



## CLEARING PERMIT

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

<b>Purpose Permit number:</b>	CPS 8764/1
<b>Permit Holder:</b>	City of Busselton
<b>Duration of Permit:</b>	27 May 2020 to 27 May 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**

Clearing for the purpose of road widening.

**2. Land on which clearing is to be done**

Kaloorup Road Reserve (PIN 11471114), Vasse

**3. Area of Clearing**

The Permit Holder must not clear more than 2 native trees within the area cross-hatched yellow on attached Plan 8764/1.

**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.

**5. Type of clearing authorised**

This Permit authorises the Permit Holder to clear native vegetation for the activities described in condition 1 of this Permit to the extent that the Permit Holder has the power to carry out works involving clearing for those activities under the *Local Government Act 1995* or any other written law.

### PART II – MANAGEMENT CONDITIONS

**6. 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.

### PART III – RECORD KEEPING AND REPORTING

**7. Record keeping**

The Permit Holder must maintain the following records for activities done in 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(s) that the area was cleared;
- (c) the size of the area cleared (in hectares); and
- (d) actions taken to avoid, minimise and reduce the impacts and extent of clearing in accordance with condition 6 of this Permit.

## 8. Reporting

The Permit Holder must provide to the *CEO* the records required under condition 8 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*;



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Adrian Wiley  
SENIOR MANAGER  
NATIVE VEGETATION REGULATION

