



1. Application details

1.1. Permit application details

Permit application No.: 2702/1
 Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Shire of Boddington

1.3. Property details

Property: ROAD RESERVE (HARVEY- QUINDANNING ROAD, LOWER HOTHAM 6390)
 ROAD RESERVE (HARVEY-QUINDANNING ROAD, UPPER MURRAY 6390)
 Local Government Area: Shire Of Boddington

Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
1.2		Mechanical Removal	Road construction or maintenance

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
Mattiske Vegetation Complex:	The proposal is to clear a total of 1.2 hectares of native vegetation over approximately 2 km road reserve for the reconstruction and maintenance of the Harvey-Quindanning Road to allow a 9 metre wide sealed road surface to be constructed.	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)	Vegetation clearing description based on site photos provided by the Shire of Boddington (Donhardt, 2008) and previous clearing permit CPS2189/1.
Michibin (Mi) - Open woodland of Eucalyptus wandoo over Acacia acuminata with some Eucalyptus loxophleba on valley slopes, with low woodland of Allocasuarina huegeliana on or near shallow granite outcrops in arid and perarid zones.	The proposed clearing is contained within two separate portions along the Harvey-Quindanning Road. Area 1 (western portion of the area under application) comprises 0.7 hectares with selective clearing required on both sides of the road. This section of the proposed road works is scheduled to commence in July 2009.		
Murray 2 (My2) - Open forest of Eucalyptus marginata subsp. thalassica-Corymbia calophylla-Eucalyptus patens and woodland of Eucalyptus wandoo with some Eucalyptus accedens on valley slopes to woodland of Eucalyptus rudis-Melaleuca raphiophylla on the valley floors in semiarid and arid zones.	Area 2 (eastern portion of the applied area) comprises 0.5 hectares with the majority of the proposed clearing restricted to the high side of the road (southern edge). Construction along this portion of the road is planned to commence in December 2008.		
Beard Vegetation Association:			
3 ? Medium forest; jarrah-marri			
4- Medium woodland; marri and wandoo.			
	The vegetation under application comprises Eucalyptus wandoo and other Eucalyptus species over a sparse understorey		

comprising occasional Xanthorrhoea preissii, Acacia spp and Hibbertia species with large expanses of invasive non-native grasses and is considered to be in a degraded to completely degraded condition, with an average of degraded 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 is not likely to be at variance to this Principle**

The vegetation under application along the Harvey-Quindanning Road in the Shire of Boddington is contained within a narrow, linear road reserve spread over a total distance of approximately 2km. The vegetation within the applied area has low species diversity and limited understorey vegetation and is considered to be in degraded condition.

Within the local area (10 km radius) there are 14 recorded occurrences of 11 priority flora species, the closest of which, *Boronia tenuis* (P4) is located approximately 700m from Area 2 (eastern area under application). *B. tenuis* is found within the same soil type, but generally within a different vegetation complex to that found within the areas under application, with the exception of the southern portion of Area 2 (40 metres distance) which is of the same vegetation complex.

Although the identified Priority species *B. tenuis* is located in close proximity to the area under application, it is found in clay soils, whereas the soils in the applied area are red, earthy soils containing ironstone gravels (Northcote et al, 1968). Therefore the applied vegetation is unlikely to include habitat that is suitable for *B. tenuis*.

Given the above, the areas under application are not considered to comprise a high level of biological diversity.

Methodology

References

- Donhardt, Site Photos (2008)
 - Northcote et al (1968)
- GIS Databases:
- CALM Managed Lands and Waters
 - Hydrography, linear (hierarchy)
 - Brookton-Boddington 1m Orthomosaic - Landgate 2003
 - SAC BIO Datasets - accessed 26/09/2008

(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 have been 35 recorded occurrences of significant fauna species. The closest known record is the Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*, Vulnerable) approximately 1.1km from the areas under application. The Carnaby's Black-Cockatoo (*Calyptorhynchus latirostris* - EPBC Act, Endangered) has been recorded 9 km from the areas under application.

