



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: 8781/1
File Number: DWERVT5130
Duration of Permit: From 9 May 2020 to 9 May 2022

PERMIT HOLDER

Shire of Augusta Margaret River

LAND ON WHICH CLEARING IS TO BE DONE

Brockman Road Reserves (PINs 11670459 and 11428670), Cowaramup
Curtis Road Reserve (PIN 11428671), Cowaramup
Miami Road Reserve (PIN 11670460), Cowaramup

AUTHORISED ACTIVITY

The Permit Holder shall not clear more than 0.062 hectares of native vegetation within the areas cross-hatched yellow on attached Plan 8781/1a.

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. 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 known *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.

3. Flora management

Prior to undertaking any clearing authorised under this permit, the Permit Holder shall:

- (a) construct a temporary fence of the area hatched red on attached Plan 8781/1b, separating the clearing area and restricting access to adjoining bushland and all *priority flora* individuals other than those listed below; and
- (b) ensure that clearing of *priority flora* is limited to four individuals of *Grevillea brachystylis* subsp. *brachystylis* (P3) within the areas cross-hatched yellow on attached Plan 8781/1a.

4. Fauna management – western ringtail possum

- (a) In relation to the area cross-hatched red on attached Plan 8781/1, the Permit Holder must engage a *western ringtail specialist* to inspect that area, including all trees and tree hollows present, within 24 hours prior to, and for the duration of clearing, for the presence of (*Pseudocheirus occidentalis*) western ringtail possum(s).
- (b) Clearing must cease in any area where fauna referred to in condition 4(a) above are identified until either:
 - (i) the western ringtail possum(s) individual has moved on from that area to adjoining *suitable habitat*; or
 - (ii) the western ringtail possum(s) individual has been removed by a *western ringtail possum specialist*.
- (c) Any western ringtail possum (*Pseudocheirus occidentalis*) individuals removed in accordance with condition 4(b)(ii) of this Permit must be relocated by a *western ringtail possum specialist* to *suitable habitat*.
- (d) Where fauna is identified under condition 4(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 relevant qualifications of the *western ringtail possum specialist* undertaking removal and relocation;
 - (vi) the date each individual was removed;
 - (vii) the method of removal;
 - (viii) the date each individual was relocated;
 - (ix) 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
 - (x) details pertaining to the circumstances of any death of, or injury sustained by, an individual.

5. 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;
- (e) actions taken to minimise the risk of the introduction and spread of *dieback* and *weeds* in accordance with condition 2 of this Permit;
- (f) actions taken in accordance with condition 3 of this Permit; and
- (g) actions taken in accordance with condition 4 of this Permit.

6. Reporting

The Permit Holder must provide to the *CEO* the records required under condition 5 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*;

dieback means the effect of *Phytophthora* species on native vegetation;

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;

priority flora means those plant taxa described as priority flora classes 1, 2, 3 or 4 in the *Department of Parks and Wildlife's Threatened and Priority Flora List for Western Australia* (as amended);

suitable habitat means habitat known to support western ringtail possums (*Pseudocheirus occidentalis*) within the known current distribution of the species, typically characterised by abundant foliage, presence of suitable nesting structures such as tree hollows, as well as high canopy cover and continuity. Known habitat includes peppermint (*Agonis flexuosa*) dominated woodlands, jarrah (*Eucalyptus marginata*) and marri (*Corymbia calophylla*) forests, riparian vegetation with a canopy of Bullich (*Eucalyptus megacarpa*) or flooded gum (*Eucalyptus rudis*), karri (*Eucalyptus diversicolor*) forests, Sheoak (*Allocasuarina fraseriana*) dominated woodlands, and other stands of myrtaceous trees growing near swamps, watercourses or floodplains;

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.

western ringtail possum specialist means a person who holds a tertiary qualification specialising in environmental science or equivalent, has a minimum of two years work experience in western ringtail possum (*Pseudocheirus occidentalis*) identification, surveys of western ringtail possums and capture and handling of western ringtail possums, and holds a valid fauna licence issued under the *Biodiversity Conservation Act 2016*.



