



1. Application details

1.1. Permit application details

Permit application No.: 2402/1
Permit type: Area Permit

1.2. Proponent details

Proponent's name: Midland Brick Pty Ltd

1.3. Property details

Property: LOT 10 ON PLAN 10872 (Lot No. 10 TOODYAY RED HILL 6056)
Local Government Area: City Of Swan
Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
1.9		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 Dwellingup complex in medium to high rainfall (Hedde, 1980)	The proposal is to clear 1.9ha of native vegetation on Lot 10, Toodyay Road, Red Hill for the purpose of extending the existing quarry. The vegetation under application is disturbed by historical gravel extraction activities including tracks running through the vegetation.	Completely Degraded: No longer intact; completely/almost completely without native species (Keighery 1994)	Vegetation clearing description based on a site inspection conducted by DEC officers on the 11 April 2008.
Mattiske (D2) Open forest of Eucalyptus marginata subsp. marginata-Corymbia calophylla on lateritic uplands in subhumid and semiarid zones. (Mattiske consulting, 1998)	The area under application contains an old gravel pit which consists of 0.8ha of vegetation considered to be in completely degraded condition and comprises sparse regrowth of Corymbia calophylla over Hakea sp, Allocasuarina humilis, Dryandra sessilis and Dryandra sp.. The majority of the old gravel pit is bare ground with little regrowth or weeds.		
Beard (2003) Medium forest; jarrah & marri on laterite with blackbutt (E. patens) in valleys, swampy bottomlands with bullich (E. megacarpa) and Agonis flexuosa Shepherd et al, 2006)			
As above	The western portion in area under application consists of 0.6ha of vegetation considered to be in good condition comprising of open Corymbia calophylla and, a very open understorey comprising Allocasuarina fraseri, Dryandra sessilis, sedge species and Dryandra nivea. Crown death was observed in some of the Corymbia calophylla.	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)	As above

As above	The southern portion of the area under application contains 0.5ha and considered to be in very good? condition and comprises <i>Corymbia calophylla</i> over <i>Dryandra sessilis</i> <i>Hakeas</i> spp. <i>Xanthorrhoea gracilis</i> , <i>Hibbertia</i> spp. <i>calothamnus</i> sp., and <i>Dryandra nivea</i> . This vegetation was noted to be denser in the middle and understorey than the western portion	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	As above
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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 area under application includes 1.9ha of native vegetation ranging from completely degraded condition in the old gravel pit portion to very good condition in the southern portion of the area under application. The vegetation comprises an overstorey of predominantly *Corymbia calophylla* varying in density over an understorey varying in density which includes predominantly *Dryandra sessilis*, *Hakea* spp., *Xanthorrhoea gracilis*, *Hibbertia* spp. and *Dryandra* spp.. There is disturbance from historical gravel extraction activities including several tracks running through the vegetation under application.

Given the high level of disturbance and adjacent extractive industry the vegetation under application is not considered likely to comprise a high level of biological diversity

Methodology DEC site inspection 11/04/2008

(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**

Within the local area (~10km radius) there are 119 known occurrences of significant fauna including the following:

- Carnaby's Black Cockatoo *Calyptorhynchus latirostris* (Endangered) N 6.3km SE
- Graceful Sunmoth *Synemon gratiosa* (Endangered) 7.6km E (Burbidge, 2004)
- Red Tiled Phascogale *Phascogale calura* (Endangered) 8.7km SE
- Chuditch *Dasyurus geoffroii* (Vulnerable) closest occurrences 4.3km E
- Red Tailed Black Cockatoo *Calyptorhynchus banksii* (Vulnerable) 5.5km SE
- Western Brush wallaby *Macropus irma* (Priority 4) 4.8km SE
- Water Rat (Rakali) *Hydromya chryogaster* (Priority 4) 9.5km SW

Lot 10 is located adjacent to John Forrest National Park however the proposed clearing is located 270m north. The vegetation under application is not considered likely to provide an ecological link or corridor for native fauna due to the adjacent extractive industry and high level of disturbance in the area.

The area under application contains 0.6ha of vegetation in good condition and 0.5ha of vegetation in very good condition. Chuditch are known to occur in a variety of woodland habitats, however given the limited area to be cleared, the amount of disturbance and surrounding extractive industries, it is not considered likely that the vegetation under application would provide significant habitat for the Chuditch (DEC 2008).

The other significant fauna within the local area have habitat requirements that differ to those found in the area under application and therefore it is not considered likely that the vegetation under application would provide significant habitat for those species (DEC 2008).

During a site inspection noted was a mature *Corymbia calophylla* with a hollow with the potential to be utilized by small mammals or birds such as Carnaby's Black Cockatoo, Red Tailed Black Cockatoo and Red Tailed Phascogale (DEC 2008).

