



## 1. Application details

### 1.1. Permit application details

Permit application No.: 323/1  
 Permit type: Area Permit

### 1.2. Proponent details

Proponent's name: PMR Quarries P/L

### 1.3. Property details

Property: LOT 2170 on Plan 211650 (Lot No. 2170 Millar Road BALDIVIS 6171)  
 Local Government Area: City Of Rockingham  
 Colloquial name:

### 1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
5.0		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 Associations: 1001 - Medium very sparse woodland; jarrah, with low woodland; banksia & casuarina 998 - Medium woodland: Tuat.	The proposal includes the clearing of 5 hectares of native vegetation for extractive industry purposes.  The vegetation under application includes <i>Macrozamia nieldii</i> , <i>Eucalyptus marginata</i> , <i>E. gomphocephala</i> , <i>E. calophylla</i> , <i>Allocasuarina fraseriana</i> , <i>Corymbia calophylla</i> , <i>Banksia grandis</i> , <i>B. attenuata</i> , <i>Hakea sp.</i> , <i>Hibbertia sp.</i> , and various sedges. The understorey is intact with moderate weed invasion of various species.	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)	The description of the vegetation under application was obtained from a site visit to the property on 12 May 2005 (DEC Trim ref: HD24067) and on 21 March 2007. The majority of the vegetation is considered to be in good condition, with some degraded areas in the western portion, and the eastern portion being in very good condition.  The fauna survey was conducted over the entire vegetated area of Lot 2170 Millar Road, of which the current applied area comprises a portion.
Heddlie Vegetation Complexes: Collesloe Complex - Central and South: Mosaic of woodland of <i>E. gomphocephala</i> and open forest of <i>E. gomphocephala</i> - <i>E. marginata</i> - <i>C. calophylla</i> ; closed heath on Limestone outcrops.  Karrakatta Complex - Central and South: Predominantly open forest of <i>E. gomphocephala</i> - <i>E. marginata</i> - <i>C. calophylla</i> and woodland of <i>E. marginata</i> - <i>Banksia</i> species.			

## 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 not likely to be at variance to this Principle  
 The vegetation under application has an average condition rating of good, with moderate weed invasion throughout the 5ha strip adjacent to the current pit face that is under application. Given that vegetation of similar quality is likely to be present in the adjacent vegetation and nearby conservation reserves, it is not considered likely that the vegetation under application represents an area of high biological diversity in the Bioregion or local area.

**Methodology** DEC site inspection 21/3/07

**(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**

CALM (2004) advise that there are 6 Priority fauna species that have been recorded in the local area (5km radius), including *Burhinus grallarius* Bush Stonecurlew (P4), *Charadrius rubricollis* Hooded Plover (P4), *Ixobrychus exilis* Lillie Billern (P4), *Macropus irma* Western Brush Wallaby (P4), *Numenius madagascariensis* Eastern Curlew (P4), and *Isoodon obesulus fusciventer* Quenda (P5). The nearest database record of Priority fauna is the Western Brush Wallaby (P4) located approximately 800 metres from the notified area within Leda Nature Reserve and it is possible that this species is present in the applied area given that the habitat present is suitable for this species (CALM 2004).

During the 2007 site visit DEC officers identified Quenda and Echidna diggings. CALM (2005) advised that the habitat within the vegetation on Lot 2170, including the applied vegetation, is suitable for the Quenda, which is listed as a Priority 5 species. Priority 5 species are considered 'conservation dependent', with the main threat to their survival being the clearing of suitable habitat.

Western Wildlife (2006) conducted a Level 1 fauna assessment (desk-top study and site visit) for all the vegetation on Lot 2170 and concluded that the vegetation within Lot 2170 'is expected to support a range of fauna including up to 6 species of amphibian, 37 species of reptile, 88 bird species and 20 mammal species.' Of the species potentially occurring on site 42 are of conservation significance, and 21 were observed during the fauna survey (Western Wildlife 2006).

During the fauna survey, 21 bird species were observed, including five Bush Forever Decreaser bird species, one migratory bird species, and one Priority fauna species (Western Wildlife 2006). Western Wildlife (2006) advised that the EPBC listed migratory Rainbow Bee-eater (*Merops ornatus*) is likely to be a common breeding visitor to the site, nesting in burrows dug into sandy ground or banks, however no active burrows were observed. Western Wildlife (2006) also advised that Carnaby's Black Cockatoo (EPBC Act Endangered) is highly likely to forage within the applied area and there are mature Tuart trees on site that contain potential nesting hollows suitable for this species. Baudin's Black Cockatoo (EPBC Act Vulnerable), and the Fork-tailed Swift (EPBC Act Migratory) are also likely to visit the area for foraging. The hollows present on site could also provide suitable habitat for mammalian species potentially occurring on-site including the Western False Pipistrelle, Honey Possum and Brush Tailed Possum (Western Wildlife, 2006).

