



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: CPS 8708/1
File Number: DWERVT3681
Duration of Permit: From 29 December 2020 to 29 December 2022

PERMIT HOLDER

Shire of Denmark

LAND ON WHICH CLEARING IS TO BE DONE

Lot 7707 on Deposited Plan 218333 (Crown Reserve 42507), Ocean Beach

AUTHORISED ACTIVITY

The permit holder must not clear more than 0.0458 hectares of native vegetation within the area cross-hatched yellow in Figure 1 of Schedule 1.

CONDITIONS

1. Avoid, minimise, and reduce impacts and extent of clearing

In determining the native vegetation authorised to be cleared under this permit, the permit holder must apply the following principles, set out in descending 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. Weed and dieback management

When undertaking any *clearing* authorised under this permit, the permit holder must take the following measures to minimise the risk of 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. Directional clearing

The permit holder must conduct *clearing* activities in a slow, progressive manner in one direction, i.e. from east to west, to allow fauna to move into adjacent native vegetation ahead of the clearing activity.

4. Records that must be kept

The permit holder must maintain records relating to the listed relevant matters in accordance with the specifications detailed in Table 1.

Table 1: Records that must be kept

No.	Relevant matter	Specifications
1.	In relation to the authorised <i>clearing</i> activities generally	<p>(a) the species composition, structure, and density of the cleared area;</p> <p>(b) 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;</p> <p>(c) the date that the area was cleared;</p> <p>(d) the size of the area cleared (in hectares);</p> <p>(e) actions taken to avoid, minimise, and reduce the impacts and extent of clearing in accordance with condition 1;</p> <p>(f) actions taken to minimise the risk of the introduction and spread of weeds and dieback in accordance with condition 2; and</p> <p>(g) actions taken to ensure clearing is slow, progressive and in one direction in accordance with condition 3.</p>

5. Reporting

The permit holder must provide to the *CEO* the records required under condition 4 of this permit when requested by the *CEO*.


DEFINITIONS

In this permit, the terms in Table have the meanings defined.

Table 2: Definitions

Term	Definition
CEO	Chief Executive Officer of the department responsible for the administration of the clearing provisions under the <i>Environmental Protection Act 1986</i> .
clearing	has the meaning given under section 3(1) of the EP Act.
condition	a condition to which this clearing permit is subject under section 51H of the EP Act.
fill	means material used to increase the ground level, or to fill a depression.
dieback	means the effect of <i>Phytophthora</i> species on native vegetation.
department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
EP Act	<i>Environmental Protection Act 1986</i> (WA)
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.
native vegetation	has the meaning given under section 3(1) and section 51A of the EP Act.
weeds	means any plant – (a) that is a declared pest under section 22 of the <i>Biosecurity and Agriculture Management Act 2007</i> ; or (b) published in a Department of Biodiversity, Conservation and Attractions species-led ecological impact and invasiveness ranking summary, regardless of ranking; or (c) not indigenous to the area concerned.

END OF CONDITIONS



Meenu Vitarana
A/MANAGER
NATIVE VEGETATION REGULATION

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

3 December 2020

SCHEDULE 1

The boundary of the area authorised to be cleared is shown in the map below (Figure 1).

