GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 6640/1
Permit Holder:	Charles Hull Contracting Co. Pty Ltd
Duration of Permit:	5 December 2015 – 4 December 2023

The Permit Holder is authorised to clear native vegetation subject to the following conditions of this Permit.

PART I – CLEARING AUTHORISED

1. **Purpose for which clearing may be done**
   Clearing for the purpose of limestone extraction.

2. **Land on which clearing is to be done**
   Lot 1 on Deposited Plan 49358, Lake Clifton.

3. **Area of Clearing**
   The Permit Holder must not clear more than 5.22 hectares of native vegetation within the area cross-hatched yellow on attached Plan 6640/1.

4. **Clearing not authorised**
   The Permit Holder shall not clear any native vegetation after 4 December 2018.

5. **Application**
   This Permit allows the Permit Holder to authorise persons, including employees, contractors and agents of the Permit Holder, to clear native vegetation for the purposes of this Permit subject to compliance with the conditions of this Permit and approval from the Permit Holder.

PART II – MANAGEMENT CONDITIONS

6. **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*:
   (i) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
   (ii) ensure that no *dieback* or *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared; and
   (iii) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

7. **Avoid, minimise etc.**
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:
(i) avoid the clearing of native vegetation;
(ii) minimise the amount of native vegetation to be cleared; and
(iii) reduce the impact of clearing on any environmental value.

8. **Revegetation and rehabilitation**
The Permit Holder shall:

(a) retain the vegetative material and topsoil removed by clearing authorised under this Permit and stockpile the vegetative material and topsoil;

(b) at an *optimal time* following clearing authorised under this Permit, *revegetate* and *rehabilitate* the areas that are no longer required for the purpose for which they were cleared under this Permit by:
(i) re-shaping the surface of the land so that it is consistent with the surrounding 5 metres of uncleared land;
(ii) ripping the ground on the contour to remove soil compaction; and
(iii) laying the vegetative material and topsoil retained under condition 8(a) on the cleared areas.

(c) within 24 months of laying the vegetative material and topsoil on the cleared area in accordance with condition 8(b) of this Permit:
(i) engage an *environmental specialist* to determine the species composition, structure and density of the area *revegetated* and *rehabilitated*; and
(ii) where, in the opinion of an *environmental specialist*, the composition structure and density determined under condition 8(c)(i) of this Permit will not result in a similar species composition, structure and density to that of pre-clearing vegetation types in that area, *revegetate* the area by deliberately *planting* and/or *direct seeding* native vegetation that will result in a similar species composition, structure and density of native vegetation to pre-clearing vegetation types in that area and ensuring only *local provenance* seeds and propagating material are used.

(d) Where additional *planting* or *direct seeding* of native vegetation is undertaken in accordance with condition 8(c)(ii) of this permit, the Permit Holder shall repeat condition 8(c)(i) and 8(c)(ii) within 24 months of undertaking the additional *planting* or *direct seeding* of native vegetation.

(e) Where a determination by an *environmental specialist* that the composition, structure and density within areas *revegetated* and *rehabilitated* will result in a similar species composition, structure and density to that of pre-clearing vegetation types in that area, as determined in condition 8(c)(i) and (ii) of this permit, that determination shall be submitted for the CEO's consideration. If the CEO does not agree with the determination made under condition 8(c)(ii), the CEO may require the Permit Holder to undertake additional *planting* and *direct seeding* in accordance with the requirements under condition 8(c)(ii).

PART III - RECORD KEEPING AND REPORTING

9. Records to be kept

The Permit Holder must maintain the following records for activities done pursuant to this Permit:

(a) In relation to the clearing of native vegetation authorised under this Permit:
   (i) 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;
   (ii) the date that the area was cleared;
   (iii) the size of the area cleared (in hectares); and
   (iv) the purpose for which clearing was undertaken.

(b) In relation to the *revegetation* and *rehabilitation* of areas pursuant to condition 8 of this Permit:
   (i) the location of any areas *revegetated* and *rehabilitated*, 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;
   (ii) a description of the *revegetation* and *rehabilitation* activities undertaken;
   (iii) the size of the area *revegetated* and *rehabilitated* (in hectares);
   (iv) the species composition, structure and density of *revegetation* and *rehabilitation*, and
   (v) a copy of the *environmental specialist*'s report.

10. Reporting

(a) The Permit Holder must provide to the CEO on or before 31 July of each year, a written report:
   (i) of records required under condition 9 of this Permit; and
   (ii) concerning activities done by the Permit Holder under this Permit between 1 July to 30 June of the preceding financial year.

