



## 1. Application details

### 1.1. Permit application details

Permit application No.: 2137/1  
 Permit type: Area Permit

### 1.2. Proponent details

Proponent's name: Shire of Gnowangerup

### 1.3. Property details

Property: ROAD RESERVE ( MINDARABIN 6336)  
 ROAD RESERVE ( TOOMPUP 6336)  
 Local Government Area: Shire Of Gnowangerup  
 Colloquial name:

### 1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
1.8		Mechanical Removal Mechanical Removal	Road construction or maintenance 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 1075: Shrublands; mallee scrub, Eucalyptus eremophila & black marlock (Eucalyptus redunca)	The areas under application are for the purpose of road maintenance to address black spot issue. The proposed clearing (1.8ha) will be undertaken within existing road reserves. Aerial photography suggests that the vegetation condition of the areas to be cleared is considered to be in good condition (Keighery, 1994).	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)	References: - Keighery, B.J. (1994) - Vegetation condition was determined from aerial photography (Katanning 1.4m Orthomosaic - DLI 01, Katanning 50cm Orthomosaic - Landgate06, Borden 50cm Orthomosaic - Landgate06)

## 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 proposed clearing (1.8ha) is to be undertaken within existing road reserves and is considered to be in Good condition (Keighery 1994) from aerial photography. Given this, and that the structure of the vegetation has been compromised due to adjacent land clearing, and that Toompup Nature Reserve occurs within 1km of the area under application (and is a much larger area which represents significantly higher biological diversity), the area under application is not likely to represent high biological diversity.

**Methodology** Keighery, B.J. (1994)  
 GIS datasets:  
 - Katanning 1.4m Orthomosaic - DLI 01,  
 - Katanning 50cm Orthomosaic - Landgate06,  
 - Borden 50cm Orthomosaic - Landgate06  
 - Pre-European Vegetation - DA 01/01

### (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 proposed clearing (1.8ha) to be undertaken within existing road reserves is considered to be in Good

condition (Keighery 1994) from aerial photography. There is one recorded occurrence of tammar wallaby, located 1.3km south east from the area under application. This was recorded as occurring within the Toompup Nature Reserve. Given this information and considering that tammar wallaby shelter in dense, low thickets (CALM, 2003), it is unlikely that the vegetation under application would be preferable for this species.

Species & Community Branch, DEC (2007) also advised clearing is not likely to impact on the Muir's Corella within the local area.

**Methodology** CALM, 2003  
Species & Community Branch, DEC, 2007  
Keighery, B.J. (1994)  
SAC biodatasets 191107  
GIS datasets:  
- Katanning 1.4m Orthomosaic - DLI 01,  
- Katanning 50cm Orthomosaic - Landgate06,  
- Borden 50cm Orthomosaic - Landgate06

**(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**

Five declared rare flora (DRF) species, 2 Priority 1 species, 6 Priority 2 species, 4 Priority 3 species and 3 Priority 4 species have been recorded as occurring within 10km radius of the area under application (local area). DRF species, *Caladenia bryceana* subsp. *bryceana*, *Thelymitra psammophila* and *Adenanthos pungens* subsp. *pungens* have been recorded as occurring within the same vegetation association and soil type as the area under application, and DRF species, *Hibbertia priceana* has been recorded as occurring within a variety of vegetation associations, including Vegetation Association 1075, and the same soil type as the two areas under application.

Priority 1 species, *Leucopogon* sp. *Ongerup* (AS George 16682) has been recorded as occurring with the same soil type, but different vegetation association to that of the subject area. Priority 2 species, *Spyridium villosum*, has been recorded as occurring within the same vegetation association and soil type as the area under application. Priority 2 species, *Acacia mutabilis* subsp. *incurva*, *Gonocarpus rudis*, *Microcorys lenticularis* and *Eucalyptus vesiculosa*, have also been recorded as occurring within the same vegetation association and soil type. Priority 3 species, *Leucopogon florulentus*, has been recorded as occurring within the same vegetation association and soil type as the subject area, as has *Thysanotus gageoides* and *Grevillea newbeyi*. Priority 4 species, *Eremophila veneta* ms, *Bossiaea divaricata* and *Eucalyptus latens* have been recorded as occurring within the same vegetation association and soil type.

Given the number of rare and priority flora recorded within the local area that have been recorded as occurring within the same vegetation association and soil type as the subject area, and in a landscape that has been highly cleared and thus, become fragmented (15% remaining within 10km radius of subject area), the native vegetation under application may be necessary for the continued existence of rare and priority flora.

To mitigate the loss of any priority or rare flora species, flora conditions will be imposed if a clearing permit is granted.

