



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 7941/1
Permit Holder:	City of Busselton
Duration of Permit:	30 September 2018 to 30 September 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 road upgrades.

2. Land on which clearing is to be done

Yongarillup Road reserve (PIN 11472932), Sabina River

3. Area of Clearing

The Permit Holder must not clear more than 0.26 hectares of native vegetation within the area hatched yellow on attached Plan 7941/1.

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 3 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.

7. 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*:

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

8. Fauna Management

- (a) In relation to the area cross-hatched yellow on attached Plan 7941/1, the Permit Holder must engage a *fauna specialist* to inspect that area immediately prior to, and for the duration of clearing, for the presence of *Calyptorhynchus latirostris* (Carnaby's cockatoo), *Calyptorhynchus baudinii* (Baudin's cockatoo), *Calyptorhynchus banksii* subsp *naso* (forest red-tailed black cockatoo), *Phascogale tapoatafa* subsp. *wambenger* (South-western brush-tailed phascogale) and *Pseudocheirus occidentalis* (Western Ringtail Possum(s)).
- (b) Clearing must cease in any area where fauna referred to in condition 8(a) above are identified until either:
 - (i) the South-western brush-tailed phascogale and Western Ringtail Possum(s) individual has been removed by a *fauna specialist*; or
 - (ii) the South-western brush-tailed phascogale and Western Ringtail Possum(s) individual has moved on from that area to adjoining *suitable habitat*; or
 - (iii) where black cockatoos are identified in relation to condition 8(a) of this Permit, the Permit Holder shall ensure that no clearing of the identified *black cockatoo habitat tree(s)* occur until such time that the *black cockatoo* species listed in condition 8(a) are no longer utilising the *black cockatoo habitat tree(s)*.
- (c) Any Western Ringtail Possum or South-western brush-tailed phascogale individuals removed in accordance with condition 8(b)(i) of this Permit must be relocated by a *fauna specialist* to *suitable habitat*.
- (d) Where fauna is identified under condition 8(a) of this Permit, the Permit Holder must provide the following records to the *CEO* as soon as practicable:
 - (i) the number of individuals identified;
 - (ii) the date each individual was identified;
 - (iii) the location where each individual was identified 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;
 - (iv) the number of individuals removed and relocated;
 - (v) the date each individual was removed;
 - (vi) the date each individual was relocated;
 - (vii) the date the *black cockatoo habitat tree(s)* was no longer being utilised;
 - (viii) the location where each individual was relocated to, recorded using a GPS unit set to GDA94, expressing the geographical coordinates in Eastings and Northings or decimal degrees; and
 - (ix) details pertaining to the circumstances of any death of, or injury sustained by, an individual.

PART III - RECORD KEEPING AND REPORTING

9. 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 8 of this Permit;
 - (ii) actions taken to avoid, minimise and reduce the impacts and extent of clearing in accordance with condition 6 of this Permit;
 - (iii) actions taken to minimise the risk of the introduction and spread of *weeds* and *dieback* in accordance with condition 7 of this Permit
- (ii) concerning activities done by the Permit Holder under this Permit between 1 January and 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.

DEFINITIONS

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

black cockatoo habitat tree/s: means trees that have a diameter, measured at 1.5 metres from the base of the tree, of 50 centimetres or greater that contain hollows suitable for nesting by Carnaby's cockatoo, Baudin's cockatoo or Forest Red-tailed 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 who holds a tertiary qualification specializing in environmental science or equivalent, and has a minimum of 2 years work experience in fauna identification and surveys of fauna native to the region being inspected or surveyed, or who is approved by the CEO as a suitable fauna specialist for the bioregion, and who 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;

suitable habitat: means habitat known to support Western Ringtail Possums (*Pseudocheirus occidentalis*) and South-western brush-tailed phascogale (*Phascogale tapoatafa* subsp. *wambenger*) within the known current distribution of the species. For Western Ringtail Possums, this often includes stands of myrtaceous trees (usually Peppermint Tree (*Agonis flexuosa*)) growing near swamps, watercourses or floodplains, and at topographic low points which provide cooler, often more fertile, conditions. For South-western brush-tailed phascogale, this includes dry sclerophyll forests and open woodlands that contain hollow-bearing trees; and

weed/s means any plant -

(a) that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*; or

(b) published in a Department of Biodiversity, Conservation and Attractions Regional Weed Rankings Summary, regardless of ranking; or

(c) not indigenous to the area concerned.

