GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS
Area Permit Number: 5133/1
File Number: 2011/006805-1
Duration of Permit: From 14 December 2012 to 14 December 2019

PERMIT HOLDER
Shire of Augusta-Margaret River

LAND ON WHICH CLEARING IS TO BE DONE
Lot 268 on Deposited Plan 209367, Augusta

AUTHORISED ACTIVITY
The Permit Holder shall not clear more than 3.7 hectares of native vegetation within the area cross hatched yellow on attached Plan 5133/1.

CONDITIONS

1. Period in which clearing is authorised
The Permit Holder shall not clear any native vegetation after 14 December 2014.

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) shall only move soils in *dry conditions*;
(c) ensure that no *dieback* or *weed*-affected soil, *mulch, fill* or other material is brought into the area to be cleared; and
(d) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

3. Retain vegetative material and topsoil, 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 in an area that has already been cleared.

(b) within 3 months following the completion of extractive activities, *revegetate* and *rehabilitate* the area(s) 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; and
  (ii) ripping the ground on the contour to remove soil compaction; and
  (iii) ripping the pit floor and contour batters within the extraction site; and
  (iv) laying the vegetative material and topsoil retained under condition 3(a) on the cleared area(s); and
  (v) 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

(vi) ensuring only *local provenance* seeds and propagating material are used to *revegetate* and *rehabilitate* the area.

(c) within 2 years of undertaking *revegetation* and *rehabilitation* in accordance with condition 3(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 3(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, the Permit Holder must undertake additional *planting* or *direct seeding* of native vegetation in accordance with the requirements of condition 3(b)(v) and (vi) of this Permit.

(d) where additional *planting* or *direct seeding* of native vegetation is undertaken in accordance with condition 3(c)(ii) of this permit, the Permit Holder shall repeat condition 3(c)(i) and 3(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 3(c)(i) and 3(c)(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 3(c)(ii), the CEO may require the Permit Holder to undertake additional *planting* and *direct seeding* in accordance with the requirements under condition 3(c)(ii).

4. Fauna management

(a) Prior to undertaking any clearing authorised under this Permit, the area(s) shall be inspected by a *fauna specialist* who shall identify *habitat tree(s)* suitable to be utilised by fauna species listed below:
   (i) Western Ringtail Possum *(Pseudocheirus occidentalis)*;
   (ii) Carnaby's cockatoo *(Calyptorhynchus latirostris)*;
   (iii) Red-tailed black cockatoo *(Calyptorhynchus banksii)*; and
   (iv) Masked Owl *(Tyto novaehollandiae subsp. Novaehollandiae)*

(b) Prior to clearing, any *habitat tree(s)* identified by condition 4(a) shall be inspected by a *fauna specialist* for the presence of fauna listed in condition 4(a).

(c) Where fauna are identified in relation to condition 4(b) of this Permit, the Permit Holder shall ensure that:
   (i) no clearing of the identified *habitat tree(s)* occurs, unless approved by the CEO
   (ii) no clearing occurs within 50 metres of the identified *habitat tree(s)* unless approved by the CEO.
   (iii) where fauna are identified in relation to condition 4(b) of this Permit, the Permit Holder shall ensure that no taking of identified fauna occurs unless approved by the CEO.

5. Records must 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 species composition, structure and density of the cleared area;
   (ii) 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;
   (iii) the date that the area was cleared; and
   (iv) the size of the area cleared (in hectares).

(b) In relation to the *revegetation* and *rehabilitation* of areas pursuant to condition 3 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.

(c) In relation to fauna management pursuant to condition 4 of this Permit:
   (i) the location of each habitat tree 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;
   (ii) the species name of fauna reasonably likely to utilise, or that have been observed utilising, the habitat tree(s);
   (iii) a copy of the fauna specialist's report.

6. Reporting

(a) The Permit Holder must provide to the CEO on or before 30 June of each year, a written report:
   (i) of records required under condition 5 of this Permit; and
   (ii) concerning activities done by the Permit Holder under this Permit between 1 January and 31 December of the preceding year.