Samara Rogers
MANAGER
NATIVE VEGETATION REGULATION

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

17 April 2020

Plan 8781/1a

115°5'50.604"E

115°5'53.160"E

115°5'55.716"E

115°5'58.272"E

33°50'48.804"S

33°50'51.576"S

33°50'54.348"S

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Legend

CPS layers

 CPS areas approved to clear

base layers

 Road Centrelines

LGA Boundaries (LGATE-233)

N



0 25 50 75 100 m



Officer delegated under section 20 of the
Environmental Protection Act 1986



GOVERNMENT OF
WESTERN AUSTRALIA

Plan 8781/1b

115°5'50.604"E

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Legend

CPS layers

-  CPS areas approved to clear
-  CPS subject to conditions

base layers

-  Road Centrelines

LGA Boundaries (LGATE-233)

N



0 25 50 75 100 m



Officer delegated under section 20 of the
Environmental Protection Act 1986



GOVERNMENT OF
WESTERN AUSTRALIA



1. Application details

Permit application details

Permit application No.: 8781/1
Permit type: Area Permit

Applicant details

Applicant's name: Shire of Augusta Margaret River
Application received date: 6 January 2020

Property details

Property: Brockman Road reserve (PIN 11670459 and PIN 11428670), Cowaramup
Curtis Road reserve (PIN 11428671), Cowaramup
Miamiup Road reserve (PIN 11670460), Cowaramup

Local Government Authority: Shire of Augusta Margaret River
Localities: Cowaramup

Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
0.062		Mechanical	Road upgrades to improve road safety

Decision on application

Decision on Permit Application: Grant

Decision Date: 17 April 2020

Reasons for Decision:

The clearing permit application has been assessed against the clearing principles, planning instruments and other matters in accordance with section 51O of the *Environmental Protection Act 1986*. It has been concluded that the proposed clearing may be at variance with Principles (a) and (b), and is not likely to be at variance with any of the remaining clearing principles.

Through assessment it has been determined that the proposed clearing will result in impacts to a small number of individuals of *Grevillea brachystylis* subsp. *brachystylis*, a Priority 3 flora species. While impacts of the proposed clearing to the overall population are considered minimal, a flora management condition requiring the extent of clearing to be marked by temporary fencing that restricts access to adjoining bushland and individuals adjacent to the application area, has been applied to further minimise this risk.

The assessment also identified that, while the application area is not likely to comprise significant habitat for fauna species, the proposed clearing has the potential to impact individual western ringtail possums utilising the area at the time of the proposed clearing. A fauna management condition requiring the inspection of suitable habitat prior to clearing is considered to mitigate any indirect impacts to western ringtail possums.

During the assessment it was identified that the proposed clearing may facilitate the spread of weeds and dieback into adjacent native vegetation. A weed and dieback management condition has been applied to minimise this risk.

In determining to grant a clearing permit subject to avoid and minimise, weed and dieback, flora management, and fauna management 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 0.062 hectares of native vegetation within Brockman Road reserve (PIN 11670459 and PIN 11428670), Curtis Road reserve (PIN 11428671) and Miamiup Road reserve (PIN 11670460), Cowaramup, for the purpose of road upgrades to improve road safety.

Vegetation Description

The vegetation within the application area is mapped within the South West vegetation complex Cowaramup, C2 complex, described as open forest of *Eucalyptus marginata* subsp. *marginata-Corymbia calophylla-Banksia grandis* on lateritic uplands in perhumid and humid zones (Mattiske and Havel, 1998).