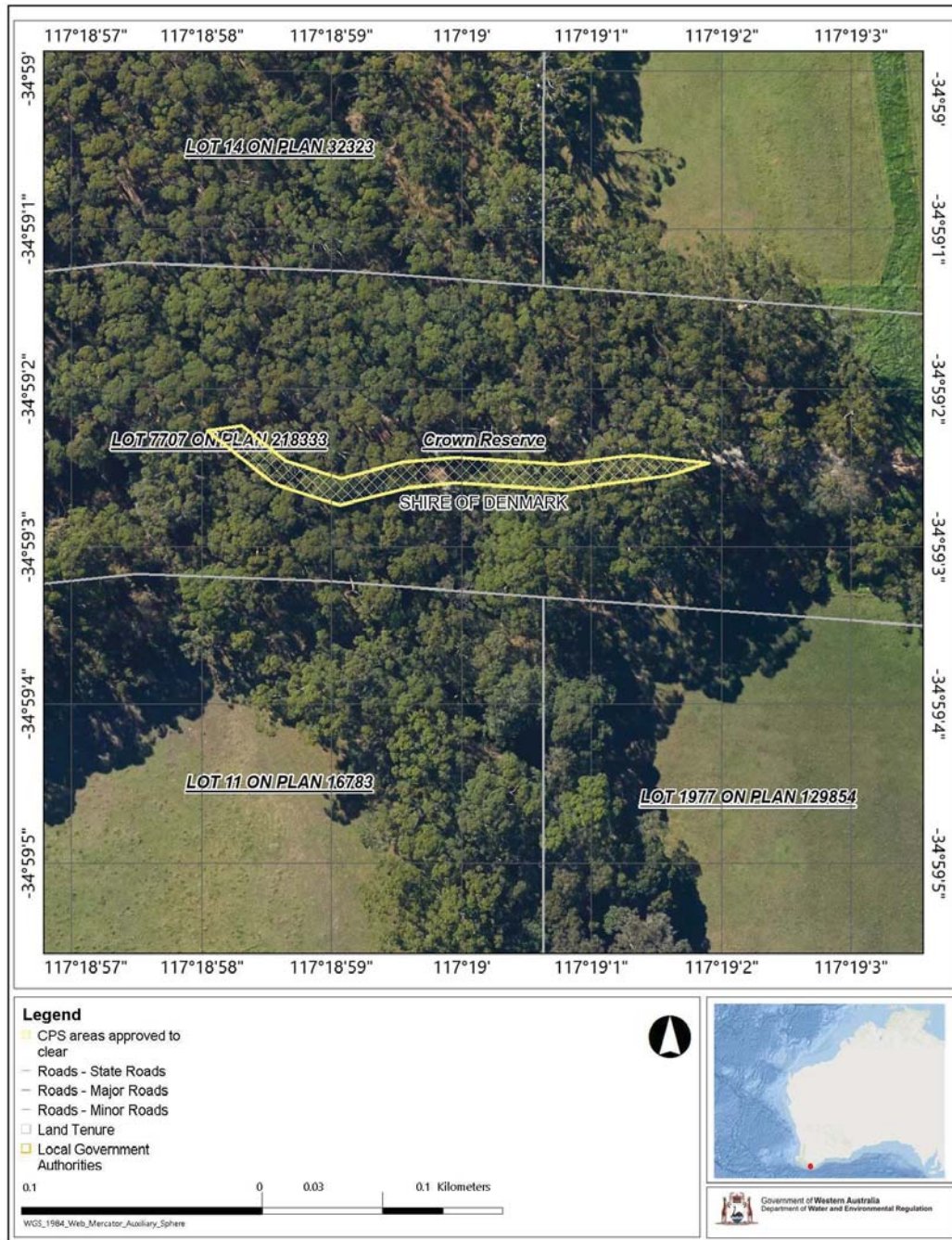


Figure 1: Map of the boundary of the area within which clearing may occur.



1. Application details

Permit application details

Permit application No.: CPS 8708/1
Permit type: Area Permit

Applicant details

Applicant's name: Shire of Denmark
Application received date: 21 October 2019

Property details

Property: Lot 7707 on Plan 218333, Ocean Beach
Local Government Authority: Shire of Denmark
Localities: Ocean Beach

Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
0.0458		Mechanical removal	Bridge repair for heritage trail

Decision on application

Decision on Permit Application: Granted
Decision Date: 3 December 2020

Reasons for Decision: The clearing permit application was received on 21 October 2019 and has been assessed against the clearing principles, planning instruments and other matters in accordance with section 51O of the *Environmental Protection Act 1986*. It has been concluded that the proposed clearing is at variance to principle (f) and is not likely to be at variance to any of the remaining clearing principles.

After consideration of the available site information, the extent of the proposed clearing and the current land use, as well as the applicant's minimisation and mitigation measures, the Delegated Officer determined that the proposed clearing is unlikely to result in significant impacts to environmental values.

In determining to grant a clearing permit subject to avoid and minimise, weed and dieback, and directional clearing 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 0.0458 hectares of native vegetation within the Denmark to Nornalup Heritage Rail Trail (Crown Reserve 42507), Ocean Beach, for the purpose of bridge repair.

Vegetation Description

A flora and vegetation survey undertaken by Bio Diverse Solutions in September 2020 and photographs supplied by the applicant (Shire of Denmark, 2019), identified that the vegetation within the application area consists primarily of karri (*Eucalyptus diversicolor*) forest, described as *Eucalyptus diversicolor* tall forest over *Corymbia calophylla*, *Allocasuarina decussata* woodland, over *Acacia pentadenia* open low scrub, *Hibberia cuneiformis* open dwarf scrub, *Lepidosperma effusum*, *Lepidosperma costale* very open tall sedges, over *Pteridium esculentum* very open ferns, over *Oxalis incamata*, *Plantago lanceolata* very open herbs, over *Cenchrus clandestinus*, *Cynodon dactylon* very open grasses (Bio Diverse Solutions, 2020). The full survey description is available in Figure 3.

This is inconsistent with the mapped Hazelvale South West Vegetation Complex, described as a mosaic of a low woodland to woodland of *Eucalyptus marginata* subsp. *marginata* – *Eucalyptus patens*, low forest of *Agonis juniperina* – *Callisatchys lanceolata* with closed heath of *Myrtaceae* spp. on sandy plains in the hyperhumid zone (Mattiske and Havel, 1998).

Vegetation Condition

The flora and vegetation survey identified that the vegetation within the application area is in 'Very Good' (Keighery, 1994) condition, defined as vegetation structure altered, with obvious signs of disturbance (Keighery, 1994). It was noted that the vegetation has been subject to visible disturbance from its use as a walking trail and some degradation has occurred from fire, weed invasion and adjacent grazing pressure (Bio Diverse Solutions, 2020).

