



## **CLEARING PERMIT**

*Granted under section 51E of the Environmental Protection Act 1986*

### **PERMIT DETAILS**

Area Permit Number: 8942/1  
File Number: DWERVT5911  
Duration of Permit: 13 November 2020 to 13 November 2022

### **PERMIT HOLDER**

Brent Douglas Hope  
Rosalie Jean Hope

### **LAND ON WHICH CLEARING IS TO BE DONE**

Lot 1 on Plan 18209, Kojonup

### **AUTHORISED ACTIVITY**

The Permit Holder shall not clear more than 1.126 hectares of native vegetation within the area cross-hatched yellow on attached Plan 8942/1.

### **CONDITIONS**

#### **1. 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:

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

#### **2. 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 1 of this Permit; and

#### **3. Reporting**

The Permit Holder must provide to the *CEO* the records required under condition 2 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*;

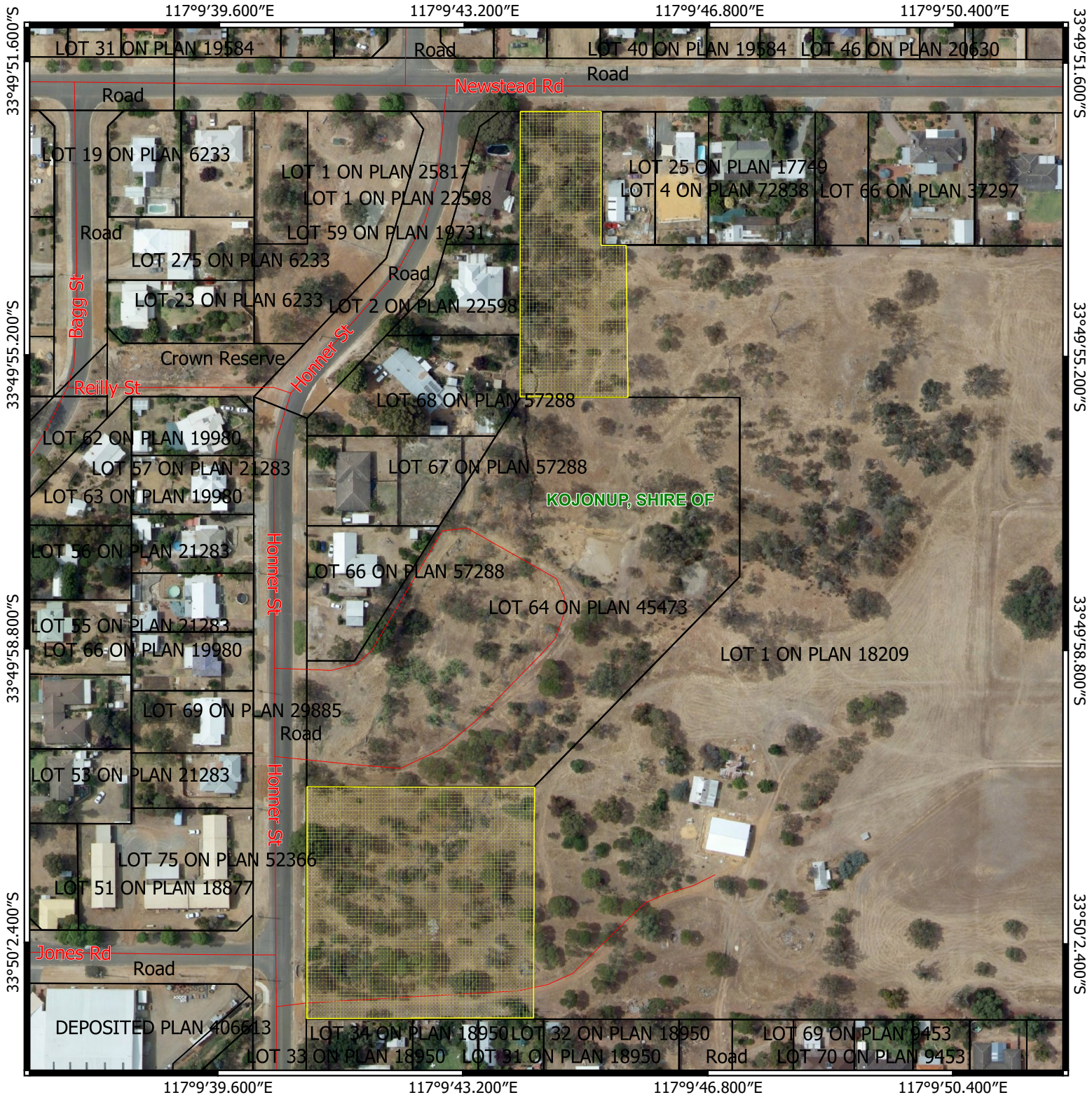


Meenu Vitarana  
A/MANAGER  
NATIVE VEGETATION REGULATION

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

21 October 2020


# Plan 8942/1




## CPS layers

 CPS areas approved to clear

## base layers

 Road Centrelines

 Local Government Authority (LGA) Boundaries (LGATE-233)

## Map Layers

 Land TenureLGATE - 226



0 25 50 75 100 m



1:2000

MGA Zone 50  
Geocentric Datum of Australia 1994

Officer delegated under section 20 of the  
Environmental Protection Act 1986



GOVERNMENT OF  
WESTERN AUSTRALIA





## 1. Application details and outcome

### 1.1. Permit application details

Permit number:	CPS 8942/1
Permit type:	Area permit
Applicant name:	Mr Brent Douglas Hope and Mrs Rosalie Jean Hope
Application received:	11 June 2020
Application area:	1.126 hectares (ha)
Purpose of clearing:	Fire risk reduction and maintenance of pasture land
Method of clearing:	Mechanical removal
Property:	Lot 1 on Plan 18209, Kojonup
Location (LGA area/s):	Shire of Kojonup
Localities (suburb/s):	Kojonup

### 1.2. Description of clearing activities

The application is to clear 1.126 hectares of native vegetation distributed across two separate areas, to reduce the risk of bushfires to nearby residential housing and to allow for the continued use of the land for the purpose of pasture. The proposed clearing consists of 1.126 hectares of largely regrowth native vegetation that is separated into two areas being 0.38 hectares (northern area) and 0.75 hectares (southern area) in size. The extent of the proposed clearing is indicated in Figure 1 (see Section 1.5).

### 1.3. Decision on application and key considerations

Decision:	Granted