Given that there is a mature hollow with the potential to be utilised by fauna, the vegetation under application may be suitable for the maintenance of a significant habitat for native fauna.

If the permit is granted a condition for fauna management should be imposed

Methodology Burbidge (2004)
DEC (2007a)
DEC site visit 11/04/2008
GIS databases:
SAC biosets accessed 4/04/2008

(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

Within the local area (~5km radius) there are two populations of Declared Rare Flora (DRF) and 74 known occurrences of Priority Flora including the following:

Thelymitra dedmaniarum (DRF) 4.8km NW
Anthocercis gracilis (DRF) 4.9km SW
Calothamnus rupestris (P4) 2.7km W

The area under application includes 1.9ha of native vegetation ranging from completely degraded condition in the old gravel pit portion to very good condition in the southern portion of the area under application.

DRF in the local area are found within different Vegetation complexes and soil types mapped in the vegetation under application (WA Herbarium, 1998).

Given that the vegetation under application is not representative of the habitat requirements of DRF and Priority Flora in the local area it is not considered likely to be necessary for the continued existence of rare flora.

Methodology DEC site inspection 11/04/2008
WA Herbarium, 2007
GIS Databases:
SAC biodatasets accessed 04/04/2008
Soils Statewide DA 11/99
Hedde
Mattiske
Pre-European Vegetation ? DA 01/01

(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 of the vegetation under application (~10km) there are 22 known occurrences of TECs and two known occurrences of PECs including the following:

SCP3c Eucalyptus calophylla - Xanthorrhoea preissii woodlands and shrublands, Swan Coastal Plain (4.1km SW)
SCP20c Shrublands and woodlands of the eastern side of the Swan Coastal Plain (6.4km SW)
SCP08 Herb rich shrublands in clay pans (6.4km SW)
171 Central granite shrublands (3.3km W) PEC

The vegetation and soil mapping of the TECs and PECs in the local area differ to those found in the area under application.

Given the distance to the nearest TEC or PEC and that the vegetation under application is found on the Darling Scarp and that the identified TECs are found on the Swan Coastal Plain and are associated with a different land form, it is unlikely that the vegetation under application comprises or is necessary for the maintenance of a Threatened Ecological Community.

Methodology DEC Site Inspection 11/04/2008
GIS Databases:
SAC biosets (Accessed 4/04/2008)
Soils Statewide DA 11/99
Hedde
Mattiske
Pre-European Vegetation ? DA 01/01

(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 area under application is part of the Jarrah Forest IBRA Region which has a current pre-European representation of 53.8% (Shepherd 2006). The vegetation under application is identified by Heddle et al 1980 as Dwellingup complex of which there is 84.9% pre-European vegetation remaining. The vegetation under application is identified by Mattiske Consulting (1998) as ?Dwellingup? complex of which there is 90.5% of pre-European vegetation remaining. The vegetation under application is also part of Beard Vegetation Association 2003 which has a current representation level of 86% (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).

Given the limited amount of disturbance and that John Forrest National Park is 270m south of the area under application, it is not considered likely to be significant as a remnant of native vegetation in the local area, and therefore is not considered likely to be at variance to this principle.

	Pre-European (ha)	Current extent (ha)	Remaining (%)	In secure tenure (%)
IBRA Bioregion Jarrah Forest*	4,506,674	2,426,070	53.8	14
City of Swan**	173,440	88,082	52.7	NA
Local Area (~10km radius)	~ 31,400	~ 26,240	~ 83.5	NA
Beard vegetation type***				
2003	59,261	50,939	86	8.1
Mattiske ***				
Dwellingup 2	103,344	54,792	90.5	NA
Heddle****				
Dwellingup Complex	83,660	71,067	84.9	12.9

* (Shepherd, 2006)

** (Shepherd et al, 2001)

*** (Mattiske Consulting, 1998)

****(Heddle et al, 1980)

Methodology

Shepherd (2001)
Shepherd (2006)
Heddle et al (1980)
Mattiske consulting (1998)
DEC site inspection 11/04/2008
GIS Databases:
NLWRA Land use
Mattiske
Heddle
SAC biosets (Accessed 4/04/2008)
Pre-European- DA 01/01

(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 mapped watercourses or wetlands within the area under application. Sussanah Brook is a significant stream occurring approximately 1.3km north of the area under application. Strelley Brook is located approximately 80m north of the area under application. There is an unnamed minor perennial watercourse 270m south of the area under application.

Topographic contours identify Strelley Brook as down gradient of the area under application.

Given that there is no wetland or riparian vegetation in the area under application the proposed clearing is not considered likely to be at variance to this principle.

