



1. Application details

1.1. Permit application details

Permit application No.: 2682/1
 Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Roadstone Quarries

1.3. Property details

Property: LOT 573 ON PLAN 3475 (POSTANS HOPE VALLEY 6165)
 LOT 574 ON PLAN 3475 (POSTANS HOPE VALLEY 6165)
 Local Government Area: Town Of Kwinana
 Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
19.6		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: 6: Medium woodland; tuart & Jarrah and 998: Medium woodland; tuart (SAC Bio Dataset 1/10/2008, Shepherd 2007).	The proposal is to clear 19.6 hectares of native vegetation, 9.2 ha is within Lot 573 (14.5 ha property) and 10.4ha is within Lot 574 (14.5 ha property), for the purpose of the extraction of sand and limestone.	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)	The vegetation condition and clearing description were obtained during a site inspection undertaken 8 October 2008 (DEC 2008) and from the vegetation assessment (Landform Research 2008).
Heddle Vegetation Complex: Karrakatta Complex Central and South. Predominantly open forest of Eucalyptus gomphocephala, Eucalyptus marginata, Eucalyptus calophylla and woodlands of E. marginata, Banksia species (Heddle et al. 1980).	The vegetation under application is described as Banksia-Eucalypt woodland. The vegetation has been identified as Floristic Community Type(FCT) 21a Central Banksia attenuata / Eucalyptus marginata woodlands (Landform Research 2008).	There is evidence of an intense fire occurring 3 to 4 years ago with regeneration of Banksia sp occurring.	The majority of the vegetation is in good condition (16ha) and consists of a sparse overstorey of Banksia sp and Eucalyptus marginata with a low shrub layer of Xanthorrhoea sp, Macrozamia fraseri, Acacia pulchella, Hibbertia sp and Conostylis sp. Ground cover is dominated by the weeds Briza maxima, Briza minor, veldt grass, lupins

and gladiolus. Drosera sp and Kennedia sp were also observed.

As above	The vegetation in the northeast corner of the site is in very good condition (1.8ha) and consists of an overstorey of Banksia sp, Eucalyptus sp. and Allocasuarina sp. The weeds mentioned above occurred in a lower density than elsewhere in the site and there is a relatively denser native shrub layer.	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	As above
As above	Vegetation in a degraded condition (~1.8ha) is limited to areas of physical disturbance along tracks and firebreaks and is highly disturbed by weeds. Limited areas of rubbish dumping occur.	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (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 may be at variance to this Principle**

The vegetation under application is in a good to very good condition and is described as Banksia-Eucalypt woodland. It consists of a sparse overstorey of Banksia sp and Eucalyptus marginata with a low shrub layer of Xanthorrhoea sp, Macrozamia fraseri, Acacia pulchella, Hibbertia sp and Conostylis sp. Ground cover is dominated by the weeds Briza maxima, Briza minor, veldt grass, lupins and gladiolus.

A vegetation assessment, undertaken in May, August and October 2008, identified 65 native flora species and 23 exotic flora species occurring within the area under application (Landform Research 2008).

The vegetation under application may provide suitable nesting and foraging habitat for indigenous fauna such as the Quenda (Isoodon obesulus fusciventer) and Carnabys Black-Cockatoo (Calyptorhynchus latirostris) (DEC 2007).

Given the good to very good vegetation condition, possible nesting and foraging habitat for indigenous fauna and the large area (19.6 ha) under application, the proposed clearing may be at variance to this Principle.

Methodology References
 -DEC (2007)
 -DEC (2008)
 -Landform Research (2008)
 GIS Databases
 - SAC Bio Datasets 1/10/2008

(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 may be at variance to this Principle**

There are five fauna species of conservation significance recorded in the local area (5km radius).

The vegetation under application is in a good condition with an overstorey consisting of Banksia sp and Eucalyptus sp that may provide suitable foraging habitat for the conservation significant Carnaby's Black-Cockatoo (Calyptorhynchus latirostris). In addition, a few hollow bearing eucalypt trees were observed during the site inspection (DEC 2008) that could potentially be used as nesting habitat by species of conservation significance and other mammal and avifauna.

The vegetation within the area under application comprises of a dense understorey suitable for ground-dwelling fauna such as the Quenda (Isoodon obesulus fusciventer) which has been recorded in the local area (5km radius) (DEC 2007). The Bobtail Lizard (Tiliqua rugosa rugosa) was also observed during the site inspection (DEC 2008).

Given the good condition of the majority of the vegetation under application (DEC 2008), the relatively large area proposed to be cleared (19.6ha) and the potential utilisation of the area for foraging and nesting habitat by local fauna, the vegetation under application may comprise of a significant habitat for indigenous fauna.

Methodology References
-DEC (2007)
-DEC (2008)
GIS Databases:
-SAC Bio Datasets 1/10/2008

(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

There is one known record of the rare flora species *Diuris micrantha* occurring within the local area (5 km radius). This population is located ~3.5 km south of the area under application.

D. micrantha is a tuberous, perennial herb growing from 0.3 up to 0.6 m high with yellow and brown flowers during Sep and Oct. It grows in brown loamy clay and is found in winter-wet swamps in shallow water (Western Australian Herbarium 1998-).