The vegetation within Lot 2170 is likely to provide an ecological corridor between areas of vegetation to the north and south, however a 40m buffer will be retained on the eastern boundary of the applied area to assist in the migration of fauna. The vegetation under application contains habitat that has the potential to support a range of native fauna. This habitat may be considered significant given the potential for hollows to be utilised by Carnaby's Cockatoo, although the large area of remaining vegetation to the north and in the nearby conservation reserves is likely to be more significant.

A condition has been placed on the permit requiring identification of potential habitat hollows and translocation of specially protected fauna where found.

**Methodology** CALM (2005)  
Western Wildlife (2006)  
DoE Site visit 5/9/05  
DEC site visit 21/3/07

**(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**

CALM (2005) advised that there is one known occurrence of Declared Rare Flora (DRF) (*Diuris micrantha*) and three Priority flora species (*Dodonaea hackettiana*, *Aotus cordifolia*, *Aponogon hexatepalus*) that have been recorded within the local area (5km radius).

The vegetation under application comprises Banksia woodland with areas of moderate weed disturbance and CALM (2005) advised that 'habitats available are in good condition, and may contain habitat suitable for *D. hackettiana* (Hackett's Hopbush, P4)'. CALM (2005) also advised that the other species identified in the local area are not likely to occur due to a lack of suitable habitat.

Although the flora survey was not conducted during an optimal time, *D. hackettiana* is a shrub that is readily identifiable at any time of year, and none were observed on site (Landform Research 2006). No other DRF or Priority flora species were identified during the flora survey.

Given that no DRF or Priority flora were identified on site during the flora survey, it is not considered likely that the vegetation under application includes, or be necessary for the maintenance of, rare flora.

**Methodology** CALM (2005)  
Landform Research (2006)

**(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**

CALM (2005) has advised that within the local area there are 4 known occurrences of Threatened Ecological Community (TEC) Type 19b 'Woodlands over sedgeland in Holocene dune swales of the southern Swan Coastal Plain' (Critically Endangered). The nearest occurrence of this TEC is located approximately 2.5 kilometres from the area under application.

Biodiversity Coordination Section (BCS) (2007) advised that the area under application was previously contained within the boundary of Bushplan site number 349, in which the Floristic Community Types (FCT) are 17, 21a, 25 and 28. These FCTs are not identified as Threatened Ecological Communities.

Given that the area under application is on a sandy rise, and that the FCT previously identified on site are not TEC, it is therefore not considered likely that the vegetation under application includes, or is necessary for the maintenance of a TEC.

**Methodology** BCS (2007)  
CALM (2005)  
DoE Site Visit 5/9/05  
GIS Database y Topographic Contours, Metropolitan Area - DLI

**(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 proposed to be cleared is defined as Beard vegetation associations 1001 and 998 (Shepherd et al. 2001), and Heddle vegetation complexes 'Cottesloe Complex - Central and South' and 'Karrakatta Complex - Central and South' (Heddle et al. 1980). Of these vegetation types, association 1001 and Karrakatta Complex have 27.6% and 29.5% respectively of pre-European extent remaining.

The 'Cottesloe Complex - Central and South' and 'Karrakatta Complex - Central and South' 2.5% and 8.8% respectively of vegetation (Heddle et al 1980) in secure tenure while Beard vegetation association 1001 has only 4.2% of vegetation in secure tenure (Shepherd et al. 2001). The JANIS (1997) report recommended that 15% of the pre-1750 distribution of each vegetation ecosystem should be protected in a comprehensive, adequate and representative reserve system.

Although the identified vegetation complexes have less than the recommended 30% minimum of Pre-European extent remaining, the applied area is considered to be within a constrained area. The EPA (2003) recognises the Perth Metropolitan Region as a 'constrained area', providing for the reduction of vegetation complexes remaining to a minimum of 10% of the pre-European extent. Therefore the proposal is not considered likely to be at variance to this Principle.

