GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS
Area Permit Number: 8483/1
File Number: DWERVT2746
Duration of Permit: 21 September 2019 to 21 September 2021

PERMIT HOLDER
Terra Property Pty Ltd

LAND ON WHICH CLEARING IS TO BE DONE
Lot 91 on Deposited Plan 28768, Forrestdale
Lot 200 on Deposited Plan 45942, Forrestdale
Lot 101 on Diagram 58509, Forrestdale

AUTHORISED ACTIVITY
The Permit Holder shall not clear more than 4.17 hectares of native vegetation within the area hatched yellow on attached Plan 8483/1.

CONDITIONS

1. Avoid, minimise and reduce the impacts and extent of clearing
In determining the amount of native vegetation to be cleared authorised under this Permit, the Permit Holder must have regard to the following principles, set out in order of preference:
(a) avoid the clearing of native vegetation;
(b) minimise the amount of native vegetation to be cleared; and
(c) reduce the impact of clearing on any environmental value.

2. 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.

3. Fauna management
Clearing shall be conducted in a slow, progressive manner to allow fauna to move out of the clearing area.

4. Records must be kept
The Permit Holder must maintain the following records for activities done pursuant to this Permit, in relation to the clearing of native vegetation authorised under this Permit:
(a) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
(b) the date that the area was cleared;
(c) the size of the area cleared (in hectares);

(d) actions taken to avoid, minimise and reduce the impacts and extent of clearing in accordance with condition 1 of this Permit; and
(e) actions taken to minimise the risk of the introduction and spread of weeds and dieback in accordance with condition 2 of this Permit.

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

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;

weed/s means any plant -
(a) that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*; or
(b) 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.

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Ryan Mincham
MANAGER
NATIVE VEGETATION REGULATION

Officer delegated under Section 20
of the Environmental Protection Act 1986

22 August 2019

Plan 8483/1

Legend

- CPS areas approved to clear
- Cadastre - LGATE 218
- Road Centrelines

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Officer delegated under section 20 of the Environmental Protection Act 1986

GOVERNMENT OF WESTERN AUSTRALIA

Government of Western Australia
Department of Water and Environmental Regulation

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No: 8483/1
Permit type: Area Permit

1.2. Applicant details

Applicant's name: Terra Property Pty Ltd
Application received date: 2 May 2019

1.3. Property details

Property: Lot 91 on Deposited Plan 28768, Forrestdale
Lot 200 on Deposited Plan 45942, Forrestdale
Lot 101 on Diagram 58509, Forrestdale
Local Government Authority: City of Armadale
Localities: Forrestdale

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
4.17		Mechanical Removal	Urban and residential development

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 22 August 2019
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* (EP Act). It has been concluded that the proposed clearing is at variance to Principle (f) and is not likely to be at variance to the remaining principles.

The Delegated Officer determined that the proposed clearing may increase the spread of weeds and dieback into adjacent vegetation. To minimise this impact, a condition has been placed on the permit requiring the implementation of weed and dieback management measures.

The Delegated Officer noted that the application area contains suitable habitat for Quenda (*Isoodon obesulus fusciventer*), listed as Priority 4 under the *Biodiversity Conservation Act 2016*. To minimise potential direct impacts to ground dwelling fauna, a condition has been placed on the permit requiring the clearing activity to be undertaken in a slow and progressive manner to allow fauna to move away from the application area.

In determining to grant a clearing permit subject to conditions, the Delegated Officer considered that the proposed clearing is not likely to lead to an unacceptable risk to the environment.

2. Site Information

Clearing Description: The application to clear 4.17 hectares within a permit boundary of approximately 8 hectares, within Lot 91 on Plan 28768 ('Lot 91'), Lot 200 on Plan 45942 ('Lot 200'), and Lot 101 on Diagram 58509 ('Lot 101'), is for the purpose of bulk earthworks prior to subdivision approval for urban and residential development along Anstey Road, Forrestdale. The application area is indicated in Figure 1.

Vegetation Description: The application area is mapped as Southern River Complex, which is described as open woodland of *Corymbia calophylla* (Marri) - *Eucalyptus marginata* (Jarrah) - *Banksia* species with fringing woodland of *Eucalyptus rudis* (Flooded Gum) - *Melaleuca rhaphiophylla* (Swamp Paperbark) along creek bed (Heddle et al., 1980).