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 application area consists predominantly of a canopy of *Corymbia calophylla* (marri) interspersed with sparse *Eucalyptus marginata* (jarrah) and introduced *Eucalyptus* sp., with a mid-storey of *Leptospermum* sp. (tea trees) over a *Pteridium esculentum* (bracken fern) dominated understorey (DWER, 2020; Shire of Augusta Margaret River, 2020). The application area has a fairly diverse mid- and understorey but has been subject to some weed invasion, where weed cover comprises approximately 25 per cent for the majority of the application area, with the exception of road edges that are dominated by weedy grasses (DWER, 2020).

Vegetation Condition

The condition of the vegetation within the application area ranges from Very Good to Good (Keighery, 1994) condition, defined as:

- Very Good: Vegetation structure altered, obvious signs of disturbance (Keighery, 1994); and
- Good: Vegetation structure significantly altered with obvious signs of multiple disturbance. Retains basic vegetation structure or ability to regenerate (Keighery, 1994).

Vegetation condition was considered Good (Keighery, 1994) along the edges of the application area and for the north-eastern portion of the application area (DWER, 2020). The remaining vegetation in the application area, in particular the southern border, is considered to be in Very Good (Keighery, 1994) condition (DWER, 2020).

Soil Type:

The soil type within the application area is mapped within the Cowaramup flats Phase (216CoCO1), described as flats (0-2% gradient) with gravelly duplex (Forest Grove) and pale grey mottled (Mungite) soils (DPIRD, 2017).

A site inspection conducted by DWER officers identified that the application area occurs on slightly sloping topography, where the north eastern portion application area comprised gravelly loam soils and the southwestern portion of the application area comprised gravelly sands (DWER, 2020).

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 application area (DWER, 2020).

3. Avoidance and minimisation measures

The Shire of Margaret River (the Shire) has advised that measures have and will be taken to avoid and minimise the clearing of native vegetation wherever possible (Shire of Augusta Margaret River, 2020). Where possible, the Shire has advised that retrenchment pruning will be undertaken as an alternative to clearing in order to maintain road safety, while minimising tree removal (Shire of Augusta Margaret River, 2020).

The Shire has also advised that the clearing envelope and marri trees to be removed will be clearly marked to ensure that any direct disturbance will occur within the defined clearing boundaries only (Shire of Augusta Margaret River, 2020). Further, the Shire has proposed pre-start inductions for all project staff and contractors to include a briefing on the importance of the area for significant flora (specifically *Grevillea brachystylis* subsp. *brachystylis*) and on the requirement to restrict disturbance to the defined clearing envelope (Shire of Augusta Margaret River, 2020).

The Shire has also advised dieback and weed control measures will be implemented during operations (Shire of Augusta Margaret River, 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 may be at variance with this principle

A review of available databases determined that a total of 32 threatened or priority flora have been recorded within the local area, comprising one Priority 1 (P1) flora, six Priority 2 (P2) flora, 16 Priority 3 (P3) flora, eight Priority 4 (P4) flora, and one threatened flora (Western Australian Herbarium, 1998-). Based on the habitat preferences of the above species, including soil type and vegetation association, the application area may contain suitable habitat for 15 threatened or priority flora species.

Supporting information provided by the applicant and advice received from the Department of Biodiversity Conservation and Attractions (DBCA) indicated that a population of *Grevillea brachystylis* subsp. *brachystylis* (P3) had been identified within the application area and surrounding bushland during DBCA surveys in 2016 (DBCA, 2020; Shire of Augusta Margaret River, 2020). DBCA advised that the identification of this species has not been fully determined, and that it is possible the individuals identified within the area are *Grevillea bronwenae* (P3) rather than *Grevillea brachystylis* subsp. *brachystylis* (DBCA, 2020).