	Pre-European area (ha)	Current extent (ha)	Remaining %	Conservation status***	% in reserves/CALM-managed
land					
IBRA Bioregion	1,529,235	657,450	43%*	Depleted	
City of Rockingham	24,326	8,534	35.1%*	Depleted	
Local Area (~10km radius)	65,372	14,700	22.5%	Vulnerable	
Beard vegetation association					
- 1001	68,475	18,907	27.6%*	Vulnerable	4.2%
- 998	51,094	18,320	35.9%	Depleted	32.9%
Heddle vegetation complex					
- Cottesloe Complex - Central and South	8.8%	44,995	18,474	41.1%**	Depleted
- Karrakatta Complex - Central and South	2.5%	49,912	14,729	29.5%**	Vulnerable

\* (Shepherd et al. 2001)

\*\* (EPA 2003)

\*\*\* (Department of Natural Resources and Environment 2002)

**Methodology** Heddle et al. (1980)  
JANIS (1997)  
Shepherd et al. (2001)  
Department of Natural Resources and Environment (2002)  
EPA (2000)  
EPA (2003)

**(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**

The area under application is located approximately 830m east of a Conservation Category Wetland (CCW) and the nearest watercourse is the Peel Main Drain which is located approximately 1.2km to the east.

Given the distance to the nearest watercourse or wetland, and that no wetland dependent vegetation was observed on site, the vegetation under application is not considered likely to be growing in association with a watercourse or wetland.

**Methodology DoE site visit 5/9/05**

GIS Databases:

EPP, Lakes - DEP 1/12/92

Hydrography, linear (hierarchy) - DOE 13/4/05

Geomorphic Wetlands (Management Categories), Swan Coastal Plain - DOE 15/9/04

**(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**

There is a high risk of wind erosion of the Spearwood Dune system (State of Western Australia 2005) following the clearing of native vegetation on this site. The high erosion potential is due to the sandy nature of the topsoil and without appropriate ground cover, windbreaks or adequate dust suppression on exposed surfaces the proposal would be likely to cause land degradation.

The proposed land use of area under application is a sand and limestone mine; therefore the above mentioned issues should be addressed and managed through the extractive industries licence. The proposal therefore may be at variance to this Principle. A condition has been placed on the permit requiring that clearing not occur unless actively mining the area to be cleared within six months of the clearing.

**Methodology State of Western Australia (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 is not likely to be at variance to this Principle**

The area under application is located approximately 280m south of Bush Forever site 349 and 400m from Leda Nature Reserve, with a large remnant of vegetation located between that would act as a buffer. A Conservation Category Wetland, which has also been identified under the Environmental Protection (Swan Coastal Plain Lakes) Policy 1992, is located approximately 830m from the area under application within Leda Nature Reserve.

Other conservation areas within the local area (5km radius) include:

- Two registered DEC Nature Conservation Covenants, the nearest of which is located approximately 4km from the applied area,
- Three registered DEC Land for Wildlife sites, the nearest of which is located approximately 2.8km from the applied area, and
- Six other Bush Forever sites.

The vegetation on Lot 2170, including the vegetation under application, has also been identified in the Perth Biodiversity Project (Del Marco et al. 2004) as a 'significant ecological linkage' (linkage # 75 and # 87), with the retention and protection of these linkages recognised as important in the local Rockingham Greening Plan (City of Rockingham 2002). The vegetation remnant as a whole provides ecological connectivity between vegetation to the south and conservation areas to the north. In order to retain this connectivity, and to meet Shire buffer regulations, a 40m vegetated remnant will be retained on the eastern boundary of the area under application.

Given that there is a large vegetated buffer located between the area under application and the Bush Forever site to the north, and that an ecological corridor will be retained on the eastern boundary of the applied area, it is not considered likely that the proposal would have an impact on the environmental values of any nearby conservation reserve.

**Methodology CALM (2005)**

GIS Databases:

Bushforever - MFP 07/01

EPP, Lakes - DEP 1/12/92

Geomorphic Wetlands (Management Categories), Swan Coastal Plain - DOE 15/9/04

Perth Biodiversity Project (2004)

**(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 area under application is not within a Public Drinking Water Source Area and there is a low to nil risk of salinity. Watercourses in the area include a Conservation Category Wetland and EPP Lake located 830m to the west, and the Peel Main Drain located 1.2km to the east.

CALM (2005) advised that the original proposed clearing of 39 hectares may result in increased surface water runoff, siltation, altered hydrology, and possibly eutrophication of the nearby EPP Lake, however the current application of 5 hectares is likely to have significantly less impact on surface water flows. In addition, the proposed land use on site is a sand mine, therefore minimising the risk of eutrophication of any nearby wetlands.

Given that there is a low to nil risk of salinity, and given the distance to the wetland and the high infiltration rates of the sandy soils, it is not considered likely that the proposed clearing would cause deterioration in the quality of surface or ground water.

**Methodology** GIS Databases:  
EPP, Lakes - DEP 1/12/92  
Geomorphic Wellands (Management Categories), Swan Coastal Plain - DOE 15/9/04  
Hydrography, linear (hierarchy) - DOE 13/4/05

**(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 approximately 830m east of a Conservation Category Wetland (CCW) and the nearest watercourse is the Peel Main Drain located approximately 1.2km to the east.

