



1. Application details

1.1. Permit application details

Permit application No.: 1724/1

Permit type: Area Permit

1.2. Proponent details

Proponent's name: Shire of Serpentine - Jarrahdale

1.3. Property details

Property: ROAD RESERVE (HOPELAND 6125)

Local Government Area: Shire Of Serpentine-Jarrahdale

Colloquial name: Karnup Road Reserve

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
	17	Cutting	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
Hedde Complex: Vegetation	The proposal includes the clearing of 17 trees within the Karnup Road reserve for the purpose of widening the road.	Completely Degraded: No longer intact; completely/almost completely without native species (Keighery 1994)	Vegetation clearing description based on a site visit conducted by DEC officers on 8 December 2006, and site photos provided by the applicant (DOC15305).
Southern River Complex - Open woodland of <i>E. calophylla</i> - <i>E. marginata</i> - <i>Banksia</i> species with fringing woodland of <i>E. rudis</i> - <i>M. raphiophylla</i> along creek beds.	The vegetation under application comprises mainly immature <i>Eucalyptus rudis</i> and some immature <i>E. calophylla</i> with no understorey present.		
Beard Association 999: Medium woodland; marri	The Vegetation is considered to be in completely 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 comprises 17 immature *Eucalyptus rudis* and *E. calophylla* and is considered to be completely degraded, with no understorey present. It is therefore not considered likely that the vegetation under application comprises a high level of biodiversity.

Methodology DEC Site visit 8/12/06

(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 likely to be at variance to this Principle
 The vegetation under application comprises 17 immature *Eucalyptus rudis* and *E. calophylla* with no understorey present.

The lack of understorey within the vegetation under application is likely to limit it's habitat potential for ground-dwelling fauna such as Quenda. No hollows were observed that could potentially be utilised as habitat, and the trees are not considered to be at a hollow-bearing age. It is therefore not considered likely that the vegetation under application comprises significant habitat for indigenous fauna.

Methodology DEC site visit 8/12/06
SJ Shire site photos

(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 of the application) there are 7 known occurrences of the Declared Rare Flora (DRF) *Caladenia huegelii* and *Drakaea elastica*, the nearest of which is located approximately 1.6km to the north of the area under application. These occurrences are located on a similar soil type, but within a different vegetation complex to the area under application. There are also five known occurrences of Priority flora within the local area.

The vegetation under application comprises 17 immature Eucalypt trees adjacent to a road and is considered to be in completely degraded condition, with no understorey species present. It is therefore not considered likely that the vegetation under application includes, or is necessary for the continued existence of, rare flora.

Methodology DEC site visit 8/12/06
GIS Database:
Declared Rare and Priority Flora List - CALM 01/07/05

(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 four known occurrences of Threatened Ecological Communities (TEC) within the local area (5km radius of the application) the closest of which is located approximately 3.2km to the east of the applied area.

The Bush Forever study identified the following TEC to be associated with the Foothills/Pinjarra Plain landform:

- Southern wet shrublands (2)
- *Eucalyptus calophylla* - *Kingia australis* woodlands on heavy soils (3a)
- *Eucalyptus calophylla* - *Eucalyptus marginata* woodlands on sandy clay soils (3b)
- *Eucalyptus calophylla* - *Xanthorrhoea preissii* woodlands and shrublands (3c) (Government of Western Australia 2000).

Given that the vegetation under application comprises mainly immature *Eucalyptus rudis* and is in completely degraded condition, it is not considered likely to be representative of a TEC. In addition, given the distance to the nearest TEC, it is not considered likely that the vegetation under application is necessary for the maintenance of a TEC.

Methodology DEC site visit 8/12/06
Government of Western Australia (2000)
GIS Database:
Threatened Ecological Communities - CALM 12/4/05

(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

Hedde et al. (1980) defines the vegetation under application as 'Southern River Complex' of which there is 19.8% of pre-European vegetation extent remaining (Shepherd et al. 2001), and which is considered to be of 'endangered' status for biodiversity conservation (Department of Natural Resources and Environment 2002).

The vegetation under application is also classified as Beard vegetation association 999, of which there is 11.8% of pre-European extent remaining and which is also considered to be endangered (Shepherd et al. 2001).

The State Government is committed to the National Objective Targets for Biodiversity Conservation, which includes targets that prevent the clearing of ecological communities with an extent below 30% of that present pre-1750 (Department of Natural Resources and Environment 2002; EPA 2000). Beyond this value, species extinction is believed to occur at an exponential rate and any further clearing may have irreversible consequences for the conservation of biodiversity. Given the completely degraded condition of the vegetation under application, the proposal may be at variance with this principle.

A condition has been imposed requiring the replanting of 40 *Eucalyptus rudis* and 20 *E. calophylla* in Karnup Road Reserve, in order to offset the vegetation loss as a result of the proposed clearing.

	Pre-European (ha)	Current (ha)	Remaining %	Conservation status***	%in reserves
Swan Coastal Plain	1,529,235	657,450	43.0*	Depleted	
Shire of SJ	90,478	53,038	58.6*	Least concern	

Local Area (~10km radius)					
Hedde vegetation complex			**		
Southern River Complex	57,979	11,501	19.8	Endangered	1.5
Beard vegetation associations 999					
	275,380	32,451	11.8*	Endangered	8.1
* (Shepherd et al. 2001)					
**(EPA, 2003)					
*** (Department of Natural Resources and Environment 2002)					

Methodology Hedde et al. (1980)
 Shepherd et al. (2001)
 DEC site visit 8/12/06
 Department of Natural Resource and Environment (2002)
 EPA (2003)
 GIS Databases:
 Hedde Vegetation Complexes - DEP 21/06/95
 Pre-European Vegetation - 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 at variance to this Principle**
 The area under application is located within a multiple use wetland. A Conservation Category Wetland is located approximately 590m to the north east of the southern extent of the proposed clearing, and a Resource Enhancement Category wetland is located approximately 90m to the south east. The nearest watercourse is the Serpentine River, located 3.3km to the north.
 The vegetation under application comprises mainly immature *Eucalyptus rudis*, which are considered to be a wetland dependent species, and therefore the proposal is considered to be at variance to this Principle.
 To offset the loss of wetland dependent vegetation an condition has been imposed requiring replanting of 40 *E. rudis* and 20 *E. calophylla* seedlings within Karnup Road Reserve.