Methodology

DEC site inspection 11/04/2008

GIS databases:
Hydrography linear (hierarchy)
Hydrography linear

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

Comments Proposal may be at variance to this Principle

The soil type mapped within the area under application comprises lateritic gravels and block laterite. The chief soils are ironstone gravels with sandy and earthy matrices (Northcote et al 1960-68). The area under application is mapped as having a low salinity risk and no known risk of acid sulphate soils.

The main land degradation risk associated with the removal of vegetation on the identified soil type is considered to be water erosion. The area under application is located upslope at a gradient of 6% approximately 80m from Strelley Brook. The 1.9ha of vegetation under application includes 1.1ha of vegetation in good to very good condition and it is considered that its removal may increase surface water runoff resulting in erosion gullies and rills.

Given that the proposed clearing may cause water erosion resulting in appreciable land degradation the proposal therefore may be at variance to this Principle.

The risk of water erosion will be managed by the extractive industry license. The impacts of water erosion will be minimised as the proposed extraction pit will prevent water from running off away from the site.

Methodology Northcote et al, 1960-68
GIS databases:
Soils Statewide DA 11/99
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 is not likely to be at variance to this Principle

Within the local area (~10km radius) there are the following nearby conservation areas:

John Forrest National Park 270m south (adjacent to Lot 10)
Parkerville Nature Reserve 3.9km SE
Talbot Road Bushland (Bush Forever site) 6.4km SW
Darling Range Regional Park 6.9km N

Given the area under application is limited to 1.9ha, the current level of disturbance to the vegetation under application and distance to nearby conservation areas the proposed clearing is not considered likely to have a direct or indirect impact on the environmental values of any nearby conservation areas.

Methodology GIS databases:
CALM Managed Lands and Waters
Bushforever
Swan Coastal Plain 20cm orthomosaic ? DI /06

(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 may be at variance to this Principle

Sussanah Brook is a significant stream located approximately 1.3km north and Strelley Brook is located approximately 80m north of the area under application. In addition, there is an unnamed minor perennial watercourse 270m south of the area under application.

The area under application is not located within a Public Drinking Water Source Area.

The area under application has a low salinity risk and no known risk of acid sulphate soils. It is not considered likely that the proposed clearing would result in the deterioration in the quality of underground water through salinity or acid sulphate soils.

The main land degradation risk associated with the removal of vegetation on the lateritic soils identified on site is considered to be water erosion. Given that the area under application is located upslope at a gradient of 6% approximately 80m from Strelley Brook, it is considered that the proposed clearing may cause water erosion resulting in the deterioration in surface water quality.

The risk of water erosion will be managed by the extractive industry license. The impacts of water erosion will

be minimised as the proposed extraction pit will prevent water flowing off-site.

Methodology Northcote et al, 1960-68
GIS Databases:
Salinity Risk LM 25m DOLA- 00
PDWSA
Hydrography linear (heierarchy)

(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

Sussanah Brook is a significant stream occurring approximately 1.3km north of the area under application. There is an unnamed minor perennial watercourse 270m south of the area under application.

Strelley Brook is located approximately 80m north of the vegetation under application. Topographic contours identify Strelley Brook as down gradient of the area under application.

Given that the vegetation under application is limited to 1.9ha the proposed clearing is not considered likely to cause or exacerbate the incidence or intensity of flooding.

Methodology DEC site inspection
GIS Databases:
Hydrography linear (heierarchy)

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

Comments

There are two Aboriginal Sites of Significance mapped within the area under application, DEC will advise the proponent of their responsibilities under the Aboriginal Heritage Act 1972.

The vegetation under application occurs within Lot 10 Toodyay Road, Red Hill which is currently zoned for resource.

City of Swan has issued an extractive industry license to the proponent for Lot 10, Toodyay Road, Red Hill Valid until December 2010 (Landform Research, 2008).

Methodology GIS Databases:
Aboriginal sites of significance
Cadastre
Town Planning Scheme

4. Assessor's comments

Comment

The assessable criteria have been addressed and the clearing as proposed may be at variance to principle b, g and i.

5. References

- Burbidge, A. (2004) Threatened Animals of Western Australia, Department of Conservation and Land Management, Perth, Western Australia.
- Commonwealth of Australia (2001) National Targets and Objectives for Biodiversity Conservation 2001-2005, AGPS, Canberra.
- DEC. (2008). NatureBase ? Fauna Species Profile: Western Brush Wallaby. <http://www.naturebase.net/content/view/840/1288/> (Accessed 04/04/2008).
- 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.
- Extractive Industry License, Landform Research TRIM ref DOC48078
- 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.
- Shepherd, D.P. (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.

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)