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

6 May 2020

# Plan 8764/1

115°14'36.384"E

115°14'42.576"E

115°14'48.768"E

33°42'15.120"S

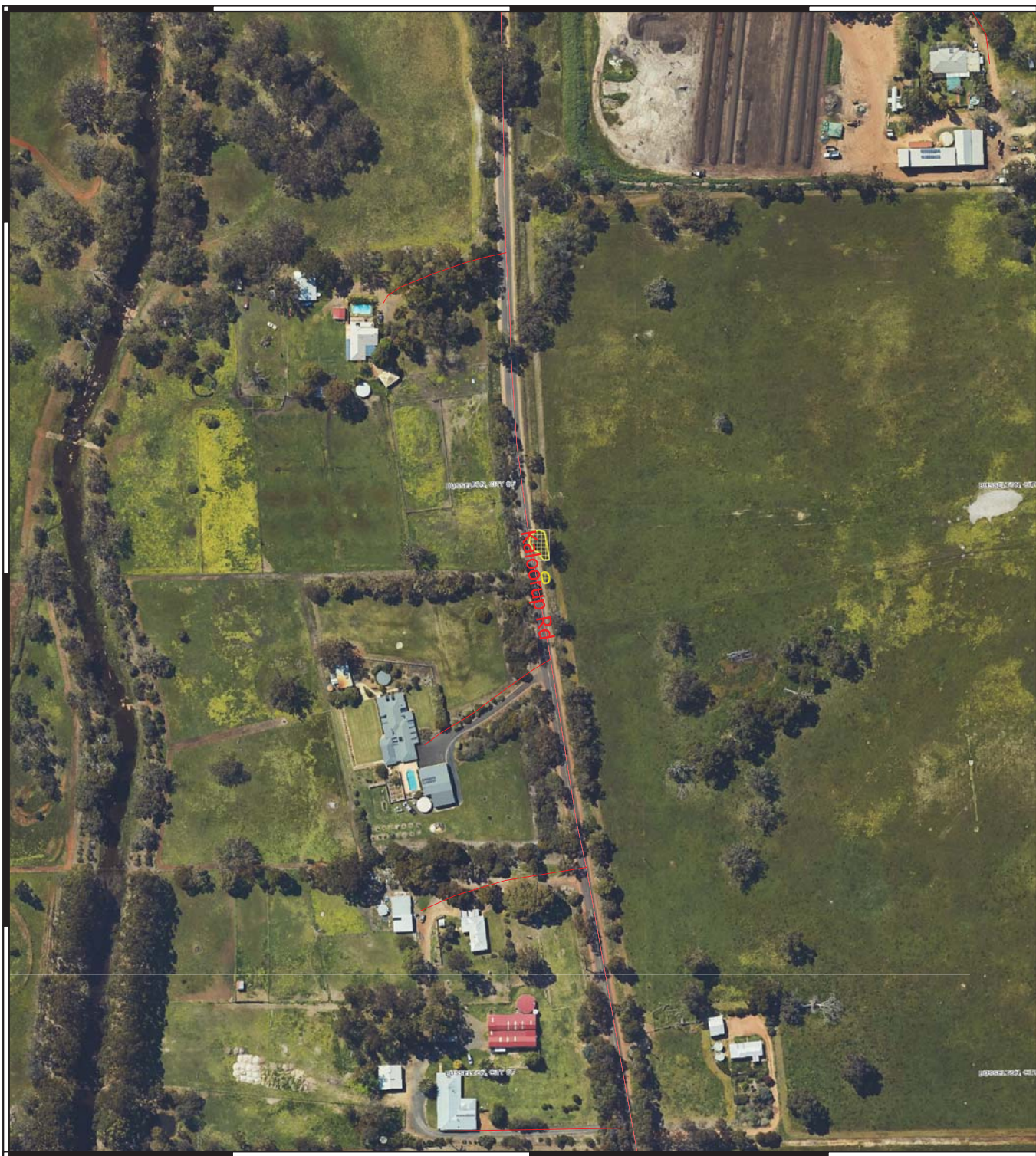
33°42'21.240"S

33°42'27.360"S

33°42'15.120"S

33°42'21.240"S

33°42'27.360"S




115°14'36.384"E

115°14'42.576"E


115°14'48.768"E

## Legend

### CPS layers

 CPS areas approved to clear

### base layers

 Road Centrelines

LGA Boundaries (LGATE-233)

N



0 50 100 150 200 m



  
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## 1. Application details

### Permit application details

Permit application No.: 8764/1  
Permit type: Purpose Permit

### Applicant details

Applicant's name: City of Busselton  
Application received date: 17 December 2019

### Property details

Property: Kaloorup Road Reserve (PIN 11471114), Vasse  
Local Government Authority: City of Busselton  
Localities: Vasse

### Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
	2	Mechanical	Road construction or upgrades

### Decision on application

Decision on Permit Application: Grant  
Decision Date: 6 May 2020  
Reasons for Decision: The clearing permit application was received on 17 December 2019 and 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 at variance to Principles (e) and (f), may be at variance to Principle (a) and is not likely to be at variance to any of the remaining clearing principles.

In determining to grant a clearing permit subject to avoid and minimise 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 for the proposed clearing of 2 native trees within Kaloorup Road Reserve (PIN 11471114), Vasse, for the purpose of road widening.

**Vegetation Description** The vegetation within the application area is mapped within the Abba complex of the Swan Coastal Plain vegetation complexes, described as a mixture of open forest of *Corymbia calophylla* (marri) - *Eucalyptus marginata* (jarrah) - *Banksia* species and woodland of *Corymbia calophylla* (marri) with minor occurrences of *Corymbia haematoxylon* (mountain marri). Woodland of *Eucalyptus rudis* (flooded gum) - *Melaleuca* species along creeks and on flood plains (Heddle et al., 1980).

Photographs supplied by the applicant and a site inspection conducted by the Department of Water and Environmental Regulation (DWER) indicate that the vegetation within the road reserve consists predominantly of isolated *Corymbia calophylla* (marri) trees, interspersed with sparse *Eucalyptus rudis* (flooded gum) (City of Busselton, 2019; DWER 2020). Some native understorey and regrowth was observed within the road reserve outside of the application area (DWER, 2020). The application area itself consists of one flooded gum and one immature marri tree, and is devoid of any native mid- or understorey species (DWER, 2020). The application area occurs within a road reserve that has been subject to extensive historical disturbance and significant weed invasion (DWER, 2020).

**Vegetation Condition** The vegetation within the application area is considered to be in Completely Degraded (Keighery, 1994) condition, defined as the structure of the vegetation is no longer intact and the area is completely or almost completely without native species (Keighery, 1994).

The vegetation condition of the application area was determined through photographs supplied by the applicant and a site inspection undertaken by DWER officers (City of Busselton, 2019; DWER 2020).