DBCA indicated that the occurrence of either species at the location is of conservation significance, due to the distance from their known areas of occurrence and that, given the taxonomically difficult populations on the Blackwood Plateau landform, they may represent a restricted and undescribed species (DBCA, 2020). DBCA also advised that at the time of the 2016 survey, over 100 individuals were identified within the larger bushland area, of which 4 individuals are mapped within the current proposed clearing area (DBCA, 2020). Further, these species are fairly well-recorded within the local area, with *Grevillea brachystylis* subsp. *brachystylis* known from 38 records from Ludlow to Schroeder, while *Grevillea bronwenae* is known from 39 records from The Plains to Rosa Glen (Western Australian Herbarium, 1998-). DBCA advised that as impact to the *Grevillea* population within the application area is likely to be minimal, the proposed clearing is not likely to present a significant impact to the present population or to the continued existence of either *Grevillea brachystylis* subsp. *brachystylis* or *Grevillea bronwenae* (DBCA, 2020). DBCA advised that indirect impacts of the proposed clearing to adjoining vegetation may represent a significant impact to the population, and recommended that contractors be well-managed and that the extent of the proposed clearing is clearly marked for the duration of works, to insure indirect impacts to adjoining vegetation from material storage, machinery, and vehicles is avoided (DBCA, 2020). A flora management condition, requiring the extent of clearing to be marked by temporary fencing that restricts access to adjoining bushland and individuals adjacent to the application area, will mitigate indirect impacts to adjacent native vegetation and priority flora.

Noting the above, the surveys conducted by DBCA in 2016 and a site inspection undertaken by DWER officers identified no other threatened or priority flora within the application area (DBCA, 2020; DWER, 2020). Given the extent of the proposed clearing, that the area has been subject to disturbance due to weed invasion and use by local residents, and that no other priority species have been identified within the application area, the proposed clearing is not considered likely to result in significant impacts to any priority flora species. As assessed under Principle (c), the application area is also not likely to contain significant habitat for the one threatened flora species recorded within the local area. However, the DWER site inspection identified a fairly high level of diversity of mid- and understorey species within the application area (DWER, 2020). While the application area may comprise high floristic diversity, the extent of the proposed clearing is small, the area has been subject to disturbance particularly along the road edges, and the application area forms the northernmost border of a larger bushland remnant with similar floristic composition (DWER, 2020). Noting this, it is unlikely that the proposed clearing will significantly reduce floristic diversity within the existing remnant or the local area. Given the above, the application area is not likely to comprise significant habitat or to be necessary for the continued existence of any threatened or priority flora, but will result in minimal impacts to individuals of a priority flora species and may comprise a high level of floristic diversity.

According to available databases, there are no mapped state-listed threatened ecological communities (TECs) within the local area. Four state-listed priority ecological communities (PECs) are mapped within the local area. The closest PEC, Shrublands of near permanent wetlands in creeklines of the Whicher Scarp (Whicher Scarp community G2), occurs approximately 7.9 kilometres north-east of the application area. Given the distance and separation from local TECs and PECs, 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 or PEC.

The north-eastern portion of the application area intersects a mapped ecological linkage defined by the South West Region Ecological Linkage (SWREL) Report (Molloy et al., 2009). However, as discussed above, the application area forms the northernmost border of a larger bushland remnant, and borders an existing road that intersects the above ecological linkage. Noting that the proposed clearing will widen the existing road by no more than five metres, it is not expected that the proposed clearing will significantly reduce connectivity along the mapped ecological linkage. Further, noting the extent of the proposed clearing, the loss of vegetation within the application area will not sever connectivity within the larger bushland remnant and is not expected to impact dispersal of species through local bushland remnants or the local area.

As assessed under Principle (b), the application area may provide suitable habitat for six threatened or priority fauna species; *Calyptorhynchus banksii naso* (forest red-tailed black cockatoo), *Calyptorhynchus baudinii* (Baudin's cockatoo), *Calyptorhynchus latirostris* (Carnaby's cockatoo), *Isoodon fusciventer* (quenda), *Phascogale tapoatafa wambenger* (south-western brush-tailed phascogale) and *Pseudocheirus occidentalis* (western ringtail possum). A DWER site inspection identified that the application area is likely to be utilised by black cockatoo species (Baudin's cockatoo, Carnaby's cockatoo, and forest red-tailed black cockatoo) and the western ringtail possum. However, noting the extent of the proposed clearing, that adjoining larger bushland remnants containing suitable habitat will be retained, and that the application area is disturbed from use by local residents, the proposed clearing is not considered likely to impact significant habitat for any of the above threatened or priority fauna species.