**Methodology** SAC biodatasets 191107  
GIS datasets:  
- Katanning 1.4m Orthomosaic - DLI 01,  
- Katanning 50cm Orthomosaic - Landgate06,  
- Borden 50cm Orthomosaic - Landgate06  
- Pre-European Vegetation - DA 01/01  
- Soils, Statewide - DA 11/99

**(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**

The closest Threatened Ecological Community (TEC) to the area under application is located 40km south. Given the distance, and that the landscape between the subject area and the TEC has been heavily cleared, it is unlikely that the proposed clearing would impact on the TEC.

**Methodology** SAC Bio datasets 201107  
GIS datasets:  
- Katanning 1.4m Orthomosaic - DLI 01  
- Katanning 50cm Orthomosaic - Landgate06  
- Borden 50cm Orthomosaic - Landgate06  
- 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	<b>Proposal is at variance to this Principle</b>			
Pre-European (ha)	Current Extent	Remaining	Conservation Status**	% in Secure Tenure
	(ha)	(ha)	(%)	
IBRA Bioregion: Mallee*	7,395,902			
	4,017,869			
	54.3			
	31.3		Least concern	
Shire: Gnowangerup*** Beard Unit 1075 (within Mallee Bioregion)* 517033	454,958	83,957	18.5	Depleted
	61599			
	11.9			
	44.9		Depleted	
Beard Unit 1075 (Regional)*	527029			
	62579			
	11.9			
	Depleted			
	44.6			

\* (Shepherd, 2006)

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

\*\*\* (Shepherd et al, 2001)

The area under application is located in the Shire of Gnowangerup and within the Mallee Bioregion. The extent of pre-European vegetation within these areas is 18.5% and 54.3%, respectively (Shepherd et al., 2001; Shepherd, 2006).

The vegetation proposed to be cleared is a component of Beard Vegetation Association 1075 (Hopkins et al., 2001) of which there is 11.9% remaining regionally, and 11.9% remaining locally (Shepherd, 2006). These vegetation types are considered to have a conservation status of Depleted (Department of Natural Resources and Environment, 2002).

Additionally, aerial photography indicates that the landscape has become highly fragmented due to extensive clearing. These figures (with the exception of the extent of vegetation within the Mallee Bioregion) are well below the State Governments 30% 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 (EPA 2000). Furthermore, the Shire of Gnowangerup lies within the agricultural zone of EPA Position Paper No. 2. The EPA does not support the further reduction in native vegetation through clearing for agriculture and supports active management by landholders to maintain environmental values of remaining vegetation.

Given the low vegetation representation within the Shire of Gnowangerup, and within Beard Vegetation Association 1075, locally and regionally, the proposal is at variance to this principle.

To mitigate the loss of vegetation complexes through clearing, offset conditions will be imposed if a clearing permit is granted.

**Methodology** Department of Natural Resources and Environment (2002)  
EPA (2000)  
Shepherd, D.P. (2006)  
Shepherd, D.P., Beeston, G.R. and Hopkins, A.J.M. (2002)  
GIS datasets:  
- Katanning 1.4m Orthomosaic - DLI 01  
- Katanning 50cm Orthomosaic - Landgate06  
- Borden 50cm Orthomosaic - Landgate06  
- Pre-European Vegetation - DA 01/01  
- Interim Biogeographic Regionalisation of Australia - EA 18/10/00

**(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**  
Three watercourses flow within 10km radius of the area under application, the closest being Warperup Creek, located 2km east, and Peedillup Creek, located 2km south. A tributary from Warperup Creek flows within 400m of the subject area. Flora species recorded within the local area (10km radius of subject area) occur in dry soils and are not likely to be wetland species (WA Herbarium 2007).

Given this, and the distance to any watercourses, it is unlikely that the vegetation under application would be considered to be growing in association with a watercourse/wetland.

**Methodology** GIS datasets:  
- Hydrography, linear - DOE 1/2/04  
- Hydrography, linear (hierarchy) - DOW  
WA Herbarium (2007)

**(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 area under application is of high elevation (270m  $\pm$  280m AHD) with a topography of: dissected plateau at low elevation having an undulating to rolling ridge and slope relief with some steep bluffs adjacent to drainage-ways; some swamps. The chief soils are hard neutral yellow mottled soils (Dy3.82) containing ironstone gravels in their surface horizons on the flat to gently undulating ridge crests. Associated soils are leached sands (Uc2.2) sometimes underlain by boulder laterite and (Dy5.8) soils on the ridge crests; (Dy3.42), (Dy2.42), (Dr2.32), (Dr3.42), and possibly other similar (Dy) and (Dr) soils on the valley side slopes; and small areas of (Uc4.11) soils adjacent to tors on valley side slopes (Northcote et al. 1960-68). The area has low annual rainfall (400mm/year), and high evaporation (1600mm  $\pm$  1800mm/year). Groundwater salinity has been recorded as 7000  $\pm$  14000 TDS (total dissolved solids) mg/L. Additionally, aerial photography indicates that the landscape has become highly fragmented due to extensive clearing.