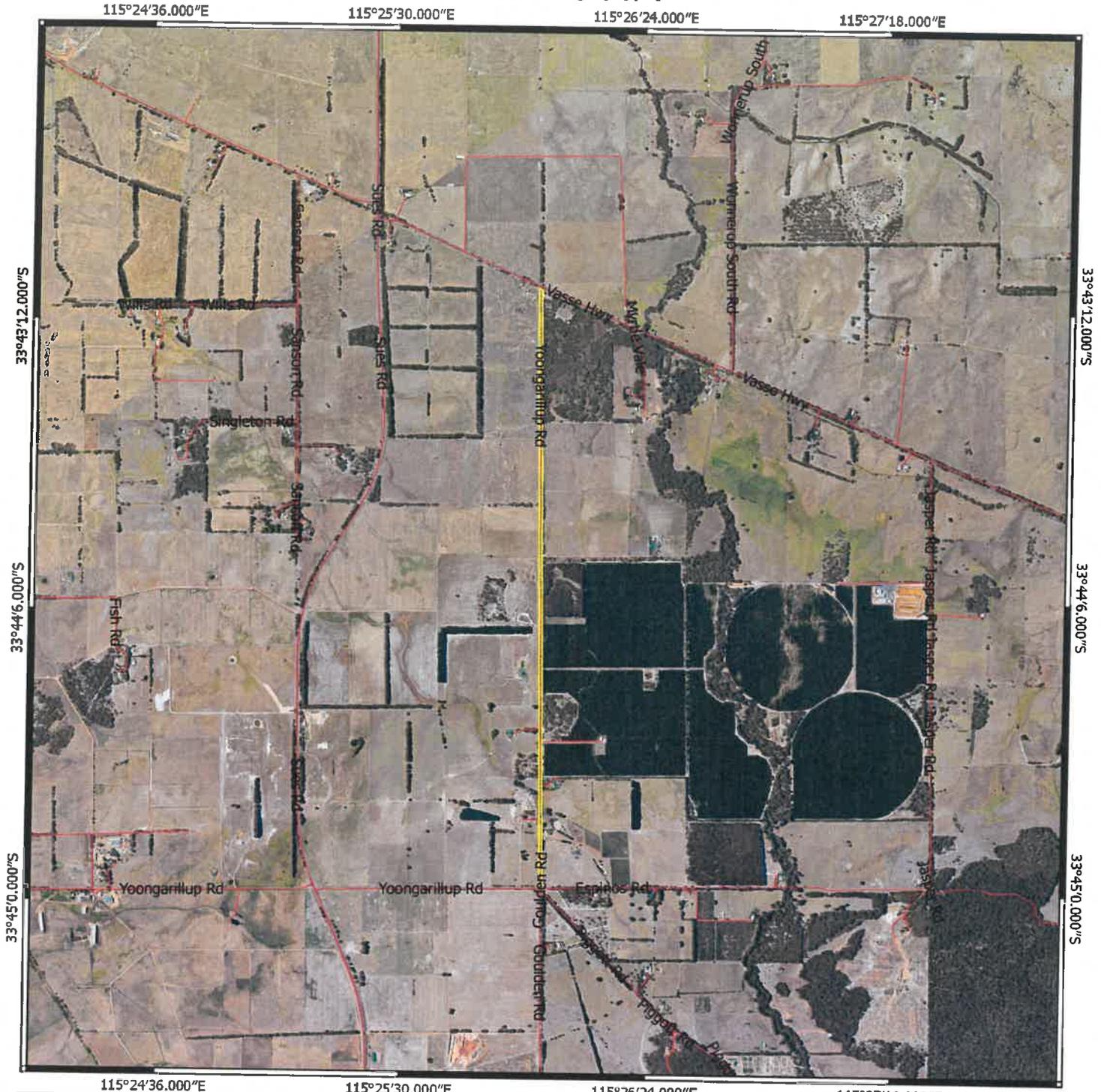


Mathew Gannaway
MANAGER
NATIVE VEGETATION REGULATION

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

22 August 2018

Plan 7941/1



Legend

 CPS areas approved to clear

 Roads

Wa Now



MGA 94
Geocentric Datum of Australia 1994

Mathew Connew Date 22/06/2016
Mathew Connew

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



GOVERNMENT OF
WESTERN AUSTRALIA

WA Crown Copyright 2016



1. Application details

1.1. Permit application details

Permit application No.: 7941/1
Permit type: Purpose Permit

1.2. Applicant details

Applicant's name: City of Busselton
Application received date: 10 January 2018

1.3. Property details

Property: Yoongarillup Road Reserve - 11472932
Local Government Authority: Busselton, City of
Localities: Sabina River

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	Purpose category:
0.26		Mechanical Removal	Road upgrades

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 22 August 2018

Reasons for Decision: The clearing permit application was received on 10 January 2018 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 principle (f), may be at variance to principle (b), and is not likely to be at variance to the remaining principles.