Due to the distance to the nearest watercourse or wetland, and the location of the site on a sandy rise, is not considered likely that the proposed clearing would cause or exacerbate the incidence of flooding.

**Methodology** GIS Databases:  
Hydrography, linear (hierarchy) - DOE 13/4/05  
Geomorphic Wellands (Management Categories), Swan Coastal Plain - DOE 15/9/04

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

**Comments**  
If the proponent undertakes the screening of sand extracted from the site then a licence under Part V of the Environmental Protection Act 1986 would be required.

Lot 2170 Millar Road is part of a Native Title Claim however, since it is privately owned by the City of Rockingham 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.

The original application included all vegetation within Lot 2170, however the current application comprises 5 ha of the total vegetation on site.

A flora survey was conducted within the vegetation on site and is suitable to determine the presence of significant flora. However, the flora survey does not appear to have been conducted in accordance with the EPA Guidance Statement 51 and the vegetation condition and Floristic Community Types as described in the flora report are not consistent with observations made by DEC officers during the site visits. Therefore other information sources have been utilised for these parts of the assessment.

Submissions were received objecting to the granting of a permit for the original proposal to clear 39 hectares on the basis of the vegetation complexes being under-represented, the ecological corridors that the remnant as a whole provides, the potential for DRF, TEC and fauna habitat on site. These concerns have been addressed through the clearing principles.

This lot is approved by the EPA as a regional waste disposal site. The lot is owned by the City of Rockingham and mined under contract by PMR Quarries with the sand resource being removed ahead of the landfill operations. As such revegetation management plans have not been requested for this site as the final rehabilitation of the site will be handled by the City of Rockingham following the completion of landfill operations.

**Methodology** GIS Database: Native Title Claims - DLI 7/11/05

#### 4. Assessor's comments

Purpose	Method	Applied area (ha)/ trees	Comment
Extractive Industry	Mechanical 5.0 Removal		<p>The assessable criteria have been addressed and the clearing as proposed may be at variance to Principle b and g.</p> <p>Principle (b): The vegetation under application includes mature Tuart trees that may contain habitat hollows suitable for the EPBC Listed Carnaby's Cockatoo, and therefore may comprises significant habitat for this species.</p> <p>Principle (g): There is a high risk of wind erosion on site, however this should be managed through the extractive industry licence. In addition, a condition has been placed on the permit requiring that clearing not occur unless actively mining the area to be cleared within six months of the clearing.</p> <p>The assessing officer therefore recommends that the permit be granted conditions requiring identification of potential habitat hollows and relocation of fauna where necessary and requiring no clearing unless mining within six months of the clearing.</p>

#### 5. References

- CALM Land clearing proposal advice. Advice to A/Director General, Department of Environment (DoE), Department of Conservation and Land Management, Western Australia. DoE TRIM ref IN24589.
- City of Rockingham (2002) Rockingham Greening Plan.
- DEC (2006) Biodiversity advice for land clearing application. Advice to Assessing Officer, Native Vegetation Assessment Branch, Department of Industry and Resources (DoIR), received DATE. Biodiversity Coordination Section, Department of Environment and Conservation, Western Australia.
- Del Marco, A., Taylor, R., Clarke, K., Savage, K., Cullity, J. and Miles, C. (2004) Local Government Biodiversity Planning Guidelines for the Perth Metropolitan Region. Perth Biodiversity Project, Western Australian Local Government Association, Perth.
- Department of Natural Resources and Environment (2002) Biodiversity Action Planning. Action planning for native biodiversity at multiple scales; catchment bioregional, landscape, local. Department of Natural Resources and Environment, Victoria.
- 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.
- EPA (2003) 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.
- JANIS Forests Criteria (1997) Nationally agreed criteria for the establishment of a comprehensive, Adequate and Representative reserve System for Forests in Australia. A report by the Joint ANZECC/MCFFA National Forest Policy Statement Implementation Sub-committee. Regional Forests Agreement process. Commonwealth of Australia, Canberra.
- 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 (2006) Flora and vegetation survey - Location 2170 Millar Road Baldivis. DEC TRIM ref. DOC17356.
- 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.
- Site Visit 19/8/05, Department of Environment and Conservation (DEC), Western Australia. TRIM ref 2005O/791.
- State of Western Australia (2005) Agmaps Land Manager CD Rom.
- Western Wildlife (2006) Millar Rd Quarry Extension: A Fauna Assessment. DEC TRIM ref. DOC9847.

## 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)
D&E	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)