Given the application area may comprise a high level of floristic diversity, includes individuals within a population of a priority flora species, and includes suitable habitat for threatened fauna species, the proposed clearing may be at variance with this principle.

Flora and fauna management conditions on the permit will minimise indirect impacts.

(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 may be at variance with this principle

A total of 28 threatened or priority fauna have been recorded within the local area, including 15 threatened fauna, five priority fauna, six species protected under international agreement and one other specially protected fauna species (DBCA, 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 six of the above threatened or priority fauna species; Baudin's cockatoo, Carnaby's cockatoo, the forest red-tailed black cockatoo, quenda, south-western brush-tailed phascogale and the western ringtail possum.

Black cockatoo species

'Breeding habitat' for black cockatoo species 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 the application area and surrounding bushland, making it a suitable location for breeding if appropriate hollows are present.

Supporting information provided by the applicant and a site inspection undertaken by DWER officers identified that the proposed clearing will include the removal of six marri trees, all of DBH less than 500 millimetres, as well as one jarrah tree with a DBH of approximately 100 millimetres (DWER, 2020; Shire of Augusta Margaret River, 2020). Noting the above, it is not considered likely that trees within the application area provide suitable or significant breeding or roosting habitat for black cockatoo species. This is consistent with advice received from DBCA, which noted that the trees proposed for clearing are unlikely to be of a size suitable to provide breeding habitat (DBCA, 2020).

Black cockatoo species are noted to forage on a range of plant species, predominantly the seeds and flowers of marri, jarrah and proteaceous species (e.g. *Banksia* spp., *Hakea* spp. and *Grevillea* spp.) (Commonwealth of Australia, 2012). As the application area consists of marri and jarrah, and is mapped within 12 kilometres of known breeding sites, the application area is likely to provide suitable foraging habitat for black cockatoo species. The DWER site inspection identified historical evidence of black cockatoo foraging within the application area, in the form of chewed marri nuts (DWER, 2020). Given the above and advice received from DBCA, it is likely that black cockatoo species are utilising the area for foraging (DBCA, 2020; DWER, 2020). Noting that mapped potential feeding habitat is abundant within the local area and suitable foraging habitat within the adjoining bushland remnant will be retained. Noting the above and the extent of the proposed clearing, the application area is not likely to comprise significant foraging habitat for black cockatoo species.

Quenda

Quenda are ground-dwelling marsupials, typically associated with forest or woodlands near watercourses, where understorey consists of dense scrub and leaf litter is abundant (DEC, 2012a). Given the application area consists of woodland vegetation, in Good to Very Good (Keighery, 1994) condition, with diverse ground cover of predominantly bracken fern, the application area may contain suitable habitat for quenda. The DWER site inspection identified a burrow within the application area, however the size and shape of the burrow was not consistent with the small, cone-shaped burrows produced by quenda, and was more likely a rabbit warren (DWER, 2020). Further, given the extent of the proposed clearing, that suitable habitat is abundant in the local area and that individuals will be able to disperse into the adjoining suitable bushland remnant if present at the time of clearing, the application area is not likely to comprise significant habitat for quenda.

South-western brush-tailed phascogale

The south-western brush-tailed phascogale is an arboreal dasyurid, associated with dry sclerophyll forests and open woodlands that contain hollow-bearing trees, characterised by high canopy cover and connectivity (DEC, 2012b). Given the application area comprises a canopy of marri and jarrah that is well-connected, both within the road reserve and to adjacent bushland remnants, the application area may provide suitable habitat for the south-western brush-tailed phascogale. However, as discussed above, the seven trees proposed to be cleared do not contain hollows and a DWER site inspection identified no signs of south-western brush-tailed phascogales (DWER, 2020). Given the application area does not include hollow-bearing trees, it is unlikely that the application area comprises suitable habitat for the south-western brush-tailed phascogale. Further, the extent of the proposed clearing is minimal, the proposed clearing does not impact canopy connectivity or ecological linkages within local bushland, and suitable habitat is abundant within adjoining bushland, allowing individuals to disperse if present at the time of clearing. Given the above, the application area is not likely to comprise significant habitat for south-western brush-tailed phascogales.