(b) Prior to 14 September 2019, the Permit Holder must provide to the CEO a written report of records required under condition 5 of this Permit where these records have not already been provided under condition 6(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;

dry conditions means when soils (not dust) do not freely adhere to rubber tyres, tracks, vehicle chassis or wheel arches;

environmental specialist means a person who is engaged by the Permit Holder for the purpose of providing environmental advice, 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;

fauna specialist means a person with training and specific work experience in fauna identification or faunal assemblage surveys of Western Australian fauna;

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

habitat tree(s) means trees that have a diameter, measured at 1.5m above the ground, of 50cm or greater, healthy but with dead limbs and broken crowns that are likely to contain hollows and roosts suitable for native fauna, or where these are not present then healthy but with the potential to contain hollows and roosts;

local provenance means native vegetation seeds and propagating material from natural sources within 20 kilometres 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;

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

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.

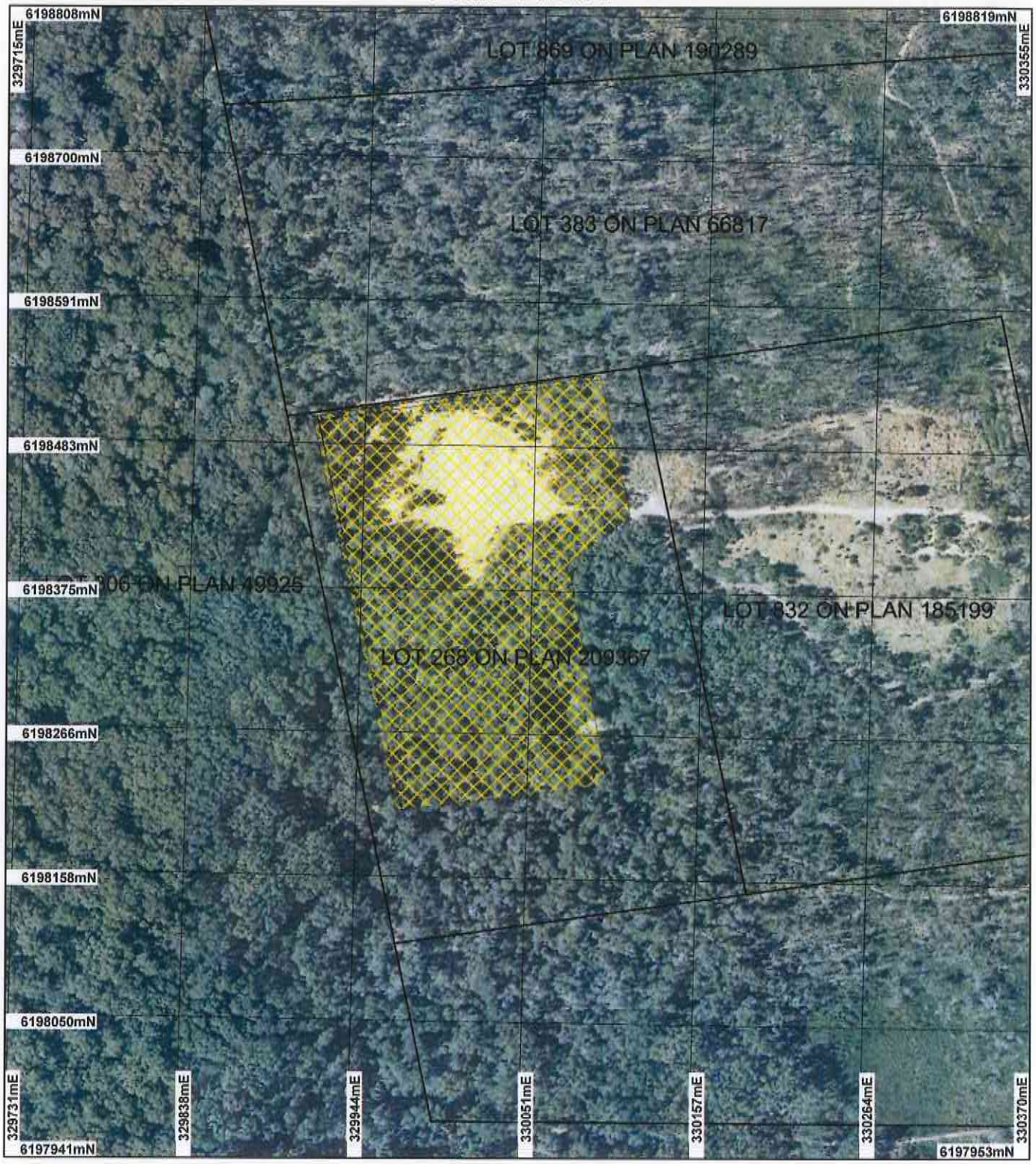
weed/s means a species listed in Appendix 3 of the "Environmental Weed Strategy" published by the Department of Conservation and Land Management (1999), and plants declared under section 37 of the *Agriculture and Related Resources Protection Act 1976*.

