Department of Environment and Conservation

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 2701/1

Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Rocla Quarry Products

1.3. Property details

Property: LOT M1899 ON DIAGRAM 10521 (LENNARD BROOK 6503)

Local Government Area: Shire Of Gingin

Colloquial name:

1.4. Application

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

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
Beard vegetation association: 1027 - Mosaic: Medium open woodland; Jarrah & marri, with low woodland; banksia / Medium sparse woodland; jarrah & marri (SAC Bio Datasets 13/11/2008; Shepherd, 2007) Heddle Vegetation Complexes: Karamal complex - south: Open forest of E. marginata - E. calophylla with second storey of B. grandis. Moondah complex: Low closed to low open forest of B. attenuata - B. menziesii - E. todtiana - B. prionotes on slopes, open woodland of E. calophylla - Banksia spp. In valley. (Heddle et al, 1980)	The area under application (29.7ha) is located within Lot M1899 (174ha property, zoned rural). The proposed clearing is for sand extraction. The area under application have been identified as three vegetation habitat types: - Casuarina humilis closed heath; - Banksia spp.-Eucalyptus todtiana low open woodland; and - Eucalyptus marginata-Corymbia calophylla open forest over Banksia grandis. The central and eastern sections (~19.4ha) are in excellent with intact structure and minimal disturbance.	Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery 1994)	The condition of the native vegetation under application was sourced from the site inspection conducted on the 3 November 2008 (DEC, 2008).
As above	The north-west (~2ha) was in good condition from weed disturbance and the south west section (~8.3ha) is in good condition with disturbance from grazing goats.	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)	As above

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

A site inspection (DEC, 2008) of the area under application identified three vegetation habitat types:
- Casuarina humilis closed heath;
- Banksia spp.-Eucalyptus todtiana low open woodland; and
- Eucalyptus marginata-Corymbia calophylla open forest over Banksia grandis

The majority of vegetation is in excellent condition (~19ha), supporting structurally intact and floristically diverse vegetation communities with minimal disturbance (DEC, 2008). This vegetation provides feeding habitat for Carnaby's Black-Cockatoo (Calyptorhynchus latirostris) and may also provide habitat for ground dwelling fauna such as the Western Brush Wallaby and Chuditch.

A consulting botanist undertook a field inspection in May 2008 and identified Blancoa canescens within the area under application (RPS, 2008). B. canescens is known as a significant species as its location is considered to be disjunct from their known geographical range (Government of Western Australia, 2000).

The vegetation under application includes habitat suitable for rare and priority flora found in the local area. An appropriately timed flora and vegetation survey, conducted in September and October 2008 (RPS, 2009) identified a diversity of flora (total of 173 native taxa) occurring within the applied area; no rare flora were recorded, but two priority flora species, Calytrix sylvana (P4) and Hypolaena robusta (P4) and seven significant flora species including B. canescens and Schoenus latitans.

Four threatened ecological communities (TEC) have been recorded within the local area (10km radius) of the applied clearing area. One of the TEC's, Banksia attenuata woodlands over species-rich dense shrublands (Floristic Community Type 20a), which is located ~9.0km south of the area under application, occurs on the same soils and within a similar vegetation complex as the area under application. Therefore, it is considered that the vegetation under application may comprise a TEC.

There are also approximately ten occurrences of priority ecological community (PEC), Banksia on yellow-orange sands with the closest occurrence being ~3.3km south-west of the area under application. This PEC is Banksia woodland of the Gingin area restricted to soils dominated by yellow-orange sands, which may occur within the area under application. The soils within the area under application are described as yellow earthy sands (Northcote et al. 1960-68), which are consistent with this PEC.

Plots should be established in the range of vegetation units at the site and scored (typically spring and late spring), and perform analysis of the data using appropriate statistical techniques to accurately determine the floristic community types present at the site (DEC, 2008a).