Decision date:	21 October 2020
Decision area:	1.126 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 11 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 the environmental values of biological values including habitat for flora and fauna species, significant remnant vegetation, or land and water resources (see section 3.2).

In determining to grant a clearing permit subject to a condition to avoid and minimise clearing, 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 areas approved to clear.**

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; and
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)

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)

### **3. Detailed assessment of application**

#### **3.1. Avoidance and mitigation measures**

No evidence of avoidance or mitigation measures was provided to support the application. The applicant noted on the application form that they had been approached by occupants in residential housing located in close proximity to the application area to undertake the proposed clearing for bush fire safety.

#### **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 A) and considered whether the clearing poses a risk to environmental values. The assessment against the Clearing Principles is contained in Appendix B.

This assessment identified that the clearing may pose a risk to the environmental value(s) of biological values, significant remnant vegetation, and land and water resources, and that these required further consideration. The detailed consideration and assessment of the clearing impacts against the specific environmental values 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:

According to available databases, seven threatened species, three conservation dependent, one other specially protected fauna, one Priority 3 and three Priority 4 fauna species have been recorded within the local area (20 kilometre radius). The closest conservation fauna record to the proposed clearing area is a Baudins black cockatoo sighting recorded 137 metres from the application area. Two records of Carnaby's cockatoos have been recorded 394 metres and 495 metres east of the application area. The forest red-tailed black cockatoo has been recorded approximately 964 metres from the application area. The proposed clearing area is also located 6.3 kilometres from a confirmed breeding site and 1.6 kilometres from a confirmed active roosting site. The application area also falls within the Carnaby's black cockatoo, Baudin's black cockatoo and forest red-tailed black cockatoo distribution areas.