M Warnock
A/MANAGER
NATIVE VEGETATION CONSERVATION BRANCH

Officer delegated under Section 20
of the Environmental Protection Act 1986

22 November 2012

Plan 5133/1



LEGEND

Clearing Instruments

- Areas Approved to Clear

Cadastre

Leeuwin 50cm Orthomosaic - Landgate 2004

N

0 100 m

Scale 1:3807
(Approximate when reproduced at A4)

Geocentric Datum Australia 1994

Note: the data in this map have not been projected. This may result in geometric distortion or measurement inaccuracies.

M. Warnock Date 22/11/12

Information derived from this map should be confirmed with the data custodian acknowledged by the agency acronym in the legend.

Department of Environment and Conservation

Our environment, our future

* Project Data is denoted by asterisk. This data has not been quality assured. Please contact map author for details.

Department of Environment and Conservation

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 5133/1
Permit type: Area Permit

1.2. Proponent details

Proponent's name: **Shire of Augusta-Margaret River**

1.3. Property details

Property: LOT 268 ON PLAN 209367 (AUGUSTA 6290)
Local Government Area: Shire of Augusta-Margaret River
Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
3.7		Mechanical Removal	Extractive Industry

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 22 November 2012

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
Mapped Beard vegetation Association 1: Tall forest; karri (Eucalyptus diverscolor) (Shepherd et al, 2001)	The application is to clear up to 3.7 hectares of native vegetation within Lot 268 on Deposited Plan 209367, Augusta, for the purpose of sand extraction.	Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery 1994)	The condition of the vegetation under application was obtained from a Flora and Vegetation survey undertaken by Onshore Environment Consultants Pty Ltd on the 30 November 2011 and a site inspection undertaken by the Department of Environment and Conservation (DEC) on the 9 August 2012.
Mapped Beard Vegetation Association 14: Low forest; jarrah(Shepherd et al, 2001)	The vegetation consisted of a Eucalyptus marginata, Corymbia calophylla forest over Agonis flexuosa, Banksia grandis low scrub over Bossiaea disticha, Xanthorrhoea preissii and Macrozamia riedlei (Onshore Environment Consultants, 2011).	To Completely Degraded: No longer intact; completely/almost completely without native species (Keighery 1994)	
Mattiske vegetation complex Gracetown (G3): Mixture of low woodland of Agonis flexuosa, open forest of Corymbia calophylla-Eucalyptus marginata subsp. marginata and tall open forest of Eucalyptus diversicolor with some Corymbia calophylla and Eucalyptus cornuta on eastward facing slopes in the hyperhumid zone (Mattiske and Havel, 1998).	The vegetation under application is considered to be in a completely degraded to excellent (Keighery, 1994) condition (Onshore Environment Consultants, 2011).		
Mattiske vegetation complex Cowaramup (C1): Open to tall open forest of Eucalyptus marginata subsp. marginata-Corymbia calophylla-Banksia grandis on lateritic uplands in the hyperhumid zone (Mattiske and Havel, 1998).			

3. Assessment of application against clearing principles

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

Comments

Proposal is at variance to this Principle

The application is to clear up to 3.7 hectares of native vegetation within Lot 268 on Deposited Plan 209367, Augusta, for the purpose of sand extraction. The area under application is approximately 3.2km south from the townsite of Augusta. The vegetation under application is considered to be in a completely degraded to excellent (Keighery, 1994) condition (Onshore Environment Consultants, 2011).