Soil Type:

The soil type within the application area is mapped as the Hazelvale Subsystem (254WhHA), described as narrow sandy plains, slight stream incision. Humus podzols on crests of spurs; Teatree scrub. Yellow duplex soils on valley flanks; Jarrah-Marri low forest. Peaty podzols on minor valley floors; sedges and reeds (DPIRD, 2019).
The flora and vegetation survey identified the soil type within the application area to be seasonally wet, dark brown clay loam (Bio Diverse Solutions, 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.

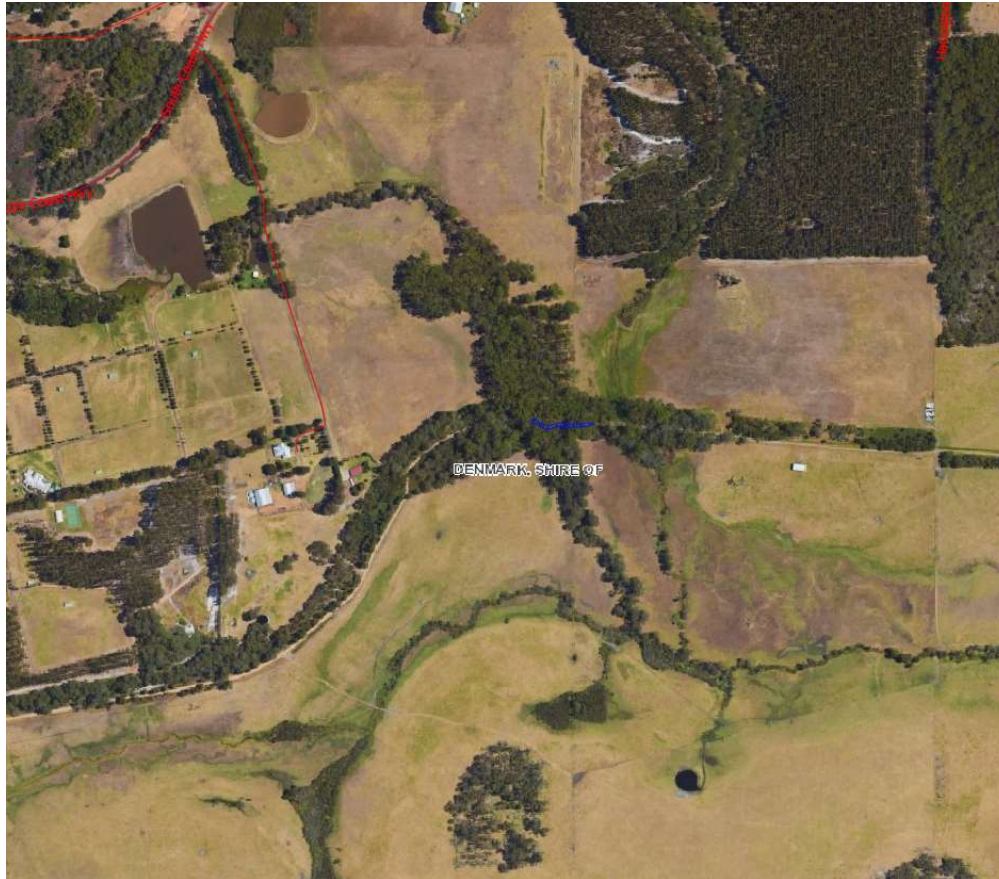


Figure 1. Application area (outlined in blue).



Figure 2. Photographs of the application area provided by the applicant (Shire of Denmark, 2019).

Flat site situated at the bottom of a slope, with dark brown Clay Loam soil which is seasonally wet.

Vegetation Description: *Eucalyptus diversicolor* Tall forest over *Corymbia calophylla*, *Allocasuarina decussata* Woodland, over *Acacia pentadenia* Open Low Scrub A. *Hibbertia cuneiformis* Open Dwarf Scrub C, *Lepidosperma effusum*, *Lepidosperma costale* Very Open Tall Sedges, over *Pteridium esculentum* Very Open Ferns, over *Oxalis incarnata*., *Plantago lanceolata* Very Open Herbs, over *Cenchrus clandestinus*, *Cynodon dactylon* Very Open Grasses.

Total of 0.046ha within the survey area.

Lifeform	Cover (%)	Dominant species
Trees >30m	30-70%	<i>Eucalyptus diversicolor</i>
Trees 10-30m	10-30%	<i>Corymbia calophylla</i> , <i>Allocasuarina decussata</i>
Shrubs >2m	30-70%	<i>Trymalium odoratissimum</i> subsp. <i>trifidum</i>
Shrub 1-2m	2-10%	<i>Acacia pentadenia</i>
Shrubs 0.5-1m	<5%	<i>Hibbertia cuneiformis</i>
Sedge	<5%	<i>Lepidosperma effusum</i> , <i>Lepidosperma costale</i>
Herbaceous	2-10%	<i>Pteridium esculentum</i> , <i>Oxalis incarnata</i> *, <i>Plantago lanceolata</i> *
Grass	2-10%	<i>Cenchrus clandestinus</i> *, <i>Cynodon dactylon</i> *



Figure 3. Vegetation description and additional photographs within the application area (Bio Diverse Solutions, 2020).