A flora and vegetation survey conducted by Bennett Environmental Consulting Pty Ltd (BEC) during 16 May 2013 and 22 October 2013 identified the following vegetation units occurring within the application area;

- **MR** - Low Woodland B of *Melaleuca preissiana, Corymbia calophylla, Nuytsia floribunda and Allocasuarina fraseriana* over Open Scrub of *Kunzea glabrescens* over Heath A of *Regelia ciliata* over Open Dwarf Scrub D of mixed taxa over Very Open Tall Sedges of *Dasypogon bromeliifolius* and *Phlebocarya ciliata*; and

- **Kg** - Open Low Woodland B of *Melaleuca preissiana* over Dense Thicket of *Kunzea glabrescens* over Open to Dense Tall Sedges of *Lepidosperma longitudinale*.

Vegetation Condition: Very good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994).

To

Completely degraded: the structure of the vegetation is no longer intact and the area is completely or almost completely without native species (Keighery 1994).

Soil and Landform Type: The application area is mapped within the Pinjarra P8 Phase (Schoknecht et al., 2004):

- Broad poorly drained flats and poorly defined stream channels with moderately deep to deep sands over mottled clays; acidic or less commonly alkaline gley and yellow duplex soils to uniform bleached or pale brown sands over clay.

Comment: The local area considered in the assessment of this application is defined as a 10 kilometre radius around the perimeter of the application area. According to available aerial imagery, the local area retains approximately 21 per cent native vegetation cover.

The vegetation condition was determined from the field survey conducted in 2013 (BEC, 2013) and confirmed during a site inspection undertaken by the Department of Water and Environmental Regulation's (DWER) Environmental Officers on 13 June 2019.

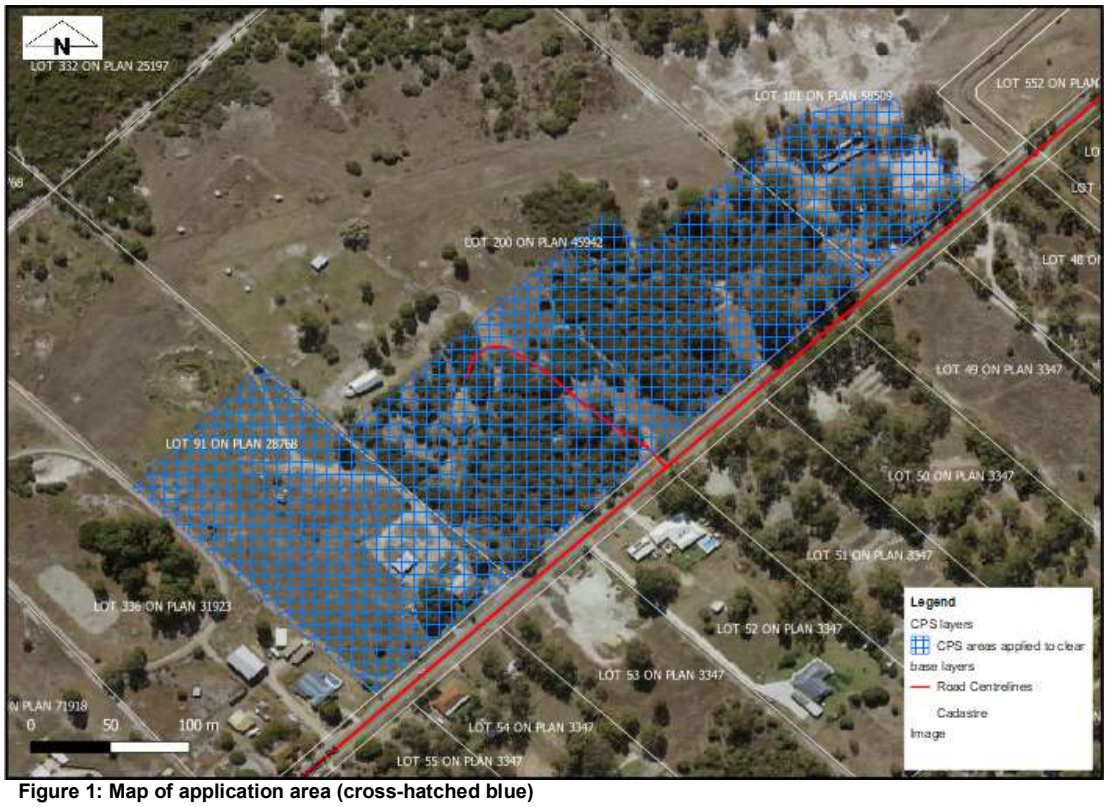

Figure 1: Map of application area (cross-hatched blue)

Figure 2. Representative photos of the application area.