**Soil Type:** The soil type within the application area is mapped within the following systems:

- Abba flats Phase (213AbAB1), described as flats and low rises with sandy grey brown duplex (Abba) and gradational (Busselton) soils (DPIRD, 2017), and occupying approximately 75 per cent of the application area; and
- Abba wet flats Phase (213AbABw), described as wet flats and slight depressions with sandy grey brown duplex (Abba) and gradational (Busselton) soils (DPIRD, 2017), and occupying approximately 25 per cent of the application area.

**Local Area:**

The local area referred to in the assessment of this application is defined as a 10 kilometre (km) radius measured from the perimeter of the application area.



Figure 1. Application area (outlined in blue).



Figure 2. Photographs of the two trees proposed to be cleared under clearing permit application CPS 8764/1 (DWER, 2020).

**3. Avoidance and minimisation measures**

The City of Busselton (the City) has advised that the proposed road upgrades have been designed to limit widening to the less-vegetated eastern side of Kaloorup Road reserve (PIN 11471114), reducing the area of native vegetation required to be cleared (DWER, 2020). The City advised that within the eastern side of the road reserve, efforts were made in the design process to avoid large marri trees where possible (DWER, 2020). However, the City advised that due to the high speed limit of the road and issues with manoeuvrability, some trees could not be avoided as these would compromise the safety and functionality of the road (DWER, 2020).

The City originally applied to clear eight native trees within Kaloorup Road reserve for the purpose of road upgrades to improve road safety (City of Busselton, 2019). Following the findings of a preliminary assessment, the City reduced the proposed clearing area to two native trees, to avoid and minimise the impact of the clearing on the environmental values of this road reserve as far as is practical without compromising road safety requirements (City of Busselton, 2020).

#### 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 with this principle

A review of available databases determined that a total of 55 threatened or priority flora have been recorded within the local area, comprising three Priority 1 (P1) flora, seven Priority 2 (P2) flora, 19 Priority 3 (P3) flora, nine Priority 4 (P4) flora, and 17 threatened flora (Western Australian Herbarium, 1998-). None of these records occur within the application area. Based on the habitat preferences of the above species, including soil type, vegetation association and vegetation condition, the application area may contain suitable habitat for 16 priority flora species and seven threatened flora species. DWER's site inspection observed that the application area consists of vegetation in Completely Degraded (Keighery, 1994) condition, devoid of native mid- or understorey species (DWER, 2020). It is therefore considered that the application area is not likely to comprise suitable habitat for any of the above threatened or priority flora species and is not likely to comprise a high level of floristic diversity.

The application area is mapped as, and contains species representative of the Swan Coastal Plain vegetation complex, Abba complex. As discussed under Principle (e), the Abba complex is extensively cleared and has experienced a significant reduction in its pre-European vegetation extent, where only 0.36 per cent of remaining vegetation mapped within this complex lies within conservation estate. Given the above, occurrences of vegetation representative of the Abba complex is likely to be significant for its maintenance, and represent regionally significant diversity within the Swan Coastal Plain Interim Biogeographic Regionalisation of Australia (IBRA) Bioregion.

According to available databases, there are four state-listed threatened ecological communities (TECs) and eight state-listed priority ecological communities (PECs) mapped within the local area. As assessed under Principle (d), the closest TEC occurs approximately 3.3 kilometres south-east of the application area, while the closest PEC, *Banksia* Dominated Woodlands of the Swan Coastal Plain IBRA Region, occurs approximately 1.3 kilometres south of the application area. Noting the distance and separation from TECs and PECs within the local area and the Completely Degraded (Keighery, 1994) condition of the vegetation, the application area is not likely to comprise whole or part of, or be necessary for the maintenance of a TEC or PEC.

A mapped South West Region Ecological Linkage is adjacent to the application area. As remnant vegetation is limited within the local area, as assessed under Principle (e), the trees within the application area may aid movement through the landscape for some fauna. However, given the isolated nature of the two trees proposed to be cleared, and the degraded condition of the vegetation, it is not considered that these trees do not contribute to the ecological linkage in a significant way. Furthermore, the more vegetated western side of the road reserve is outside of the application area be retained. Therefore, the proposed clearing is not likely to significantly impact vegetation connectivity within the landscape.