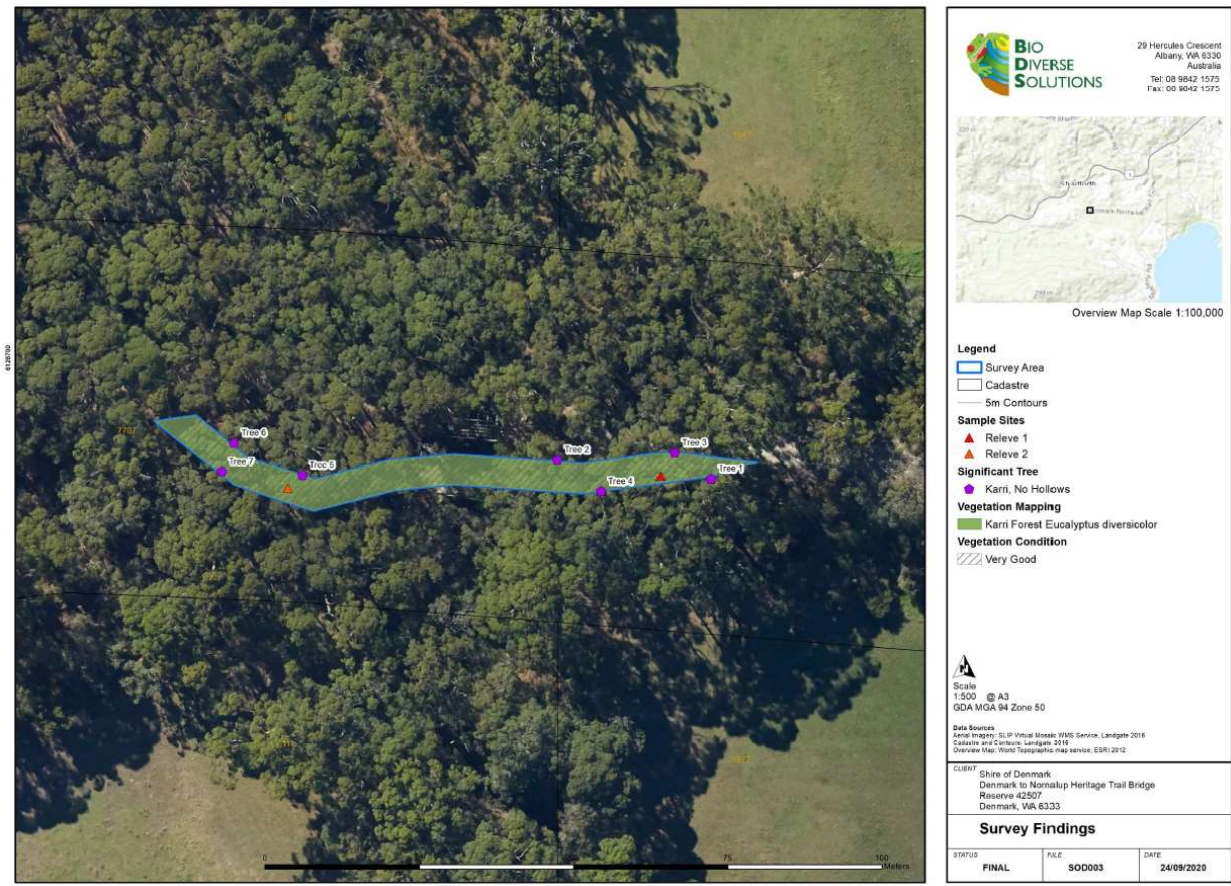


Figure 4. Location of significant karri trees within and adjacent to the application area (Bio Diverse Solutions, 2020).

Tree ID	Species	DBH (mm)	Eastings	Northings	Hollows Present (Y/N)	Location (trunk, branch)	Size of entrance (w x h) cm	Type of entrance (side, chimney, elbow)	Height above ground (m)	Chewing and/ or scratching present (Y/N)
1	<i>Eucalyptus diversicolor</i>	639	528942.840401	6128680.43864	N	N/A	N/A	N/A	N/A	N
2	<i>Eucalyptus diversicolor</i>	681	528917.872779	6128683.53913	N	N/A	N/A	N/A	N/A	N
3	<i>Eucalyptus diversicolor</i>	931	528936.926114	6128684.69303	N	N/A	N/A	N/A	N/A	N
4	<i>Eucalyptus diversicolor</i>	727	528925.704449	6128676.86514	N	N/A	N/A	N/A	N/A	N
5	<i>Eucalyptus diversicolor</i>	649	528875.835794	6128679.53057	N	N/A	N/A	N/A	N/A	N
6	<i>Eucalyptus diversicolor</i>	1078	528865.487841	6128686.28321	N	N/A	N/A	N/A	N/A	N
7	<i>Eucalyptus diversicolor</i>	860	528863.488049	6128681.62753	N	N/A	N/A	N/A	N/A	N



Figure 5. Description and habitat assessment of significant karri trees within and adjacent to the application area (Bio Diverse Solutions, 2020).

