



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: 7644/1

File Number: DER2017/000985

Duration of Permit: From 26 October 2017 to 26 October 2019

PERMIT HOLDER

Goldleaf Developments Pty Ltd

LAND ON WHICH CLEARING IS TO BE DONE

Lot 108 on Deposited Plan 33922, Yallingup

AUTHORISED ACTIVITY

The Permit Holder shall not clear more than 5.38 hectares of native vegetation within the area hatched yellow on attached Plan 7644/1.

CONDITIONS

1. 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.

2. Western Ringtail Possum Management

- (a) In relation to the area cross hatched yellow on attached Plan 7644/1, the Permit Holder must engage a *fauna specialist* to inspect that area immediately prior to, and for the duration of, clearing, for the presence of western ringtail possum(s) (*Pseudocheirus occidentalis*).
- (b) Clearing must cease in any area where a western ringtail possum (*Pseudocheirus occidentalis*) is identified until either:
 - (i) the individual has been removed by a *fauna specialist*; or
 - (ii) the individual has moved on from that area to adjoining *suitable habitat*.
- (c) Any western ringtail possum (*Pseudocheirus occidentalis*) individuals removed in accordance with condition 2(b)(i) of this Permit must be relocated by a *fauna specialist* to *suitable habitat*.
- (d) Where a western ringtail possum(s) (*Pseudocheirus occidentalis*) is identified under condition 2(a) of this Permit, the Permit Holder must provide the following records to the *CEO* as soon as practicable:

- (i) the number of individuals identified;
- (ii) the date each individual was identified;
- (iii) the location where each individual was identified recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
- (iv) the number of individuals removed and relocated;
- (v) the date each individual was removed;
- (vi) the date each individual was relocated;
- (vii) the 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
- (viii) details pertaining to the circumstances of any death of, or injury sustained by, an individual.

3. Black Cockatoo Management

- (a) Prior to undertaking any clearing authorised under this Permit, the Permit Holder shall engage a *fauna specialist* who shall inspect trees located in the Permit Area to identify hollows suitable to be utilised by Baudin's cockatoo (*Calyptorhynchus baudinii*), Carnaby's cockatoo (*Calyptorhynchus latirostris*) and forest red-tailed black cockatoo (*Calyptorhynchus baudinii*);
- (b) Prior to clearing, any trees identified in condition 3(a) shall be inspected by a *fauna specialist* for the presence of Baudin's cockatoo (*Calyptorhynchus baudinii*), Carnaby's cockatoo (*Calyptorhynchus latirostris*) and forest red-tailed black cockatoo (*Calyptorhynchus baudinii*); and
- (c) Where fauna are identified under condition 3(b) of this Permit, the Permit Holder shall ensure the no clearing occurs within 10 metres of the identified tree, unless first approved by the CEO.

DEFINITIONS

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

CEO: means the Chief Executive Officer of the Department of Water and Environmental Regulation (Western Australia);

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

fauna specialist: means a person who holds a tertiary qualification specializing in environmental science or equivalent, and has a minimum of two years work experience in fauna identification and surveys of fauna native to the region being inspected or surveyed, or who is approved by the CEO as a suitable fauna specialist for the bioregion, and who holds a valid fauna licence issued under the *Wildlife Conservation Act 1950*;

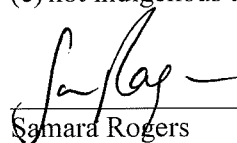
fill means material used to increase the ground level, or fill a hollow;

mulch means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation;

suitable habitat: means habitat known to support western ringtail possums (*Pseudocheirus occidentalis*) within the known current distribution of the species. This often includes stands of myrtaceous trees (usually Peppermint Tree (*Agonis flexuosa*)) growing near swamps, watercourses or floodplains, and at topographic low points which provide cooler, often more fertile, conditions; and

weed/s means any plant -

- (a) that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*; or
- (b) published in a Department of Parks and Wildlife Regional Weed Summary, regardless of ranking; or
- (c) not indigenous to the area concerned.