(b) If no clearing authorised under this Permit was undertaken between 1 July to 30 June of the preceding financial year, a written report confirming that no clearing under this permit has been carried out, must be provided to the CEO on or before 31 July of each year.

(c) Prior to 4 September 2023, the Permit Holder must provide to the CEO a written report of records required under condition 9 of this Permit where these records have not already been provided under condition 10(a) of this Permit.

DEFINITIONS

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

dieback means the effect of Phytophthora species on native vegetation;

direct seeding means a method of re-establishing vegetation through the establishment of a seed bed and the introduction of seeds of the desired plant species;

environmental specialist means a person who holds a tertiary qualification in environmental science or equivalent, and has experience relevant to the type of environmental advice that an environmental specialist is required to provide under this Permit, or who is approved by the CEO as a suitable environmental specialist.

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

local provenance means native vegetation seeds and propagating material from natural sources within 50 kilometres and the same Interim Biogeographic Regionalisation for Australia (IBRA) subregion of the area cleared.

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;

optimal time means the period from April to June for undertaking direct seeding, and the period from May to July for undertaking planting;

planting means the re-establishment of vegetation by creating favourable soil conditions and planting seedlings of the desired species;

regenerate/ed/ion means re-establishment of vegetation from in situ seed banks and propagating material (such as lignotubers, bulbs, rhizomes) contained either within the topsoil or seed-bearing mulch;

rehabilitate/ed/ion means actively managing an area containing native vegetation in order to improve the ecological function of that area;

revegetate/ed/ion means the re-establishment of a cover of local provenance native vegetation in an area using methods such as natural regeneration, direct seeding and/or planting, so that the species composition, structure and density is similar to pre-clearing vegetation types in that area.

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 Rankings Summary, regardless of ranking; or
(c) not indigenous to the area concerned.

amended

M Warnock
SENIOR MANAGER
CLEARING REGULATION

Officer delegated under Section 20
of the Environmental Protection Act 1986

5 November 2015

Plan 6640/1

Legend

- Roads
- Local Government Authority
- Cadastre
- Imagery
- Clearing Instruments Activities

N

0 200m

1:7,000

(Approximate when reproduced at A4)

GDA 94 (Lat/Long)

Geocentric Datum of Australia 1994

Date 5/11/15

M Warnock

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

GOVERNMENT OF WESTERN AUSTRALIA

Government of Western Australia
Department of Environment Regulation

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 6640/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Charles Hull Contracting Co. Pty Ltd

1.3. Property details

Property: Lot 1 on Deposited Plan 49358, Lake Clifton
Local Government Authority: Shire of Waroona
DER Region: Greater Swan
DPaW District: Swan Coastal
LCDC: Harvey River
Localities: Lake Clifton

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
5.22		Mechanical Removal	Limestone extraction

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 5 November 2015

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description
Beard vegetation association 998 is described as medium woodland; tuart (Shepherd et al., 2001).

Heddle vegetation complex Cottesloe Complex-Central and South is described as a mosaic of woodland of *Eucalyptus gomphocephala* (Tuart) and open forest of *Eucalyptus gomphocephala* (Tuart) - *Eucalyptus marginata* (Jarrah) - *Corymbia calophylla* (Marri); closed heath on the limestone outcrops (Heddle et al., 1980).

A vegetation assessment was conducted over Lot 1 on Deposited Plan 49358 in 2008 by Landform Research. One vegetation community was recorded within the application area (Landform Research, 2009):

Peppermint Woodland: *Agonis flexuosa* low regrowth woodland with remnants of scattered *Banksia grandis*, *Eucalyptus gomphocephala*, *Hakea prostrata*, *Acacia saligna*, *Acacia rostellifera*, *Hibbertia cuneiformis* and *Hibbertia hypericoides*.

During a site inspection, vegetation within the application area was observed to represent a woodland dominated by *Agonis flexuosa* with scattered *Eucalyptus gomphocephala* (DER, 2015).

Clearing Description
Charles Hull contracting Co. Pty Ltd (Charles Hull) proposes to clear up to 5.22 hectares of native vegetation within Lot 1 on Deposited Plan 49358, Lake Clifton, for the purpose of limestone extraction.

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

To:

Completely Degraded: No longer intact; completely/almost completely without native species (Keighery, 1994).

Comment
The proposed clearing is for the extension of limestone extraction operations. The application area is located adjacent to an existing pit.

