

# Supporting documentation for a Clearing Permit Application For Hyden Norseman Road, Forrestania East.

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Prepared for the Shire of Kondinin  
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## 1 Introduction

In June 2018, Ecoedge was engaged by the Shire of Kondinin (the Shire) to prepare a clearing permit application and associated supporting documentation for clearing of approximately 0.76 hectares of native vegetation within a proposed extension to a gravel pit along the Hyden-Norseman Road. The gravel pit is 0.78 ha in size and is located approximately 22 Straight Line Kilometres (SLK) ENE of the Marvel Loch Forrestania Cross Roads (the 'Survey Area') (**Figure 1**). The proposed extension to the gravel pit is required in order to provide for the future ongoing road maintenance works within the Shire.

This document provides a summary of flora, vegetation, and fauna values identified at the site; an over view of measures to mitigate impacts of the proposed clearing; and an assessment of the proposal against the ten principles for clearing native vegetation under Schedule 5 of the *Environmental Protection Act 1986*.

The proposed clearing footprint is shown in **Figure 2**.

## 2 Flora and Vegetation

### 2.1 Desktop Assessment

The Survey Area is situated within the Southern Cross (COO2) sub-region of the Coolgardie biogeographic region, as defined in the Interim Biogeographical Regionalisation for Australia (IBRA) (Commonwealth of Australia, 2016).

The vegetation within the Survey Area was mapped by Beard as Association 511 'Medium woodland; salmon gum and morrel' (Beard, 1972). This vegetation association is mapped as having 88.26% of its original extent remaining, but is poorly represented in the Department of Biodiversity, Conservation and Attractions (DBCA) conservation estate, with 3.12% in formal and informal reserves (Government of Western Australia, 2018). The extent remaining of this association significantly exceeds the desired minimum 30% retention targets stated by the Commonwealth government and the EPA (Environment Australia, 2001; EPA, 2000).

The Survey Area occurs entirely within a large tract of intact native bushland, the closest boundary to the edge of this bushland is located approximately 46 km to the south west.

There are no ESAs associated with the Survey Area vegetation. The nearest ESA to the Survey Area, designated around the Lake Cronin Nature Reserve, is located approximately 10 km to west of the site (**Figure 1**).

### 2.2 Field Survey

An assessment of vegetation within the Survey Area was undertaken by Ecoedge in September 2018 (Ecoedge, 2019).

#### 2.2.1 Vegetation Units

Only one vegetation unit was recognised in the Survey Area. This was assessed to be in Excellent Condition.

It comprises a shrubland with scattered emergent small trees, that include *Allocasuarina spinosissima*, *Eucalyptus olivina*, *Callitris preissii*, *Grevillea excelsior* and *Hakea francisiana* with the shrub layer dominated by species such as *Acacia assimilis* subsp. *assimilis*, *Melaleuca cordata* and *Thryptomene kochii*. Of the 0.78 ha Survey Area, 0.76 ha comprised this vegetation unit, with the remainder being cleared of native vegetation.

The mapped vegetation unit does not resemble either a State or Federally listed Threatened or Priority ecological community.

The mapped vegetation unit does not correlate well with Beard's Vegetation Association 511 "Medium woodland; salmon gum & morrel" mapped for the Survey Area. This may be explained by Beard's 1:250,000 scale of mapping which cannot account for small scale variations in vegetation. It is suggested that the units may better correlate with either Beard Association 2048 'Shrublands; scrub-heath in the Mallee Region' or Association 519 'Shrublands; mallee scrub, *Eucalyptus eremophila*'. These Associations are mapped adjacent to Association 511. Both of these significantly exceeds the desired minimum 30% retention targets stated by the Commonwealth government and the EPA (Environment Australia, 2001) with over 99% of their extent remaining.

### 2.2.2 Flora

Twenty one species of vascular flora were identified in the Survey Area. No Threatened or Priority flora, or other conservation-significant species were found.



Figure 1. Location of the Survey Area.