3. Avoidance and minimisation measures

The applicant has identified that 6 large karri trees bordering on the application area will be retained and only one large karri tree that restricts access to the new trail alignment will be removed (Shire of Denmark, 2019). The applicant has identified that once the realignment of the heritage trail is complete, the existing trail that is no longer in use will be rehabilitated with local native species (Shire of Denmark, 2019).

The Delegated Officer was satisfied that the applicant has made a reasonable effort to avoid and minimise potential impacts of the proposed clearing on environmental values.

4. Assessment of application against clearing principles

(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

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

A review of available databases determined that a total of 32 threatened or priority flora have been recorded within the local area, comprising three Priority 1 (P1) flora, four Priority 2 (P2) flora, eight Priority three (P3) flora, 13 Priority 4 (P4) flora and four threatened flora (Western Australian Herbarium, 1998-). None of these records occur within the application area, however a record of one P3 species, *Andersonia* sp. *Virolens* (G.J. Keighery 12000), occurs approximately 100 meters from the application area, within connected remnant vegetation. As assessed under Principle (c), no threatened flora are likely to occur within the application area. However, based on the habitat preferences of the above species, including soil type and vegetation association, the application area may contain habitat for the following priority species:

- *Andersonia* sp. *Virolens* (G.J. Keighery 12000) (P3);
- *Anthocercis sylvicola* (P3);
- *Banksia serra* (P4);
- *Eucalyptus virginea* (P4);
- *Gahnia sclerioides* (P4);
- *Melaleuca viminalis* (P2); and
- *Tetraria* sp. Blackwood River (A.R. Annels 3043) (P3).

Based on the number of records of the above priority species in the local area and the distribution of these species, the proposed clearing is not likely to have an impact on the conservation status of these species should they be present, with the exception of *Andersonia* sp. *Virolens* (G.J. Keighery 12000), *Melaleuca viminalis* and *Tetraria* sp. Blackwood River (A.R. Annels 3043).

A flora and vegetation survey undertaken by Bio Diverse Solutions in September 2020, identified no threatened or priority flora occurring within the proposed clearing area (Bio Diverse Solutions, 2020). The survey included targeted searches for the species above and also did not observe any unidentifiable species from their respective genera (Bio Diverse Solutions, 2020). The survey identified a total of 26 native species occurring within the application area, which are typically associated with karri forests and riparian communities. Given the above, it is not considered likely that the proposed clearing will result in impacts to any conservation significant flora species or that the application area includes high floristic diversity.

According to available databases, there are no mapped threatened ecological communities (TECs) within the local area. One priority ecological community (PEC), Coastal Saltmarsh described as subtropical and temperate coastal saltmarsh, occurs approximately 4.1 km south-east of the application area. Due to the distance from the nearest TECs and PECs, the proposed clearing is not likely to have a significant impact on these communities. Further, the application area is not likely to comprise the whole or part of, or be necessary for the maintenance of, a TEC.

The application area is included within the South Coast Macro Corridor Network, classified as "Strategic Zone A", which contains areas of woody vegetation greater than 30 hectares in size and spaced no more than 1 kilometre apart, which may form a strategic link between major protected areas (Wilkins et al., 2006). The application area is also located within a remnant of vegetation in a fragmented landscape, which may provide some connectivity between larger remnant vegetation for fauna moving through the local area. However, the extent of the proposed clearing is small and will not sever connectivity within the remnant or between the existing remnant and surrounding vegetation. Therefore, the proposed clearing is not considered likely to have a significant impact on ecological linkages within the local area or the function of the South West Macro Corridor.

As assessed under Principle (b), the application area may contain suitable habitat for 16 threatened fauna species. As the clearing area is small and adjacent vegetation will be retained, slow, progressive directional clearing will aid many of these fauna to move into native vegetation adjacent to the application area, ahead of the clearing activity. A fauna survey undertaken by Bio Diverse Solutions in September 2020, also identified that the karri tree proposed to be cleared does not contain hollows of any size and observed no evidence of use by any conservation significant fauna species (Bio Diverse Solutions, 2020). Given the above, it is not considered likely that the proposed clearing will impact significant habitat for any conservation significant fauna species.

As the application area does not include regionally or locally significant vegetation or ecological communities, does not include significant habitat for any conservation significant flora or fauna species, and is not likely to function as a significant ecological linkage, the application area is not considered likely to comprise a high level of biodiversity and the proposed clearing is not likely to be at variance with this principle.

(b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna.