Given that the majority of the vegetation is in excellent condition, and that the vegetation provides significant habitat for fauna, it may comprise a TEC and/or PEC and provides habitat for flora of conservation significance, it is considered that the vegetation comprises a high level of biodiversity.

Methodology

References:
- DEC (2008)
- DEC (2008a)
- Northcote et al (1960-68)
- RPS (2008)
- RPS (2009)

GIS Database:
- SAC Bio Datasets 13/11/2008

(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 is at variance to this Principle

Five fauna species of conservation significance are known to occur in the local area (10km radius) including, Chuditch (Dasyurus geoffroii), Western Brush Wallaby (Macropus irma); and Carnaby's Black Cockatoo (Calyptorhynchus latirostris); with the closest record being Western Brush Wallaby located ~7.5km north-west.

The Black-Cockatoo is known to feed on a large variety of plants including Proteaceous species (e.g. banksia and grevillea), marri nuts (Corymbia calophylla), jarrah (Eucalyptus marginata), tuart (Eucalyptus gomphocephala), Casuarina spp and a range of introduced species, (Shah, 2006). This species is listed as a Schedule 1 species under the Wildlife Conservation (Specially Protected Fauna) Notice 2008(2) being 'fauna that is rare or is likely to become extinct'.

Surveys of Carnaby's populations and their feeding and roosting habits show that the Northern Region of the Swan Coastal Plain appears to be an important area throughout the season (Shah, 2006). Native species such as Banksia and Eucalypts play a significant role in the ecology of the Carnaby's Cockatoos on the Swan Coastal Plain (Shah, 2006).

The cumulative impacts from the reduction of Carnaby's foraging habitat on the Swan Coastal Plain has resulted in vegetation that provides a food source for Carnaby's cockatoos being considered as significant habitat; the continual net loss of critical habitat will result in additional pressure on the current population of Carnaby's cockatoos (DEC, 2009a). The vegetation under application has been identified as feeding habitat for Carnaby's Black Cockatoo (DEC, 2009b).

Fauna Habitat Notes (DEC, 2007) indicate that Chuditch occupy large home ranges, is highly mobile and appears able to utilise bush remnants and corridors and that Western Brush Wallaby occur in areas of forest and woodlands supporting a dense shrub layer.

A site inspection (DEC, 2008) of the area under application identified three vegetation habitat types:

- Casuarina humilis closed heath;
- Banksia spp.-Eucalyptus todtiana low open woodland; and
- Eucalyptus marginata-Corymbia calophylla open forest over Banksia grandis

The majority of vegetation is in excellent condition (~19ha), supporting structurally intact and floristically diverse vegetation communities with minimal disturbance (DEC, 2008). Suitable habitat was observed for ground dwelling fauna such as the Chuditch and Western Brush Wallaby with some sections supporting structurally intact vegetation with a dense understorey. In addition, the eastern and southern areas under application are well connected to large tracts of surrounding bushland.

Given the occurrence of approximately 19ha of native vegetation in excellent condition at this site and that the vegetation under application provides a foraging site for Carnaby's Black-Cockatoo and may be utilised by a number of other fauna species, including the Chuditch and Western Brush Wallaby, it is considered that the vegetation comprises significant habitat for indigenous fauna, and therefore the proposal is at variance to this Principle.

Methodology References:
- DEC (2007)
- DEC (2008)
- Shah (2006)

GIS Database:
- SAC Bio Datasets 13/11/2008

(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**

The following five rare flora species are known to occur within the local area (10km radius):
- Chamelaucium lullfitzii;
- Eleocharis keigheryi;
- Grevillea curviloba subsp curviloba;
- Grevillea curviloba subsp incurva; and
- Ptychosema pusillum

The closest records are C. lullfitzii and P. pusillum, which are located ~5km south of the area under application. Of the five species of rare flora C. lullfitzii and P. pusillum occur on the same soils and within similar vegetation complexes as the area under application. C. lullfitzii, a shrub that occurs on white or yellow sand and flowers Sep-Dec; P. pusillum, a perennial herb that occurs on sands and flowers Aug-Oct. (Western Australian Herbarium, 1998-).

