



1. Application details

1.1. Permit application details

Permit application No.: 2250/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Rinker Australia Pty Ltd

1.3. Property details

Property: LOT 518 ON PLAN 50784 (STAKE HILL 6181)
Local Government Area: Shire Of Murray
Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
2.23		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
Hedde Vegetation Complex: Karrakatta Complex - Central and South - Predominantly open forest of E. gomphocephala - E. marginata - E. calophylla and woodland of E. marginata - Banksia species.	The proposal is to clear 2.23 hectares of native vegetation for the purpose of sand extraction. Mattiske Consulting (2007) describes the vegetation under application as 'woodland of Allocasuarina fraseriana, Banksia attenuata and B. menziesii with emergent Eucalyptus marginata over Hibbertia hypericoides, with patches of Kunzea ericifolia'.	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	Vegetation clearing description is based on a flora and vegetation survey conducted by Mattiske Consulting in January 2007 over all the vegetation contained on Lot 518. Mattiske (2007) also conducted a search targeted at <i>Drakaea elastica</i> during June, September and October 2007. A site visit was also conducted by DEC officers on 14 June 2007. A Level 1 fauna survey was conducted by Bamford Consulting Ecologists (2007) over all the vegetation on Lot 518.
Beard Vegetation Association 998: Medium woodland, tuart (Shepherd 2006)	The vegetation under application comprises mixed Banksia woodland with Eucalyptus spp., <i>Allocasuarina fraseriana</i> over an understorey dominated by <i>Hibbertia</i> .		The vegetation under application is described by Mattiske Consulting (2007) to be in very good to excellent condition.

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 may be at variance to this Principle

The vegetation under application is considered to be in very good to excellent condition, forms part of a corridor linking the adjacent Bush Forever site to the north and remnant vegetation to the south, and is considered to comprise part of significant habitat for indigenous fauna.

During a flora survey of all the vegetation on Lot 518 Mattiske Consulting (2007) identified 49 indigenous flora species, including three weed species.

Given the above, it is considered that the vegetation under application may comprise a high level of biodiversity.

To mitigate the loss of vegetation under application, a condition has been imposed to revegetate the areas to be cleared.

Methodology DEC site visit 14/6/07
Mattiske Consulting (2007)

(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 not at variance to this Principle**

During a fauna assessment Bamford Consulting Ecologists (2007) recorded sightings and evidence of 10 bird species, two reptile species, and three (one introduced) mammal species. These included species of conservation significance such as the Quenda and the Forest Red-tailed Black Cockatoo.

The vegetation under application is in very good to excellent condition with an intact understorey that would provide suitable habitat for ground-dwelling fauna such as Quenda. Bamford Consulting Ecologists (2007) report that the habitat present within the vegetation on Lot 518 is well suited to Quenda, and Quenda diggings were observed during their fauna assessment, however the diggings were not considered to be fresh. Quenda have also been recorded in Paganoni Swamp, which is located approximately 900m to the west.

The Jarrah and Banksia woodland on site has the potential to provide nesting and feeding habitat for Black Cockatoos. Bamford Consulting Ecologists (2007) observed evidence of recent feeding activity by the Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*) on Jarrah fruits in the northwest corner of the applied area, and report that the habitat on site is most suited to this species. The large Jarrah present on site have the potential to support hollows suitable for nesting by Black Cockatoos, with one hollow observed by Bamford Consulting Ecologists (2007) on Lot 518. During the DEC site visit Carnaby's Black Cockatoo (*Calyptorhynchus latirostris*) was observed to be active in similar vegetation on the adjacent property.

The vegetation under application is part of a large vegetated remnant that includes the Bush Forever site, Paganoni Swamp and the Serpentine River to the north and forms part of an ecological link between these sites and vegetation to the south.

Given the potential for the vegetation under application to provide habitat for a range of fauna species, including species of conservation significance, and its location within a large vegetated remnant, it is considered that the vegetation under application comprises part of a significant habitat for indigenous fauna.

To mitigate any loss of habitat within the area under application, a Fauna Management condition, and a condition requiring that clearing be conducted from west to east to allow movement of fauna, will be imposed on a permit if clearing is approved.