Given the soil type, elevation, high evaporation, and extensive clearing within the local area, it is possible that appreciable land degradation may occur in the form of wind erosion. Also, relative to the high salinity recording, land degradation may also occur in the form of clearing-induced dryland salinity.

In order to mitigate the possible erosion and salinity-induced impacts, wind erosion conditions will be imposed if the proposed clearing is granted.

**Methodology** Northcote, K. H et al. (1960-68)  
GIS datasets:  
- Pre-European Vegetation - DA 01/01  
- Katanning 1.4m Orthomosaic - DLI 01  
- Katanning 50cm Orthomosaic - Landgate06  
- Borden 50cm Orthomosaic - Landgate06  
- Soils, Statewide - DA 11/99  
- Isohyets - BOM 09/98  
- Groundwater Salinity, Statewide - DOW  
- Topographic Contours, Statewide - DOLA 12/09/02  
- Rainfall, Mean Annual - BOM 30/09/01

**(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 nature reserve within 10km radius of area under application, namely, Toompup Nature Reserve

(Reserve Number 15756 Purpose of Conservation of Flora and Fauna). The reserve forms a component of Beard Vegetation Associations 1075, 47 and 938, and there is vegetation connecting the reserve to the area under application. Given that the reserve is within 900m south east of the subject area, contains a component of the same Beard Vegetation Association, and connects to the area under application, the clearing may impact on the environmental values of Toompup Nature Reserve through loss of fauna corridors.

- Methodology** GIS datasets:
- Pre-European Vegetation - DA 01/01
  - CALM Managed Lands and Waters - CALM 1/07/05
  - Katanning 1.4m Orthomosaic - DLI 01
  - Katanning 50cm Orthomosaic - Landgate06
  - Borden 50cm Orthomosaic - Landgate06

**(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**  
 The proposed clearing sites are within the Pallinup River/ Beaufort Inlet Catchment. There is no mapped record of acid-sulphate soils for the area under application. The area has low annual rainfall (400mm/year), and high evaporation (1600mm - 1800mm/year). Groundwater salinity has been recorded as 7000 - 14000 TDS (total dissolved solids) mg/L. The subject areas occur within an extensively cleared area, where approximately 15% of native vegetation remains within a 10km radius of the areas under application. Given this information and the low annual rainfall, clearing may cause deterioration in the quality of surface and underground water in the form of dryland salinity.

The exposed slopes on both sides of the intersections may exacerbate wind erosion and cause sedimentation of Warperup Creek, particularly, the tributary nearest to the proposed clearing area. Therefore, this proposal may be at variance to this Principle.

To minimise the potential for deterioration in water quality to occur, offset conditions will be imposed if a clearing permit is granted.

- Methodology** GIS datasets:
- Pre-European Vegetation - DA 01/01
  - Isohyets - BOM 09/98
  - Groundwater Salinity, Statewide - DOW
  - Rainfall, Mean Annual - BOM 30/09/01
  - Hydrographic Catchments - Subcatchments y DOW
  - Katanning 1.4m Orthomosaic - DLI 01
  - Katanning 50cm Orthomosaic - Landgate06
  - Borden 50cm Orthomosaic - Landgate06

**(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 areas under application have low annual rainfall (400mm/year), and high evaporation (1600mm - 1800mm/year). Although this land occurs in an extensively cleared area, given the high evaporation of the area, it is unlikely that the clearing will cause or exacerbate the incidence or intensity of flooding.

- Methodology** GIS datasets:
- Pre-European Vegetation - DA 01/01
  - Isohyets - BOM 09/98
  - Groundwater Salinity, Statewide - DOW
  - Rainfall, Mean Annual - BOM 30/09/01

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

**Comments**  
 There is one Native Title claim over the area under application, but as the property is privately owned, the granting of the clearing permit is a secondary approval and does not constitute a future act under the Native Title Act 1993.

**Methodology**

**4. Assessor's comments**

Purpose	Method	Applied area (ha)/ trees	Comment
Road	Mechanical	1.8	The assessable criteria have been assessed. The proposed clearing is at variance to Principle (e); may

construction or Removal  
maintenance

be at variance to Principles (c), (g), (h) and (i); and is not likely to be at variance to Principle (a), (b), (d)  
(f), (i) and (j).

Road Mechanical  
construction or Removal  
maintenance

Flora, dieback, weeds, erosion control and offset conditions have been imposed if permit is granted.

## 5. References

- Department of Conservation and Land Management (2003) Mammals of the South West.
- 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.
- 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 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.
- Species & Community Branch, DEC (2007) Fauna Advice Note. TRIM Ref: DOC40546.

## 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)