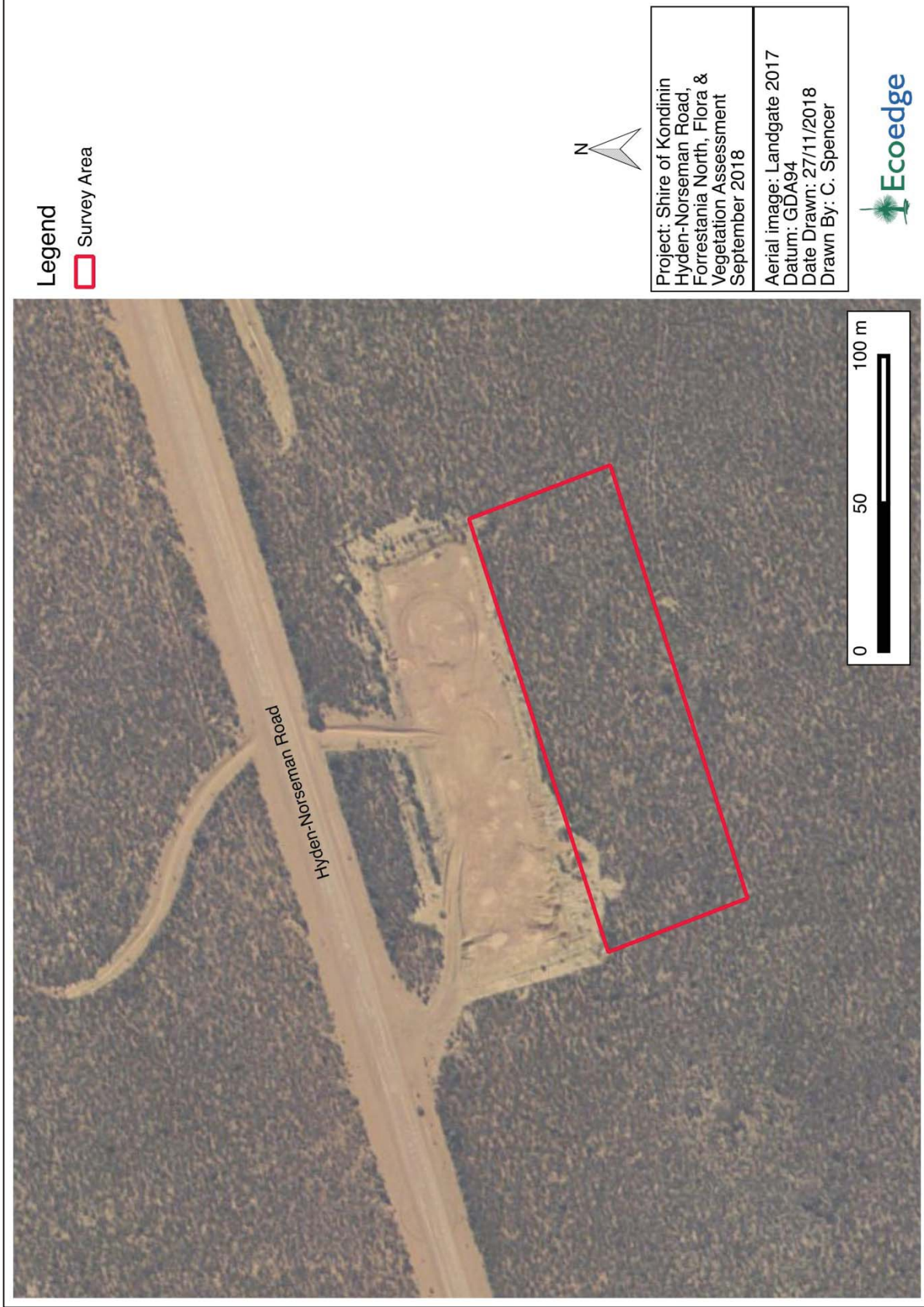


Figure 2. Proposed clearing area.

### 3 Fauna

A Level 1 Fauna Survey and a Level 2 Assessment for black cockatoo habitat / site use (EPA 2016b) was undertaken by Greg Harewood (Zoologist) on the 3 October 2018 (Harewood, 2019). The species of main concern within the Survey Area was the Carnaby's black cockatoo<sup>1</sup> (CBC). Information pertaining to the fauna survey is summarised below.