The area under application is located within the distribution range of the Forest Red-tailed Black Cockatoo and Carnaby's Black Cockatoo and the Eucalyptus trees under application may provide some foraging habitat for these birds, which feed on the seeds and nectar from the flowers of Eucalypts. However, it is not considered likely to be significant feeding habitat given the limited vegetation under application and the presence of conservation reserves, State Forest and Timber Reserves in the local area.

The vegetation under application is limited to 1.2 hectares spread over approximately 2km of road reserve and is in a degraded condition. Although there is a lack of understorey within the applied area which would limit the habitat potential for ground dwelling fauna species such as the Quenda (*Isoodon obesulus fusciventer*, P5), Brush-tailed Wallaby (*Macropus irma*, P4), Chuditch (*Dasyurus geoffroii*, Vulnerable) and Woylie (*Bettongia penicillata ogiby*, P5), mature Eucalyptus trees on site have the potential to contain hollows which could be utilised for habitat by the Forest Red-tailed Black Cockatoo, Carnaby's Black Cockatoo and the Brush-tailed Phascogale.

Given that mature Eucalyptus trees located within the area under application on the Harvey-Quindanning Road have the potential to contain habitat hollows which could be utilised by significant fauna, it is therefore considered that the vegetation under application may comprise significant habitat for fauna.

To ensure hollows are not being utilized by significant fauna within the area under application, Fauna Management conditions will be imposed on a permit.

Methodology **References**
- Burbidge (2004)
- Donhardt, Site Photos (2008)
- Simpson and Day (2004)
GIS Databases:
- SAC BIO datasets - accessed 26/09/2008

(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 are no known occurrences of rare flora within a 10km radius of the areas under application. The closest rare flora, *Pultenaea pauciflora* is located approximately 16km from of the applied areas and is found within a different vegetation complex and soil type to the areas under application.

Given the absence of rare flora in the local area and that suitable habitat is not likely to be present for *P. pauciflora*, it is not likely that the vegetation under application includes, or is necessary for the continued existence of, rare flora.

Methodology **References**
- Brown et al (1998)
- Northcote et al (1968)
GIS Databases:
- Matiske Vegetation
- Soils Statewide
- SAC Bio Datasets 9/10//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 are no known occurrences of Threatened Ecological Communities (TEC) within a 20km radius of the area under application. The closest TEC is located approximately 39km west of the applied area and is associated with *Eucalyptus calophylla* - *E. marginata* woodlands on sandy clay soils of the southern Swan Coastal Plain.

Given that the vegetation under application is *Eucalyptus* woodlands found in the Wheatbelt and that the nearest TEC is found on a different landform being the Swan Coastal Plain, it is not considered likely that the vegetation under application comprises, or is necessary for the maintenance of, a TEC.

Methodology **GIS Database:**
- Matiske Vegetation
- Soils Statewide
- SAC Bio Datasets 24/09//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**
Matiske (1988) defines the vegetation under application as 'Michibin' and 'Murray 2' complexes of which there is 26.5% and 74.2% respectively of pre-European extent remaining. The vegetation under application is also described as Beard vegetation associations 3 and 4, of which there is 70.03% and 24.15% respectively of pre-European extent remaining (Shepherd, 2007).

The area under application is located within the Shire of Boddington of which there is 76.99% of pre-European extent remaining (Shepherd, 2007) and the local area (10km radius) which has approximately 73% of pre-European extent remaining.

The State Government is committed to the National Objectives and Targets for Biodiversity Conservation which includes a target that prevents the clearance of ecological communities with an extent below 30% of that present pre-European settlement (Commonwealth of Australia, 2001).

Although the vegetation under application is part of vegetation complexes that have below the minimum threshold of 30% pre-European extent remaining, given that the Shire of Boddington and the local area respectively have 76.99% and approximately 73% of pre-European extent remaining and given the degraded condition of the area under application, it is not considered likely that the vegetation under application is

significant as a remnant.