Chamelaucium lullfitzii and Ptychosema pusillum may occur within the area under application as both of these species occur nearby, in addition 22 priority flora species are known to occur within the local area (10km radius); it is recommended that an appropriately timed flora survey be undertaken (DEC, 2008a).

A consulting botanist undertook a field inspection in May 2008 and did not identify any rare or priority flora (RPS, 2008); however this may not be considered as an appropriately timed flora survey. An appropriately timed flora survey conducted within the applied area did not identify any rare flora species growing within the site (RPS, 2009).

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

Methodology References:
- DEC (2008a)
- RPS (2008)
- RPS (2009)
- Western Australian Herbarium (1998-)

GIS Databases:
- Heddle Vegetation Complexes
- Pre-European Vegetation
- SAC Bio Datasets
- Soils, Statewide 13/11/2008

(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 may be at variance to this Principle**

There are four Threatened Ecological Communities (TEC) that are known to occur in the local area (10km radius), being:
- Perth to Gingin Ironstone Formation;

- Herb-rich saline shrublands in claypans;
- Banksia attenuata woodlands over species-rich dense shrublands; and
- Forests and woodlands of deep seasonal wetlands of the Swan Coastal Plain.

Of the four TEC, Banksia attenuata woodlands over species-rich dense shrublands (Floristic Community Type (FCT) 20a), which is located ~9.0km south of the area under application, occurs on the same soils and within a similar vegetation complex as for the area under application. Therefore, it is considered that the vegetation under application may comprise a TEC. Plots should be established in the range of vegetation units at the site and scored (typically spring and late spring), and perform analysis of the data using appropriate statistical techniques to accurately determine the FCT present at the site (DEC, 2008a).

To determine the floristic community types present at the site an appropriately timed flora survey in accordance with EPA Guidance Statement 51 and with methodology consistent with Gibson et al. (1994) is required to determine the presence of a TEC within the applied area.

An appropriately timed flora survey conducted within the applied area did not identify any TEC within the site (RPS, 2009); however, a statistical analysis of the data was not performed and therefore, the FCT present at the site was not accurately determined.

Methodology

References:
- DEC (2008a)
- Gibson et al. (1994)
- RPS (2009)

GIS Database:
- SAC Bio Datasets13/11/2008

(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 vegetation within the areas under application are identified as a component of Beard vegetation type 1027, and Heddle Karamal Complex South and Moondah Complex, of which there is 56.1%, 59.4% and 38.7% of Pre-European extent remaining respectively (Shepherd, 2007; EPA, 2006).

The Environmental Protection Authority (EPA) supports a 30% threshold level as recommended in the National Objectives Targets for Biodiversity Conservation; below which species loss appears to accelerate exponentially at an ecosystem level (EPA, 2000). The vegetation types under application retain more than this 30% threshold level.

Given the extent of vegetation remaining in the Shire (52.8%), the current representation levels of the Heddle complexes and Beard vegetation association and the extensive remnants to the south, it is not considered likely that the vegetation under application is significant as a remnant in an area that has been extensively cleared.

	Pre-European (ha)	Current extent (ha)	Remaining (%)	In secure tenure (%)
IBRA Bioregion*				
Swan Coastal Plain^	1,501,208	583,140	38.8	
Shire of Gingin*	319,671	168,783	52.8	
Beard vegetation type 1027*	39,809	22,315	56.1	30.8
Heddle vegetation complexes**				
Karamal Complex South	24,017	14,278	59.4	27.3
Moondah Complex	17,715	6,864	38.7	9.8

* (Shepherd, 2007)
** (EPA, 2006)
^ Area within Intensive Land Use Zone

Methodology

References:
- EPA (2000)
- EPA (2006)
- Heddle et al (1980)
- Shepherd (2007)

GIS Databases:
- Interim Biogeographic Regionalisation of Australia
- SAC Bio Datasets 13/11/2008

(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

There are no wetlands or watercourses mapped within the area under application with the closest water bodies being Lennard Brook (also mapped as a conservation category wetland), located ~480m north and an associated tributary located ~ 490m north-east of the area under application. Further, a site inspection (DEC, 2008) of the area under application did not identify any wetland dependant vegetation.