Through the assessment it was determined that the application area contains suitable foraging habitat for black cockatoos and western ringtail possums. The Delegated Officer noted that the small amount of clearing proposed was to occur selectively over a long, narrow 3.4 kilometre stretch of road, that the vegetation condition is in a degraded (Keighery, 1994) condition and that sufficient vegetation would remain in the reserve, so as not to significantly impact fauna habitat.

The Delegated Officer also took into consideration that the applicant significantly reduced the application area through modification of the proposed road upgrades from one hectare to 0.26 hectares as well as excused all potential breeding habitat, in order to minimise the impact to conservation significant fauna.

Through assessment it was determined that the application area is located adjacent to a federally listed threatened ecological community and conservation area. The proposed clearing may result in the spread of weeds and dieback into these conservation areas as well as remnant vegetation remaining in the road reserve. A weed and dieback management condition has been placed on the clearing permit to minimise this risk.

In determining to grant a clearing permit, the Delegated Officer determined that potential impacts to fauna species can be adequately minimised and/or avoided by imposing fauna management measures and 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 0.26 hectares of native vegetation within a 6.23 hectare footprint area within Yoongarillup Road reserve (PIN 11472932, Sabina River, for the purpose of road upgrades (Figure 1).

Vegetation Description The application area is mapped as Swan Coastal Plain vegetation complex 'Abba', 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 (Heddl et al., 1980).

Vegetation Condition Degraded; Structure severely disturbed; regeneration to good condition requires intensive management (Keighery, 1994).

The condition and description of the application area was determined via a fauna survey undertaken by SW Environmental and upon review of photographs provided by the applicant (SW Environmental, 2018; City of Busselton, 2018a).

Soil and landform type

Two landform soil and landform types have been mapped within the application area:

- Abba Complex: Winter wet flats and slight depressions with sandy grey brown duplex (Abba) and gradational (Busselton) soils.
- Abba Flats Phase: Flats and low rises with sandy grey brown duplex (Abba) and gradational (Busselton) soils (Schoknecht et al., 2004).

Comments

The local area considered in the assessment of this application is defined as a 10 kilometre radius measured from the perimeter of the application area.

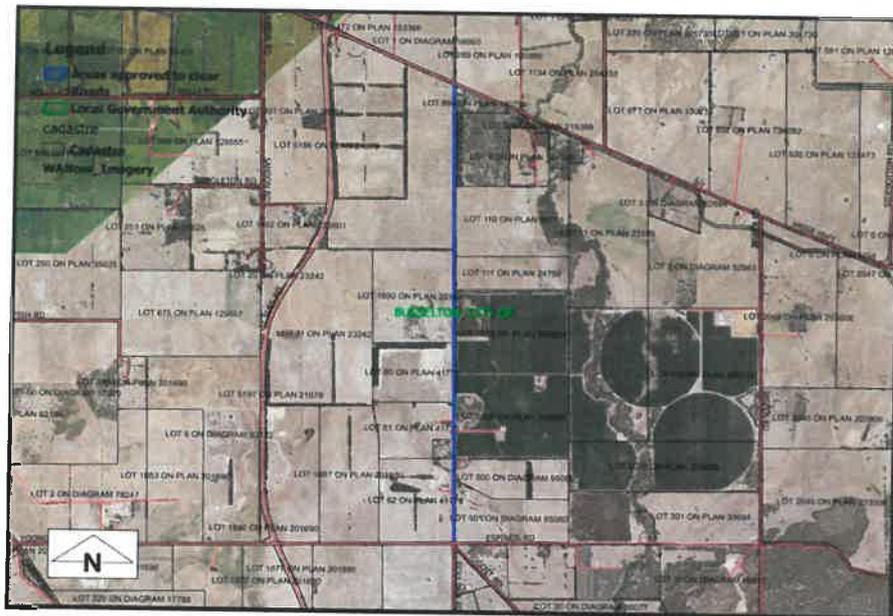


Figure 1: Application area cross hatched in blue.



Figure 2: Aerial photograph showing the northern end of the application area from 7.40 SLK to 8.57 SLK on Yoongarillup Road reserve (SW Environmental, 2018a).



Figure 3: Aerial photograph showing the application area from 6.9 SLK southwards on Yoongarillup Road reserve (SW Environmental, 2018a).

3. Minimisation and mitigation measures

The applicant initially applied to clear one hectare of native vegetation within a 6.23 hectare footprint area, whereby a preliminary assessment of that area identified the following impacts:

- the application area contains suitable foraging habitat for Carnaby's cockatoo (*Calyptorhynchus latirostris*), Baudin's cockatoo (*Calyptorhynchus baudinii*), forest red-tailed black cockatoo (*Calyptorhynchus banksii subsp. naso*), South-western brush-tailed phascogale (*Phascogale tapoatafa subsp. wambenger*) and western ringtail possum (WRP) (*Pseudocheirus occidentalis*).