Samara Rogers
A/ MANAGER
CLEARING REGULATION

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

2 October 2017

Plan 7644/1

33.71974°S

33.71974°S

115.035378°E

115.0428°E



LOT 108 ON PLAN 53922

115.035378°E

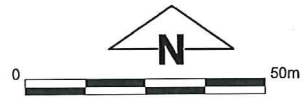
115.0428°E

33.723748°S

33.723748°S

Legend

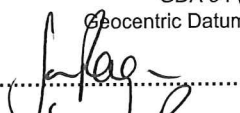
-  Cadastre
-  Cadastre (Search)
-  Imagery
-  Clearing Instruments Activities
-  Roads
-  Local Government Authority



1:1,500

(Approximate when reproduced at A4)
GDA 94 (Lat/Long)

Geocentric Datum of Australia 1994

 Date 2/10/2017

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



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WESTERN AUSTRALIA
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Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 7644/1
Permit type: Area Permit

1.2. Applicant details

Applicant's name: Goldleaf Developments Pty Ltd

1.3. Property details

Property: LOT 108 ON PLAN 33922, YALLINGUP
Local Government Authority: BUSSELTON, CITY OF
DER Region: Greater Swan
DPaW District: BLACKWOOD
Localities: YALLINGUP

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
5.38		Mechanical Removal	Establishing a vineyard

1.5. Decision on application

Decision on Permit Application: Grant

Decision Date: 2 October 2017

Reasons for Decision: The clearing permit application received on 8 June 2017 has been assessed against the clearing principles, planning instruments and other matters in accordance with s51O of the *Environmental Protection Act 1986*. It has been concluded that the proposed clearing may be at variance to Principle (b) and is not likely to be at variance to any of the remaining clearing principles.

Through assessment it has been determined that the vegetation in the application area has the potential to provide nesting habitat for Carnaby's cockatoo (*Calyptorhynchus latirostris*), Baudin's cockatoo (*Calyptorhynchus baudinii*) and the forest red-tailed black-cockatoo (*Calyptorhynchus banksii* subsp. *naso*). To mitigate the potential impact to these species a condition has been placed on the permit requiring the identification of suitable hollows to be utilised by black cockatoos; the inspection of hollow for the presence of black cockatoos; and the retention of hollows that are being utilised.

The Delegated Officer also determined that the application area contains suitable habitat for western ringtail possums (*Pseudocheirus occidentalis*). A condition requiring a fauna specialist to be on site during clearing will assist in mitigating the risk of injury to/death of western ringtail possum individuals.

The disturbance cause by the proposed clearing will increase the risk of weeds and dieback being spread in to adjacent areas of remnant vegetation. To reduce this risk the Delegated Officer has placed a weed and dieback management condition on the permit.

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description	Clearing Description	Vegetation Condition	Comment
The application area is mapped as the following South West Forests Vegetation complexes:	The applicant proposes to clear 5.38 hectares of native vegetation within Lot 108 on Deposited Plan 33922, Yallingup, for the purpose of establishing a vineyard.	Completely Degraded; No longer intact, completely/almost completely without native species (Keighery, 1994). To	The condition of the vegetation in the application area was determined by a Department of Water and Environmental Regulation (DWER) site inspection on 11 July 2017 (DWER, 2017a). The application area can be separated into two sections, the central portion and eastern portion.
Cowaramup C2 (90 per cent of the application area) - Open forest of <i>Eucalyptus marginata</i> subsp. <i>marginata</i> -			

Corymbia calophylla-
Banksia grandis on
lateritic uplands in
perhumid and humid
zones.

Cowaramup Cw2 (10 per
cent of the application
area) – Woodland of
Eucalyptus marginata
subsp. *marginata*-
Corymbia calophylla on
slopes and low woodland
of *Melaleuca preissiana*-
Banksia littoralis on
depressions in perhumid
and humid zones.

(Government of Western
Australia, 2017).

Good; Structure
significantly altered by
multiple disturbance;
retains basic
structure/ability to
regenerate (Keighery,
1994).

The central portion of the application area is in
a completely degraded condition and contains
bare areas devoid of native vegetation, with
occasional scattered large *Agonis flexuosa*
and *Xanthorrhoea preissii* (DWER, 2017a).