Noting all three of the abovementioned species of black cockatoos have been recorded within one kilometre of the application area and noting the mapped vegetation type comprises of Marri and Wandoo woodland, the application area may provide suitable foraging and breeding habitat noting the presence of Eucalyptus species which are a preferred food and breeding source for these species (Valentine and Stock, 2008; Commonwealth of Australia, 2012). However, a site inspection undertaken by DWER officers confirmed that the vegetation within the application area is not consistent with the mapped vegetation type and consists predominantly of *Eucalyptus rudis* (Flooded Gum), with *Acacia acuminata* (Jam) (see Appendix A for vegetation description) which are not preferred food source for black cockatoo species (DWER, 2020). The site inspection confirmed that there were no suitable foraging species within the application area nor was there any evidence of foraging or roosting within the application area (DWER, 2020).

Black cockatoos breed in large hollow-bearing trees, generally within woodlands or forests or in isolated trees (Commonwealth of Australia, 2012). To be suitable as a black cockatoo breeding site, trees require a suitable nest hollow or need to be of a suitable diameter at breast height (DBH) to develop a nest hollow. For most tree species, a suitable DBH is 500 millimetres (Commonwealth of Australia, 2012). The Flooded gums may provide suitable breeding habitat for the Carnaby's cockatoo which are known to breed within this species. However, the site inspection noted that only one Flooded Gum had a DBH greater than 500 millimetres, however was split into four smaller trunks at breast height; therefore did not contain any suitable hollows for black cockatoos (DWER, 2020). Given this, the application area does not comprise of suitable breeding habitat for black cockatoo species.

As shown in the representative photographs shown under Appendix D, the application area is in a completely degraded condition that contains little to no ground cover. Considering this it is unlikely that the proposed clearing area provides significant habitat for any ground dwelling fauna located within the local area.

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.

##### **3.2.2. Environmental value: significant remnant vegetation – Clearing Principle (e)**

###### Assessment:

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

The extent of mapped native vegetation in the local area (20 kilometre radius) is at 14.9 per cent, which is below the national objectives and targets for biodiversity conservation in Australia. Vegetation within the application area occurs within the mapped Beard Vegetation Association Complex 4. Within the local area, this complex retains 27.09 per cent of its pre-European extent remaining (see Appendix A). Noting that the current vegetation extent for the mapped vegetation complex and the local area fall below the 30 per cent threshold, the application area is considered to be a remnant within an extensively cleared landscape.

However, as noted in the site characteristics under Appendix A, DWER's site inspection confirmed that the vegetation in the clearing areas is a completely different vegetation type to the mapped Beard Vegetation Association, therefore is not representative. In addition, it is unlikely that the completely degraded parkland cleared native vegetation within the proposed clearing areas contributes to vegetation connectivity in the local area.

In consideration of the above, the application area is not considered to be a significant remnant of native vegetation and the proposed clearing is not likely to have a significant impact on the extensively cleared local area.

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 management conditions required.

### **3.2.3. Environmental value: land and water resources – Clearing Principles (f) and (i)**

#### Assessment:

According to available databases and as observed during a site inspection undertaken by DWER officers, a minor non-perennial watercourse known as the 'Kojonup Brook' runs through both the northern and southern portions of the application area, which had recently been flowing during the inspection (DWER, 2020). There was some standing water in areas and the ground was wet (photo 6, Appendix D). As described under the site characteristics in Appendix A, the application area contains Flooded Gum and *Juncus* sp. which are species typically associated with wetlands and watercourses. Given this, the proposed clearing will result in the loss of vegetation growing in association with a watercourse. However, noting the riparian vegetation has been assessed as being in completely degraded condition, the proposed clearing is not likely to significantly impact upon the environmental value of this watercourse.

The proposed clearing may cause increase runoff and sedimentation into the watercourse that intersects the application area. However, impacts to this hydrological feature is likely to be mitigated via the use of existing culverts which are in place at the northern border of the northern area and at the southwest of the southern area allowing water movement (photo 7 and 8, Appendix D). Given this, the impacts to surface water quality are likely to be short term and minimal. In addition, the applicant advised DWER officers during the site inspection that formal culverts were planned to be installed by the Shire of Kojonup which would also manage any surface water impacts (DWER, 2020).

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 management conditions required.