	Pre-European (ha)	Current extent (ha)	Remaining (%)	In secure tenure (%)
IBRA Bioregion*				
Jarrah Forest	2,390,590	1,657,274	69.32	
Shire of Boddington**	159,249	122,598	76.99	
Local area (10km radius)	~31,400	~23,078	~73.0	
Beard vegetation type*				
3	2,661,405	1,863,719	70.03	18.0
4	1,054,279	254,656	24.15	4.39
Mattiske vegetation complex				
Michibin (Mi)	1,345,524	356,512	26.5	
Murray 2 (My 2)	593,148	440,381	74.2	

* (Shepherd, 2007)

** (EPA, 2006)

^ Area within Intensive Land Use Zone

Methodology GIS Databases:
 - Commonwealth of Australia (2001)- EPA (2006)
 - EPA (2006)
 - Shepherd (2007)
 GIS Databases:
 - Interim Biogeographic regionalisation of Australia
 - Mattiske Vegetation
 - SAC Bio Datasets accessed 09/10/2008

(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 no wetlands recorded within a 10km radius of the area under application, however there are three known watercourses, the closest of which is the Murray River located approximately 26m north of the applied area. In addition, the Hotham River is located approximately 900m northeast and the Williams River is located approximately 910m to the northeast.

Given the distance to the nearest watercourses, and that no wetland dependent vegetation was observed from the site photos provided by the Shire of Boddington (Donhardt, 2008), the vegetation under application is not considered likely to include vegetation growing in, or in association with, an environment associated with a watercourse or wetland.

Methodology References
 - Donhardt (2008)
 GIS Databases:
 - Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain
 - Hydrology, 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 is not likely to be at variance to this Principle

The soils within the area under application are described as red earths, some of which contain ironstone gravels (Northcote et al, 1968). These soils are associated with a low risk of salinity and have a nil to low risk of acid sulphate soils. It is therefore not considered likely that the proposed clearing would result in any significant increase in salinity or have an impact on 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, however given the area under application is limited to 1.2 hectare, within a narrow, linear road reserve, it is not likely to result in appreciable water erosion.

Given the above, it is not considered likely that the proposed clearing would result in appreciable land degradation.

- Methodology** **References**
- Northcote et al (1968)
- GIS Databases:**
- Acid Sulfate Soil Risk Map, Swan Coastal Plain - DEC
 - Salinity Risk LM 25m - DOLA 00
 - Soils, Statewide - DA 11/99

(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**

There is one area reserved for conservation purposes within a 10km radius of the areas under application, being Lane Poole Reserve, which is located approximately 2.8km west of Area 1 (western area under application). This particular reserve is also identified as a System 6 Reserve (id 295). In addition the Harris River State Forest, the Dwellingup State Forest and two Un-named Timber Reserves are located within close proximity to the areas under application.

Furthermore, the northern portion of Area 1 (western area under application) is located immediately adjacent to the Dwellingup State Forest for a distance of approximately 42 metres. The proposed clearing may have an indirect impact through the spread or introduction of dieback or weed species by machinery used for the construction of the proposed Harvey-Quindanning Road extension.

There are serious consequences associated with the spread of such diseases and exotic species into an area reserved for conservation, including the potential extinction of species. Indirect impacts may occur if dieback and weed risks are not adequately managed. The proposal is therefore considered to be at variance to this Principle

If a permit were to be granted, conditions will be placed on the permit to ensure wash down of vehicles and machinery, and to ensure construction material is weed and dieback free. In addition, conditions will be imposed requiring weed control within the road reserve and additional cleared areas.

- Methodology** **GIS Databases:**
- DEC Managed Lands and Waters
 - System 6 Conservation Reserves

(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 watercourse is the Murray River, which is located approximately 26m north of the area under application. The applied area is within the Peel Estuary-Murray River Catchment, but is not located within a Public Drinking Water Source Area.