Proposed clearing may be at variance with this principle

A total of 48 conservation significant fauna species have been recorded within the local area, including 17 species protected under international agreement, seven priority fauna, 22 threatened fauna, and two specially protected fauna (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 16 conservation significant fauna species. As the clearing area is small and adjacent vegetation will be retained, slow, progressive directional clearing will aid many of these fauna to move into native vegetation adjacent to the application area, ahead of the clearing activity. Given a directional clearing condition is applied, the extent of the proposed clearing and the abundance of suitable habitat in the local area, the clearing is not likely to result in the loss of significant habitat for these fauna, with the exception of the forest red-tailed black cockatoo (*Calyptorhynchus banksii naso*), Baudin's cockatoo (*Calyptorhynchus baudinii*), Carnaby's cockatoo (*Calyptorhynchus latirostris*), the south-western brush-tailed phascogale (*Phascogale tapoatafa wambenger*), and the western ringtail possum (*Pseudocheirus occidentalis*).

Black cockatoo species forage on the seeds, nuts and flowers of a range of plant species, including *Proteaceous* species (*Banksia*, *Hakea*, *Grevillea*), Eucalypts, *Corymbia* species, sheoak, and introduced species such as *Pinus* species (Commonwealth of Australia, 2012). Given the application area contains an overstorey of karri and sheoak, the application area is likely to contain some suitable foraging habitat for black cockatoo species. However, noting the extent of the proposed clearing and the abundance of suitable foraging habitat in the local area, it is not likely that the proposed clearing will significantly impact foraging habitat for 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). For most tree species, suitable DBH for nest hollows is 500 millimetres (Commonwealth of Australia, 2012). While breeding, black cockatoos also generally forage within a 6 to 12 kilometre radius of their nesting site (Commonwealth of Australia, 2012). Although the applicant has committed to retaining most large karri trees adjacent to the application area, one large karri tree that has the potential to provide breeding habitat for black cockatoos will be removed (Shire of Denmark, 2019). In addition to the potential suitable foraging habitat within the application area, it should be noted that mapped potential black cockatoo feeding habitat is recorded within 12 kilometers of the application area, making it a suitable location for breeding if hollows are present. A fauna survey undertaken by Bio Diverse Solutions in September 2020, identified seven karri trees within the vicinity of the application area (six adjacent to the clearing area and one within) with a DBH of greater than 500 millimetres that may provide suitable breeding habitat for black cockatoo species. However, the survey identified that none of these trees contained hollows of any size and no trees exhibited evidence of use by black cockatoo species as foraging, breeding or roosting habitat (Bio Diverse Solutions, 2020; Figures 4 and 5). Given the above, the application area is not considered to contain suitable breeding habitat for black cockatoo species and the proposed clearing is not considered likely to impact significant habitat.

The south-western brush-tailed phascogale is primarily an arboreal insectivore, utilising tree hollows in open woodlands for diurnal refuge and breeding habitat (Department of Environment and Conservation, 2012). Given the application area consists of woodland with a connected canopy of karri and sheoak, the application area may contain suitable habitat for the south-western brush-tailed phascogale. However, noting the extent of the proposed clearing, that the application area does not include any hollow-bearing trees (Bio Diverse Solutions, 2020), and considering the abundance of suitable habitat in the local area, the clearing is not anticipated to result in the loss of significant foraging or breeding habitat for this species. Further, as discussed above, the directional clearing condition applied will allow any individuals present within the application area to move into adjacent native vegetation outside the application area. Therefore, the proposed clearing is not considered likely to significantly impact individuals utilising the area.

The western ringtail possum is an arboreal folivore, associated with a diverse range of habitats in the south coast from Walpole to Cheynes Beach, including coastal heath, jarrah (*Eucalyptus marginata*) and marri (*Corymbia calophylla*) forest, peppermint (*Agonis flexuosa*) woodlands, riparian vegetation and karri forest (Department of Parks and Wildlife, 2017). Western ringtail possums (WRP) also utilise a range of diurnal refuge sites within suitable habitat, but most commonly use tree hollows or dreys constructed from foliage, which may also be utilised for breeding (Department of Parks and Wildlife, 2017). The connected canopy of karri and sheoak woodland present in the application area may therefore provide suitable foraging habitat and diurnal refuge sites for western ringtail possums. However, as stated above, a fauna survey identified that the application area does not include hollow-bearing trees and did not observe any signs of use by western ringtail possums (Bio Diverse Solutions, 2020). As the clearing extent is small, the area contains no hollow-bearing trees, and suitable habitat is adjacent to the application area and abundant within the local area, the clearing is not anticipated to result in the loss of significant foraging habitat or diurnal refuge sites for this species. Further, as discussed above, the directional clearing condition applied will allow any possums present within the application area to move into adjacent native vegetation. Therefore, the proposed clearing is not likely to significantly impact western ringtail possums.

As discussed in Principle (a), the application area may provide connectivity to surrounding vegetation for fauna moving through the landscape, as a remnant between larger vegetated areas. However, the extent of the proposed clearing is small and does not sever connectivity within the remnant or between the remnant and surrounding vegetation. Further, the directional clearing condition applied will allow fauna to move into native vegetation adjacent to the application area, ahead of the clearing activity and continue through the landscape. Given the above, the proposed clearing is not likely to significantly impact fauna utilising the habitat to move through the landscape.