3. Minimisation and mitigation measures

The applicant has noted that all naturally vegetated areas for retention have been outlined through the Town Planning Scheme amendment and Local Plan Structure that is currently being processed for the City of Armadale (Coterra, 2019a).

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 application is to clear up to 4.17 hectares of native vegetation within a permit boundary of approximately 8 hectares for the purpose of undertaking bulk earthworks prior to subdivision approval for urban and residential development as indicated in Figure 1.

A flora and vegetation survey was conducted over Lots 101 and 200, however did not include Lot 91 (BEC, 2013). Therefore, a portion of the application area has not been surveyed. A site inspection conducted by DWER Environmental Officers on 13 June 2019 determined that Lot 91 is in a completely degraded (Keighery, 1994) condition, with three isolated trees over lawn. It also contains existing access tracks and a place of residence. Given this, the proposed clearing within Lot 91 does not contain a high level of biological diversity (DWER, 2019).

The flora and vegetation survey conducted during May and October 2013 over Lots 101 and 200 recorded six vegetation units, of which two, MR and Kg, occur within the application area (see Section 2 for the vegetation unit descriptions; BEC, 2013). All vegetation units recorded during the survey is inferred as floristic community type (FCT) 4, '*Melaleuca preissiana* Damplands' (BEC, 2013). It is noted that the application area has been subject to historical grazing, clearing and weed invasion (BEC, 2013). The vegetation unit MR was recorded as being in a good to excellent (Keighery, 1994) condition and vegetation unit Kg was in a completely degraded to degraded (Keighery, 1994) condition. The recent site inspection identified that the condition of the application area had declined in some areas since the 2013 survey, and the majority of the application area has been subject to high weed invasion (DWER, 2019). Given this, the application area was found to be in a completely degraded to very good (Keighery, 1994) condition.

The survey also identified two additional areas within the application area that were not assigned vegetation units. These additional areas were identified to be in a completely degraded to degraded (Keighery, 1994) condition, and are described as 'cleared ground with scattered trees of *Melaleuca preissiana*' and 'planted trees and remnant endemic tees' (BEC, 2013). The DWER site inspection identified that some natural revegetation has occurred in these previously cleared areas since the survey in 2013 (DWER, 2019). However, this vegetation was still in a completely degraded to degraded (Keighery, 1994) condition, of which majority is in a degraded (Keighery, 1994) condition (DWER, 2019).

According to available databases, 55 conservation significant flora species comprising sixteen threatened flora species, four priority 1 flora species, six priority 2 flora species, seventeen priority 3 flora species, and twelve priority 4 flora species, have been recorded within the local area (Western Australian Herbarium, 1998–). A detailed flora survey conducted over the application area did not record any threatened flora species from within the application area (BEC, 2013). As discussed in Principle (c), based on the soil type and vegetation present, the application area is not likely to provide suitable habitat for local threatened flora species. One priority flora species, *Jacksonia gracillima* (priority 3), was recorded at two locations during the survey. One of these records was from within the application area, however this record only consisted of one plant (BEC, 2013). *Jacksonia gracillima* is known from multiple locations within the local area (Western Australian Herbarium, 1998–), therefore the proposed clearing of one plant is not likely to significantly impact the conservation or local representation of this species.