No rare flora, including *D. micrantha*, was found during a vegetation assessment of the area under application, undertaken in May, August and October 2008 (Landform Research 2008). In addition, shallow yellow and brown sands occur within the area under application (Landform Research 2008).

Although not the entire area under application was surveyed at an appropriate time of year, the area under application does not contain the preferred soil and habitat (winter wet swamps) that *D. micrantha* favours. The area under application is therefore, not likely to provide habitat for rare flora and therefore is not likely to be at variance to this Principle.

Methodology References
- Landform Research (2008)
- Western Australian Herbarium (1998-)
GIS Datasets
-SAC Bio Datasets 1/10/2008

(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 is not likely to be at variance to this Principle

There is one known occurrence of the Threatened Ecological Community (TEC) Floristic Community Type (FCT) 26a *Melaleuca huegelli* and *Melaleuca acerosa* shrublands on limestone ridges within the local area (5km radius). This TEC occurs ~1.8km south of the area under application.

Limestone ridges do not occur within the area under application (DEC 2008) and the vegetation assessment described the vegetation as *Banksia - Eucalypt* woodland (Landform Research 2008). In addition, *M. huegelli* and *M. acerosa* were not identified in the vegetation survey (Landform Research 2008). Therefore, it is not considered likely for the proposed clearing to be at variance to this Principle.

Methodology References
- DEC (2008)
-Landform Reserch (2008)
GIS Database
-SAC Bio datasets 01/10/2008

(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 under application is associated with Beard Vegetation Association 6 and 998. There is approximately 26.18% and 41.61% pre-European extent remaining respectively (Shepherd 2007). The vegetation under application is associated with the Heddlé Vegetation Complex Karrakatta Complex Central and South, which has 29.5% pre-European vegetation extent remaining (EPA 2006).

The State Government is committed to the National Objectives and Targets for Biodiversity Conservation which includes a target that prevents a clearance of ecological communities with an extent below 30% of that present pre-European settlement (Commonwealth of Australia 2001). Two of the mapped vegetation complexes associated within the area under application are below the State Governments target of 30%. However, the EPA (2006) recognises the Perth metropolitan Region as a constrained area, providing for the reduction of vegetation complexes to a minimum of 10% of the pre-European extent.

The area under application is located within the Perth Metropolitan Region and belongs to vegetation complexes that have over 10% of their pre-European extent. Therefore, it is not considered likely for the proposed clearing to be at variance to this Principle.

	Pre-European (ha)	Current extent (ha)	Remaining (%)	In secure tenure (%)
IBRA Bioregion*				
Swan Coastal Plain [^]	1,501,209	583,141	38.8	32.5
Town of Kwinana*	11,998	4,821	40.2	9.3
Beard vegetation type*				
6	56,343	14,749	26.2	34.3
998	51,015	21,225	41.6	38.1
Heddle vegetation complex**				
Karrakatta Complex Central/ South	49,912	14,729	29.5	2.5

* (Shepherd, 2007)

** (EPA, 2006)

[^] Area within Intensive Land Use Zone

Methodology References
 -Commonwealth of Australia (2001)
 -EPA (2006)
 -Shepherd (2007)
 GIS Datasets
 -Heddle Vegetation Complexes
 -SAC Bio Datasets 01/10/2008

(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 numerous wetlands occurring within the local area (5 km radius) with the nearest being a Conservation Category Wetland (CCW) and Environmental Protection Policy (EPP) lake known as Long Swamp, occurring ~490 m southwest of the area under application. The nearest watercourse is the Peel Main Drain 2.9 km southeast of the area under application.

A minimum wetland buffer of 50 m is required for all proposed developments to protect wetland values and functions (Water and Rivers Commission 2001). Given the distance to the nearest wetlands and watercourses and given that no wetland vegetation was observed during the site inspection (DEC 2008), the proposed clearing is not considered likely to be at variance to this Principle.

Methodology References
 -DEC (2008)
 -Water and Rivers Commission (2001)
 GIS Databases
 -Geomorphic Wetland (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**
 Soils within the area under application are part of the Spearwood Dune System and area described as well drained yellow and brown sands (Landform Research 2008).

These soils have a high risk of wind erosion and phosphorus export and low risk of surface water runoff (Department of Agriculture 2005). Appropriate ground cover, windbreaks or adequate dust suppression on exposed surfaces is required to prevent wind erosion.

Given the relatively large area (19.6ha) and the sandy soils of the area under application the proposed clearing may be at variance to this Principle.

To minimise the risk of wind erosion a condition has been placed on the permit requiring clearing to be undertaken in stages and revegetation to follow clearing.

Methodology References
 -Department of Agriculture (2005)

(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 nearest conservation reserves to the area under application are the Bush Forever sites 267 (Mandogalup Road Bushland) and 346 (Beeliar Regional Park), which are located ~ 800 m northeast and 1.2 km southwest of the area under application, respectively. In addition, Long Swamp (CCW and EPP Lake) is an area listed on the register of national estate and is located ~490 m southwest of the area under application.

