEC within the application area (Strategen, 2017).

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

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

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

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).

As indicated in Table 1, the native vegetation extents within the Jarrah Forest Interim Biogeographic Regionalisation for Australia (IBRA), and mapped South West vegetation associations retain above 30 per cent Pre-European vegetation extent (Government of Western Australia, 2017; Government of Western Australia, 2018). The local area retains 34.6 per cent native vegetation.

Table 1: Vegetation extent statistics.

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Extent in Parks and Wildlife Managed Lands (%)
IBRA Bioregion*				
Jarrah Forest	66,451.58	39,032.63	58.74	69.17
South West Vegetation Complex **				
Dwellingup (D2)	86,128.30	71,071.50	82.50	68.50
Darling Scarp (DS2)	32,448.29	13,536.76	41.72	10.13
Local Area				
10 kilometre radius	35,662.50	12,340.50	34.60	-

The application area occurs on the Darling Scarp (Figure 2). Within the context of the local area, the Swan Coastal Plain to the west contains little to no remnant native vegetation, agricultural land to the east contains approximately 50 percent native vegetation and the scarp itself retains a majority of its pre-European vegetation. The application area is part of a broadly continuous band of native vegetation that extends along the Darling Scarp, extending through John Forest National Park, Red Hill Nature Reserve, Wandoo Heights Nature Reserve, Joshua Mews Bushland and large tracks of native vegetation located on private land (Figure 2). As the proposed clearing and end land use is linear, relatively small in size and will not form a barrier to fauna movement, it is not a significant remnant in the context of the local area.

As assessed within Principle (b), the application area forms habitat for threatened Black Cockatoo species. However, given the context of adjoining vegetation and the local area, the vegetation under application is not likely to form significant habitat for these species.

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

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

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

No watercourses or wetlands have been mapped within the application area. The flora survey did not identify any vegetation associated with a watercourse or wetland within the application area (Strategen, 2017).

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

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

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

The application area is mapped within six land systems (Table 2) (Department of Primary Industries and Regional Development (DPIRD), 2018). As assessed under Principle (f), no watercourse or wetland are present within the application area.

The land degradation risk for each of the land systems identified is outlined in Table 2. As identified within Table 2, clearing within the identified land systems is not likely to cause wind erosion, water logging, increased salinity or flooding. However, clearing within Darling Scarp 1 phase and Mambup 2 phase has a high risk of water erosion. Darling Scarp 1 phase covers 0.02 hectares of the application area and Mambup 2, 0.3 hectares.

As a majority of the proposed clearing is in the form of slashing (vegetation stabilising the soil will remain), minimal clearing will occur within high risk soil subsystems and given the lack of watercourses, the proposed clearing is not likely to cause appreciable land degradation.

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

Table 2: Land degradation risk categories (DPIRD, 2018).

	Darling Scarp 1	Mambup 1	Mambup 2	Murray valley Disturbed Mine	Myara 2	Dwellingup 2
wind erosion	<3% of map unit has a high to extreme wind erosion risk	10-30% of map unit has a high to extreme wind erosion risk	<3% of map unit has a high to extreme wind erosion risk	<3% of map unit has a high to extreme wind erosion risk	<3% of map unit has a high to extreme wind erosion risk	30-50% of map unit has a high to extreme wind erosion risk

Water logging	<3% of map unit has a moderate to very high waterlogging risk	<3% of map unit has a moderate to very high waterlogging risk	<3% of map unit has a moderate to very high waterlogging risk	<3% of map unit has a moderate to very high waterlogging risk	<3% of map unit has a moderate to very high waterlogging risk	<3% of map unit has a moderate to very high waterlogging risk
Water erosion	>70% of map unit has a high to extreme water erosion risk	30-50% of map unit has a high to extreme water erosion risk	50-70% of map unit has a high to extreme water erosion risk	<3% of map unit has a high to extreme water erosion risk	30-50% of map unit has a high to extreme water erosion risk	<3% of map unit has a high to extreme water erosion risk
Salinity risk	30-50% of map unit has a moderate to high salinity risk or is presently saline	30-50% of map unit has a moderate to high salinity risk or is presently saline	30-50% of map unit has a moderate to high salinity risk or is presently saline	30-50% of map unit has a moderate to high salinity risk or is presently saline	30-50% of map unit has a moderate to high salinity risk or is presently saline	30-50% of map unit has a moderate to high salinity risk or is presently saline
flood risk	<3% of the map unit has a moderate to high flood risk	<3% of the map unit has a moderate to high flood risk	<3% of the map unit has a moderate to high flood risk	<3% of the map unit has a moderate to high flood risk	<3% of the map unit has a moderate to high flood risk	<3% of the map unit has a moderate to high flood risk

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

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

The application area is part of a broadly continuous band of native vegetation that extends along the Darling Scarp, extending through John Forest National Park, Red Hill Nature Reserve, Wandoo Heights Nature Reserve, Joshua Mews Bushland and large tracks of native vegetation located on private land (Figure 2).