Given the distance to the nearest waterbodies from the area under application and the lack of wetland dependant vegetation, the clearing as proposed is considered not likely to be at variance to this Principle.

Methodology

Reference:
- DEC (2008)

GIS Databases:
- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain
- 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 landscape of the area under application and surrounds can be described as undulating to low hilly dissected plateau on the western section and gently undulating plateau underlain by sedimentary rocks (Northcote et al, 1960-68). The chief soils on the slopes are red earthy sands on the western section and yellow earthy sands with siliceous sands on the eastern section (Northcote et al, 1960-68). The red earthy soils are considered to be at risk of wind erosion and the siliceous sands may be considered to be at risk to water erosion.

A majority of the area under application is located on a ridge (170m AHD) with the southern area sloping down to 130m AHD at a gradient of 11%, moderately inclined (Wells, 1988). The clearing as proposed may result in an increase in surface water runoff causing erosion gullies.

Given the red earthy soils and the siliceous sands, and the associated water and wind erosion risk; the clearing as proposed may cause appreciable land degradation.

Methodology

References:
- Northcote et al (1960-68)
- Wells (1988)

GIS Databases:
- Soils, Statewide
- Topographic Contours, 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 is not likely to be at variance to this Principle

The closest conservation reserves to the area under application are Nullilla Nature Reserve (4.1ha of bushland) and an unnamed Nature Reserve (ID 42743; 155ha of bushland) located 5.3km west south-west and 5.3km north-east, respectively. In addition, aerial mapping of the local area confirms limited connectivity from the area under application to the conservation areas.

Given the distance of the area under application to the reserves and the limited connectivity it is not likely that the clearing of the vegetation under application will impact on the environmental values of the conservation areas.

Methodology

GIS databases:
- DEC Managed Lands and Waters
- Gingin 50cm Orthomosaic - Landgate 2006

(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

There are no wetlands or watercourses mapped within the area under application with the closest water bodies

being Lennard Brook (also mapped as a conservation category wetland), located down slope ~480m north and an associated tributary located down slope ~ 490m north-east of the area under application.

The area under application has a no risk of salinity and is not located within a Public Drinking Water Source Area (PSWSA).

Given the sandy nature of the soils and the distance to Lennard Brook, it is not considered that the proposed clearing would cause deterioration in the quality of surface water. Therefore, the proposed clearing is not likely to be at variance to this Principle.

Methodology GIS Databases:
- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain
- Hydrogology, linear
- Public Drinking Water Source Areas (PDWSAs)
- Salinity Risk LM 25m - DOLA 00

(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**

There are no wetlands or watercourses mapped within the area under application with the closest water bodies being Lennard Brook (also mapped as a conservation category wetland), located ~480m north and an associated tributary located ~ 490m north-east of the area under application; and as such it is considered that the clearing as proposed is not likely to cause or increase the incidence or intensity of localised flooding. Therefore, this clearing proposal is not likely to be at variance to this Principle.

Methodology GIS Databases:
- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain
- Hydrography, linear

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

Comments

The Department sent a letter dated 11 December 2008 to the applicant. RPS (2009) sent a flora and vegetation survey in response to the correspondence.
The assessment of the clearing principles has been undertaken against the additional information.

Planning Consent and Extractive Industry Licence from the Shire of Gingin (2008) remain outstanding for this clearing proposal.

There is no other RIWI Act Licence, Works Approval or EP Act Licence that affects the area under application.