- a small portion of the vegetation within the application area is located adjacent to a federally listed threatened ecological community (TEC);
- the application area includes the Abba vegetation complex that has been extensively cleared, whereby only 6.6 per cent of its pre-European extent remains; and
- the application area contributes towards an ecological linkage for fauna to move through the local area between remnants of native vegetation.

On 8 August 2018, the applicant amended the application area from one hectare to 0.26 hectares within a 6.23 hectare footprint area. The applicant advised that the amendment has avoided/minimised the above mentioned impacts via the following measures:

- the retention of all trees containing potential suitable breeding hollows for black cockatoos and South-western Brush-tailed Phascogale;
- reduced the extent of suitable foraging habitat for black cockatoos and western ringtail possums from one hectare to 0.26 hectares;
- the reduction in proposed clearing area maintains the ecological linkage; and
- reduced the potential risk of impact to the federally listed TEC by reducing the size of the proposed clearing to 0.26 hectares.

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

The applicant commissioned SW Environmental to undertake a fauna survey of the application area which was carried out on 8 May 2018 (SW Environmental, 2018). The fauna survey included up to four metres of the existing seal edge on both sides of the Yoongarillup Road reserve, between 5.15 SLK to 8.57 SLK (SW Environmental, 2018a).

The majority of the roadside vegetation within the application area comprises of one vegetation type, being a *Corymbia calophylla* woodland with emergent *Eucalyptus marginata* over scattered *Xanthorrhoea preissii* and *Kingia australis* over introduced weeds (SW Environmental, 2018; City of Busselton, 2018). There is extended sections of the road reserve that have no over-storey Eucalyptus species and only consist of *Xanthorrhoea preissii* and *Kingia australis* species over grassy weeds which is demonstrated in the centre of the photograph in Figure 2 (SW Environmental, 2018). The portion of the application area from 5.77 SLK of the Yoongarillup Road reserve to the south consists of predominately *Agonis flexuosa* and *Melaleuca raphiophylla* over introduced species (SW Environmental 2018; City of Busselton, 2018a). As shown in Figure 3, an extended section along the eastern side of the Yoongarillup Road reserve from 6.25 to 6.98 SLK is dominated by planted Eucalyptus Blue gums (SW Environmental, 2018).

According to available datasets there are records of 59 priority flora species within the local area (10 kilometre radius surrounding the application area). Noting that the application area is in a degraded (Keighery, 1994) condition, with invasive grasses that dominate the understorey, the proposed clearing is not likely to contain any priority flora species.

As assessed under Principle (b), the application area contains up to 0.26 hectares of foraging habitat for Carnaby's cockatoo, Baudin's cockatoo, forest red-tailed black cockatoo, South-western Brush-tailed Phascogale and WRP. Noting that most of the native vegetation within the road reserve will be retained and the proposal has been redesigned to avoid all hollow bearing trees, it is considered that the selective clearing of 0.26 hectares over a 3.4 kilometre stretch of the narrow road reserve is not likely to significantly impact upon foraging habitat for the fauna species described above.

As assessed under Principle (c), the application area is not likely to contain, or provide suitable habitat for any rare flora species recorded within the local area.

As discussed under Principle (d), a small portion of the application area is mapped adjacent to the 'Herb rich saline shrublands in clay pans' TEC. Noting that the applicant has reduced the application area to 0.26 hectares, the proposed clearing is not likely to significantly impact the vegetative buffer that adjoins this TEC. A weed and dieback condition has been placed on the permit to minimise the impacts of potential weed invasion through increased edge effects.

As discussed further in Principle (e), the current vegetation extent for the mapped Abba vegetation complex within the bioregion is well below the 30 per cent threshold. Noting that the vegetation under application is not representative of the Abba vegetation complex, the degraded (Keighery, 1994) condition of the application area and the small extent of the proposed clearing which is not likely to significantly impact upon fauna movement capabilities given the majority of the vegetation within the road reserve will be retained, the vegetation proposed to be cleared is not considered to be a significant remnant of native vegetation.

As discussed under Principle (h), the application area is located adjacent to Yoongarillup Reserve which is located on the Eastern side of the Yoongarillup Road on the Northern end of the application area. The disturbance caused by the proposed clearing may impact on the conservation values of the Yoongarillup Reserve and degrade the quality of the adjoining TEC vegetation through the increased risk of weeds and dieback spreading into these conservation areas. A weed and dieback condition has been placed on the permit to mitigate this risk.

Given the above, 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 may be at variance to this Principle

According to available databases, nine threatened fauna, five fauna protected under international agreement, one other specially protected fauna and six priority fauna have been recorded within 10 kilometres of the application area (DBCA, 2007-). Upon review of the habitat types under application as described under Principle (a), the application area has the potential to provide suitable habitat for five of the above mentioned species being, Carnaby's cockatoo, Baudin's cockatoo, the Forest Red-tailed black-cockatoo, South-western brush-tailed phascogale and WRP.