Vegetation condition was determined during a site inspection by the assessing officer (DER, 2015). The condition of native vegetation ranges from completely degraded (Keighery, 1994) in areas that have been completely cleared and used for waste storage, to good (Keighery, 1994).

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 application area consists of 5.22 hectares of native vegetation within the Swan Coastal Plain Interim Biogeographic Regionalisation of Australia (IBRA) bioregion, and is located at the edge of a remnant of vegetation approximately 1,099 hectares in size. The property within which the application area is located is adjacent to a major road to the west and State Forest to the north and east.

Vegetation condition within the application area ranges from completely degraded to good condition (Keighery, 1994; DER, 2015), and is mapped as a mixed woodland of tuart (*Eucalyptus gomphocephala*) and open forest of tuart, jarrah (*Eucalyptus marginata*) and marri (*Corymbia calophylla*) (Heddle et al., 1980). During a site inspection, a majority of the application area was found to be comprised of woodland dominated by peppermint trees (*Agonis flexuosa*), with scattered eucalypts (DER, 2015).

A total of 416 dicotyledon, 212 monocotyledon, four gymnosperm, one lichen, three slime mould and three moss species have been recorded within 10 kilometres of the application area, including four rare and 23 priority flora (Parks and Wildlife, 2007-). Of these, two priority 3 (*Lasiopetalum membranaceum* and *Platysace ramosissima*) and one priority 4 flora species (*Caladenia speciosa*) have the potential to occur within the application area (Western Australian Herbarium, 1998-), however these species have moderate to large distributions and are unlikely to be impacted on a local or regional scale if they are present.

Of the flora recorded within 10 kilometres of the application area, 117 are not native to Western Australia (Parks and Wildlife, 2007-). Invasive flora 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 (DEC, 2011). Potential impacts to biodiversity within and nearby the application area as a result of the proposed clearing may be minimised by the implementation of weed management practices.

Due to the predominantly degraded (Keighery, 1994) condition of vegetation within the application area, floristic diversity within the application area is likely to be lower than that within the surrounding area.

According to available databases, 143 bird, 16 mammal, 22 reptile, six amphibian and nine invertebrate species have been recorded within 10 kilometres of the application area, including nine threatened, seven priority and one other specially protected fauna species (Parks and Wildlife, 2007-). Of these, four threatened and one priority fauna species may use habitat within the application area. However, due to the presence of weeds, previous clearing, the ongoing limestone extraction activities adjacent to the application area and the presence of significant habitat adjacent to the application area, impacts to these species are not likely to be significant.

There are no Priority Ecological Communities (PECs) mapped within the area under application. Parks and Wildlife advises that the habitat type and vegetation community recorded by Landform Research (2009) may indicate the presence of either 'Southern Swan Coastal Plain *Eucalyptus gomphocephala* - *Agonis flexuosa* woodlands (type 25)' or 'Northern Spearwood shrublands and woodlands (community type 24)' Priority 3 PECs (Parks and Wildlife, 2015c). However, a majority of this vegetation is in a degraded (Keighery, 1994) condition (Landform Research, 2009; DER, 2015), and the proposed clearing is not likely to impact the conservation status of either PEC if they are present.

The application area is located between two mapped occurrences of the '*Melaleuca huegelii* - *Melaleuca systena* shrublands on limestone ridges (Gibson et al., 1994)' Threatened Ecological Community (TEC). A vegetation assessment conducted in 2008 mapped the vegetation community 'Melaleuca thicket' within the northern portion of the property, but not within the application area (Landform Research, 2009). The application area is not considered to comprise significant buffer vegetation for the maintenance of this TEC.

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

Methodology

References:
DEC (2011)
DER (2015)
Gibson et al. (1994)
Heddle et al. (1980)
Keighery (1994)
Landform Research (2009)
Parks and Wildlife (2007-)
Parks and Wildlife (2015c)
Western Australian Herbarium (1998-)

GIS Databases:
- DPaW Tenure
- NLWRA, Current Extent of Native Vegetation
- Roads
- SAC Bio Datasets (accessed August 2015)

(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 is not likely to be at variance to this Principle

The application area is located immediately south of an existing limestone extraction operation, is adjacent to a main road to the west, and is partly fragmented from surrounding vegetation by an access track that borders the northern, eastern and southern boundary of the property. In addition, the area under application is located within 100 - 200 metres of an ecological linkage mapped within Myalup State Forest (Molloy et al., 2009).