Carnaby's Black-Cockatoo is classified as Endangered under Commonwealth Environment Protection and Biodiversity Conservation (EPBC) Act 1999. The clearing as proposed may result in a loss of habitat and foraging sites for this species; therefore, the proposal is likely to require referral to the Commonwealth Department of Environment Heritage Water and the Arts (DEHWA) under the EPBC Act 1999 for Carnaby's Black Cockatoo.

There is one Aboriginal Site of Significance listed within the areas under application, the applicant will be advised of their obligations under the Aboriginal Heritage Act 1972.

The State Planning Policy 2.4 - Basic Raw Materials does not identify M1899 as being within a priority area for extraction of basic raw material.

Lot M1899 is freehold land and is zoned Rural under the local Town Planning Scheme.

Methodology References:
- RPS (2009)
- Shire of Gingin (2008)

GIS databases:
- Aboriginal Sites of Significance
- Cadastre
- Town Planning Scheme Zones

4. Assessor's comments

Comment

The assessable criteria have been addressed and the clearing as proposed is at variance to Principles (a) and (b), and may be at variance to Principles (d) and (g).

5. References

Wells, M. (1988) A Method of Assessing Water Erosion Risk in Land Capability Studies - Swan Coastal Plain & Darling Range. Resource Management Technical Report No. 73. Department of Agriculture, Western Australia. ISSN 0729 - 3135.

DEC (2007) DEC Fauna Habitat Notes.xls. February 2007. Department of Environment and Conservation, Western Australia.

DEC (2008) DEC Species and Communities Branch - advice for CPS 2701/1 on threatened and priority ecological communities, and rare flora. Department of Environment and Conservation (DEC), Western Australia. TRIM Ref DOC69706

DEC (2008) Site Inspection Report for Clearing Permit Application CPS 2701, Lot M1899 Lennard Road, Gingin. Site inspection undertaken 03/11/2008. Department of Environment and Conservation, Western Australia (TRIM Ref DOC68610).

EPA (2000) Environmental protection of native vegetation in Western Australia. Clearing of native vegetation, with particular reference to the agricultural area. Position Statement No. 2. December 2000. Environmental Protection Authority, Western Australia.

EPA (2006) Guidance for the Assessment of Environmental Factors - Level of Assessment for Proposals Affecting Natural Areas Within the System 6 Region and Swan Coastal Plain Portion of the System 1 Region. Guidance Statement No 10. Environmental Protection Authority, Western Australia.

Gibson N., Keighery B., Keighery G., Burbidge A. and Lyons M. (1994). A Floristic Survey of the Southern Swan Coastal Plain. Western Australian Department of Conservation and Land Management and the Western Australian Conservation Council.

Government of Western Australia (2000) Bush Forever Volumes 1 and 2. Western Australian Planning Commission, Perth WA.

Heddle, E. M., Loneragan, O. W., and Havel, J. J. (1980) Vegetation Complexes of the Darling System, Western Australia. In Department of Conservation and Environment, Atlas of Natural Resources, Darling System, Western Australia.

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

RPS (2008) Vegetation Survey Lot M1899 Lennard Road, Gingin. RPS Environmental Pty Ltd. TRIM Ref DOC62267

RPS (2009) Level 2 Flora and vegetation survey, Lennards Road Quarry, Gingin. RPS Environment and Planning Pty Ltd, October 2009 (Hardcopy only).

Shah, B. (2006) Conservation of Carnaby's Black-Cockatoo on the Swan Coastal Plain, Western Australia. December 2006. Carnaby's Black-Cockatoo Recovery Project. Birds Australia, Western Australia.

Shepherd, D.P. (2007). Adapted from: 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. Includes subsequent updates for 2006 from Vegetation Extent dataset ANZWA1050000124.

Shire of Gingin (2008) Direct interest submission for Lot M1899 Lennard Road. TRIM Ref DOC68611

6. 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)