The fauna survey undertaken by SW Environmental incorporated a habitat tree survey which involved the identification of all potential habitat trees that occurred within the application area that have a Diameter at Breast Height (DBH) of over 500 millimetres (including those trees without hollows), to quantify the potential breeding habitat for the fauna species outlined above (SW Environmental, 2018a).

Carnaby's cockatoo, Baudin's cockatoo and Forest Red-tailed black cockatoo (collectively referred to as black cockatoos within the report) are classified as rare or likely to become extinct as Endangered fauna under the *Wildlife Conservation Act 1950*. Under the *Environment Protection and Biodiversity Conservation Act 1999*, the Carnaby's and Baudin's cockatoo are listed as Endangered and the Forest Red-tailed black cockatoo is listed as Vulnerable. 'Breeding habitat' for black cockatoos 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 DBH to develop a nest hollow. For most tree species, suitable DBH is 500 millimetres (Commonwealth of Australia, 2012).

The fauna survey carried out by SW Environmental identified forty-three potential habitat trees whereby the DBH was over 500 millimetres and where large hollows could develop in the future (SW Environmental, 2018a). Thirteen of the 43 potential habitat trees contained hollows that are potentially large enough for the western ringtail possum or South-western brush-tailed phascogale. Seven of the 43 potential habitat trees contained hollows large enough for black cockatoos to enter (>10 centimetre diameter), with only three trees containing large enough hollows (>20 centimetres) that are preferred by black cockatoo species (SW Environmental, 2018a). No evidence of actual use for breeding by black cockatoo species (past or present) was observed in the hollow bearing trees within the application area (SW Environmental, 2018a). The applicant has redesigned the proposed road reconstruction works in order to avoid the seven trees that contained hollows large enough for black cockatoos to enter (SW Environmental, 2018b). The revised application area will now only impact three large trees with a DBH of over 500 millimetres, which do not contain hollows. Noting that the proposed clearing will not impact upon any hollow bearing trees, the application area is not considered to represent significant breeding habitat for black cockatoo species.

Black cockatoos forage on the seeds, nuts and flowers of a large variety of plants including Proteaceous species (*Banksia*, *Hakea*, *Grevillea*), Eucalypts, *Corymbia* species and a range of introduced species (Valentine and Stock, 2008). The portions of the application area that contain *Corymbia calophylla* woodland are considered to provide suitable foraging habitat for the black cockatoos. Baudin's black cockatoo were observed within the application area as well as evidence of foraging (presence of chewed cones) during the fauna survey (SW Environmental, 2018a). Following the redesign of the proposed road reconstruction works and implementation of avoidance/mitigation measures, the fauna survey identified that the proposed clearing will impact upon 0.26 hectares of foraging habitat for black cockatoo species (SW Environmental, 2018b). Noting that most of the native vegetation within the road reserve will be retained and the avoidance of breeding habitat, it is considered that the selective clearing of 0.26 hectares over a 6.23 hectare footprint area would not significantly impact upon foraging habitat for black cockatoos that remains within the reserve. To minimise any potential impacts to individual black cockatoos, a fauna management condition requiring the presence of a fauna spotter will help mitigate any impacts.

The South-western brush-tailed phascogale preferred habitat in Western Australia is within dry sclerophyll forests and open woodlands that contain hollow-bearing trees. Noting the vegetation type under application, suitable habitat for this species occurs within the application area. However, noting that no hollow bearing trees are proposed to be cleared, and given the small scale of the clearing of 0.26 hectares which will be selectively cleared over a 3.4 kilometre stretch of road, it is not likely the application area represents significant habitat for the South-western Brush-tailed Phascogale.

Suitable habitat for WRP varies between land units, however commonly it includes suitable vegetation structures for protection and/or nesting, and canopy continuity to aid in avoidance and/or escape predation and other threats. Vegetation communities critical to WRP include long unburnt mature remnants of peppermint (*Agonis flexuosa*) woodlands with high canopy continuity and *Eucalyptus marginata* and *Corymbia calophylla* forests and woodlands with limited anthropogenic disturbance (unlogged or lightly logged, and a low intensity and low frequency fire history), that are intensively fox-baited and have low indices of fragmentation.

The *Corymbia calophylla* woodland and the section of the road reserve that consists of predominately *Agonis flexuosa* and *Melaleuca raphiophylla* is likely to provide suitable habitat for the WRP. The fauna survey undertaken by SW Environmental did not identify any WRP dreys within the application area (SW Environmental, 2018). While the application area contains suitable WRP habitat, noting that there was no confirmed WRP evidence observed during the fauna survey (no WRP dreys or scats), it is considered that the vegetation proposed for clearing does not provide significant habitat for WRP. Noting that a large amount of vegetation within the road reserve will be retained and all hollow bearing trees will be retained, it is considered that any local populations that may occur within the application area will be able to persist within the remaining vegetation. A fauna management condition will be placed on the permit to ensure that no WRP individuals are injured or killed during the clearing process.