The area under application has a nil to low risk of salinity and a nil to low risk of acid sulphate soils. It is therefore not considered likely that the proposed clearing would cause salinity or acid sulphate soils resulting in the deterioration in the quality of underground water.

Soils within the area under application generally have a low risk of land degradation, however the removal of vegetation from the identified soils may result in water erosion. This is likely to be minimal given the area under application is limited to 1.2 hectares, within a narrow, linear road reserve. Given this, and the distance to the nearest watercourse, it is not considered likely that the proposed clearing would cause water erosion resulting in deterioration in surface water quality.

- Methodology** **GIS Databases:**
- Acid Sulfate Soil Risk Map, Swan Coastal Plain - DEC
 - Hydrographic Catchments - Catchments
 - Hydrography, linear (hierarchy) - DOW
 - Public Drinking Water Source Areas (PDWSAs) - DOW
 - Salinity Mapping LM 25 - 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 approximately 26m to the south of the Murray River and around 250m south of the Murray River at an elevation of 170 - 205 metres. Given the area under application is limited to 1

hectare contained within a narrow, linear road reserve, it is not considered likely that the proposed clearing of the vegetation would impact on peak flood height or duration.

- Methodology** GIS Databases:
- Geomorphic wetlands (Mgt Categories) - Swan Coastal Plain - DEC
 - Hydrography, linear (hierarchy) - DOW
 - Soils, Statewide
 - Topographic Contours, Statewide - DOLA 12/09/02

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

Comments

The area under application is located within a Native Title Claim area. The applied area is contained within existing road reserves that are managed by, or invested in the Shire of Boddington. Therefore the clearing as proposed should not fall under the future acts process under the Native Title Act 1993.

In a submission, Cressida Wilson (DEC Roadside Conservation Committee) advised that the Harvey-Quindanning Road had not been surveyed for conservation value scores and that this particular road did not appear to have any particular habitat value or have a role as a corridor. (TRIM ref: DOC64431).

In a submission it was requested that the Eucalyptus trees on the southern side of Harvey-Quindanning Road within Area 1 be retained and likewise the Eucalyptus wandoo trees in Area 2 should also be retained. In addition, recommend that revegetation should be implemented at 1:1 ratio.

The western area under application (Area 1) is located within two Aboriginal sites of significance which are listed on the Interim Register. These Aboriginal sites are site 4292 (Art) and site 4293 (Art) which were subject to a Westrail Survey in 2005 and 2006. In addition, this section of the applied area is also located immediately adjacent to the Murray River (Aboriginal site 3537) which is listed on the Permanent Register. Given the proximity of these sites to the applied area, it is considered that consultation should be considered for the area under application.

- Methodology** GIS Databases:
- Aboriginal Sites of Significance
 - Native Title Claims - DIA

4. Assessor's comments

Comment

The assessable criteria have been addressed and the proposed clearing may be at variance to principle (b) and (h).

5. References

Brown A., Thomson-Dans C. and Marchant N.(1998). Western Australia's Threatened Flora, Department of Conservation and Land Management, Western Australia.

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 Fauna habitat notes.xls February 2007. Department of Environment and Conservation (DEC), 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.

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, E.M. and Havel, J.J. (1998) Vegetation Complexes of the South-west Forest Region of Western Australia. Maps and report prepared as part of the Regional Forest Agreement, Western Australia for the Department of Conservation and Land Management and Environment 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. (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.

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.

Simpson, K. & Day, N. (2004) Field Guide to the Birds of Australia, Penguin Group (Australia), Camberwell, Victoria

Submission, Direct Interest Submission, 1/10/2008, TRIM DOC 64427.

Submission, Direct Interest Submission, 26/09/2008, TRIM DOC 64431.

Western Australian Herbarium (1998). FloraBase - The Western Australian Flora. Department of Environment and Conservation. <http://florabase.dec.wa.gov.au/> (Accessed 25/09/2008).

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)