The application area is located approximately 190 metres of a Bush Forever site (342), which is known to support conservation significant flora and fauna species, and is part of a regionally significant fragmented bushland/wetland linkage, by acting as an ecological linkage to bushland to the north and west (Government of Western Australia, 2000). According to available databases, eleven threatened, one priority 1, one priority 2, seven priority 3, eight priority 4, seventeen protected under international agreement, and two other specially protected fauna species, have been recorded within the local area (Department of Biodiversity, Conservation and Attractions, 2017–). The level 1 fauna survey recorded 28 terrestrial fauna species, including one priority fauna species, Quenda (*Isoodon obesulus fusciventer*, Priority 4) (Bamford, 2013). As assessed under Principle (b), many of these conservation significant fauna may be vagrant visitors to the application area. However, given the application area is in a mostly degraded (Keighery, 1993) condition, it is not likely that the application area comprises a high level of faunal diversity.

According to available databases, approximately a third of the application area is mapped as the 'Banksia Woodlands of the Swan Coastal Plain' threatened ecological community (TEC) listed as Endangered under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), and a priority ecological community (PEC) under the *Biodiversity Conservation Act 2016* (BC Act). This Commonwealth listed TEC and State listed PEC is restricted to areas in and immediately adjacent to the Swan Coastal Plain IBRA bioregion, including the Dandaragan plateau. This coastal plain stretches from around Jurien Bay in the north, to Dunsborough in the south (DotEE, 2016). This Banksia Woodlands TEC has undergone a decline of approximately 60 per cent in its original extent, and almost all that remains occurs as highly fragmented patches less than 10 hectares in size (DotEE, 2016).

The flora and vegetation survey was conducted in 2013 prior to the listing of this TEC in 2016, therefore DWER undertook a site inspection in June 2019 to confirm whether the vegetation within the application area was representative of the Banksia Woodland TEC. To be considered representative of the TEC, a remnant in the Swan Coastal Plain bioregion must include at least one of four *Banksia* species being candlestick banksia, *Banksia menziesii* (firewood banksia), *Banksia prionotes* (acorn banksia) and/or *Banksia ilicifolia* (holly-leaved banksia); must include an emergent tree layer often including marri, jarrah, or tuart, and other medium trees including *Eucalyptus todtiana* (pricklybark), *Nuytsia floribunda* (WA Christmas tree), western sheoak, *Callitris arenaria* (sandplain cypress), *Callitris pyramidalis* (swamp cypress) or *Xylomelum occidentale* (woody pear); and must include an often highly species-rich understorey (DotEE, 2016). The DWER site inspection confirmed that the vegetation within the application area did not exhibit the vegetation structure as described above, and therefore did not represent the Banksia Woodlands TEC (DWER, 2019).

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 is not likely to be at variance to this Principle

As discussed in Principle (a), eleven threatened, one priority 1, one priority 2, seven priority 3, eight priority 4, seventeen protected under international agreement, and two other specially protected fauna species, listed under the BC Act, have been recorded within the local area (Department of Biodiversity, Conservation and Attractions, 2017–). Noting the habitat requirements of these species and the mapped vegetation type within the application area, the application area may be utilised by the Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksia* subsp. *naso*; Vulnerable), Carnaby's Cockatoo (*Calyptorhynchus latirostris*; Endangered), Quenda (*Isoodon obesulus fusciventer*; Priority 4), two short-tongued bee species *Leioproctus douglasiellus* (Endangered) and *Neopasiphae simplicior* (Endangered), and a newly discovered native bee species, *Leioproctus muelleri*.

A level 1 fauna survey was conducted by Bamford Consulting Ecologists (Bamford) in May 2013. Three vegetation substrate associations (VSAs) were recorded over the survey area (Bamford, 2013), of which two are located within the application area, including:

- VSA1 - very open *Melaleuca* shrubland over pasture; and
- VSA2 - closed *Melaleuca* shrubland.

VSA1 is widespread and representative of the cleared land in the local area. Given this, it is generally of low value as a fauna habitat. VSA2 may provide some foraging and refuge opportunities for fauna, as it represents areas of dense vegetation within an area predominated by VSA1 (Bamford, 2013). However, VSA2 is not likely to be significant in functioning as an ecological linkage within the local area. The Bush Forever site (342) located approximately 190 metres north west of the application area has this function.