As discussed under Principle (e), the local area has been extensively cleared. There are several remnant patches of native vegetation remaining within the local area and considering the position of the application area in relation to the remnants, the application area provides and contributes to ecological linkages in the local area that facilitate the movement of fauna within and

across the landscape. In consideration of the extent of the proposed clearing that is spread out selectively over a 3.4 kilometre stretch of road and that majority of the vegetation in the road reserve will be retained, it is considered that the impact on the functionality of this road reserve as an ecological linkage to support fauna habitat will be minimal.

The application area is located approximately 520 metres east of a South West Regional Ecological Linkage (Molloy et al., 2009). Noting the distance from the application area to this linkage, the proposed clearing is not likely to sever the linkage or its core values.

Given the above, the proposed clearing may 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 search of the Department of Biodiversity, Conservation and Attractions (DBCA's) rare flora database revealed that there are 19 species of rare flora mapped within the local area (10 kilometre radius). The closest rare flora species is mapped approximately 100 metres south of the application area. This species is a spreading or sprawling shrub that grows to between 0.4 to one metre high within sand, laterite soils (Western Australian Herbarium, 1998-). The record of this species was identified growing within pale coarse yellow sand over clay.

As described under Section 2, the majority of the application area is dominated by invasive grasses and lacks native understorey vegetation. DBCA have advised that given the degraded (Keighery, 1994) condition of the understorey, it is unlikely that significant populations of rare flora recorded within the local area will be present within the application area (DBCA, 2018).

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 may be at variance to this Principle

According to available datasets, a small portion of the application area that occurs on the Eastern side of the Road reserve adjacent to Yoongarillup Reserve, is mapped within the 'Herb rich saline shrublands in clay pans' TEC which is federally listed as 'Critically Endangered' and state listed as 'Vulnerable'.

This TEC is characterised as a woodland or herbland comprising of *Melaleuca* species and *Casuarina obesa* over a suite of herbs. As discussed under Principle (a), *Eucalyptus marginata/Corymbia calophylla* woodland with a few scattered *Agonis flexuosa* over *Xanthorrhoea preissii* is the dominant vegetation type within the application area, over an understorey dominated by introduced species in a degraded (Keighery, 1994) condition. Noting that the *Eucalyptus marginata/Corymbia calophylla* woodland is the dominant vegetation type, the application area is not considered to be representative of this TEC.

The roadside vegetation proposed for clearing currently provides a buffer to protect this TEC and other Federally listed TEC's further into the reserve (DBCA, 2018). Noting that the applicant has reduced the application area to 0.26 hectares, the proposed clearing is not likely to significantly impact the vegetative buffer that adjoins this TEC. The proposed clearing may indirectly impact the adjoining TEC through weed invasion by increased edge effects. A weed and dieback condition has been placed on the permit to minimise this potential impact.

Given the above, the proposed clearing may 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 per cent 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 Swan Coastal Plain Interim Biogeographic Regionalisation for Australia (IBRA) bioregion retains greater than 30 per cent of its pre-European extent (Government of Western Australia, 2018).

The remaining extent of native vegetation within mapped Abba vegetation complex within the IBRA bioregion is significantly below the minimum 30 per cent representation threshold, with approximately 6.6 per cent of its European extent remaining. The vegetation within the application area is not considered to be representative of the Abba vegetation complex. Given this, the degraded (Keighery, 1994) condition and extent of the vegetation proposed for clearing, the application area is not considered to be a significant remnant of native vegetation.

The local area retains approximately 32.6 per cent (12,459.60 hectares) vegetative cover within a 10 kilometre radius, and 23.69 per cent (2,674.10 hectares) vegetative cover within a five kilometre radius. Therefore, the application area falls within an extensively cleared landscape. However, noting that the majority of native vegetation will remain within the road reserve and is therefore not likely to significantly impact fauna movement across the landscape, all large hollow-bearing trees will be retained, and only selective minimal clearing will occur sporadically over a 6.23 hectare footprint area, the application area is not considered to be significant as a remnant of native vegetation.

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

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Current percentage remaining within all DBCA managed land* (%)	Extent remaining in all DBCA managed lands (proportion of Pre-European extent) (%)
IBRA Bioregion*					
Swan Coastal Plain	1,501,222	578,997	38.6	-	38.5
Vegetation complex in Bioregion*					
Abba	50,893	3,326	6.6	0.4	-

(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 to this Principle

According to available databases, a large portion of the application area is mapped within a Multiple-Use Palusplain wetland. A minor perennial watercourse also intersects the application area. The application area is also mapped approximately 565 metres east of a major river known as the 'Sabina River'.