## Appendix A – 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 B.

### 1. Site characteristics

Site characteristic	Details
Local context	<p>The proposed clearing area is located within a residential property situated at Lot 1 on Plan 18209, Kojonup, within the township of Kojonup. The 9.2 hectare land parcel has predominately been parkland cleared and only sparsely distributed paddock trees remain to the east of the proposed clearing area. Residential lots that have largely been cleared adjoin the proposed clearing area to the north, south and west of the site. The proposed clearing area and remainder of the land parcel is currently being used to graze sheep. A large extent of the vegetation proposed for clearing is considered to be riparian vegetation associated to the non-perennial watercourse known as 'Kojonup Brook' that runs through both the northern and southern clearing areas.</p> <p>Spatial data indicates the local area (20 kilometre radius) of the proposed clearing area) retains approximately 14.9 per cent (18,999.11 hectares) of the pre-European native vegetation cover.</p>
Vegetation description	<p>The application area is mapped as Beard Vegetation Complex 4, which is described as 'Medium woodland; marri &amp; wandoo' (Government of Western Australia, 2018).</p> <p>Vegetation composition was determined by a site inspection of the application areas carried out by the Department of Water and Environmental Officers (DWER) on 15 September 2020 (DWER, 2020). The areas under application consist of a very open woodland and tall shrubland, consisting predominantly of <i>Eucalyptus rudis</i> (Flooded Gum), with <i>Acacia acuminata</i> (Jam) in areas further from the drainage line and associated with a granite outcrop (DWER, 2020).</p> <p>The majority of the Flooded Gums in the southern area are all relatively young (&lt;10 years). Two <i>Hakea prostrata</i> (Harsh Hakea) and ornamental shrubs were also noted in the southern area. The understorey consists almost exclusively of weed species including Guildford Grass (<i>Romulea rosea</i>), Soursob (<i>Oxalis pes-caprae</i>), Largeflower Wood Sorrel (<i>Oxalis purpurea</i>), Cape Weed (<i>Arctotheca calendula</i>), winter grass (<i>Poa annua</i>), Ryegrass (<i>Lolium</i> sp.), annual veldt grass (<i>Ehrharta longiflora</i>), and clover (<i>Trifolium</i> sp.) (DWER, 2020).</p> <p>The site inspection by DWER officers confirmed that the vegetation within the application area is not representative of the mapped Beard Vegetation Complex 4 (DWER, 2020)</p>
Vegetation condition	<p>DWER's site inspection (DWER, 2020) determined that the vegetation within the proposed clearing area is in completely degraded (Keighery, 1994) condition on the scale described by Keighery (1994) scale (see Appendix C). The full Keighery condition rating scale is provided in Appendix C, below.</p>
Soil description	<p>The application area is mapped within the following soil types:</p> <ul style="list-style-type: none"> <li>Farrar 2 Subsystem: (Map unit 257Fa_2): (southern portion of application area approximately 0.75 hectares) Undulating rises and low hills with mainly grey deep sandy duplex soils</li> <li>Farrar 3 Subsystem: (Map unit 257Fa_3): (northern portion of application area approximately 0.38 hectares) Rocky undulating rises and low hills with mainly grey deep sandy duplex, red sandy and loamy duplex formed on weathered bedrock (Schoknecht et al., 2004):</li> </ul> <p>Brown clay soils were identified during DWER's site inspection of the application area (DWER, 2020). A granite outcrop was noted in the southern area (DWER, 2020).</p>