Methodology DEC Site visit 14/6/07
Bamford Consulting Ecologists (2007)
GIS Databases: SAC Bio datasets accessed 05/06/07

(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**

Within the local area (5km radius) there are two known populations of the Declared Rare Flora (DRF) *Drakaea elastica*, the closest of which is located approximately 230m to the south of the applied area.

D. elastica is described as a tuberous, perennial herb, 0.12-0.3 m high with flowers red, green, yellow during Oct-Nov in white or grey sand, low-lying situations adjoining winter-wet swamps (Western Australian Herbarium 1994). During the site visit there were areas of *Kunzea glabrescens* thicket on grey sand that appeared to be associated with slight depressions. The nearby population of *D. elastica* is located within the same soil association and vegetation complex as the area under application, and is at the same elevation as the southern portion. DEC Conservation Officers advised that 'although *D. elastica* is predominantly found in Banksia woodland, particularly under thickets of *Kunzea glabrescens* above winter-wet areas, it is not confined to those areas and has occasionally been found near the tops of sandy rises'.

During the flora survey by Mattiske Consulting (2007) no DRF species were observed within the applied area, however the flora survey was not conducted at the appropriate time of year for observing *D. elastica*. In subsequent discussions Mattiske Consulting advised that a targeted survey of the current area under application would be appropriate given the location of the new record of *D. elastica* on the adjacent lot. Additional flora surveys targeted at *D. elastica* were undertaken within the area under application by Mattiske (2007) in September and October 2007, however this species was not observed.

There are also four known populations of Priority listed flora in the local area, with the closest being *Dillwynia dillwynioides* (P3) located 500m to the east. No Priority flora species were observed within the area under application during the flora survey (Mattiske Consulting 2007).

Given that no DRF or Priority flora species were observed within the area under application during the initial

flora survey and additional surveys targeted at *D. elastica*, it is not considered likely that the vegetation under application includes, or is necessary for the continued existence of, rare flora.

Methodology DEC Site visit 14/6/07
 Mattiske Consulting (2007)
 URS (2007)
 Western Australian Herbarium (1994)
 GIS Databases:
 SAC Bio datasets accessed 06/06/07
 Topographic Contours, Statewide - DOLA 12/09/02

(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**
 Within the local area (5km radius) there are three known occurrences of a Threatened Ecological Community (TEC) that has been identified as Floristic Community Type 19b - Woodlands over sedgeland in Holocene dune swales of the southern Swan Coastal Plain (Government of Western Australia 2000).
 The vegetation under application is described by Mattiske Consulting (2007) as corresponding with Floristic Community Type 28, which is not identified as a TEC (Government of Western Australia 2000).
 Given that the vegetation under application was not identified as a TEC during the flora survey, and given the distance to the nearest known occurrences, it is not considered likely that the vegetation under application comprises or is necessary for the maintenance of a TEC.

Methodology Government of Western Australia (2000)
 Mattiske Consulting (2007)
 GIS Databases:
 SAC Bio datasets accessed 06/06/07

(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 may be at variance to this Principle**
 Heddle et al (1980) defines the vegetation under application as 'Karrakatta Complex - Central and South'. This has a pre-European representation of 29.5% (EPA 2006). The vegetation under application is also classified as Beard vegetation association 998, of which there is 41.5% of pre-European extent remaining (Shepherd 2006).
 The State Government is committed to the National Objectives Targets for Biodiversity Conservation which includes a target that prevents clearance of ecological communities with an extent below 30% of that present pre-1750 (Commonwealth of Australia 2001).
 The 'Karrakatta Complex - Central and South' has less than the recommended minimum of 30% vegetation remaining. The vegetation under application comprises 2.23 hectares in very good to excellent condition and is part of a large remnant of vegetation which is considered to be significant in the local area, which has approximately 23% of pre-European vegetation remaining due to being historically extensively cleared for agriculture and urban development.
 Given the extensively cleared local area it is considered that the vegetation under application may be significant as a remnant.