The applicant advised that all culverts within the scope of the proposed road reconstruction works will be replaced as the majority of them are currently failing (City of Busselton, 2018). This includes the culvert drain that intersects the minor perennial watercourse located at the southern end of the application area. Noting the presence of the above mentioned hydrological features within the application area and the plant species that occur within the application area typically associated to wetland environments (*Melaleuca raphiophylla*), the proposed clearing is likely to impact upon riparian vegetation growing in association with a watercourse or wetland. However, noting the extent of the application area and that the existing culverts are being upgraded, it is not likely the proposed clearing will significantly impact upon riparian vegetation growing in association with the above mentioned hydrological features.

Given the above, the proposed clearing is 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

As described under Section 2, there are two soil and landform types mapped within the application area described as the following:

- Abba Complex: Winter wet flats and slight depressions with sandy grey brown duplex (Abba) and gradational (Busselton) soils; and
- Abba Flats Phase: Flats and low rises with sandy grey brown duplex (Abba) and gradational (Busselton) soils (Schoknecht et al., 2004).

Noting the degraded (Keighery, 1994) condition of the vegetation, small size of the application area, and that the proposed clearing will occur selectively over a 6.23 hectare footprint area, the proposed clearing is not likely to cause appreciable land degradation in the forms of salinity, wind or water erosion.

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

(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 adjacent to the Yoongarillup Reserve which is located on the Eastern side of the Yoongarillup Road on the Northern end of the application area. As discussed within Principle (d), the Herb rich saline shrublands in clay pans' TEC is associated with this Reserve. An un-named Nature Reserve that is managed for the purpose of 'Conservation of flora and fauna' is mapped 470 metres east of the application area. The Millbrook State Forest and Whicher National Park are located 1.3 kilometres South East and 2.2 kilometres East of the application area respectively.

The disturbance caused by the proposed clearing may impact on the conservation values of the Yoongarillup Reserve and degrade the quality of the adjoining TEC vegetation through the increased risk of weeds and dieback spreading into these conservation areas. However, noting the extent of the proposed clearing of 0.26 hectares that will selectively occur over a 3.4 kilometre stretch of road and will avoid the majority of the vegetation that adjoins the TEC and Reserve, it is not likely the proposed clearing will impact on the environmental values of this conservation area.

As discussed within Principles (b) and (e), the application area functions as an ecological linkage by providing connection between the Yoongarillup Reserve and between areas of remnant vegetation in the local area. Given the majority of the

vegetation within the Road reserve will be retained, and the small extent of the proposed clearing, the proposed clearing will not sever this connection, nor is it considered likely to impact on the environmental values of these areas.

A weed and dieback condition will be placed on the permit to mitigate the risk of weed and dieback being spread into this conservation area and to ensure the quality of the native vegetation that remains in the reserve is not degraded.

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 under Principle (f), the application area is mapped within a Multiple-Use Palusplain wetland and a minor non-perennial watercourse.

The proposed clearing may cause increased runoff and sedimentation into these watercourses. However, impacts to these hydrological features will be mitigated via the use of existing culverts which will be upgraded during the proposed works which will in turn manage surface water flow impacts. Given this, the impacts to surface water quality are likely to be short term and minimal.

Groundwater salinity over the application has been mapped between <500 and 1000 milligrams per litre per total dissolved solids. Noting the condition and extent of clearing, the proposed clearing is not likely to result in a significant rise in groundwater levels.

Given the above, the proposed clearing 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

The Department of Primary Industries and Regional Development has mapped the flood risk for the majority of the application area as 50 to 70 per cent of the map unit with a moderate to high flood risk (the second highest risk category), and a small portion as more than 70 per cent of the map unit as a moderate to high flood risk (the highest risk category) (Schoknecht et al., 2004). The mapped high level of flood risks are likely to be associated to the application area being mapped as Multiple-Use Palusplain wetland.

As discussed under Principle (g), the soils within the application area are mapped as 'Abba complex' and 'Abba Flats Phase' which comprise of sandy grey brown duplex (Abba) and gradational (Busselton) soils (Schoknecht et al., 2004). Although the application area has been mapped as a level of flood risk, it is unlikely the proposed clearing will cause or exacerbate flooding given the highly permeable soil types under application, vegetation condition, extent and linear shape of the application area, and the proposed clearing occurring along an existing road.

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

Planning instruments and other relevant matters.