Site characteristic	Details																								
Land degradation risk	<p>The proposed clearing area is mapped within the ‘Farrar 2 Subsystem’ and ‘Farrar 3 Subsystem’ (Schoknecht et al. 2004). Land degradation risk for each system is summarised in the table below and is expressed as the percentage of that map unit being at risk.</p> <p><b>Land Degradation Risk Categories for mapped soil subsystems</b></p> <table><tr><th>Risk categories</th><th>Farrar 2 Subsystem</th><th>Farrar 3 Subsystem</th></tr><tr><td>Wind erosion</td><td>30-50% of map unit has a high to extreme wind erosion risk</td><td>10-30% of map unit has a high to extreme wind erosion risk</td></tr><tr><td>Water erosion</td><td>&lt;3% of map unit has a high to extreme water erosion risk</td><td>&lt;3% of map unit has a high to extreme water erosion risk</td></tr><tr><td>Salinity</td><td>&lt;3% of map unit has a moderate to high salinity risk</td><td>3-10% of map unit has a moderate to high salinity risk</td></tr><tr><td>Subsurface Acidification</td><td>&gt;70% of map unit has a high subsurface acidification risk</td><td>&gt;70% of map unit has a high subsurface acidification risk</td></tr><tr><td>Flood risk</td><td>&lt;3% of the map unit has a moderate to high flood risk</td><td>&lt;3% of the map unit has a moderate to high flood risk</td></tr><tr><td>Water logging</td><td>10-30% of map unit has a moderate waterlogging risk</td><td>&lt;3% of map unit has a moderate to very high waterlogging risk</td></tr><tr><td>Phosphorus export risk</td><td>&lt;3% of map unit has a high phosphorus export risk</td><td>&lt;3% of map unit has a high phosphorus export risk</td></tr></table>	Risk categories	Farrar 2 Subsystem	Farrar 3 Subsystem	Wind erosion	30-50% of map unit has a high to extreme wind erosion risk	10-30% of map unit has a high to extreme wind erosion risk	Water erosion	<3% of map unit has a high to extreme water erosion risk	<3% of map unit has a high to extreme water erosion risk	Salinity	<3% of map unit has a moderate to high salinity risk	3-10% of map unit has a moderate to high salinity risk	Subsurface Acidification	>70% of map unit has a high subsurface acidification risk	>70% of map unit has a high subsurface acidification risk	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	Water logging	10-30% of map unit has a moderate waterlogging risk	<3% of map unit has a moderate to very high waterlogging risk	Phosphorus export risk	<3% of map unit has a high phosphorus export risk	<3% of map unit has a high phosphorus export risk
Risk categories	Farrar 2 Subsystem	Farrar 3 Subsystem																							
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Salinity	<3% of map unit has a moderate to high salinity risk	3-10% of map unit has a moderate to high salinity risk																							
Subsurface Acidification	>70% of map unit has a high subsurface acidification risk	>70% of map unit has a high subsurface acidification risk																							
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																							
Water logging	10-30% of map unit has a moderate waterlogging risk	<3% of map unit has a moderate to very high waterlogging risk																							
Phosphorus export risk	<3% of map unit has a high phosphorus export risk	<3% of map unit has a high phosphorus export risk																							
Waterbodies	A minor non-perennial watercourse known as the ‘Kojonup Brook’ intersects the southern portion of the application area. DWER’s site inspection identified the presence of this watercourse through both the northern and southern area, which had recently been flowing (DWER, 2020). There was some standing water in areas and the ground was wet (DWER, 2020). There is a culvert at the northern border of the northern area and at the south west of the southern area allowing water movement. There are no wetlands mapped within or in close proximity to the application area.																								
Conservation areas	According to available databases, the closest conservation area an unnamed nature reserve occurs approximately 2.9 kilometres from the application area. This conservation area is separated from the application area by residential development associated to the Kojonup township and previously cleared agricultural land.																								
Climate and landform	The application area occurs within a Mediterranean-type climate, with an average annual rainfall of 500 millimetres and average annual evapotranspiration rate of 500 millimetres . Topography across the application area is flat.																								

## 2. Flora, fauna and ecosystem analysis

With consideration for the site characteristics set out above, relevant datasets (see Appendix E), site inspection information and representative photographs of the vegetation proposed to be cleared (see Appendix D), conservation significant flora and fauna species, and ecological communities are not likely to be impacted by the clearing.

### 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					
Jarrah Forest	4,506,660.25	2,399,838.15	53.25	1,673,614.25	39.43
Beard Vegetation Association					
4	1,022,712.69	277,087.18	27.09	65,961.48	6.66
Local Area					
20 kilometre radius	127,381.95	18,999.11	14.9	-	-

### Appendix B – Assessment against the Clearing Principles

Assessment against the Clearing Principles	Variance level	Is further consideration required?
<b>Environmental value: biological values</b>		
<p><u>Principle (a):</u> “Native vegetation should not be cleared if it comprises a high level of biodiversity.”</p> <p><u>Assessment:</u></p> <p>The application area is not likely to comprise locally or regionally significant flora, fauna, vegetation or ecological communities. Given that the proposed clearing area comprises vegetation in completely degraded (Keighery, 1994) condition that has been subject to significant disturbance through previous clearing activities, weed invasion and grazing, the proposed clearing area is not considered likely to comprise a high level of biodiversity.</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>While the application area is mapped as Beard Vegetation Association 4 which comprises of a vegetation type suitable for all three species of black cockatoo that have been recorded in close proximity to the proposed clearing area, DWER’s site inspection confirmed that the vegetation type observed within the application area is not the preferred foraging or nesting habitat for these species. Noting this and the completely degraded condition of the vegetation that contains little to no understorey, the proposed clearing is unlikely to comprise a significant habitat for conservation significant fauna recorded in the local area.</p>	Not likely to 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>Noting that the vegetation within the application area is in completely degraded (Keighery, 1994) condition with little to no understorey, and has been subject to significant disturbance resulting from previous clearing activities, weed</p>	Not likely to be at variance	No

