



1. Application details

1.1. Permit application details

Permit application No.: 726/1
Permit type: Area Permit

1.2. Proponent details

Proponent's name: Shire of Serpentine Jarrahdale

1.3. Property details

Property: COCKBURN SOUND LOCATION 1724
Local Government Area: Shire Of Serpentine-Jarrahdale
Colloquial name: Kargotich and Mundijong Roads - Adjacent Reserve 23793

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
	6	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
Beard vegetation association - 999 - Medium woodland; marri	The proposal includes clearing of six mature and 30 immature <i>Casuarina obesa</i> , for the purpose of improving public road safety through the provision of adequate sight lines. This vegetation was identified in Keighery in 1996 (DoE TRIM ref: IN22377) as a ' <i>Casuarina obesa</i> Forest to Woodland' in a completely degraded condition on the western side of Kargotich Road.	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)	Vegetation clearing description based on information obtained during site inspection on 24/8/2005 and information provided by the applicant.
Heddle vegetation complex - Guildford Complex - A mixture of open forest to tall open forest of <i>E. calophylla</i> - <i>E. wandoo</i> - <i>E. marginata</i> and woodland of <i>E. wandoo</i> (with rare occurrences of <i>E. lane-poolae</i>). Minor components include <i>E. rudis</i> - <i>M. raphiophylla</i> .	Vegetation located within the eastern side of the road however was identified as being in a very good to good condition. Both of the areas were observed during a site inspection on the 24/8/2005, as being quite degraded, with extensive weed invasion around areas of direct disturbance. Weed species dominated by <i>Eragrostis curvula</i> (African Lovegrass), although <i>Watsonia meriana</i> was also observed as present within the area.		

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 area under application is within a Threatened Ecological Community, Bush Forever Site, and Conservation Category Wetland. These classifications are determined through the significance of various environmental attributes. CALM (2005) advise that Declared Rare and Priority Flora taxa have been recorded in close proximity to the applied area. Collectively a high level of biodiversity is therefore likely to occur at this site. Based on the degraded nature of the areas under application it is considered that this proposal may be at variance to this Principle.
Methodology	CALM (2005) Site inspection (24/8/2005)

(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

CALM (2005) advise that specially protected and priority listed fauna may utilise the habitat within the Mundijong Road Flora Reserve, however the only species of native vegetation that is proposed to be removed is *Casuarina obesa* and, in itself, this is unlikely to be 'significant' habitat. Therefore, providing extreme care is taken by the proponents not to damage other vegetation in the process of removal of these trees and saplings, the proposal is not likely to be at variance to this Principle.

Methodology CALM (2005)

(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.

Comments Proposal may be at variance to this Principle

CALM (2005) advise that eight Declared Rare Taxa are known to occur within the local area of the proposed clearing, along with 19 priority flora species. There are also several records of the following Declared Rare Taxa occurring within close proximity to the notified area, within the same Pinjarra Pre-European Vegetation Association described as Medium woodland; jarrah, marri and wandoo. These are:

Diuris purdiei, Purdie's donkey orchid - a tuberous perennial herb, flowers are yellow Sep-Oct, occurs on moist grey-black sand, winter-wet swamps.

Tetraria australiensis, Southern Tetraria - a rhizomatous, tufted perennial, grass like sedge, flowers are brown Nov-Dec, grows under open marri woodland, over low shrubs and herbs. The species grows in grey sand over clay, in winter-wet slopes and flats edging temporary swamps.

Verticordia plumosa var. *pleiobotrya*, Narrow-petalled feather flower - a dense shrub, flowers are pink Oct-Dec. Found on clay or sandy loam, seasonally inundated swamps and road verges.

Given that the fluvial deposits in the notified area are seasonally wet and that there are records of these species in close proximity to the notified area it is possible that Declared Rare Taxa may occur on the site that is proposed to be cleared.

A site inspection of the flora reserve on 24/8/2005 identified that areas of vegetation on both sides of Kargotich Road are within a degraded state, suffering from weed infestation primarily consisting of *Eragrostis curvula* (African Lovegrass). While the *Casuarina obesa* under application are not classified as specially protected flora, CALM (2005) advise that it is possible that the proposed *Casuarina obesa* may provide canopy cover to the identified flora taxa (if present).

Methodology CALM (2005)
Site inspection (24/8/2005)

(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 may be at variance to this Principle

CALM (2005) advise that part of the application area is within a State listed Threatened Ecological Community, type SCP 08 - herb rich shrublands in clay pans. This clay pan community is known for its aquatic annuals.

In total there are 78 occurrences of 9 different types of Swan Coastal Plain threatened ecological communities within the local area (a 10km radius from the notified area). The protected wetlands and uplands alongside Mundijong Road have great conservation significance with many threatened vegetation complexes present.

Given that the proposed clearing is within a TEC and Declared Rare Flora may be present the proponents must ensure that, if the permit is granted, extreme care is taken on site to remove the trees and saplings without damaging the surrounding vegetation.

Methodology CALM (2005)

(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

Hedde et al (1980) defines the vegetation under application as Guildford Complex. This has a representation of 5.0% and is classified as a mixture of open forest to tall open forest of *E. calophylla* - *E. wandoo* - *E. marginata* and woodland of *E. wandoo* (with rare occurrences of *E. lane-poolei*). This complex currently has 0.2% vegetation in secure tenure (EPA, 2003), while JANIS (1997) recommends that 15% of the pre-1750 distribution of each vegetation ecosystem should be protected in a comprehensive, adequate and representative reserve system.