A total of 83 taxa were recorded from the study area, including 19 introduced species (Onshore Environment Consultants, 2011). The vegetation consists of a Eucalyptus marginata, Corymbia calophylla forest over Agonis flexuosa, Banksia grandis low scrub over Bossiaea disticha, Xanthorrhoea preissii and Macrozamia riedlei (Onshore Environment Consultants, 2011). Of the identified taxa, priority 3 species Bossiaea was recorded within the application area. The survey did not record any rare or other priority flora within the applied area.

Bossiaea sp. has a restricted range of about 60km along the Leeuwin-Naturalist Ridge west of the Blackwood River, largely centred on the Boranup forest. The limits on the occurrence of this species is mainly determined by rainfall and suitable soil. The survey undertaken by Onshore Environmental Consultants (2011) recorded the species to be prominent in the northern half of the area under application where it provided up to 65 percent cover. Given Bossiaea sp is a dominant component of the vegetation in the area, the proposed clearing will not have a significant impact on the conservation of the species.

Several priority flora have also been recorded within 10km radius of the area under application, including Caladenia sp (P3) of which the vegetation under application contains suitable habitat for. The application area also contains suitable habitat for rare flora species Caladenia sp. These species were not recorded during the flora and vegetation survey undertaken by Onshore Environment Consultants (2011), however the method used is considered to be inappropriate for surveying orchids and both species may have finished flowering during the timing of the survey. The applicant was notified of these issues and asked to conduct an additional survey targeting both the rare and priority Caladenia flora known to occur in the area.

The additional survey undertaken by Onshore Environment Consultants (2012) did not identify any Caladenia sp within the application area. DEC considers that the timing and the survey methods used for the survey are suitable for indentifying of Caladenia sp.

Several fauna of conservation significance have been recorded within and around the area under application including Western Ringtail Possum (Pseudocheirus occidentalis), Carnaby's cockatoo (Calyptorhynchus latirostris), Red-tailed black cockatoo (Calyptorhynchus banksii), Masked Owl (Tyto novaehollandiae subsp. Novaehollandiae) and Chuditch (Dasyurus geoffroii). There are a number of large trees that have been identified within the area under application, these trees area likely to provide important habitat and nesting requirements for the fauna species (DEC, 2012).

The application area is adjacent to the Leeuwin Naturaliste National Park, therefore clearing as proposed would open up the park to a greater risk of weed incursion and other disturbance.

Given that majority of the vegetation under application is in an excellent (Keighery, 1994) condition, contains priority flora and suitable habitat for conservation significant fauna, the vegetation under application is likely to contain a high level of biodiversity

The application is at variance to this principle.

Methodology

References:
- DEC (2012)
- Keighery (1994)
- Onshore Environmenatl Consultants (2011)
- Onshore Environmenatl Consultants (2012)

GIS Database:
- SAC Bio Datasets August 2012

(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

Proposal may be at variance to this Principle

Several fauna species of conservation significance are known to occur within 10km radius of the area under application. Fauna species include the Western Ringtail Possum (Pseudocheirus occidentalis), Carnaby's cockatoo (Calyptorhynchus latirostris), Red-tailed black cockatoo (Calyptorhynchus banksii), Masked Owl (Tyto novaehollandiae subsp. Novaehollandiae) and Chuditch (Dasyurus geoffroii).

A recent site inspection undertaken by DEC recorded a number of large trees that contain hollows. These trees have the potential to be used by black cockatoo species, the Masked owl and the Western Ringtail Possum. Black cockatoo species were observed flying over the application area during the site inspection (DEC, 2012).

The vegetation surrounding the application is considered to be in similar condition to the area under application

and the proposed clearing is not likely to significantly reduce the habitat for fauna species of conservation significance in the local area. However there were a number of trees identified within the application area that contained hollows suitable for nesting for fauna species of conservation significance. Hollows take years to develop and any removal of trees containing hollows within the application area should be avoided where possible.

Given the area under application contains hollows suitable for nesting purposes for fauna of conservation significance, the application may be at variance to this principle. Appropriate fauna management practices will help mitigate the impacts to conservation significant fauna recorded in the area. The applicant has advised that where possible they will retain habitat trees that are deemed suitable for fauna species of conservation significance.