Fauna habitat within the application area ranges from an open woodland dominated by *Agonis flexuosa* to an open forest of *Eucalyptus gomphocephala* (Tuart), *E. marginata* (Jarrah) and *Corymbia calophylla* (Marri). A small gully also occurs within the application area, which is dominated by the weed *Zantedeschia aethiopica* (arum lily). Habitat ranges in condition from completely degraded (Keighery, 1994) throughout the centre, where areas have been previously cleared for waste storage, to good (Keighery, 1994) in areas nearest to the property boundary.

A total of 17 threatened and priority fauna have been recorded within 10 kilometres of the area under application (Parks and Wildlife, 2007-). Of these, three threatened fauna species listed under the *Wildlife Conservation Act 1950* (WC Act) and one priority fauna listed by the Department of Parks and Wildlife (Parks and Wildlife) may use habitat within the application area for foraging, shelter or breeding.

Carnaby's cockatoo (*Calyptorhynchus latirostris*; Endangered) is known to use hollows for nesting in the immediate vicinity of the application area. While a small number of large hollow-bearing trees are present within the application area, no signs of recent use by black cockatoos were observed by DER (2015). Furthermore, given the proximity to present and historic limestone extraction operations, tree hollows within this area may be less suitable for use by Carnaby's cockatoo (Parks and Wildlife, 2015b).

The forest red-tailed black cockatoo (*Calyptorhynchus banksii naso*; Vulnerable) and Baudin's cockatoo (*Calyptorhynchus baudinii*; Schedule 1) have both been recorded within five kilometres of the application area, and are likely to use *Eucalyptus* spp. in the vicinity of the application area for foraging activities (Parks and Wildlife, 2015b). Given the availability of suitable foraging habitat outside the application area and the restricted area of suitable foraging habitat within the application area, the proposed clearing is not likely to impact significant habitat for either of these species.

Records for the western ringtail possum (*Pseudocheirus occidentalis*; Endangered) occur within 10 kilometres north and south of the area under application (Parks and Wildlife, 2007-). These records are located within Yalgorup National Park and surrounds, which is separated from the application area by a main road. The application area is not likely to provide suitable habitat for this species due to the absence of a closed canopy within *Agonis flexuosa* woodland (Parks and Wildlife, 2015b). The application area does not comprise core habitat, a primary corridor or supporting habitat as mapped by the Department of the Environment, Water, Heritage and the Arts (now the Department of the Environment) (DEWHA, 2009). The proposed clearing is therefore not likely to impact significant habitat for the western ringtail possum.

The quenda (*Isoodon obesulus* subsp. *fusciventer*; Priority 5) has also been recorded within 10 kilometres of the application area, and is known to occur within areas of dense undergrowth. Parks and Wildlife (2015b) advise that the small gully within the southern portion may represent suitable habitat for this species, despite the presence of arum lilies. Given the restricted area occupied by this habitat type and the mostly degraded (Keighery, 1994) condition of habitat in the application area, the application area is not likely to be significant on a local or regional scale for this species.

In addition to the above, hollow-utilising species including the brush-tailed phascogale (*Phascogale tapoatafa*; Vulnerable) and the brushtail possum (*Trichosurus vulpecula*; not listed) have the potential to occur within the application area. However, the proximity to existing limestone operations and fragmentation from other suitable habitat by access tracks and a major road indicate that this area is unlikely to comprise significant habitat. Impacts to fauna as a result of the proposed clearing may be minimised by implementing clearing activities in a direction from previously cleared areas towards remnant native vegetation, thereby allowing species to disperse into adjacent habitat.

While the entire patch of native vegetation within which the application area occurs is likely to provide important habitat for fauna on a local and regional scale, vegetation surrounding the application area is in good to very good (Keighery, 1994) condition and is likely to be preferred by fauna species to habitat within the application area for foraging, shelter and dispersal. Based on the proximity to an existing limestone operation, evidence of habitat degradation and fragmentation of habitat within and surrounding the application area, the proposed clearing is not likely to be at variance to this Principle.

Methodology

References:

DEWHA (2009)
Keighery (1994)
Molloy et al. (2009)
Parks and Wildlife (2007-)
Parks and Wildlife (2015b)

GIS Databases:
- Imagery
- NLWRA, Current Extent of Native Vegetation

(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

Based on available databases, a total of four rare flora species have been recorded within 10 kilometres of the application area. These rare flora species occur within the following habitat types:

- Well-drained sandy soils in low mixed banksia woodland with western sheoak (*Allocasuarina fraseriana*) and jarrah (*Eucalyptus marginata*), especially in areas of lush undergrowth;
- Shallow soils over limestone on the slopes or gullies of limestone ridges, often over closed heath or mallee shrubland;
- Winter-wet swamps, in shallow water; and
- Grey-black sand in winter-wet swamps (Western Australian Herbarium, 1998-).