Given the application area does not contain significant breeding, foraging or linkage habitat for any conservation significant fauna species, the proposed clearing is not likely to be at variance with this principle.

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

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

As discussed in Principle (a), a review of available databases determined four threatened flora have been recorded within the local area (Western Australian Herbarium, 1998-). From available databases, an assessment of the habitat requirements of these species indicated that the vegetation associations and soil type present in the application area were not likely to provide suitable habitat for the four threatened species recorded in the local area. Further, a flora and vegetation survey did not identify any threatened flora species occurring within or adjacent to the application area (Bio Diverse Solutions, 2020).

Given the above, 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 datasets, there are no mapped state-listed TECs in the local area, with the closest mapped TEC occurring approximately 14 kilometres north of the application area.

Given the above, 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 and 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 Warren Interim Biogeographic Regionalisation of Australia (IBRA) Bioregion which retains approximately 80 per cent of its pre-European vegetation extent (Government of Western Australia, 2019). The mapped South West Vegetation Complex Hazelvale, retains approximately 41 per cent of its pre-European vegetation extent within the Warren IBRA Bioregion (Table 1). The local area retains approximately 52 per cent vegetation cover.

Noting the current vegetation extent for the Warren IBRA Bioregion, the mapped South West Vegetation Complex and the local area are all above the 30 per cent threshold, the local area is not considered to be extensively cleared. Noting the application area does not include regionally or locally significant vegetation or ecological communities, does not include significant habitat for any conservation significant flora or fauna species, and is not likely to function as a significant ecological linkage, the application area is not considered to significant as a remnant of native vegetation.

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

Table 1: Vegetation representation statistics (Government of Western Australia, 2019)

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Current Extent in DBCA Managed Lands	
				(ha)	(%)
IBRA Bioregion					
Warren	833,981.98	667,164.84	80.0	550,362.11	66.0
South West Vegetation Complex					
Hazelvale	7276.42	2982.39	40.99	1089.06	14.97
Local Area					
10 kilometre radius	22,955.40	11,871.76	51.72	-	-

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

Proposed clearing is at variance with this principle

The application area lies within the Teasedale Consanguineous Wetland Suite (WH30) and intersects a significant stream known as Little River, which stems from the Wilson Inlet and Denmark River. Therefore, the vegetation proposed to be cleared is growing in, or in association with, an environment associated with a watercourse or wetland and the proposed clearing is at variance with this principle. However, it is noted that the application area and riparian vegetation has been subject to disturbance from its existing use as a walking trail and the associated bridge infrastructure, and has experience degradation from fire, weed invasion and adjacent grazing pressure. Given the existing land use, and that the extent of the proposed clearing is small, adjacent riparian vegetation will be retained, and the applicant has proposed revegetation of the existing track with local native vegetation, the proposed clearing is not anticipated to result in any long-term impact to the ecological values provided by the riparian vegetation communities associated with the wetland and watercourse included in the application area.

Given the above, the proposed clearing is 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 as the Hazelvale Subsystem (254WhHA), described as narrow sandy plains, slight stream incision. Humus podzols on crests of spurs; Teatree scrub. Yellow duplex soils on valley flanks; Jarrah-Marri low forest. Peaty podzols on minor valley floors; sedges and reeds (DPIRD, 2019). Table 2 outlines the land degradation risks associated with this soil type.

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 and waterlogging. The application area is mapped at upwards of 50 per cent, moderate to extreme risk for wind erosion, subsurface acidification, and phosphorus export risk. However, given the existing land use, the extent of the proposed clearing, that adjacent riparian vegetation will be retained and provide a buffer surrounding the cleared area, and that revegetation will occur upstream, it is not likely that the proposed clearing will be subject to wind erosion or impact on subsurface acidification or phosphorus export risk.

Given the above, the proposed clearing is likely to cause appreciable land degradation and is not likely to be at variance with this principle.

Table 2: Land degradation risk levels

Risk categories	Hazelvale Subsystem (254WhHA)
Wind erosion	50-70% of map unit has a very high to extreme wind erosion risk
Water erosion	10-30% of map unit has a very high to extreme water erosion risk
Salinity	<3% of map unit has a moderate or high salinity risk or is presently saline
Subsurface Acidification	>70% of map unit has a high subsurface acidification risk or is presently acid
Flood risk	10-30% of the map unit has a very high to extreme flood risk
Waterlogging	30-50% of map unit has a moderate to very high waterlogging risk
Phosphorus export risk	50-70% of map unit has a very 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 the available databases, there are no conservation areas within or directly adjacent to the application area. The closest conservation area, Mount Shadforth Nature Reserve, is located approximately 2.5 kilometres north-west of the application area. As discussed under Principles (a) and (b), the application area is located within a remnant of vegetation in a fragmented landscape, and may provide some connectivity between larger remnant vegetation for fauna moving through the local area including Mount Shadforth Nature Reserve. However, due to the distance from local conservation area, the extent of the proposed clearing, and the fact that the proposed clearing does not sever connectivity in the landscape, it is not likely that the proposed clearing will impact on the environmental values of any adjacent or nearby conservation area.