Western ringtail possum

The western ringtail possum is an arboreal foliovore, associated with long unburnt mature remnant peppermint woodlands along the Swan Coastal Plain management zone from Mandurah to Augusta, characterised by high canopy cover and connectivity (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 with appropriate canopy, that provide suitable foraging habitat and tree hollows for breeding and diurnal refuge (DPAW, 2017). Given the application area comprises a canopy of marri and jarrah that is well-connected, both within the road reserve and to adjacent bushland remnants, the application area may provide suitable habitat for western ringtail possums. Western ringtail possums also utilise dreys for diurnal refuge in the absence of tree hollows (DPAW, 2017), therefore, although the application area does not include any hollow-bearing trees, it may still provide suitable diurnal refugia, foraging and breeding habitat for the species.

The DWER site inspection identified western ringtail possum scats in the north-eastern portion of the application area, indicating that the application area is being utilised by the species (DWER, 2020). The site inspection did not identify any dreys within the application area (DWER, 2020). As any areas where the western ringtail possum occurs naturally are considered critical habitat for the species and worthy of protection (DPAW, 2017), the proposed clearing may result in the loss of significant habitat for western ringtail possums. However, noting the application area does not include hollow-bearing trees or dreys, the extent of the proposed clearing, that suitable habitat is abundant within adjoining bushland, and that the proposed clearing does not impact canopy connectivity or ecological linkages within local bushland, impacts to western ringtail possums are likely to be minimal. This is consistent with advice received from DBCA, which advised that, given the relatively small extent of the clearing, it is likely that individual possums will be able to disperse into the adjoining remnant vegetation if present (DBCA, 2020). However, DBCA also advised that trees should be fallen in a manner that allows for western ringtail possum dispersal, and recommended the presence of a fauna specialist at the time of clearing to ensure this occurs (DBCA, 2020). Noting the above, and that it is possible western ringtail possums will be utilising the area at the time of the proposed clearing, a fauna management condition requiring inspection of trees for western ringtail possums prior to any clearing is considered to minimise potential risk to individuals.

As discussed under Principle (a), while the application area is mapped within a south-west ecological linkage, the application area forms the northernmost border of a larger bushland remnant, and borders an existing road. Noting this and the extent of the proposed clearing, the loss of vegetation within the application area is not likely to impact this linkage or reduce connectivity within the larger bushland remnant or the local area. Therefore, the application area is not likely to be significant in facilitating fauna dispersal through the local area and the proposed clearing is not likely to significantly impact fauna moving through the landscape.

Given the proposed clearing may indirectly impact western ringtail possums, if individuals are utilising the application area at the time of clearing, the proposed clearing may 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 in Principle (a), a review of available databases determined one threatened flora species has been recorded within the local area; *Caladenia excelsa* (Western Australian Herbarium, 1998-). *Caladenia excelsa*, known from 64 records from Busselton to Augusta, is a tuberous perennial herb with green, white and red flowers, typically associated with low forest dominated by *Eucalyptus* sp. with *Agonis flexuosa* (peppermint), *Banksia* sp. and *Allocasuarina* sp. (Sheoak) over heath, in brown to grey sandy soils (Western Australian Herbarium, 1998-). Given the above, the application area may contain suitable habitat for *Caladenia excelsa*.