Assessment against the Clearing Principles	Variance level	Is further consideration required?
invasion and grazing, the proposed clearing area is unlikely to contain suitable or significant habitat for threatened flora species listed under the <i>Biodiversity Conservation Act 2018</i> .		
<p><u>Principle (d):</u> <i>"Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community."</i></p> <p><u>Assessment:</u></p> <p>There are no state listed TEC's mapped within the local area (20 kilometre radius). In addition, the completely degraded (Keighery, 1994) condition, the proposed clearing area is not considered to comprise vegetation representative of any threatened ecological community listed under the <i>Biodiversity Conservation Act 2016</i>.</p>	Not at variance	No
<b>Environmental values: significant remnant vegetation and conservation areas</b>		
<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 application area is considered to occur within an extensively cleared area given the remnant native vegetation remaining in the local area and mapped Beard Vegetation Association 4 are approximately 14.9 per cent and 27.09 respectively. However, noting that the application area is in a completely degraded (Keighery, 1994) condition and is not representative of the mapped vegetation association, it is unlikely to be a significant remnant, nor considered to be part of a significant ecological linkage in the local area.</p>	Not likely to be at variance	Yes Refer to Section 3.2.2 above.
<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>Given the distance and separation from the nearest conservation area (see Appendix A), the proposed clearing is not likely to have an impact on the environmental values of nearby conservation areas.</p>	Not likely to be at variance	No
<b>Environmental values: land and water resources</b>		
<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>As noted under Appendix A, the application area intersects a minor non-perennial watercourse known as the 'Kojonup Brook'. DWER's site inspection confirmed the presence of this watercourse within the application area and noted the <i>Flooded Gum</i> and <i>Juncus</i> sp. which are species that typically grow in association with wetlands and watercourses. Given this, the proposed clearing will impact upon vegetation growing in association with a watercourse.</p>	Is at variance	Yes Refer to Section 3.2.3 above.
<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>The mapped soil types have a high risk of land degradation in the form of subsurface acidification. Noting the proposed clearing comprises of completely degraded (Keighery, 1994) condition parkland cleared vegetation, located</p>	Not likely to be at variance	No

Assessment against the Clearing Principles	Variance level	Is further consideration required?
adjacent to cleared areas, 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 discussed under clearing principle (f), the application area intersects a minor non-perennial watercourse. The proposed clearing may result in an increase in surface water run-off which has the potential to lead to sedimentation into this watercourse. Noting the completely degraded (Keighery, 1994) condition and parkland cleared nature of the vegetation proposed to be cleared, impacts to surface water quality are expected to be minimal and limited to the duration of the proposed clearing activities. The existing culverts are also likely to minimise any potential impacts to surface water quality.</p>	Maybe at variance	Yes Refer to Section 3.2.3 above.
<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>As indicated in the land degradation risk table under Appendix A, the soil types mapped across the application area have a low flood risk.</p>	Not likely to be at variance	No



## Appendix C – Vegetation condition rating scale

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

### 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 D – Photographs of the vegetation

### Representative photographs of the application area taken during DWER's site inspection (DWER, 2020)



Photo 1: Completely degraded (Keighery, 1994) condition vegetation in Northern area



Photo 2: Completely degraded (Keighery, 1994) condition vegetation in Southern Area





Photo 3: . *Acacia anuerua* in northern area



Photo 4: Dead Acacias in southern area



Photo 5: Drainage line through Southern Area



Photo 6: Native Sedge (*Juncus pallidus*) and standing water



Photo 7: Culvert at northern border of northern area



Photo 8: Culvert at south-western border of southern area

## Appendix E – References and databases

### 1. GIS datasets

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

## 2. References

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