The eastern portion of the application area is in
a good to completely degraded (Keighery,
1994) condition. This area comprises
Eucalyptus marginata, *Corymbia calophylla*
and *Eucalyptus patens* woodland/forest over
Xanthorrhoea preissii with heavy leaf litter in
parts and some scattered *Agonis flexuosa*,
Acacia pulchella and *Hardenbergia* sp. This
area includes some large *Eucalyptus*
marginata trees with hollows (DWER, 2017a).

3. Assessment of application against clearing principles

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

Comments **Proposed clearing is not likely to be at variance to this Principle**

The applicant proposes to clear 5.38 hectares of native vegetation within Lot 108 on Deposited Plan 33922, Yallingup, for the purpose of establishing a vineyard. On 29 September 2017, the original application area was modified to remove the western portion which comprised of high quality western ringtail possum habitat. The application area remains at 538 hectares.

The site inspection by DWER officers identified that the vegetation within the application area is in a completely degraded to good (Keighery, 1994) condition, with the majority of the area in a degraded to completely degraded (Keighery, 1994) condition (DWER, 2017a). Much of the application area appears to have been parkland cleared and consistently grazed by cattle (DWER, 2017a).

Twenty priority flora species have been recorded within the local area (10 kilometre radius). The majority (18) of these species are priority 3 and 4. Priority 3 species are generally known from collections from several different localities not under imminent threat and priority 4 species are considered to have been adequately surveyed and not in need of special protection, but could be if circumstances change. The Department of Biodiversity, Conservation and Attractions (DBCA) noted that the site inspection identified the application area had been historically grazed and advised that it 'will no longer support any flora or vegetation that is currently considered threatened' (DBCA, 2017). Given the condition of the vegetation and that the majority of the species are found on the coast, creek lines or swamps the application area is not likely to support priority flora.

No priority ecological communities (PEC) are located in close proximity to the application area. The closest mapped PEC is the '*Melaleuca lanceolate* forest, Leeuwin Naturaliste Ridge' which is mapped approximately six kilometres west of the application area.

Six terrestrial fauna species listed as specially protected under the *Wildlife Conservation Act 1950* (WC Act) have been recorded within the local area, being; Baudin's cockatoo (*Calyptorhynchus baudinii*), Carnaby's cockatoo (*Calyptorhynchus latirostris*), forest red-tailed black cockatoo (*Calyptorhynchus baudinii*), chuditch (*Dasyurus geoffroii*), western ringtail possum (*Pseudocheirus occidentalis*) and quokka (*Setonix brachyurus*) (DBCA, 2007-). The DWER site inspection identified a number of large hollows in marri and jarrah trees which were of a size and orientation that could be suitable for use by black cockatoos (DWER, 2017a). Peppermint trees were also noted in the site inspection and may be habitat for western ringtail possum. This is discussed further in Principle (b).

Noting the application area may contain habitat for indigenous fauna, given the condition of vegetation, the application area it is not likely to contain high biodiversity. Given this, the proposed clearing is not likely to be at variance to this Principle.

Methodology References:
DBCA (2007-)
DBCA (2017)
DWER (2017a)
Keighery (1994)

GIS Datasets:
Sac Bio Datasets – accessed July 2017

(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.

Comments

Proposed clearing may be at variance to this Principle

As discussed in Principle (a) six terrestrial fauna species listed as specially protected under the WC Act have been recorded within the local area, being; Baudin's cockatoo, Carnaby's cockatoo, forest red-tailed black cockatoo, chuditch, western ringtail possum and quokka (DBCA, 2007-).

Carnaby's cockatoo is listed as endangered, while Baudin's cockatoo and forest red-tailed black cockatoo are listed as vulnerable under the *Environmental Protection and Conservation Act 1999*. Black cockatoos 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).

A DWER site inspection identified a number of large hollow bearing marri and jarrah trees within the application area. These hollows were observed to be of a size and orientation that could be suitable for use by black cockatoos (DWER, 2017a).

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 contains marri and jarrah trees and foraging evidence in the form of chewed marri nuts was observed during the site inspection (DWER, 2017a).