The vegetation under application is connected to Long Swamp and to Bush Forever site 267 through impacted and narrow vegetation linkages that occur on privately owned property. The vegetation under application is in good condition and may provide habitat for local fauna populations moving between Long Swamp and Bush Forever site 267. Therefore, the proposed clearing may be at variance to this Principle.

Methodology GIS Databases
- Bushforever
- DEC Managed Lands and Waters
- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain
- Register of National Estate

(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.

Comments Proposal is not likely to be at variance to this Principle

The nearest wetland and watercourse to the area under application is the CCW and EPP Lake, Long Swamp, occurring ~490 m southwest and the Peel Main Drain 2.9 km southeast of the area under application.

A minimum wetland buffer of 50 m is required for all proposed developments to protect wetland values and functions (Water and Rivers Commission 2001). Given the distance to the nearest wetland and watercourse the proposed clearing is not considered likely to cause deterioration to the quality of surface water in the local area.

Salinity risk mapping has identified the south eastern portion (~5.2ha) of the area under application as having a high salinity risk. However, given the low groundwater salinity (500-1000 mg/L) it is not considered likely that the proposed clearing would cause deterioration in the quality of the underground water.

Therefore, it is not considered likely that the proposed clearing would cause deterioration in the quality of surface or underground water.

Methodology References
-Waters and Rivers Commission (2001)
GIS Databases:
-Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain
- Groundwater Salinity, Statewide
- Hydrography, linear
- Salinity Risk LM 25m

(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 nearest wetland and watercourse to the area under application is the CCW and EPP Lake, Long Swamp, occurring ~490 m southwest and the Peel Main Drain 2.9 km southeast of the area under application.

Given the distance of the nearest wetland and watercourse to the area under application; and the sandy soils of the area (Landform Research 2008), the proposed clearing is not considered likely to cause, or exacerbate the incidence or intensity of flooding.

Methodology References
- Department of Agriculture (2005)
- Landform Research (2008)
GIS Databases
-Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain
-Hydrography, Linear

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

Comments The proposal is to clear 19.6 ha of native vegetation for the extraction of sand and limestone.

Italia Stone Group (Roadstone Quarries) has an Extractive Industries Licence for the area under application. It was issued on the 1st of July 2008 and expires on the 30th of June 2009 (Town of Kwinana 2008).

The Western Australian Planning Commission lists the area under application as a Priority Limestone Resource in the State Planning Policy 2.4 Basic Raw Materials 2000 (Landform Research 2008).

The area under application is zoned Rural under the Metropolitan Region Scheme and the Town of Kwinana Town Planning Scheme.

Alcoa Australia own Lot 573 and 574 and both lots are classed as freehold. Roadstone Quarries has an agreement with Alcoa to mine sand and limestone from the area under application (Landform Research 2008). Once completed the area under application has been approved for the storage of bauxite residue as part of Alcoa's long term red mud storage (Landform Research 2008).

Clearing of native vegetation and development of sand and limestone quarry on Lot 574 Postans Rd Hope valley was referred to the Environmental Protection Authority (EPA). The EPA determined that no formal assessment was required and that environmental issues regarding the proposal could be management under the Extractive Industry Licence issued by the Town of Kwinana (EPA 2003).

Methodology

References

- EPA (2003)
- Landform Research (2008)
- Town of Kwinana (2008)
- GIS Databases
- Cadastre
- Metropolitan Regional Scheme
- Town Planning Scheme Zones

4. Assessor's comments

Comment

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

5. References

- Commonwealth of Australia (2001) National Targets and Objectives for Biodiversity Conservation 2001-2005, AGPS, Canberra.
- DEC (2007) DEC Fauna Habitat Notes.xls. February 2007. Department of Environment and Conservation, Western Australia.
- DEC (2008) Site Inspection 6 October 2008 on Lot 573 and 574 Postans Rd Hope Valley; Department of Environment and Conservation (DEC), Western Australia. TRIM Ref DOC64655.
- EPA (2003) Clearing of Native Vegetation and Development of Sand and Limestone Quarry Lot 574 Postans Road, Hope Valley, Environmental Protection Authority, Western Australia. TRIM Ref. DOC 61678.
- 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.
- 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.
- Landform Research (2008) Lindsey Stephens, Vegetation Assessment Lots 573 and 574 Postans Rd Hope Valley, Italia Stone Group/Roadstone Quarries, Western Australia. TRIM Ref DOC61679.
- 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.
- State of Western Australia (2005) Agmaps Land Manager CD Rom.
- Town of Kwinana (2008) Extractive Industries Licence; Italia Limestone for Lot 573, 574, 575 and 576 (71) Postans Rd, Hope Valley 6165, Town of Kwinana, Western Australia. TRIM Red DOC64578.
- Water and Rivers Commission (2001). Position Statement: Wetlands, Water and Rivers Commission, Perth.
- Western Australian Herbarium (1998-). FloraBase - The Western Australian Flora. Department of Environment and Conservation. <http://florabase.calm.wa.gov.au/> (Accessed 7/10/2008).

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)