The Carnaby's Cockatoo and the Forest Red-tailed Black Cockatoo breed in large hollow-bearing trees, generally within woodlands or forests or in isolated trees (Commonwealth of Australia, 2012). These species nest in hollows in live or dead trees of karri, marri, wandoo, tuart, salmon gum, jarrah, flooded gum, York gum, powder bark, bullich and blackbutt (Commonwealth of Australia, 2012). Black cockatoos have a preference for foraging habitat that includes jarrah and marri woodlands and forest heathland and woodland dominated by proteaceous plant species such as *Banksia* sp., *Hakea* sp. and *Grevillea* sp. (Commonwealth of Australia, 2012). The application area does not contain these key food plant species, therefore any foraging opportunities within the application area are expected to be low. Within the local area, there are 23 confirmed and seven unconfirmed roosting sites, with

the closest being approximately 600 metres from the application area. The large *Eucalyptus* trees within the application area have not been recorded as a roost site, nonetheless may provide occasional roosting opportunities for black cockatoos (Bamford, 2013). The DWER site inspection did not record any hollow bearing trees occurring within the application area (DWER, 2019). Given the application area does not contain suitable breeding or ample foraging habitat, it is not likely that the proposed clearing will have significant impact on an area that comprises critical black cockatoo habitat within the local area.

Two short-tongued native bee species, *Leioproctus douglasiellus* and *Neopasiphae simplicior*, are only currently known from the Anstey-Keane dampland and/or Forestdale Lake Nature Reserve, which are both within close proximity (within approximately 700 metres) to the application area (DBCA, 2019). Similarly, a newly discovered native bee species, *Leioproctus muelleri*, is only known from the Anstey-Keane dampland (DBCA, 2019). It is therefore considered possible that the fauna habitat surrounding the ephemeral wetlands near the application area provides suitable habitat for this species. However, the results of the flora survey indicate that key flora species associated with these native bee habitats are lacking from within the application area (Coterra, 2019b). Given this, the proposed clearing is not likely to significantly impact on native vegetation that comprises significant habitat for native bees.

The level 1 fauna survey recorded evidence of Quenda from within the application area (Bamford, 2013). Quenda inhabit scrubby, often swampy vegetation with dense cover up to 1 metre high, and often feeds in areas of pasture and croplands lying close to dense cover (DEC 2012). On the Swan Coastal Plain, they are often associated with wetlands (DEC, 2012). The nearby Bush Forever site (342) is known to be significant habitat for the Quenda (Government of Western Australia, 2000). A large adult male has a home range of 2 to 7 hectares, and a female has a home range of 1 to 3 hectares (DEC, 2012). Given the close proximity of Bush Forever site (342) to the application area, and evidence (diggings) of Quenda during the fauna survey, it is likely that application area provides suitable foraging habitat for the species. However, the proposed clearing is not likely to significantly impact the local population or conservation of this species, as there is suitable habitat in the same or better condition within the nearby Bush Forever site (342). To minimise the direct impact of the proposed clearing, a fauna management condition will be placed on the permit requiring clearing to be conducted in a slow, progressive manner.

It is also noted that numerous avian species listed as Migratory under the EPBC Act may be vagrant or irregular visitors to the application area following time of high rainfall, however it is not likely that the application area would provide significant habitat for these species (Bamford, 2013).

Given the above, the proposed clearing is not likely to 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

According to available databases, sixteen threatened flora species have been recorded in the local area. Six of these threatened flora species occur in either the same mapped vegetation complex and/or soil type that are consistent with the application area. These species include *Austrostipa jacobsiana*, *Caladenia huegelii*, *Diuris purdiei*, *Drakaea elastica*, *Drakaea micrantha*, and *Lepidosperma rostratum*. Of these, one flora species, *Diuris purdiei*, is listed as a significant flora species of the Bush Forever site (342) located nearby the application area (Government of Western Australia, 2000).

A targeted survey for *Caladenia huegelii*, *Diuris purdiei*, *Drakaea elastica*, *Drakaea micrantha* and *Lepidosperma rostratum* was conducted in October 2013. The survey did not identify any of these species or other threatened flora species occurring within the survey area (BEC, 2013). The October 2013 survey was not conducted at an appropriate time to identify *Caladenia huegelii* and *Drakaea elastica*. However, it is noted that the application area does not contain preferred habitat for *Caladenia huegelii*, which are known to grow in well-drained, deep sandy soils in low mixed woodlands of *Banksia* sp., Western Sheoak (*Allocasuarina fraseriana*) and Jarrah (*Eucalyptus marginata*) (DotEE, 2019). Some flora species are present within the application area, which are known to grow in association with *Drakaea elastica*, however the application area does not contain suitable open space under the *Kunzea glabrescens* shrubland areas, and the high weed and/or sedge covers under the *Melaleuca preissiana* are not conducive to *Drakaea elastica* (DBCA, 2019).