Western ringtail possums are largely restricted to near coastal areas of peppermint woodland and peppermint/tuart woodland (Parks and Wildlife, 2016). The application area was observed to contain large peppermint trees which would be suitable for use by western ringtail possums (DWER, 2017a). DBCA advised that given the application area contains peppermint trees in close proximity to a streamline it is highly likely to support western ringtail possums (DBCA, 2017). DBCA mapped the western ringtail possum habitat suitability of the property and identified that the application area contains medium quality Category C suitable habitat. Given the presence of peppermint trees and the proximity to the mapped swamp/watercourse, the application area contains suitable habitat for western ringtail possums.

Chuditch use a range of habitats including forest, mallee shrublands, woodland and desert. The densest populations have been found in riparian jarrah forest (DEC, 2012a). The preferred habitat for the quokka is densely vegetated swamps and sometimes tea-tree thickets on sandy soils along creek systems and dense heath on slopes (DEC, 2012b). The application area is not likely to contain habitat for these two species.

An ecological linkage axis line, defined by the South West Regional Ecological Linkage (SWREL) Report (Molloy et al., 2009) is mapped approximately 1.5 kilometre north of the application area linking Leeuwin-Naturaliste National Park (2.3 kilometres west) and un-named Nature Reserve (1.8 kilometres east).

The SWREL report (Molloy et al., 2009) defines an ecological linkage as "A series of (both contiguous and non-contiguous) patches of native vegetation which, by virtue of their proximity to each other, act as stepping stones of habitat which facilitate the maintenance of ecological processes and the movement of organisms within, and across, a landscape". Given the distance to this linkage the proposed clearing is unlikely to hinder the dispersal of fauna between the two above mentioned nature reserves.

The application area contains suitable habitat for western ringtail possums and black cockatoo and therefore may be at variance to this Principle.

The requirement to check hollows prior to clearing and to have fauna spotter on site during clearing will ensure that conservation significant fauna are not impacted during the clearing process.

Methodology

References:
Commonwealth of Australia (2012)
DBCA (2007-)
DBCA (2017)
DEC (2012a)
DEC (2012b)
DWER (2017a)
Molloy et al. (2009)
Parks and Wildlife (2016)

GIS Datasets:
Sac Bio Datasets – accessed July 2017

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

Comments

Proposed clearing is not likely to be at variance to this Principle

Three rare flora species have been recorded within the local area.

The first species is an orchid which is found on the Leeuwin-Naturalist ridge, where it occupies deep sandy soils amongst dense, low shrubs in banksia, jarrah and marri woodlands (Brown et al., 1998).

The second species is also an orchid which inhabits infertile greys sands in common sheoak and jarrah woodland or forest (Brown et al., 1998).

The third species is an erect shrub which is restricted to the northern extent of the Metricup Scarp, an area characterised by granitic and lateritic outcrops with shallow, gravelly loam soils (Hislop et al., 2014).

Given the habitat requirements of the above species and the condition of the application area, the application area is not likely to support rare flora.

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

Methodology References:
Brown et al. (1998)
Hislop et al. (2014)

GIS Datasets:
Sac Bio Datasets – accessed July 2017

(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.

Comments **Proposed clearing is not likely to be at variance to this Principle**
No threatened ecological communities (TEC) are located within the local area. The closest mapped TEC is the 'Shrublands on southern Swan Coastal Plain Ironstones (Busselton Area)' which is mapped approximately 11 kilometres east of the application area.

Given the distance to the closest TEC the proposed clearing is not likely to comprise part of, or be necessary for the maintenance of this TEC.

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

Methodology GIS Datasets:
Sac Bio Datasets – accessed July 2017

(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.

Comments **Proposed clearing is not likely to be at variance to this Principle**
The application area is located within the Warren IBRA bioregion. This bioregion has approximately 79 per cent of its pre-European vegetation extent remaining (Government of Western Australia, 2016).

The application area is also mapped as south west forest vegetation complexes C2 and Cw2 which retain approximately 32 and 20 per cent of their pre-European extents, respectively (Government of Western Australia, 2017).

The application area is located within the City of Busselton, within which there is approximately 41 per cent pre-European extent remaining (Government of Western Australia, 2017).

The local area retains approximately 45 per cent native vegetation.