Methodology DEC site visit 8/12/06
 GIS Database:
 Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain - DEC

(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 area under application contains two soil types, both of which are part of the Bassendean System. The majority of the applied area contains B6 soils, which are 'imperfectly drained deep or very deep grey siliceous sands' that have a high wind erosion and phosphorus export risk (State of Western Australia 2005). A small portion of the applied area contains B2 soils, which are 'well to moderately well drained deep bleached grey sands with a pale yellow B horizon or a weak iron-organic hardpan' that have a high wind erosion, Acid Sulphate Soil and phosphorus export risk (State of Western Australia 2005).
 The majority of the applied area is associated with a low to nil risk of salinity with the exception of approximately 200m of medium to high salinity risk at the eastern extent of the proposal. Given the area under application has a low density of trees over a 1km length of road reserve the clearing as proposed is not likely to have a severe impact on salinity in the area.
 The main land degradation risk associated with the removal of vegetation on the identified soil type is considered to be water erosion; however the vegetation under application comprises 17 trees over a 1km length of road reserve. It is therefore not considered likely that the proposed clearing would result in appreciable land degradation.

Methodology State of Western Australia (2005)
 GIS Database: 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**
 There are a number of Bush Forever sites within a 5km radius of the area under application, the closest of which is located approximately 1.6km to the north.

The vegetation under application is completely degraded with no understorey present and thus is not considered likely to provide an ecological corridor for fauna. In addition the proposed clearing will occur only on the northern side of the road reserve, thus preserving remnant on the western side that could be utilised as a corridor. Given this, and the distance to the nearest conservation reserve, it is not considered likely that the environmental values of these reserves would be impacted.

Methodology DEC site visit 8/12/06
 GIS Databases:
 Bushforever - MFP 07/01
 CALM Managed Lands and Waters - CALM 1/07/05

(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**
 Groundwater salinity in the local area is 1000-3000 mg/L and watercourses in the area include a Resource Enhancement Wetland 90m to the southeast and a Conservation Category Wetland 590m to the northeast. The area under application slopes away from the nearby wetlands the proposal is therefore not considered likely to impact water quality in the wetland.

The area under application is located within a Priority 3 Public Drinking Water Source Area (PDWSA). Priority 3 PDWSAs are defined to manage the risk of pollution and land uses that have significant pollution potential are opposed (Department of Water 2004).

Given that the vegetation under application comprises 17 immature *Eucalyptus sp.* within an existing road reserve it is not considered likely that the proposed clearing would significantly alter surface water flow regimes or groundwater levels and quality. The proposal is therefore not considered likely to be at variance to this Principle.

Methodology DEC site visit 8/12/06
 Department of Water (2004)
 State of Western Australia (2005)
 GIS Databases:
 Groundwater Salinity, Statewide - 22/02/00
 Hydrography, linear (hierarchy) - DOW
 Public Drinking Water Source Areas (PDWSAs) - DOE 07/02/06

(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 90m to the north west of a Resource Enhancement Wetland at an elevation of 10-15 metres. The proposed clearing includes 17 immature *Eucalyptus sp.* over a 1km length of road reserve and therefore it is not considered likely that the removal of vegetation from site would have an impact on peak flood height or duration.

Methodology GIS Databases:
 Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain - DEC
 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; however it is contained within an existing road reserve that is vested in the Shire of Serpentine Jarrahdale. Therefore the clearing as proposed should not fall under the future acts process under the Native Title Act 1993.

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

4. Assessor's comments

Purpose	Method	Applied area (ha)/ trees	Comment
Road construction & maintenance	Cutting	17	The assessable criteria have been assessed and the clearing as proposed is at variance to Principle (f). Principle (f): The vegetation under application comprises mainly immature <i>Eucalyptus rudis</i> , which is considered to be a wetland dependent species. A condition has been imposed on the permit to replant 40 <i>Eucalyptus rudis</i> and 20 <i>E. calophylla</i> within the Karnup Road reserve to offset the loss of vegetation associated with the proposal.

The proposal also may be at variance to Principle (e).

The assessing officer therefore recommends that the permit be granted with the following condition:

CONDITIONS

1. The Permit Holder shall plant and maintain 40 *Eucalyptus rudis* (Flooded Gum) seedlings and 20 *Eucalyptus calophylla* (Marri) seedlings within Karnup Road Reserve between Manning Road and Hopeland Road, Hopeland. Seedlings shall be sourced from within a 20km radius.

5. References

- 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.
- Department of Water (2004) Water Quality Protection Note - Land Use Compatibility in Public Drinking Water Source Areas.
- 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.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- 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.
- Shire of Serpentine Jarrahdale (2007) Site photos TRIM ref. DOC15305.
- Site Visit 8/12/2006, Department of Environment and Conservation (DEC), Western Australia.
- State of Western Australia (2005) Agmaps Land Manager CD Rom.

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)