As assessed under Principle (b), the application area may contain suitable habitat for four threatened fauna species; *Calyptorhynchus banksii naso* (forest red-tailed black cockatoo), *Calyptorhynchus baudinii* (Baudin's cockatoo), *Calyptorhynchus latirostris* (Carnaby's cockatoo), and *Pseudocheirus occidentalis* (western ringtail possum). However, given the application area comprises an immature marri tree and flooded gum in Completely Degraded (Keighery, 1994) condition, with limited canopy connectivity and no tree hollows, the application area is not likely to provide significant habitat for these species.

Noting that the application area includes regionally significant vegetation, but is not likely to comprise high floristic diversity, be representative of a TEC or PEC, or provide significant habitat for fauna, the proposed clearing may be at variance with 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.

###### Proposed clearing is not likely to be at variance with this principle

A total of 23 threatened or priority fauna species have been recorded within the local area, including six threatened fauna, three priority fauna, 13 fauna species protected under international agreement and one other specially protected fauna species (DBCAs, 2007-). None of these records occur within the application area. Based on the existing records, habitat preferences and habitat requirements of the above species, the application area may contain suitable habitat for three of the above threatened fauna species; Baudin's cockatoo, Carnaby's cockatoo, and the western ringtail possum. However, given the application area comprises an immature marri tree and flooded gum in Completely Degraded (Keighery, 1994) condition, with limited canopy connectivity and no tree hollows, the application area is not likely to provide significant habitat for these species.

###### Black cockatoo species

'Breeding habitat' for black cockatoo species (Baudin's cockatoo, Carnaby's cockatoo and forest red-tailed black cockatoo) is defined as trees of species known to support breeding within the range of the species which either have a suitable nest hollow or are of a suitable diameter at breast height (DBH) to develop a nest hollow (Commonwealth of Australia, 2012). Suitable DBH for nest hollows is 500 millimetres for most tree species (Commonwealth of Australia, 2012). While breeding, black cockatoos also generally forage within a 6 to 12 km radius of their nesting site (Commonwealth of Australia, 2012). According to available datasets, mapped potential black cockatoo feeding habitat is recorded within 12 kilometres of the application area, making it a suitable location for breeding if appropriate hollows are present. The application area is mapped within the predicted breeding and occurrence range for all three black cockatoo species (Commonwealth of Australia, 2012).

A site inspection undertaken by DWER officers identified one of the trees within the application area had a DBH greater than 500 millimetres, however no trees within the application area were observed to contain hollows (DWER, 2020). The Department of Biodiversity, Conservation and Attractions (DBCAs) also advised that one of the trees within the area may support features for

black cockatoo nesting and recommended that an assessment of hollows suitable for nesting black cockatoos be undertaken. A black cockatoo habitat assessment conducted by SW Environmental in April 2020 found that the marri tree within the application area was not of suitable DBH to produce nest hollows and that, while DBH was suitable, the flooded gum did not contain any hollows (SW Environmental, 2020). This survey also identified no evidence of roosting or foraging by any black cockatoo species within the application area at the time of the habitat assessment (SW Environmental, 2020). Given the trees within the application area do not contain suitable nest hollows, the proposed clearing is not likely to impact significant breeding or roosting habitat for black cockatoo species.

Black cockatoo species are noted to forage on a range of plant species, predominantly the seeds and flowers of marri (*Corymbia calophylla*), jarrah (*Eucalyptus marginata*) and proteaceous species (e.g. *Banksia* spp., *Hakea* spp. and *Grevillea* spp.) (Commonwealth of Australia, 2012). In the absence of these species, black cockatoos have also been observed to forage on the seeds of various *Eucalyptus* spp. (Commonwealth of Australia, 2012). As the application area consists of a marri tree and flooded gum and is mapped within 12 kilometres of known breeding sites, the application area may provide suitable foraging habitat for black cockatoo species. During the DWER site inspection, one marri nut with potential marks from black cockatoo foraging was observed within the road reserve (DWER, 2020). As assessed under Principle (e), remnant vegetation is extensively cleared in the local area and black cockatoo foraging habitat may also be limited, therefore it is likely that black cockatoo species are utilising the application area for foraging. However, given the extent of the proposed clearing, that suitable foraging habitat within the western side of the road reserve will be retained and that majority of remnant vegetation within the local area is mapped as suitable foraging habitat, the application area is not likely to comprise significant foraging habitat for black cockatoo species.