The national objectives and targets for biodiversity conservation in Australia have 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 contains suitable habitat for black cockatoos and western ringtail possums and therefore may be a significant remnant. Vegetation complex Cw2 retains less than the recommended 30 per cent threshold, however this vegetation complex only makes up approximately 2 per cent of the application area and is in a completely degraded (Keighery, 1994) condition..

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

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Extent in DBCA Managed Lands (%)
IBRA Bioregion*				
Warren	833,985	660,310	79	85

Shire**				
City of Busselton	146,478	60,015	41	69
Vegetation Complex - South West Forests**				
C2	13,692	4,442	32	4.8
Cw2	6,655	1,352	20	3.3

Methodology References:
Commonwealth of Australia (2001)
*Government of Western Australia (2016)
**Government of Western Australia (2017)
Parks and Wildlife (2015a)

GIS Databases:
Remnant vegetation

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

Comments Proposed clearing is not likely to be at variance to this Principle

No watercourses or wetlands are mapped within the application area.

A non-perennial swamp is mapped approximately 92 metres west of the application area and an associated watercourse is mapped approximately 100 metres west.

On 11 July 2017, DWER officers inspected the application area and noted that no riparian vegetation was present in the application area (DWER, 2017a).

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

Methodology References:
DWER (2017a)

GIS Databases:
Hydrography, linear

(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

Comments Proposed clearing is not likely to be at variance to this Principle

The application area is located on the lower and mid slope of the landscape and has been mapped by the Department of Primary Industry and Regional Development to be a mixture of two soil types: Cowaramup gentle slope Phase (Map Unit 216CoCO2) and to a lesser extent, Cowaramup wet values Phase (Map Unit 216CoCOvw) (Commission of Soil and Land Conservation, 2017).

Map unit 216CoCO2 is described as lateritic and gentle slopes on weathered mantle over granite with loamy gravels and duplex sandy gravels. The lesser Map Unit 216CoCOvw is described as having small board U-shaped drainage depressions with swampy floors. Gravelly duplex soils on the side slopes and poorly drained alluvial soils on valley floors (Commission of Soil and Land Conservation, 2017).

The Commission of Soil and Land Conservation (2017) advises that the proposed clearing is unlikely to cause wind erosion, water erosion, water logging, eutrophication or flooding due to the soils types present, short slope lengths and its located in the landscape.

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

Methodology References:
Commission of Soil and Land Conservation (2017)

GIS Databases
Flood Risk
Salinity Risk
Soils – Sub-systems
Water Erosion
Waterlogging
Wind Erosion

(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.

Comments **Proposed clearing is not likely to be at variance to this Principle**
Leeuwin-Naturaliste National Park is located 2.6 kilometres west of the application area and un-named Nature Reserve is located 1.8 kilometres east.

As discussed in Principle (b) an ecological linkage, defined by the South West Regional Ecological Linkage (SWREL) Report (Molloy et al., 2009) is mapped approximately 1.5 kilometre north of the application area linking the two above mentioned conservation areas.

Given the distances to the closest conservation areas and ecological linkage the proposed clearing is not likely impact on the environmental values of the conservation areas or on the function of the linkage.

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

Methodology References:
Molloy et al. (2009)

GIS Databases
DBCA Estate

(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.

Comments **Proposed clearing is not likely to be at variance to this Principle**
A non-perennial swamp is mapped approximately 92 metres west of the application area and an associated watercourse is mapped approximately 100 metres west of the northern section.

The Commissioner of Soil and Land Conservation (2017) has advised that the proposed clearing is not likely to cause water erosion due to the short slope lengths, soil types present and the intended land use. Therefore, the proposed clearing is not likely to cause deterioration in the quality of surface water associated with the nearby swamp or watercourse.

Groundwater salinity within the application area is mapped 1,000-3,000 total dissolved solids, milligrams per litre. This level of groundwater salinity is classified as 'Brackish'. Given this level the proposed clearing is not likely to increase groundwater salinity.

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

Methodology References:
Commissioner of Soil and Land Conservation (2017)

GIS Databases
Hydrography, linear
Groundwater Salinity

(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.