Vegetation within the application area is comprised of *Agonis flexuosa* woodland with scattered tuart, with a small gully dominated by arum lilies (*Zantedeschia aethiopica*). This habitat is not considered to represent any of the habitat types listed above, and the application area is therefore not likely to contain any rare flora species.

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

Methodology

References:
Western Australian Herbarium (1998-)

GIS Databases:
- SAC Bio Datasets (accessed August 2015)

(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

The nearest mapped threatened ecological community (TEC) to the application area is '*Melaleuca huegelii - Melaleuca systena* shrublands on limestone ridges (Gibson et al., 1994)', which occurs 97 metres south-west and approximately 500 metres north of the application area (Landform Research, 2009). The *Melaleuca huegelii - Melaleuca systena* shrublands on limestone ridges TEC is found only upon skeletal soils on the slopes and tops of limestone ridges and is ranked as Endangered in Western Australia (Luu and English, 2005). Threatening processes to this TEC include mining, urban development, road and track development, weed invasion, grazing pressure, recreational activities and inappropriate fire regimes (Luu and English, 2005).

In total, approximately 198 hectares of *Melaleuca huegelii - Melaleuca systena* shrublands on limestone ridges (Gibson et al. 1994) is mapped within Western Australia, with a majority (171 hectares) located within the Shire of Gingin and the City of Wanneroo (Parks and Wildlife, 2015a). The remaining occurrences of this TEC are located within four kilometres of the application area in the Shire of Waroona, and cover a total of 25.3 hectares. Given the overall limited area covered by this TEC and the highly fragmented nature of remaining occurrences, all areas inhabited by this TEC are considered to represent critical habitat (Luu and English, 2005).

While this TEC occurs within the northern portion of the property, it is not considered to occur within the application area. The application area is fragmented from known occurrences of this TEC by previously cleared areas, and is not likely to be necessary for the maintenance of the TEC.

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

Methodology

References:
DER (2015)
Gibson et al. (1994)
Keighery (1994)
Landform Research (2009)
Luu and English (2005)
Parks and Wildlife (2015a)

GIS Databases:
- SAC Bio Datasets (accessed August 2015)

(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 occurs within the Swan Coastal Plain IBRA bioregion, in which approximately 39 per cent of the pre-European vegetation remains (see table below) (Government of Western Australia, 2014). The application area occurs within a larger vegetated corridor approximately 1,099 hectares in size, which is bordered by an extensively cleared area.

The national objectives and targets for biodiversity conservation in Australia has a target to prevent the clearing 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). No mapped vegetation association within the application area occurs at below the 30 per cent threshold within the Swan Coastal Plains bioregion.

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

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Extent in DPaW Managed Lands (%)
IBRA Bioregion* - Swan Coastal Plain	1,501,222	580,697	39	37
Shire* - Shire of Waroona	83,233	44,614	54	79
Beard Vegetation Association in Bioregion*				
998	50,868	18,866	37	42
Heddle Vegetation Complex **				
Cottesloe Complex-Central And\South	45,300	15,026	33	13

Methodology

References:
Commonwealth of Australia (2001)
*Government of Western Australia (2014)
**Parks and Wildlife (2015d)

GIS Databases:
- Imagery
- NLWRA, Current Extent of Native 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 at variance to this Principle

A vegetation and flora survey conducted over the application area recorded one vegetation community, comprising *Agonis flexuosa* low regrowth woodland with remnants of scattered *Banksia grandis*, *Eucalyptus gomphocephala*, *Hakea prostrata*, *Acacia saligna*, *Acacia rostellifera*, *Hibbertia cuneiformis* and *Hibbertia hypericoides* (Landform Research, 2009).

There are no watercourses or wetlands within or surrounding the application area. Therefore, vegetation proposed to be cleared is not considered to be riparian in nature.

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

Methodology

References:
Landform Research (2009)

GIS Databases:
- Hydrography, linear
- Pre-European vegetation

(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 occurs over siliceous sands over limestone caprock (Charles Hull Contracting, 2015), and comprises part of a larger limestone ridge that runs north to south over approximately 7 kilometres.