Austrostipa jacobsiana was not included in the targeted survey. However, it is noted that *Austrostipa jacobsiana* prefers calcareous soil types, which are not found within the application area. The application area is located within the mapped Pinjarra P8 Phase soil type that is commonly acidic. Given this, *Austrostipa jacobsiana* is not considered likely to occur within the application area (Coterra, 2019b).

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 is not likely to be at variance to this Principle

There are no State listed TECs located within the application area. The nearest State TEC is the 'Shrublands on dry clay flats' ecological community that is listed as 'Endangered' under the *Biodiversity Conservation Act 2016*. This TEC occurs approximately 225 metres north east of the application area.

This TEC has a high species richness and is dominated by species of *Hakea sulcata*, *Hakea varia*, *Pericalymma ellipticum*, *Verticordia densiflora*, *Regelia ciliata* and *Viminaria juncea*. Based on the results of the flora and vegetation survey, the application area is not representative of this TEC.

Based on the above, the proposed clearing is not likely to 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 at variance to this Principle

The application area is located within the Swan Coastal Plain IBRA bioregion. This bioregion has approximately 38.6 per cent of its pre-European vegetation extent remaining (Government of Western Australia, 2019a).

The application area is also mapped as Southern River Complex, which retains approximately 18.4 per cent pre-European extent (Government of Western Australia, 2019b).

The local area retains approximately 21 per cent native vegetation.

The National Objectives and Targets for Biodiversity Conservation 2001-2005 include a target to have clearing controls in place that prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750 (Commonwealth of Australia, 2001). The mapped vegetation complex and the local area fall below the threshold level of 30 per cent and therefore, the application area is located within an area that has been extensively cleared. The application area contains vegetation in completely degraded to very good (Keighery, 1994) condition, a portion of a multiple use category wetland, and suitable habitat for Quenda. Given this, and considering the National Objectives and Targets for Biodiversity Conservation 2001-2005, the application area is a significant remnant of native vegetation. However, in the Perth Metropolitan and Bunbury regions, the Environmental Protection Authority (EPA) has a modified objective to retain at least 10 per cent of the pre-clearing extent of vegetation complexes for defined constrained areas (intensely developed) (EPA, 2008; EPA, 2015; Government of Western Australia, 2000). The application area is located within the defined constrained area and given that the IBRA bioregion, mapped vegetation complex, and the local area all retain over 10 per cent native vegetation, the proposed clearing is not likely to have any significant residual impacts on the environmental values of the application area.

Table 1: Vegetation extents

	Pre-European extent (ha)	Current extent (ha)	% remaining*	Current extent in all DBCA managed land (ha)	% Current Extent in all DBCA managed land (proportion of Pre-European extent)
IBRA Bioregion:*					
Swan Coastal Plain	1,501,221	579,813	38.62	222,916	14.85
South Coastal Plain vegetation complex:**					
Southern River Complex	58,781	10,832	18.43	340.36	1.6

*Government of Western Australia. (2019a)
**Government of Western Australia. (2019b)

Based on the above, the proposed clearing is at variance to this Principle.

(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, there are numerous waterbodies and wetlands within the local area, including the Forrestdale Lakes which occur approximately 710 metres south west of the application area, and a conservation category dampland (associated with Bush Forever site 342), located approximately 190 metres of the application area. Approximately 1.65 hectares of the application area is located within a multiple use category dampland. The portion of the application area that intersects the multiple use category dampland is mostly devoid of native vegetation and only retains some isolated trees. Given this, it is not likely that the proposed clearing will result in the direct loss of the values of damplands surrounding the application area.

The survey inferred the vegetation within the application area as floristic community FCT4 – *Melaleuca preissiana* Dampland, which is likely to be groundwater dependent (Bamford, 2013). The flora and vegetation survey identified that the entire application area can be considered as a wetland (BEC, 2013).