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

(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.

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

As discussed in Principle (f), the application area intersects a natural source of surface water in Little River. The removal of riparian vegetation in the application area may increase sediment and turbidity of surface water in Little River initially. However, as the extent of the proposed clearing is small, adjacent riparian vegetation will be retained, revegetation will occur upstream, and surface flow in Little River will be maintained, the proposed clearing is not likely to cause long-term deterioration in the quality of surface water.

Groundwater salinity within the application area is mapped between 500 to 1000 milligrams per litre total dissolved solids and the application area does not lie within any groundwater areas proclaimed under the *Rights in Water and Irrigation Act 1914* (the RIWI Act). Noting this, the extent of the proposed clearing, that adjacent riparian vegetation will be retained, and that revegetation will occur upstream, 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 of the local area is recorded at 999.8 mm. As discussed in Principle (g), the application area has a low to moderate risk of flooding and waterlogging, which is consistent with the soil type and relatively high rainfall in the local area. However, given the extent of the proposed clearing, that adjacent riparian vegetation will be retained, and that revegetation will occur upstream, the proposed clearing is not likely to cause or exacerbate the incidence or intensity of flooding.

Noting the above, 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 18 November 2019, inviting submissions from the public within a 14 day period. No submissions were received in relation to this application.

There are no Aboriginal Sites of Significance mapped within the application area. It is the permit holder's responsibility to comply with the Aboriginal Heritage Act 1972 (WA) and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

4. References

Bio Diverse Solutions (2020) *Reconnaissance flora and vegetation and targeted fauna survey report for Crown Reserve 42507 Denmark-Nornalup Heritage Rail Trail* (DWER Ref: A1958721).

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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 January-November 2020).

Department of Environment and Conservation (2012) *Fauna profiles: Brush-tailed phascogale, Phascogale tapoatafa (Meyer, 1793)*. Department of Environment and Conservation, Canberra.

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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.

Shire of Denmark (2019) *Clearing permit application and supporting documents for CPS 8708/1*, received 21 October 2019 (DWER Ref: DWERT3681).

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Wilkins, P., Gilfillan, S., Watson, J. and Sanders, A. (2006) *The Western Australian South Coast Macro Corridor Network – a bioregional strategy for nature conservation*. Department of Conservation and Land Management (CALM) and South Coast Regional Initiative Planning Team (SCRIPT), Albany, Western Australia.

5. GIS Datasets

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

- 10 Metre Contours (DPIRD-073)
- Aboriginal Heritage Places (DPLH-001)
- Aboriginal Heritage Places (DPLH-001)
- Cadastre (LGATE-218)
- Cadastre Address (LGATE-002)
- Contours (DPIRD-073)
- DBCA – Lands of Interest (DBCA-012)
- DBCA Legislated Lands and Waters (DBCA-011)
- DBCA Statewide Vegetation Statistics
- Directory of Important Wetlands in Australia – Western Australia (DBCA-045)
- Environmentally Sensitive Areas (DWER-046)
- Flood Risk (DPIRD-007)
- Groundwater Salinity Statewide (DWER-026)
- Hydrography – Inland Waters – Waterlines
- Hydrological Zones of Western Australia (DPIRD-069)
- IBRA Vegetation Statistics
- Imagery
- Local Planning Scheme – Zones and Reserves (DPLH-071)
- Native Title (ILUA) (LGATE-067)
- Offsets Register – Offsets (DWER-078)
- Pre-European Vegetation Statistics
- Public Drinking Water Source Areas (DWER-033)
- Ramsar Sites (DBCA-010)
- Regional Parks (DBCA-026)
- Remnant Vegetation, All Areas
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Land Quality – Flood Risk (DPIRD-007)
- Soil Landscape Land Quality – Phosphorus Export Risk (DPIRD-010)
- Soil Landscape Land Quality – Subsurface Acidification Risk (DPIRD-011)
- Soil Landscape Land Quality – Water Erosion Risk (DPIRD-013)
- Soil Landscape Land Quality – Water Repellence Risk (DPIRD-014)
- Soil Landscape Land Quality – Waterlogging Risk (DPIRD-015)
- Soil Landscape Land Quality – Wind Erosion Risk (DPIRD-016)
- Soil Landscape Mapping – Best Available
- Soil Landscape Mapping – Systems
- Vegetation Complexes – South West forest region of Western Australia (DBCA-047)

Restricted GIS Databases used:

- ICMS (Incident Complaints Management System) – Points and Polygons
- Threatened Flora (TPFL)
- Threatened Flora (WAHerb)
- Threatened Fauna
- Threatened Ecological Communities and Priority Ecological Communities
- Threatened Ecological Communities and Priority Ecological Communities (Buffers)