Methodology References:
- DEC (2012)

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

Comments **Proposal is not likely to be at variance to this Principle**
Three rare flora species have been mapped within a 10km radius of the area under application. Kennedia sp. has been recorded approximately 730 metres of the area under application, Caladenia sp. approximately 1.8km away from the area under application and another Caladenia sp approximately 2.7km from the application area. Kennedia sp and one of the Caladenia sp have been mapped as occurring on the same soil and vegetation associations to the area under application.

Flora and vegetation surveys of the application area undertaken by Onshore Environment Consultants Pty Ltd in 2011 and 2012 did not identify any of the three species within the applied area. The survey conducted in 2012 by Onshore Environment Consultants Pty Ltd was targeted at identifying the presence of Caladenia sp within the applied area.

Given the surveys undertaken by Onshore Environment Consultants Pty Ltd did not record and rare flora within the applied area, the application is not likely to be at variance to this principle.

Methodology Reference:
- Onshore Environment Consultants (2011)
- Onshore Environment Consultants (2012)

GIS Database:
- SAC Bio Datasets August 2012

(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 **Proposal is not likely to be at variance to this Principle**
A threatened ecological community (TEC) has been mapped approximately 2.6km south of the area under application. The TEC is referred to as Augusta-microbial consisting of rimstone pools and cave structures formed by microbial activity on marine shorelines.

The vegetation under application consist mainly of a Eucalyptus marginata, Corymbia calophylla forest over Agonis flexuosa, Banksia grandis low scrub over Bossiaea disticha, Xanthorrhoea preissii and Macrozamia riedlei (Onshore Environment Consultants, 2011) and is not considered to be a representation of this TEC.

The application is not likely to be at variance to this principle.

Methodology Reference:
- Onshore Environment Consultants (2011)

GIS Databases:
- SAC Bio Datasets August 2012

(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 **Proposal is not likely to be at variance to this Principle**
The application area has been mapped as comprising of two Beard vegetation associations and two Mattiske vegetation complexes. The mapped vegetation associations and complexes retain vegetation above the 30 percent threshold level as recommended in the National Objectives Targets for Biodiversity Conservation; below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001).

Within a 10km radius of the area under application there is approximately 70 percent pre-European vegetation remaining. The Shire Augusta-Margaret River has approximately 63 percent of its pre-European vegetation remaining of which 74 percent of it is within DEC managed lands (Government of Western Australia, 2011).

The application area does not occur within an extensively cleared landscape and is not likely to be at variance to this principle.

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Extent in DEC Managed Lands (%)
IBRA Bioregion				
Warren	833,982.00	664,123.16	79.63	83.04
Shire*				
Shire of Augusta-Margaret River				
211,680.81	133,600.42	63.11	74.14	
Beard Vegetation Association in Bioregion				
1	69,117.78	55,019.32	79.60	81.82
14	5,663.89	3,864.26	68.23	45.69
Mattiske Vegetation Complex				
Cowaramup (C1)	18,967.16	7,669.59	40.44	12.39
Gracetown (G3)	4,334.23	3,993.11	92.13	56.39

Methodology

References:
- Commonwealth of Australia (2001)
- Government of Western Australia (2011)

GIS Databases:
- Heddle Vegetation Complexes
- Interim Biogeographic Regionalisation of Australia
- 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

Proposal is not likely to be at variance to this Principle

A minor perennial watercourse Redman Brook is located approximately 500 east of the application area.

Given the distance to the nearest watercourse, it is not likely that riparian vegetation will be impacted upon by the application.

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

Methodology

GIS databases:
- EPP, Areas
- Geodata, Lakes
- Hydrography, linear

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

Comments

Proposal may be at variance to this Principle

The soil under application is described as undulating low slopes of coastal dunes with aeolianite outcrops, caves, and sink holes: chief soils are brown sands (Northcote, 1960-1968).

The proposed clearing may contribute to wind erosion given the sandy soils on site and without appropriate ground cover, windbreaks or adequate dust suppression on exposed surfaces the proposal may cause appreciable land degradation. Therefore, the clearing as proposed may be at variance to this Principle.