Based on 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

The application area has been mapped within the Pinjarra P8 Phase soil type, which is described as broad poorly drained flats and poorly defined stream channels with moderately deep to deep sands over mottled clays; acidic or less commonly alkaline gley and yellow duplex soils to uniform bleached or pale brown sands over clay. (Schoknecht et al., 2004):

Land Degradation Risk Category	Pinjarra P8 Phase
Water Erosion	<3% of map unit has a high to extreme water erosion risk
Wind Erosion	10-30% of map unit has a high to extreme wind erosion risk
Waterlogging	>70% of map unit has a moderate to very high waterlogging risk
Flooding	<3% of the map unit has a moderate to high flood risk
Salinity risk	10-30% of map unit has a moderate to high salinity risk or is presently saline

Over 70 per cent of the mapped soil type has a high risk of waterlogging, therefore the application area is likely to be inundated following significant rainfall events. However, the application area is generally not susceptible to erosion, flooding or risk of salinity, therefore the proposed clearing is not likely to cause appreciable land degradation.

Based on 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 does not occur within any conservation areas. The nearest conservation area is a Bush Forever site (342) which is located approximately 190 metres north of the application area.

Bush Forever site (342) contains areas of conservation category and resource enhancement category sumplands and damplands. This site is significant as it provides habitat for Quenda, provides linkages to adjacent bushland to the north and west, and is part of a regional bushland/wetland linkage that is highly fragmented (Government of Western Australia, 2000).

The vegetation within the application area is not linked to Bush Forever site (342), as it is separated by cleared land. Given this, the proposed clearing is not likely to impact on the environmental values of any adjacent or nearby conservation areas. However clearing activities have the potential to facilitate the spread of weeds into adjacent native vegetation. Weed species can decrease the biodiversity value of an area, as they out-compete native vegetation for available resources, contribute to land degradation and increase the frequency and intensity of fires. The potential impacts may be minimised by the implementation of a weed and dieback management condition.

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

There are no watercourses that intersect the application area. A multiple use category dampland intersects the most eastern and western edges of the application area, however these areas are mostly devoid of native vegetation. Given this, it is unlikely the proposed clearing will cause the deterioration of surface water quality.

Groundwater salinity within the application area is mapped at 500 to 1,000 milligrams per litre, total dissolved solids. This level of groundwater salinity is classified as 'marginal'. Given this low salinity level, and that the groundwater is only 2 to 3 metres below the natural ground level (Coterra, 2019a), it is not likely the proposed clearing will lead to an increase in salinity levels within the vicinity of the application area and deteriorate groundwater.

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 soil type mapped over the application area is poorly drained, however the risk of flooding is low (Schnoknecht et al., 2004). Based on aerial imagery, several small ephemeral pools occur in the cleared areas adjacent to the application area. Given this, small ephemeral pools may occur within the application area following significant rainfall. However, the proposed clearing is not likely to cause or exacerbate, the incidence or intensity of flooding.

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

Planning instruments and other relevant matters.

No Aboriginal Sites of Significance have been mapped within the application area.

The EPA's modified objective to retain at least 10 per cent of the pre-clearing extent of vegetation complexes for defined constrained areas within the Perth Metropolitan and Bunbury regions was considered in assessing Principle (e) (EPA, 2008; EPA, 2015; Government of Western Australia, 2000).

The clearing permit application was advertised on the Department of Water and Environmental Regulation website on 17 May 2019 with a 21 day submission period. No public submission were received in relation to this application. However, the City of Armadale provided the following information:

- The application area is zoned as 'Urban' under the Metropolitan Region Scheme (Metropolitan Region Scheme Minor Amendment 1290-57) and 'General Rural' under the City of Armadale's Town Planning Scheme No. 4. The project is currently progressing through a Town Planning Scheme amendment and Local Structure Plan assessment.
- The applicant will require a development approval to undertake the proposed bulk earthworks.

The applicant advised that a development approval application has been submitted to the City of Armadale (Cedar Woods, 2019).

The applicant has advised that a Western Australian Planning Commission (WAPC) subdivision planning application is proposed to be submitted mid-2019.

5. References

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GIS Databases:

- Aboriginal Sites of Significance
- DPaW tenure
- Hydrography, hierarchy
- Hydrography, linear
- Land Degradation datasets
- SAC Bio Datasets