As the proposed clearing and end land use is relatively small in size and will not form a barrier to fauna movement, it is not a significant remnant in the context of the local area and will not affect fauna values within adjoining reserves.

A total of 1.11 hectares of the application area occurs within Red Hill Nature Reserve, vested and managed by DBCA as an A class nature reserve. A total of 0.15 hectares of permanent clearing and 0.96 hectares of temporary clearing (corridor clearing) within the reserve is proposed.

In order to minimise impacts to this reserve, an Environmental Management Strategy (EMS) has been developed with consultation from DBCA. This EMS has been approved by the Conservation and Parks Commission and adequately minimises the potential impacts to the reserve.

Given the limited size of the impact in relation to the adjoining reserves and given the avoidance and minimisation measures detailed in the EMS, the proposed clearing is not likely to impact on the environmental value of a conservation area.

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

(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.

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

As discussed within Principle (f), no watercourses or wetlands have been mapped within the application area. As assessed within Principle (g), the proposed clearing is not likely to cause land degradation. The application area adjoins a larger remnant of native vegetation and large reserves occur in close proximity to the application area (Figure 2), lowering the risk of groundwater quality deterioration.

Given the above, the proposed clearing is not likely to impact on the quality of surface water or groundwater and is not likely to be at variance to this Principle.

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

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

No watercourses or wetlands occur within the application area. The mapped flood risk for the associated land units is low (DPIRD, 2018). Given this and the size of the application area, the proposed clearing is not likely to exacerbate the incidence or intensity of flooding and is not likely to be at variance to this Principle.

5. Planning instruments and other relevant matters

The installation of the powerline is part of a larger plan to realign operations on Red Hill to reduce visual impacts on the Darling Scarp.

A total of 1.11 hectares of the application area occurs within Red Hill Nature Reserve, vested and managed by DBCA as an A class nature reserve. The Conservation and Parks Commission have endorsed the proposed clearing following the development of the EMS (Strategen, 2018).

The application was advertised on the Department of Water and Environmental Regulation's website on 08 February 2018 for a 21 day submission period. No submissions have been received in relation to this application.

Seven Aboriginal sites of significance are mapped within the application area. The applicant must contact the Department of Aboriginal Affairs regarding their obligations under the *Aboriginal Heritage Act 1972*.

6. References

- Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.
- Department of Biodiversity Conservation and Attractions (DBCA) (2007-) NatureMap: Mapping Western Australia's Biodiversity. Department of Parks and Wildlife. URL: <http://naturemap.dpaw.wa.gov.au/>. Accessed June 2018.
- Department of Biodiversity Conservation and Attractions (DBCA) (2013) Carnaby's cockatoo (*Calyptorhynchus latirostris*) Recovery Plan. Department of Parks and Wildlife, Perth, Western Australia.
- Department of Biodiversity, Conservation and Attractions (DBCA) (2018a) Regional advice for Clearing Permit Application CPS 7904/1. Perth Hills District. Western Australia Received 12 June 2018 (DWER Ref: A1694540).
- Department of Biodiversity, Conservation and Attractions (DBCA) (2018b) Species and Communities advice for Clearing Permit Application CPS 7904/1. Received 31 May 2018 (DWER Ref: A1694543).
- Department of Environment and Conservation (DEC) (2012) Chuditch (*Dasyurus geoffroii*) Recovery Plan. Wildlife Management Program No. 54. Department of Environment and Conservation, Perth, Western Australia.
- Department of Primary Industry and Regional Development (DPIRD) (2018) NRInfo Digital Mapping. Department of Primary Industry and Regional Development. Government of Western Australia. URL: <https://maps.agric.wa.gov.au/nrm-info/> (accessed June 2018).
- GHD (2015) Western Power Line relocation Red Hill Quarry, Flora and Fauna Assessment, February 2015. (DWER ref: A1604640).
- *Government of Western Australia (2017) 2016 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of October 2016. WA Department of Parks and Wildlife, Perth.
- **Government of Western Australia (2018) 2017 South West Vegetation Complex Statistics. Current as of December 2016. WA Department of Parks and Wildlife, Perth
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Strategen (2017) Native Vegetation Clearing Permit Application – supporting Documentation. Line relocation Red Hill Quarry. October 2017. (DWER ref A: 1604640).
- Strategen (2018) Email correspondence received from E Payne on 6 September 2018 in relation to CPS 7904/1 (DWER ref: 1718396).
- Valentine, L.E. and Stock, W. (2008) Food Resources of Carnaby's Black Cockatoo (*Calyptorhynchus latirostris*) in the Gngangara Sustainability Strategy Study Area. Edith Cowan University and Department of Environment and Conservation. December 2008.

GIS Databases:

- Aboriginal Sites of Significance
- Department of Biodiversity, Conservation and Attractions, Tenure
- Hydrography, COG Hydro
- Hydrography, General Hydro
- Hydrography, Wetlands
- Land degradation risk categories
- SAC bio datasets
- TPFL Data March 2018
- Vegetation Complexes – South West Forests
- WAHerb Data May 2018
- WA TEC PEC Boundaries