#### Western ringtail possum

The western ringtail possum is an arboreal folivore, associated with long unburnt mature remnant peppermint woodlands along the Swan Coastal Plain management zone from Mandurah to Augusta (DPAW, 2017). These woodlands are usually characterised by high canopy cover and connectivity, often growing near swamps and watercourses that offer more fertile conditions (DPAW, 2017). Throughout the range of the western ringtail possum, suitable habitat also includes marri and *Eucalyptus marginata* (jarrah) woodlands and other *Eucalyptus* dominated forests, that provide suitable foraging habitat and tree hollows for breeding and diurnal refuge (DPAW, 2017). Although the application area comprises marri and *Eucalyptus* woodland within a mapped wetland, canopy within the application area is sparse, providing little connectivity to surrounding suitable habitat or throughout the road reserve. Further, as noted above, no trees within the application area have been observed to contain hollows (SW Environmental, 2020), and the application area is not likely to contain suitable breeding or diurnal refuge sites for western ringtail possums. No evidence of western ringtail possums, i.e. scats or dreys, were observed during the DWER site inspection (DWER, 2020). Given the above and the extent of the proposed clearing, the application area is not likely to provide significant habitat for western ringtail possums.

As discussed in Principles (a) and (e), the application area is a remnant of native vegetation within an extensively cleared area. As remnant vegetation within the local area is limited, the application area may provide some linkage and refuge for fauna moving through the landscape. However, the extent of the proposed clearing is minimal, the vegetation within the application area is sparse and isolated from larger remnants of vegetation, the vegetation is considered to be in Completely Degraded (Keighery, 1994) condition, and the more vegetated side of the road reserve will be retained. On this basis, the proposed clearing is not likely to significantly impact fauna moving through the landscape.

Given the above, the application area is not likely to provide significant habitat for threatened fauna and is not likely to be significant as an ecological linkage for fauna moving through the landscape. Therefore, the proposed clearing is not likely to be at variance with this principle.

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

#### **Proposed clearing is not likely to be at variance with this principle**

As discussed under Principle (a), a review of available databases determined 17 threatened flora species have been recorded within the local area (Western Australian Herbarium, 1998-). None of these records occur within the application area. Based on the habitat preferences of the above species, including soil type, vegetation association and vegetation condition, the application area may contain suitable habitat for seven threatened flora species.

As discussed under Principle (a), a site inspection conducted by DWER officers observed that the application area consists of vegetation in Completely Degraded (Keighery, 1994) condition, devoid of any native mid- or understorey species (DWER, 2020). Accordingly, no individuals of any threatened flora species were observed to occur within the application area or adjacent roadside vegetation. Given that the proposed clearing will involve the removal of two isolated trees over a Completely Degraded (Keighery, 1994) understorey that has been subject to a high degree of disturbance from weed invasion, the application area is not considered likely to comprise significant habitat for any of the above threatened flora species.

Noting the above, the application area is not likely to include, or be necessary for the continued existence of, any threatened flora species, and the proposed clearing is not likely to be at variance with 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 with this principle**

As discussed under Principle (a), according to available databases, there are four state-listed TECs in the local area. The closest mapped TEC, Shrublands on southern Swan Coastal Plain Ironstones (Busselton area) (floristic community type 10b as originally described in Gibson et al. (1994)), occurs approximately 3.3 kilometres south-east of the application area, separated by previously cleared agricultural land. Given the distance and separation from the application area and the Completely Degraded (Keighery, 1994) condition of the vegetation, the application area is not likely to comprise the whole or a part of, or be necessary for the maintenance of a state-listed TEC.

Noting the above, the proposed clearing is not likely to be at variance with 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 at variance with 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 per cent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001).

The application area is located within the Swan Coastal Plain Interim Biogeographic Regionalisation of Australia (IBRA) Bioregion which retains approximately 38.6 per cent of its pre-European vegetation extent (Government of Western Australia, 2019). The mapped Swan Coastal Plain vegetation complex, Abba complex, retains 6.5 per cent of its pre-European extent within the Swan Coastal Plain IBRA Bioregion (Table 1). The Local Government area retains approximately 40.97 per cent of vegetation cover, while the local area retains approximately 14.3 per cent. Noting the current vegetation extent for both the Abba 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. Therefore, the proposed clearing is at variance with Principle (e).