Sandy soils within the A Horizon vary in depth throughout the application area and the clearing of native vegetation may therefore increase the susceptibility of some areas to wind erosion. However, Charles Hull Contracting (2015) note that wind erosion within previously cleared areas has been minimal due to the typically high moisture content within the topsoil. The proposed clearing is not considered likely to cause appreciable land degradation within vegetation outside the application area.

The applicant has provided a management plan that notes all surface water runoff from the site is directed into

the pit, where permeable soils allow accumulated water to drain (Charles Hull Contracting, 2015). With consideration to implemented stormwater management and the absence of watercourses and wetlands within the application area, clearing the vegetation under application is not likely to cause water erosion.

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

Methodology References:
Charles Hull Contracting (2015)

GIS Databases:
- SAC biodata sets accessed (August 2015)

(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**
The application area is adjacent to the Myalup State Forest, which is vested in the Conservation Commission of Western Australia and managed by Parks and Wildlife. Based on aerial imagery, the application area does not appear to form an ecological linkage between the State Forest and surrounding vegetation.

Vegetation within the adjacent State Forest appears to be in a degraded to good (Keighery, 1994) condition, with some weed invasion evident (DER, 2015). Clearing the vegetation under application may increase the spread of weeds and dieback into the adjacent vegetation. However, given that weeds are already present both within the application area and adjacent vegetation, the proposed clearing is not likely to have a significant impact on the environmental values of the adjacent State Forest.

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

Methodology References:
DER (2015)
Keighery (1994)

GIS Databases:
- DPaW Tenure

(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**
There are no watercourses within or surrounding the application area (DER, 2015). The proposed clearing is therefore not likely to cause deterioration in the quality of surface water. Pre-existing limestone extraction activities are conducted in accordance with a Limestone Pit Management Plan, which includes measures for stormwater management (Charles Hull Contracting, 2015).

Groundwater salinity within the area under application is estimated to be between 500 - 1,000 milligrams/Litre Total Dissolved Solids. Given this, the proposed clearing activity is not likely to significantly alter salinity levels within or outside the application area.

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

Methodology References:
DER (2015)

GIS Databases:
- Groundwater Salinity, Statewide
- Hydrography, linear

(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 comprises 5.22 hectares of native vegetation on sandy soils over limestone (Northcote et al., 1960-68). In some areas, vegetation occurs on a slope from 10 to 25 metres above sea level.

The clearing of ten hectares of native vegetation is likely to increase the amount of runoff during periods of heavy rainfall. However, any increase in flooding is unlikely to be significant, and will be highly localised. Given that vegetation to be cleared is for the purpose of expanding limestone operations, runoff is likely to accumulate within the proposed limestone extraction pit. Pre-existing limestone extraction activities are conducted in accordance with a Limestone Pit Management Plan, which includes measures for stormwater management (Charles Hull Contracting, 2015). With these measures in place, the proposed clearing is not likely to cause or exacerbate the incidence or intensity of flooding.

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

Methodology References:
Charles Hull Contracting (2015)
Northcote et al. (1960-68)

GIS Databases:
- Topographic Contours, Statewide

Planning instruments and other relevant matters.

Comments The current application proposes to clear up to 5.22 hectares of native vegetation within Lot 1 on Deposited Plan 49358, Lake Clifton, for the purpose of limestone extraction. The application was originally for the clearing of up to 10 hectares, and was reduced to 5.22 hectares on 14 October 2015 following the identification of a Threatened Ecological Community within the northern portion of the property.

An Extractive Industry Licence (EIL) was granted by the Shire of Waroona on 4 December 2013 and expires on 4 December 2018. The EIL requires that the site be rehabilitated to establish a native vegetation community that is representative of the original native vegetation following the cessation of limestone extraction activities.

The Limestone Pit Management Plan prepared by Charles Hull Contracting (2015) states that topsoil will be stripped and stockpiled for future rehabilitation prior to limestone extraction (Charles Hull Contracting, 2015). In accordance with the management plan, topsoil dispersion will be mitigated by only undertaking clearing and topsoil stripping activities when there is a sufficient level of soil moisture (Charles Hull Contracting, 2015).

There are no Sites of Aboriginal Significance mapped within the area applied to clear.

The clearing permit application was advertised on 27 July 2015 by the Department of Environment Regulation inviting submissions from the public. No submissions were received.

Methodology References:
Charles Hull Contracting (2015)

GIS Databases:
- Aboriginal Sites Register System

4. References

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