No records of any threatened flora occur within the application area. Further, flora surveys conducted by DBCA in 2016 within the application area and surrounding bushland, and a site inspection undertaken by DWER officers identified no threatened flora within the application area or adjacent vegetation (DBCA, 2020; DWER, 2020). Noting this, the number of records of the species in the local area, the extent of the proposed clearing, and the level of disturbance in the application area due to weed invasion and use by local residents, the application area is not likely to contain significant habitat or be necessary for the continued existence of *Caladenia excelsa*.

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

According to available databases, there are no mapped state-listed TECs in the local area. The closest mapped TEC, Shrublands on the southern Swan Coastal Plain Ironstones (Busselton Area) (floristic community type 10b as originally described in Gibson et al. 1994), occurs approximately 11.8 kilometres east of the application area. Given the distance and separation from the nearest TEC, 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.

Given 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 not likely to be 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 Jarrah forest Interim Biogeographic Regionalisation of Australia (IBRA) Bioregion which retains approximately 53.25 per cent of its pre-European vegetation extent (Government of Western Australia, 2019). The mapped South West vegetation complex, Cowaramup, C2 complex, retains 32.45 per cent of its pre-European extent within the Jarrah forest IBRA Bioregion (Table 1). The local area retains approximately 36.74 per cent of vegetation cover.

Noting the IBRA bioregion, mapped South West vegetation complex and local area all retain above the 30 per cent threshold, the application area is not likely to be significant as a remnant of native vegetation in an area that has been extensively cleared.

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

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

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Current Extent in DBCA Managed Lands	
				(ha)	(%)
IBRA Bioregion					
Jarrah forest	4,506,660.25	2,399,838.15	53.25	1,673,614.25	39.4
South West vegetation complex					
Cowaramup, C2	13,692.45	4,442.60	32.45	863.08	6.3
Local Area					
10 kilometre radius	31,496.87	11,571.19	36.74	-	-

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

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

According to available datasets, the application area is not mapped within any wetlands and is located approximately 0.55 kilometres from a non-perennial tributary of Wilyabrup Brook. However, the application area does not intersect any natural source of surface water and is separated from Wilyabrup Brook by previously cleared residential land. This was confirmed during the site inspection undertaken by DWER officers, which identified no characteristic riparian vegetation or evidence of inundation within the application area (DWER, 2020).

Given the above, the vegetation within the application area is not considered to be growing in association with a watercourse or wetland and the proposed clearing is not likely to be at variance with 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 with this principle

The soil type within the application area is mapped within the Cowaramup flats Phase (216CoCO1), described as flats (0-2% gradient) with gravelly duplex (Forest Grove) and pale grey mottled (Mungite) soils (DPIRD, 2017).

As indicated in Table 2, the soil type mapped within the application area presents a low risk of land degradation resulting from water erosion, salinity, flooding, waterlogging and phosphorous export. The application area is mapped at upwards of 50 per cent, high to extreme risk for wind erosion and subsurface acidification. However, adjacent vegetation within the adjoining bushland remnant will be retained, which can be expected to aid in buffering potential land degradation. Given the above, the extent of the proposed clearing and that the area has been subject to disturbance from weed invasion and use by local residents, the proposed clearing is not considered likely to cause appreciable land degradation.

It is noted that, as the application area has been subject to weed invasion, the proposed clearing may facilitate the spread of weeds and dieback to adjacent bushland vegetation and other remnant vegetation in the local area. A weed and dieback condition is considered to minimise this risk.

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

Table 2: Land degradation risk levels

Risk categories	Cowaramup flats Phase (216CoCO1)
Wind erosion	>70% 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
Salinity	<3% of map unit has a moderate to high salinity risk or is presently saline
Subsurface Acidification	>70% of map unit has a high to extreme subsurface acidification risk or is presently acid
Flood risk	<3% of map unit has a moderate to high flood risk
Waterlogging	30-50% of map unit has a moderate to very high waterlogging risk
Phosphorus export risk	3-10% 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 datasets, there are no conservation areas mapped within or directly adjacent to the application area. The closest conservation area, Bramley National Park, occurs approximately 5.4 kilometres south of the application area, separated by previously cleared residential land.