Methodology

Reference:
- Northcote et al (1960-68)

GIS Database:
- Soils, Statewide

(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

Proposal may be at variance to this Principle

The Leeuwin-Naturaliste National Park is approximately 20 metres east of the area under application. Given the close proximity between the area under application and the National Park, the clearing, as proposed may increase the chance of weeds and dieback impacting the National Park.

Given the above, the application may be at variance to this principle.

Weed and dieback management practices will help mitigate impacts of the proposed clearing to the nearby conservation area.

Methodology GIS databases:
- DEC 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 **Proposal is not likely to be at variance to this Principle**
A minor perennial watercourse Redman Brook is located approximately 500 east of the application area. Given the distance to the nearest watercourse, the application is unlikely to impact surface water quality.

Groundwater salinity within the application area is less than 500 milligrams per litre of Total Dissolved Solids (TDS), this level of salinity is considered to be low.

The application is not likely to be at variance to this principle.

Methodology GIS databases:
- 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 **Proposal is not likely to be at variance to this Principle**
A minor perennial watercourse Redman Brook is located approximately 500 east of the application area.

Given the distance to the nearest water body and high infiltration rates associated with sandy soils, the clearing as proposed is not likely to cause or exacerbate the incidence of flooding.

The application is not likely to be at variance to this principle.

Methodology GIS databases:
- Hydrography, linear

Planning instrument, Native Title, Previous EPA decision or other matter.

Comments

The area under application falls within the Blackwood Rights in Water and Irrigation Act 1914 groundwater and surface water area. Should the operation require a water supply for dieback washdown, dust suppression or other potential uses, an application will need to be obtained from the Department of Water (Dow, 2012). DoW has no objection to the proposed clearing.

The sand proposed to be extracted under this application will be used for the Augusta Boat Harbour development.

Methodology References:
- DoW (2012)

4. References

Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.

DEC (2012) Site Inspection Report for Clearing Permit Application CPS 5133/1, Lot 268 Leeuwin Road, Augusta. Site inspection undertaken 9 August 2012. Department of Environment and Conservation, Western Australia (TRIM Ref. DOC:A541112).

DoW (2012) Email received on 1 August 2012 in relation to Clearing Permit Application CPS 5133/1 Shire of Augusta Margaret River (DEC Ref Doc:A529550)

Government of Western Australia (2011); 2011 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). WA Department of Environment and Conservation, Perth.

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

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

Northcote, K. H. with Beckmann G G, Bettenay E., Churchward H. M., van Dijk D. C., Dimmock G. M., Hubble G. D., Isbell R. F., McArthur W. M., Murtha G. G., Nicolls K. D., Paton T. R., Thompson C. H., Webb A. A. and Wright M. J. (1960-68): 'Atlas of Australian Soils, Sheets 1 to 10, with explanatory data'. CSIRO and Melbourne University Press: Melbourne.

Onshore Environment Consultants (2011). Flora and Vegetation Survey. Lot 268 Leeuwin Road, Augusta. Additional Information within Clearing Permit Application CPS 5133/1 - Shire of Augusta Margaret-River (DEC Ref Doc:A517635)

Onshore Environment Consultants (2012). Flora and Vegetation Survey. Lot 268 Leeuwin Road, Augusta. Additional Information within Clearing Permit Application CPS 5133/1 - Shire of Augusta Margaret-River (DEC Ref Doc:A566097)

Shepherd, D.P., Beeston, G.R., and Hopkins, A.J.M. (2001), Native Vegetation in Western Australia. Technical Report 249. Department of Agriculture Western Australia, South Perth.

5. Glossary

Term	Meaning
BCS	Biodiversity Coordination Section of DEC
CALM	Department of Conservation and Land Management (now BCS)
DAFWA	Department of Agriculture and Food
DEC	Department of Environment and Conservation
DEP	Department of Environmental Protection (now DEC)
DoE	Department of Environment
DoIR	Department of Industry and Resources
DRF	Declared Rare Flora
EPP	Environmental Protection Policy
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
TEC	Threatened Ecological Community
WRC	Water and Rivers Commission (now DEC)