The application area is located within the Busselton-Capel Groundwater Area as proclaimed under the *Rights in Water and Irrigation Act 1914*. The Department of Water and Environmental Regulation's (DWER) Water licencing section advised that any groundwater abstraction in this proclaimed area is subject to licensing, other than supply from the shallow water table (superficial aquifer) for domestic and non-intensive stock watering purposes (DWER, 2018a). DWER Water licencing advised that water to support the proposed clearing activities (such as dust suppression) may be sourced offsite (DWER, 2018a).

As part of the proposed road reconstruction works, the applicant proposes to upgrade the existing culverts that occur within the application area. DWER's water licencing section advised that a permit to interfere with bed and banks is not required for the interference to replace or repair culverts in unproclaimed RIWI surface water areas (DWER 2018b).

No Aboriginal sites of significance have been mapped within the application area.

The clearing permit application was advertised on the DWER website on 02 February 2018 with a 21 day submission period. No public submissions have been received in relation to this application.

5. Applicant's Submissions

On 26 April 2018, DWER wrote to the applicant inviting them to address the impacts identified in the preliminary assessment of the application as outlined under Section 3. The applicant submitted a final proposed road design that reduced the extent of clearing native vegetation from one hectare to 0.26 hectares which addressed the matters raised in the preliminary assessment. A fauna survey of the application area was also conducted and provided to DWER on 15 August 2018. The final design was based on the results of this survey, whereby all potential breeding habitat for conservation significant fauna will be avoided and impacts to foraging habitat now considered to be minimal.

6. References

City of Busselton (2018a) Supporting information (photographs of the application area) provided by the applicant in relation to clearing permit application CPS 7941/1. City of Busselton (DWER Ref: A1604955).

- City of Busselton (2018b) Correspondence with applicant regarding water licencing permits in relation to clearing permit application CPS 7941/1. City of Busselton (DWER Ref: A1710725).
- 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. Department of Sustainability, Environment, Water, Populations and Communities, Canberra.
- Department of Biodiversity, Conservation and Attractions (2018) Regional advice received in relation to clearing permit application CPS 7941/1, received 21 March 2018, Department of Biodiversity, Conservation and Attractions, Western Australia (DWER Ref: A1650819).
- Department of Biodiversity, Conservation and Attractions (DBCA) (2007-) NatureMap: Mapping Western Australia's Biodiversity. Department of Environment and Conservation. URL: <http://naturemap.dec.wa.gov.au/>. Accessed 17/08/2018
- Department of Water and Environmental Regulation (DWER) (2018a) Water licencing advice received from DWER South West Region for clearing permit application CPS 7941/1, received 1 February 2018, Department of Environment and Regulation, Western Australia (DWER Ref: A1604955).
- Department of Water and Environmental Regulation (DWER) (2018b) Water licencing advice received from DWER South West Region for CPS 7941/1, received 8 August 2018, Department of Environment and Regulation, Western Australia (DWER Ref: A1710775).
- Government of Western Australia (2018) 2017 *Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report)*. Current as of December 2017. WA Department of Biodiversity, Conservation and Attractions.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Molloy, S., Wood, J., Hall, S., Wallrodt, S. and Whisson, G. (2009) *South West Regional Ecological Linkages Technical Report*. Western Australian Local Government Association (WALGA) and Department of Environment and Conservation (DEC), Perth.
- Schoknecht, N., Tille, P. and Purdie, B. (2004) Soil-landscape mapping in South-Western Australia – Overview of Methodology and outputs' Resource Management Technical Report No. 280. Department of Agriculture.
- Shepherd, D.P., Beeston, G.R. and Hopkins, A.J.M. (2001) Native Vegetation in Western Australia, Extent, Type and Status. Resource Management Technical Report 249. Department of Agriculture, Western Australia.
- SW Environmental (2018a) RE: (SW174) Yoongarillup Road (5.15-8.57SLK), Sabina River: EPBC Act referral advice for black cockatoos and WRP. SW Environmental, Dunsborough, Western Australia (DWER Ref: A1710725).
- SW Environmental (2018b) (SW174) Yoongarillup Road (5.15-8.57SLK), Sabina River: Habitat tree survey. SW Environmental, Dunsborough, Western Australia (DWER Ref: A1712328).
- Western Australian Herbarium (1998-) FloraBase - The Western Australian Flora. Department of Parks and Wildlife. <http://florabase.dpaw.wa.gov.au/> (Accessed 17/08/2018).
- Valentine, L.E. and Stock, W. (2008) Food Resources of Carnaby's Black Cockatoo (*Calyptorhynchus latirostris*) in the Gnaragara Sustainability Strategy Study Area. Edith Cowan University and Department of Environment and Conservation. December 2008.

GIS Database:

- Remnant vegetation
- SAC bio datasets (accessed August 2018)
- Pre-European Vegetation
- Hydrography, linear
- Soils, statewide
- Groundwater salinity, statewide
- Land Degradation datasets
- DPaW estate
- Aboriginal Sites of Significance