#### 3.1 Carnaby's black cockatoo

##### 3.1.1 Breeding habitat

The subject site contained no trees fitting the criteria of being CBC breeding habitat (i.e. suitable trees with a diameter at breast height >30cm and with potential breeding hollows) with almost all the specimens present being relatively small, stunted specimens.

##### 3.1.2 Foraging habitat

No evidence of CBC foraging was observed during the field survey. Several known and potential foraging habitat flora species were identified within the Project Area. It was estimated that the total quality foraging habitat area comprised no more than 0.5 ha.

##### 3.1.3 Roosting habitat

The subject site contained no habitat suitable for use as a roost site by CBC. Based on available mapping there is about 31,000 ha of remnant native vegetation within 10 km of the subject site. Much of this is likely to represent CBC foraging habitat of some type, and potential breeding and foraging habitat, though it should be noted that the subject site is located near the inland/eastern limit of the Carnaby's black cockatoo's range and they probably only occur infrequently even in areas of ideal habitat.

#### 3.2 Other Conservation Significant Fauna

No fauna species of conservation significance were positively identified as utilising the subject site. Based on habitats present, several species may possibly occur at times though their current status on-site and/or in the general area was difficult to determine.

### 4 Requirement for a Clearing Permit

The proposed clearing activities were assessed against the Environmental Protection (Clearing of Native Vegetation) Regulations 2004 (the Clearing Regulations) and exemptions under Part V of the *Environmental Protection Act 1986* (EP Act), and against the Principles for clearing native vegetation under Schedule 5 of the EP Act.

A clearing permit is required as there is no valid exemption for the proposed clearing under the EP Act or under the Clearing Regulations.

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<sup>1</sup> Carnaby's cockatoo (*Calyptorhynchus latirostris*), listed as Endangered under both the *Wildlife Conservation Act 1950* and *Environmental Protection and Biodiversity Conservation Act 1999*.



## 4.1 Actions taken to limit impacts from the Proposal

### 4.1.1 Avoidance

The Shire has sought gravel from alternative sources and determined that this approach is the best of the available limited options.

Much of the potential sources of gravel in the vicinity of the Hyden-Norseman Road is the subject of mine tenements which limits alternative options for the supply of gravel.

The nearest farm based gravel pit is approximately 50 km away from the gravel pits and is not considered economically feasible.

### 4.1.2 Mitigation

The Shire propose to mitigate impacts of the proposal via revegetation of the site following extraction activities in accordance with the attached revegetation plan.

The proposed revegetation activities will mitigate impacts of clearing in the following ways.

- The revegetation activities mean that the proposed clearing will not result in a permanent loss of vegetation at site and that there will be no net loss of vegetated areas.
- The revegetated area will restore the overall functioning of the ecological linkage / corridor for the migration of fauna and flora.
- Revegetation processes will mitigate potential impacts to infiltration and drainage caused by extraction activities. The exposed clay layer will be ripped and covered with overburden, top soil and mulch. This will slow water flow and facilitate localised water infiltration.
- Restored vegetation and proposed weed control activities will impede potential recolonisation of cleared areas by weeds.

An overview of the revegetation approaches and completion criteria revegetation plan is provided herein.

#### 4.1.2.1 Revegetation plan

The aim of revegetation plan is that vegetation at the site is self-sustaining and broadly representative of the pre-clearing vegetation unit represented at site within five years of the completion of revegetation. Proposed revegetation methods include reuse of topsoil, direct seeding and planting of seedlings to achieve the following minimum revegetation targets **Table 1**.

Table 1. Vegetation unit completion criteria.