It is noted that the application area includes species representative of the mapped Swan Coastal Plain vegetation complex, Abba complex. Noting that the pre-European vegetation extent of the Abba complex has been significantly reduced and that only 0.36 per cent of remaining vegetation mapped within this complex lies within conservation estate, occurrences of vegetation representative of the Abba complex is likely to be significant for its maintenance, and the clearing of vegetation representative of the Abba complex may be significant. However, the application area consists of isolated marri and flooded gum trees in Completely Degraded (Keighery, 1994) condition. Noting the above and that the application area comprises less than 0.001 per cent of the remaining vegetation mapped within the Abba complex the loss of these two trees is not considered to be a significant impact to this restricted vegetation complex.

**Table 1: Vegetation representation statistics (Government of Western Australia, 2018)**

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Current Extent in DBCA Managed Lands	
				(ha)	(%)
<b>IBRA Bioregion</b>					
Swan Coastal Plain	1,501,221.93	579,813.47	38.62	222,916.97	14.85
<b>Local Government Area</b>					
City of Busselton	146,478.41	60,013.68	40.97	68.96	28.25
<b>Swan Coastal Plain vegetation complex</b>					
Abba Complex	50,892.78	3,326.20	6.54	183.20	0.36
<b>Local Area</b>					
10 kilometre radius	24,770.20	3,538.81	14.29	-	-

**(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 at variance with this principle**

According to available databases, the application area is mapped within an unnamed multiple-use wetland and the Ruabon consanguineous wetland suite. While the application area is also adjacent to a non-perennial tributary of Buanyanyup River, located approximately 200 metres west of the application area, the application area does not intersect any natural source of surface water and is separated from the above-mentioned watercourse by previously cleared agricultural land. During the site inspection undertaken by DWER officers, one of the trees within the application area growing within a drainage line was identified as a flooded gum, typically associated with coastal winter-wet areas or riparian vegetation in swamps and wetlands (DWER, 2020). Given the application area is mapped within wetland suites and includes a riparian species, the vegetation proposed to be cleared may be growing in, or in association with, an environment associated with a watercourse or wetland.

Given the above, the proposed clearing is at variance with this principle. However, noting the extent of the proposed clearing, that the vegetation is in Completely Degraded (Keighery, 1994) condition and that the application area is separated from natural sources of surface water through previously cleared agricultural land, the proposed clearing is not anticipated to result in any long-term impact to the ecological values provided by the riparian vegetation communities associated with the watercourse or wetlands associated with the application area.



**(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 with this principle**

The soil type within the application area is mapped within the following systems:

- Abba flats Phase (213AbAB1), described as flats and low rises with sandy grey brown duplex (Abba) and gradational (Busselton) soils (DPIRD, 2017), and occupying approximately 75 per cent of the application area; and
- Abba wet flats Phase (213AbABw), described as wet flats and slight depressions with sandy grey brown duplex (Abba) and gradational (Busselton) soils (DPIRD, 2017), and occupying approximately 25 per cent of the application area.

As indicated in Table 2, the soil type mapped within the application area presents a low risk of land degradation resulting from wind erosion, water erosion, salinity, flooding, and phosphorous export. The application area is mapped at upwards of 50 per cent, high to extreme risk for subsurface acidification and waterlogging. However, given the extent of the proposed clearing, that adjacent vegetation on the more-vegetated western side of road reserve will be retained, and that the existing vegetation is in Completely Degraded (Keighery, 1994) condition, the proposed clearing is not considered likely to cause appreciable land degradation.

It is noted that vegetation within the adjacent road reserve is in predominantly Completely Degraded (Keighery, 1994) condition and has also been subject to significant weed invasion (DWER, 2020). Noting this, and that the application area is separated from larger remnants of vegetation by previously cleared agriculture land, the proposed clearing is not likely to cause land degradation through the spread of weeds and dieback.

Noting the above, the proposed clearing is not likely to be at variance with this principle.