	Pre-European area (ha)	Current extent (ha)	Remaining %
	% in reserves/DEC- managed land		
Swan Coastal Plain	1,501,456	571,758	38.1**
Shire of Murray	181,526	98,552	54.3*
Local Area (~10km radius)	~22,200	~5075	~23
Heddle vegetation complex			***
Karrakatta Complex ? Central and south	49,912	14,729	29.5
Beard vegetation association 998	51,017	21,178	41.5
* (Shepherd et al. 2001)			
** (Shepherd 2006)			
*** (EPA, 2006)			

Methodology Commonwealth of Australia (2001)
 DEC Site visit 14/6/07
 EPA (2006)
 Heddle et al. (1980)
 Shepherd (2006)

(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 is a Conservation Category Wetland (CCW) located approximately 320m to the east of the applied area, and Paganoni Swamp, also a CCW and an EPP Lake, is located 720m to the west. The Serpentine River is also located 450m to the east of the area under application.

Given the distance to the nearest wetland, and that no wetland dependent vegetation was observed during the site visit, it is not considered likely that the vegetation under application is growing in, or association with, an environment associated with a watercourse or wetland.

Methodology DEC Site visit 14/6/07
GIS Databases:
Geomorphic Wetlands (Classification), Swan Coastal Plain - DEC
Hydrography, linear (hierarchy) - DOW

(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

Soils within the applied area are part of the Spearwood S1b Phase, comprising deep siliceous yellow brown sands or pale sands with yellow-brown subsoil. These soils have a high phosphorus export risk and a very high wind erosion risk (State of Western Australia 2005).

There is a nil salinity risk within the area under application, however the easternmost portion has a moderate to low risk of acid sulphate soils.

The removal of vegetation as proposed will the expose soils to and is likely to result in appreciable land degradation in the form of wind erosion. The proposed clearing will also remove deep-rooted perennials, reducing the phosphorus retention ability of the soil, which may cause an increase in nutrient export and the risk of eutrophication.

Given that there is the potential for the proposed clearing to result in wind erosion and phosphorus export, it is considered that the proposal may be at variance to this Principle.

In order to minimise the risk of wind erosion, conditions will be imposed requiring clearing in stages and revegetation if clearing is approved.

Methodology State of Western Australia (2005)
GIS Databases:
Acid Sulfate Soil Risk Map, Swan Coastal Plain - DEC
Salinity Risk LM 25m - DOLA 00

(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 area under application is located approximately 20m to the south of Bush Forever site 395. There are also Conservation Category Wetlands located approximately 320m to the east and 720m to the west.

Given the 20m buffer between the applied area and the Bush Forever site, it is not considered likely that the clearing would directly impact on its environmental values. However the vegetation under application is part of a continuous vegetated remnant that forms an ecological corridor for the movement of fauna between Bush Forever site 395 and the vegetation to the south. The proposed clearing will reduce the width of this corridor, reducing its effectiveness, and therefore will likely impact on the environmental values of the adjacent Bush Forever site.

Given that the vegetation under application forms part of a vegetated remnant linking Bush Forever site 395 and vegetation to the south, it is considered that the proposed clearing may indirectly impact the environmental values of this reserve. The proposal therefore may be at variance to this Principle.

To mitigate the potential impacts of the clearing on adjacent conservation reserves, a condition will be imposed requiring revegetation of the areas cleared if clearing is approved.

Methodology DEC Site visit 14/6/07
GIS Databases:
Bushforever - MFP 07/01

(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 Conservation Category Wetland (CCW) is located approximately 320m to the east of the applied area. Due to the high infiltration rates of the sandy soils identified within the area under application, and the distance to the wetland it is not considered likely that the proposed clearing would cause water erosion resulting in a deterioration in surface water quality in the CCW.

The area under application has a moderate to low risk of acid sulphate soils and a low salinity risk. However, the soils on site have a high risk of phosphorus export and the proposed clearing will remove deep-rooted perennials that are important for the uptake of nutrients throughout the year. This may increase the risk of phosphorus export from the applied area through drainage, contributing to a deterioration in groundwater quality.

Given the high risk of phosphorus export associated with the identified soil types, it is considered that the proposed clearing of 2.23 hectares may cause a deterioration in the quality of ground water.

In order to minimise the nutrient export from the site, conditions have been imposed requiring clearing in stages and revegetation.

Methodology State of Western Australia (2005)
GIS Databases:
Acid Sulfate Soil Risk Map, Swan Coastal Plain - DEC
Geomorphic Wetlands (Classification), Swan Coastal Plain - DEC
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

The area under application is located at an elevation of 15-30 metres and the sandy soils identified on site have a low risk of water logging (State of Western Australia 2005).