As discussed under Principle (a), the north-eastern portion of the application area intersects a mapped South West Region ecological linkage, which provides connectivity to Bramley National Park. However, given the extent of the proposed clearing and that the loss of vegetation within the application area does not sever this linkage or significantly impact connectivity in the local area, it is not likely that the proposed clearing will impact dispersal into or out of local conservation area.

Given above, as well as the distance and separation from the closest conservation area, the proposed clearing is not likely to impact on the environmental values of any local conservation area and 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 lies within the Cape to Cape North Surface Water Area, a proclaimed surface water area under the *Rights in Water and Irrigation Act 1914* (the RIWI Act). However, as discussed in Principle (f), the application area is separated from the closest watercourse by approximately 554 metres of previously cleared residential land. Given the separation from the nearest surface water source, the extent of the proposed clearing, and that adjoining remnant vegetation will be retained, the proposed clearing is not likely to cause deterioration in the quality of surface water.

Groundwater salinity within the application area is mapped at 1000 to 3000 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). However, as discussed under Principle (f), the application area is mapped at a low risk of land degradation due to salinity. Further, as the extent of the proposed clearing is minimal and adjacent bushland vegetation will be retained, 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 recorded at 1200 millimetres. However, as discussed under Principle (f), the soil type within the application area is mapped as a low risk of flooding and waterlogging. Further, the extent of the proposed clearing is minimal and adjoining remnant vegetation will be retained. Given 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 23 January 2020, inviting submissions from the public within a 14 day period. No submissions were received in relation to this application.

The application area intersects a mapped Aboriginal Site of Significance, Cowaramup Sale Yards Camp & Corroboree Ground. It is the applicant's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Sites of Aboriginal Significance are damaged through the clearing process.

4. References

- 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).
- Department of Biodiversity, Conservation and Attractions (DBCA) (2020). DBCA South West Region comments regarding CPS 8781/1. DWER Ref: A1883933.
- Department of Environment and Conservation (DEC) (2012a) Fauna profiles: Quenda, *Isoodon obesulus fusciventer*. Department of Environment and Conservation, Western Australia.
- Department of Environment and Conservation (DEC) (2012b) Fauna profiles: Brush-tailed phascogale, *Phascogale tapoatafa*. Department of Environment and Conservation, Western Australia.

Department of Parks and Wildlife (DPAW) (2017) Western Ringtail Possum (*Pseudocheirus occidentalis*) Recovery Plan. Wildlife Management Program No. 58. Department of Parks and Wildlife, Perth, WA.

Department of Primary Industries and Regional Development (DPIRD) (2017). NRInfo Digital Mapping. Department of Primary Industries and Regional Development. Available from: <https://maps.agric.wa.gov.au/nrm-info/> (accessed January 2020). Government of Western Australia.

Department of Water and Environmental Regulation (DWER) (2020) Site inspection report for clearing permit application CPS 8781/1, undertaken 27 February 2020. DWER Ref: A1860898.

Government of Western Australia (2019). 2018 State-wide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of October 2016. WA Department of Parks and Wildlife, Perth.

Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Mattiske, E.M. and Havel, J.J. (1998) Vegetation Complexes of the South-west Forest Region of Western Australia. Maps and report prepared as part of the Regional Forest Agreement, Western Australia for the Department of Conservation and Land Management and Environment 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 and Department of Environment and Conservation, Perth.

Shire of Augusta Margaret River (2020) Clearing permit application CPS 8781/1 and supporting information. DWER Ref: A1856421.

Western Australian Herbarium (1998-) FloraBase - The Western Australian Flora. Department of Biodiversity, Conservation and Attractions. Available from: <http://florabase.dpaw.wa.gov.au/> (accessed February 2020).

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
- South West Vegetation Complexes
- WA Herbarium Data
- WA TEC/PEC Boundaries and Buffers