**Table 2: Land degradation risk levels**

Risk categories	Abba flats Phase (213AbAB1)	Abba wet flats Phase (213AbABw)
Wind erosion	10-30% 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 high salinity risk or is presently saline	3-10% of map unit has a high salinity risk or is presently saline
Subsurface Acidification	>70% of map unit has a high subsurface acidification risk or is presently acid	>70% of map unit has a high subsurface acidification risk or is presently acid
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
Waterlogging	50-70% of map unit has a moderate to very high waterlogging risk	>70% of map unit has a moderate to very high waterlogging risk
Phosphorus export risk	10-30% of map unit has a high to extreme phosphorus export risk	10-30% of map unit has a high to extreme phosphorus export 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 with this principle**

According to available databases, the closest conservation area, Locke Nature Reserve, is located approximately 2.6 kilometres north of the application area. As discussed in Principles (a), (b) and (e), the application area may provide some linkage to local conservation area for fauna moving through the landscape, as remnant vegetation is limited within the local area. However, given the extent of the proposed clearing, that the application area is separated from Locke Nature Reserve through previously cleared agricultural land, and that the vegetation within the application area is sparse and in Completely Degraded (Keighery, 1994) condition, the proposed clearing is not likely to impact on the environmental values of any adjacent or nearby conservation area.

Given the above, the proposed clearing is not likely to be at variance with 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 with this principle**

The application area does not occur within a proclaimed surface water area and does not intersect with any natural source of surface water. The closest source of surface water, a non-perennial tributary of Buayanyup River, is located approximately 200 metres west of the application area, separated by previously cleared agricultural land. Given the extent of the proposed clearing and the separation from the nearest surface water source, the proposed clearing is not likely to cause deterioration in the quality of surface water.

Groundwater salinity within the application area is mapped at 500 to 1000 milligrams per litre total dissolved solids. The application area lies within the Busselton-Capel Groundwater Area, a groundwater area proclaimed under the *Rights in Water and Irrigation Act 1914* (the RIWI Act). Noting this, the extent of the proposed clearing, that adjacent vegetation on the more-

vegetated western side of road reserve will be retained, and that the vegetation is in Completely Degraded (Keighery, 1994) condition, the proposed clearing is not likely to cause deterioration in the quality of underground water.

Given the above, the proposed clearing is not likely to be at variance with 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 with this principle**

The mean annual rainfall for the local area is 900 millimetres, however, as discussed under Principle (g), the soil type within the application area is mapped as a low risk of flooding. Although the application area is mapped at upwards of 50 per cent, high to extreme risk for waterlogging, the extent of the proposed clearing is minimal, adjacent vegetation on the more-vegetated western side of road reserve will be retained and the vegetation is in Completely Degraded (Keighery, 1994) condition. Noting the above, the proposed clearing is not likely to cause, or exacerbate, the incidence or intensity of flooding.

The proposed clearing is not likely to be at variance with this principle.

**Planning instruments and other relevant matters.**

The clearing permit application was advertised on the Department of Water and Environmental Regulation's website on 28 January 2020, inviting submissions from the public within a 21 day period. No submissions were received in relation to this application.

There are no Aboriginal Sites of Significance mapped within the application area.

**4. References**

- City of Busselton (2019) Clearing permit application CPS 8764/1 and supporting information. DWER Ref: A1851806.
- City of Busselton (2020) Reduction in clearing area for clearing permit application CPS 8764/1. DWER Ref: A1886392.
- Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.
- Commonwealth of Australia (2012) EPBC Act referral guidelines for three threatened black cockatoo species, Canberra.
- Department of Biodiversity, Conservation and Attractions (2007-). NatureMap: Mapping Western Australia's Biodiversity. Department of Parks and Wildlife. Available from: <http://naturemap.dpaw.wa.gov.au/> (accessed February 2020).
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**5. GIS Datasets**

- Aboriginal Sites of Significance
- CAWS Clearing Control Catchments (DWER)
- DBCA Managed Estate
- Directory of Important Wetlands
- Geomorphic Wetlands Swan Coastal Plain
- Hydrography, hierarchy
- Hydrography, linear
- IBRA Vegetation Statistics
- Land Degradation datasets

- Local Planning Scheme – Zones and Reserves
- NatureMap
- Perth Groundwater Mapping (DWER)
- Remnant Vegetation
- SAC Bio Datasets
- Soil and Landscape Quality - Risks
- Soils, Statewide
- TPFL Data
- Swan Coastal Plain Vegetation Complexes
- WA Herbarium Data
- WA TEC/PEC Boundaries and Buffers