Criterion	Baseline floristic data (Table 6)	Five year completion targets	Five year completion criteria	Comments
A	Total species richness <ul style="list-style-type: none"> <li>• 21 species</li> </ul>	Minimum Project Area species richness is 40% of total species richness, or 60% of commercially viable available species.	A minimum of 9 species occurring within the Project Area.	A species richness target of 60% of commercially available species is considered achievable. Only 15 species are considered currently potentially commercially available. This fraction is the only part for which the Shire has any control over.
B	Plant density <ul style="list-style-type: none"> <li>• 5000 p/ha per species</li> </ul>	Minimum plant density (p/ha) is 50 % of baseline data.	A minimum of 2500 native plant stems established per hectare. 1900 stems for 0.76 ha	A 50% target is considered achievable. The low rainfall combined with long hot summers make the success of planted seedlings hard to predict. The sites isolation makes watering of seedlings impractical.
C (i)	Percentage cover environmental weeds both minor and major competitive species <ul style="list-style-type: none"> <li>• &lt;1%</li> </ul>	Total combined weed cover should not exceed 10% baseline data.	The revegetation site should have no more than 10% cover of either minor and major environmental weeds	It is possible that there will be some colonisation of the site by environmental weeds following site works due to the high level of disturbance. The 10% cover target is applied to this criterion as it may be hard to guarantee complete control of all weeds, especially if they cannot be controlled by selective herbicides.
C (ii)	Declared Pest Plants <ul style="list-style-type: none"> <li>• Nil</li> </ul>	Total number of Declared Pest plants should not exceed baseline data.	No Declared Pest plants recorded across the Project Area.	A list of Declared Pest plants in the Shire of Kondinin is available on the Department of Primary Industries and Regional Development website.

## 5 Assessment against Clearing Principles

Information for this assessment in regards to flora values has been taken from Ecoedge (2019), and in regards to fauna values has been taken from Harewood (2019).

Table 2. Vegetation unit completion criteria.

<b>Clearing Principle</b>	<b>Response</b>
(a) it comprises a high level of biological diversity ; or	<p>Not at variance, flora and vegetation:            Only 18 native flora species were identified across the 0.78 ha survey area. This species richness is low compared to other comparable areas, for example Wheatbelt woodlands typically have 30+ species per 100 m<sup>2</sup> (Harvey &amp; Keighery 2012) and according to one study flora species richness in the Mallee biogeographic region, which is located to the south of the Coolgardie biogeographic region, ranges from 17 to 48 species per 1000 m<sup>2</sup> (Van Der Moezel &amp; Bell, 1989).            Not at variance, fauna:            The fauna survey concluded that the Project Area does not have what can be considered a high level of biological diversity.</p>
(b) it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia; or	<p>Not at variance. The Project Area is not considered to contain significant habitat for Carnaby's black cockatoo or any other fauna species. Fauna habitats present within the subject site were considered common and widespread in the general area, the extent of clearing is very small and the faunal assemblage present is very unlikely to be different to that found in similar habitats located elsewhere in the immediate vicinity.</p>
(c) it includes, or is necessary for the continued existence of, rare flora; or	<p>Not at variance. No Threatened, Priority flora or other flora of conservation significance was found within the Survey Area.</p>
(d) it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community; or	<p>Not at variance</p>

(e) it is significant as a remnant of native vegetation in an area that has been extensively cleared; or	Not at variance
(f) it is growing in, or in association with, an environment associated with a watercourse or wetland; or	Not at variance
(g) the clearing of the vegetation is likely to cause appreciable land degradation; or	Not at variance
(h) the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area; or	Not at variance
(i) the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water; or	Not at variance
(j) the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.	Not at variance

## 6 Conclusion

The Shire of Kondinin proposes to clear approximately 0.76 ha of native vegetation in order to extend an existing gravel pit along the Hyden Norseman Road. This gravel pit is required to provide for the future and ongoing road maintenance works within the Shire.

The proposal is not likely to be at variance with any of the ten principles for clearing native vegetation under Schedule 5 of the *Environmental Protection Act 1986*.

The proposed clearing is unlikely to have a significant impact on local, regional and national vegetation and flora, and fauna values given the relatively small extent of proposed clearing within a significantly broader extent of intact and well represented native vegetation. It is further recommended that the potential impacts of the proposal will be mitigated via the staged rehabilitation of the cleared areas by natural regeneration and planned revegetation activities.

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