Comments **Proposed clearing is not likely to be at variance to this Principle**
The application area is located on the lower and mid slope of the landscape and has been mapped by the Department of Primary Industry and Regional Development to be a mixture of two soil types: Cowaramup gentle slope Phase (Map Unit 216CoCO2) and to a lesser extent, Cowaramup wet values Phase (Map Unit 216CoCOvw) (Commission of Soil and Land Conservation, 2017).

The Commission of Soil and Land Conservation (2017) advises that the proposed clearing is not expected to contribute to flooding.

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

Methodology References:
Commissioner of Soil and Land Conservation (2017)

GIS Databases
Flood Risk
Soils – Sub-systems

Planning instruments and other relevant matters.

Comments The application area is mapped within the Busselton-Capel Groundwater Area and the Cape to Cape North Surface Water Areas as proclaimed under the *Rights in Water and Irrigation Act 1914*. Regulatory Services (Water) advised that the applicant has applied for the irrigation of the proposed vineyard and a licence was granted for 9ML, which covers the five hectares of vines (7.5ML) and the domestic use of 1.5ML (DWER, 2017b).

Regulatory Services (Water) further advised that the western portion of the proposed clearing appears to impinge upon the boundary of the riparian zone of a waterway (that is a tributary of Gunyulgup Brook that rises on the subject lot) and a non-perennial swamp (indicating a potentially high water table) and noted the following potential impacts:

- Due to the gently sloping nature of the land, the proposed clearing carries a small risk of erosion, sediment transport and associated turbidity into the Gunyulgup Brook.
- The proposed land use poses a moderate risk of nutrient, pesticide and herbicide input into Gunyulgup Brook and groundwater particularly at the western portion in the vicinity of the swamp (high water table) and waterway.

The following risk management measures were recommended to be followed where appropriate/practical:

- To minimise turbidity and erosion, clearing to take place during the dry period of the year, when flows are at their lowest and erosion is least likely;
- Establishing perennial grasses between planted rows to control erosion and attenuate nutrients;
- The use of fertilisers, pesticides and fertilizers follow best management practices such as applications during the dry period of the year in accordance with the manufactures instructions; and the use of slow release fertilisers and low environmental impact pesticides/herbicides;
- The use of organic fertilisers / soil amendments like manure, compost and mulch is encouraged; and
- In particular, the Department recommends that the proponent consider excluding the riparian zone/swampy area (western portion of proposed clearing) from clearing/cultivation to minimise water quality impacts.

(DWER, 2017b)

The application was advertised online on 11 July 2017 for a 21 day submission period. No submission from the public were received during this period.

On 15 September 2017, the applicants consultant was notified that the western portion of the original application area comprised of significant habitat for western ringtail possums. The applicant was requested to avoid and minimise the impacts to western ringtail possums by modifying the application area to remove the high quality Category B habitat. On 29 September 2017, the applicants consultant notified DWER that the applicant wished to proceed with a modified application area which removed the high quality western ringtail possum habitat (Soil Dynamics, 2017).

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

Methodology References:
DWER (2017b)

GIS Databases
Aboriginal Sites of Significance
RIWI, Groundwater Areas

4. References

- Brown A., Thomson-Dans C. and Marchant N. (1998). Western Australia's Threatened Flora, Department of Conservation and Land Management, Western Australia.
- Commissioner of Soil and Land Conservation (2017) Land Degradation Advice and Assessment Report for clearing permit application CPS 7644/1 received on 2 September 2017. Department of Primary Industries and Regional Development (DWER Ref: A1516976).
- Department of Biodiversity, Conservation and Attractions (DCBA) (2007-) NatureMap: Mapping Western Australia's Biodiversity. URL: <http://naturemap.dpaw.wa.gov.au/>. Accessed August 2017.
- Department of Biodiversity, Conservation and Attractions (DCBA) (2017) Species and Communities, and Swan Regional Advice for Clearing Permit Application CPS 7644/1. Received on 12 July 2017 (DWER Ref: A1473216).
- Department of Water and Environmental Regulation (DWER) (2017b) Rights in Water and Irrigation Act 1914 advice for Clearing Permit Application CPS 7644/1. Advice received on 13 July 2017. Department of Water and Environmental Regulation, Western Australia (DWER Ref: A1499601).
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