Due to the high infiltration rates associated with the sandy soils and the slight relief within the area under application, the proposed clearing of vegetation is not likely to cause or exacerbate the incidence of flooding.

Methodology DEC Site visit 14/6/07
State of Western Australia (2005)
GIS Databases:
Topographic Contours, Statewide - DOLA 12/09/02

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

Comments

The land proposed to be cleared is part of a Native Title Claim however, since it is privately owned the Native Title has been extinguished under the Native Title Act. Therefore the clearing as proposed should not fall under the future acts process of the Native Title Act 1993.

Lot 518 is zoned urban under the Peel Regional Scheme and rural in the Shire of Murray Town Planning Scheme No. 4.

Rinker Australia Pty Ltd has a current Licence to Take Water from the Department of Water.

The Shire of Murray advises that they do not object to the proposed clearing, however would prefer the permit not be granted until the conditions for CPS 1852/1 have been met to the satisfaction of DEC, and that vegetation not be cleared until it is ready to be mined. The Shire advises that Readymix Holdings hold an extractive industry license for the property that expired on 30 June 2007. Planning approval is currently valid until 30 June 2009 subject to annual renewal and conditions.

A submission was received opposing to the proposed clearing on the grounds that the vegetation within Lot 518 is part of a remnant of vegetation in a highly cleared landscape, the DRF found nearby, and that the proposed clearing will impact on the adjacent Bush Forever site.

The issues raised in these submissions have been addressed in the assessment and through conditions that will be placed on the permit if granted. The flora survey and additional surveys targeted at the nearby Declared Rare Flora (DRF) *Drakaea elastica* did not identify the presence of this or any other DRF or Priority flora

species. A condition will be imposed on the permit if granted requiring revegetation in order to mitigate impact on corridors to the nearby Bush Forever site. The proponent has undertaken fauna searches as required under the permit CPS 1852/1, however revegetation cannot be completed until the vegetation has been cleared.

Department of Planning and Infrastructure (Bush Forever) advised that the remaining vegetation on Lot 518 has been identified in the draft Southern Metropolitan and Peel Region Growth Strategy and policy framework report as an important ecological linkage between the Bush Forever site and the lot to the south, and consequently the Bush Forever office does not support the proposal. In addition, the vegetation has been identified as a potential site for a land swap for the Perth to Bunbury Highway, however this decision will not be finalised for approximately 2 years.

Methodology

4. Assessor's comments

Purpose	Method	Applied area (ha)/ trees	Comment
Extractive Industry	Mechanical Removal	2.23	The assessable criteria have been addressed and the proposed clearing is at variance to Principle b and may be at variance to Principles a, e, g, h and i.

5. References

- Bamford Consulting Ecologists (2007) Black Cockatoo and Quenda Fauna Assessment, Stock Road Quarry. DEC TRIM ref. DOC21328.
- Commonwealth of Australia (2001). National Targets and Objectives for Biodiversity Conservation 2001-2005, AGPS, Canberra.
- EPA (2006) Guidance for the Assessment of Environmental Factors -level of assessment of proposals affecting natural areas within the System 6 region and Swan Coastal Plain portion of the System 1 Region. Report by the EPA under the Environmental Protection Act 1986. No 10 WA.
- Government of Western Australia (2000) Bush Forever Volumes 1 and 2. Western Australian Planning Commission, Perth WA.
- Hedde, 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.
- Mattiske Consulting Pty Ltd (2007) Flora and Vegetation Survey of Stock Road Quarry Expansion Area. DEC TRIM ref. DOC21328.
- Shepherd (2006) 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.
- Shepherd, D.P., Beeston, G.R. and Hopkins, A.J.M. (2001) Native Vegetation in Western Australia, Extent, Type and Status. Resource Management Technical Report 249. Department of Agriculture, Western Australia.
- State of Western Australia (2005) Agmaps Land Manager CD Rom.
- URS (2007) Final Report - Supporting documentation for the Clearing Permit Application, Stock Road Quarry. DEC TRIM ref. DOC21328.
- Western Australian Herbarium (1998-). FloraBase - The Western Australian Flora. Department of Environment and Conservation. <http://florabase.calm.wa.gov.au/> Accessed on Thursday, 5 July 2007.

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)