Vegetation under application is also classified as vegetation association 999 (Hopkins et al. 2001). This association has a representation of 11.8% of the pre- European extent, and is described as Medium Woodland; Marri (Shepherd et al. 2001)

The State Government is committed to the National Objectives Targets for Biodiversity Conservation which includes a target that prevents the clearing of ecological communities with an extent below 30% of that present pre-1750 (Department of Natural Resources and Environment, 2002; EPA, 2000).

While these representation figures are below the recommended 30% target, the vegetation on site is recognised as being within a completely degraded condition, and unlikely to be representative of the vegetation complex.

	Pre-European area (ha)	Current extent (ha)	Remaining %	Conservation status***	% in reserves/CALM-managed land
IBRA Bioregion	1,529,235	657,450	43%*	Depleted	
Shire of Serpentine-Jarrahdale		90,478	53,038	58.8%*	Least Concern
Beard vegetation association - 999	275,380	32,451	11.8%*	Vulnerable	8.1%*
Hedde vegetation complex - Guildford Complex	92,497	4,662	5.0%**	Endangered	0.2%**

* (Shepherd et al. 2001)

** (Hedde et al. 1980)

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

Methodology EPA (2003)
JANIS (1997)
Hopkins et al. (1997)
Shepherd et al. (2001)
Department of Natural Resources and Environment (2002)

(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 categorised as a Conservation Category Wetland (CCW). CCW's are wetlands with high ecological values and are the highest priority wetlands for protection, and are recognised under objective one of the Wetlands Conservation Policy for Western Australia as valuable (Government of Western Australia, 1997).

Vegetation within this area is described by Keighery 1996 (DoE TRIM ref: IN22377) as '*Casuarina obesa* Forest to Woodland' adjacent to areas of excellent to very good 'Wetland Mosaic'. Given the degraded nature of the area of vegetation under application, and the infestation of weeds, and the selective removal of *Casuarina obesa*, it is not considered likely that wetland functions or viability will be impacted upon.

Methodology Site inspection (24/8/2005)
GIS Databases:
- Geomorphic Wetlands (Mgt 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 is not likely to be at variance to this Principle

The proposed clearing of vegetation adjacent to Mundijong Road, involves the removal of selected trees and saplings. Soils within the area are classified as having a Class 2 Acid Sulphate Soils risk, with a moderate to low risk of ASS or PASS, generally at a depth greater than three metres. No disturbance to the soil or root systems of the vegetation will occur as a result of the clearing, and thus it is therefore considered that approval of this application would be unlikely to cause appreciable degradation within the road reserve area.

Methodology Site inspection (24/8/2005)

(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

CALM (2005) advise that there are many CALM managed reserves within the local area. The surrounding vegetation of the Swan Coastal Plain is severely fragmented and the reserves contain important remnants of

Swan Coastal Plain vegetation communities. The notified area provides a buffer to the conservation area within the road reserve and forms part of an ecological linkage between the fragmented bushland and wetlands. It was identified in the 1990's in a series of reports as being a regionally significant roadside remnant (Bush Forever Volume 2 Part B).

The site also has EPA Threatened or Poorly Reserved Plant Communities and is the location of conservation category wetlands (Bush Forever Volume 1). It has also been entered in the Register of the National Estate; subject to protection under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999.

Although very specific in nature and small in size, the proposed clearing may be at variance to this Principle.

Methodology CALM (2005)

(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 vegetation under application consists of six mature and 30 immature *Casuarina obesa*. The proposed removal method involves the pruning or removal of vegetation to a height which does not impact on visual sight lines for traffic. This method of removal will not disturb the soil or root systems of the vegetation, and thus is not considered likely to cause a deterioration in surface or groundwater quality.

Methodology Site inspection (24/8/2005)
 GIS Databases:
 - Hydrography, linear - DOE 01/02/04
 - Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain - DOE 15/09/04

(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 proposed clearing is within a Conservation Category Wetland within Mundijong Road Reserve. Clearing of vegetation within the proposed area is limited selected *Casuarina obesa*, over a relatively small and degraded area. Although the clearing of vegetation may slightly increase water infiltration to the groundwater table, the scale and amount of clearing makes this application unlikely to appreciably impact on localised flooding in the area.

Methodology Site inspection (05/09/2005)
 GIS Database:
 - Hydrography, linear - DOE 01/02/04
 - Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain - DOE 15/09/04

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

Comments

The Shire of Serpentine Jarrahdale have advised that the intersection of Kargotich Road and Mundijong Road, Mundijong has experienced many traffic accidents, with Shire investigations determining that road sight lines are the leading contributing factor. As such, the removal of *Casuarina obesa* is deemed by the Shire to be necessary to address safety concerns.

No other statutory approvals from the Department of Environment are required.

Methodology

4. Assessor's recommendations

Purpose	Method	Applied area (ha)/ trees	Decision	Comment / recommendation
Road construction or Removal maintenance	Mechanical	6	Grant	<p>The assessable criteria have been address, and the proposal has been found that the proposal may be at variance to Principles (a), (c), (d), and (h).</p> <p>While the proposed clearing is to occur in areas recognised as containing the above environmental constraints, the proposal will have a limited impact through the selective removal of <i>Casuarina obesa</i> only, and thus should not significantly impact on the environmental significance of the flora reserve.</p> <p>Therefore the assessing officer recommends the application by granted, subject to conditions relating to the prevention of soil disturbance, selected clearing, and weed management.</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 2005O/780.
- 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 (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.
- Hopkins, A.J.M., Beeston, G.R. and Harvey J.M. (2001) A database on the vegetation of Western Australia. Stage 1. CALM Science after J. S. Beard, late 1960's to early 1980's Vegetation Survey of Western Australia, UWA Press.
- 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, BJ (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.

6. Glossary

Term	Meaning
CALM	Department of Conservation and Land Management
DAWA	Department of Agriculture
DEP	Department of Environmental Protection (now DoE)
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 DoE)