



**1. Application details**

**1.1. Permit application details**

Permit application No.: 2595/1  
 Permit type: Area Permit

**1.2. Proponent details**

Proponent's name: Shire of Serpentine - Jarrahdale

**1.3. Property details**

Property: LOT 1510 ON DIAGRAM 97296 ( OAKFORD 6121)  
 Local Government Area: Shire Of Serpentine-Jarrahdale  
 Colloquial name:

**1.4. Application**

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
0.05		Mechanical Removal	Building or Structure

**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: 1001 - Medium very sparse woodland; jarrah, with low woodland; banksia & casuarina. (Shepherd 2007; SAC Bio datasets 06/11/2008)	The clearing of 0.05ha is to establish a hardstand for a water tank.  The vegetation under application is described as Banksia woodland over diverse dense shrubland. The vegetation includes Banksia attenuata, Eucalyptus todtiana, Drosera sp and Xanthorrhoea preissii. The soils were grey, leached sands.	Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery 1994)	Description and condition of the vegetation under application, was determined from the site inspection (DEC, 2008). The condition was considered to be 50% excellent and 50% very good.
Hedde Vegetation Complex: Bassendean Complex Central and South - Vegetation ranges from woodland of E. marginata - C. fraseriana - Banksia spp. to low woodland of Melaleuca species, and sedgelands on the moister sites. This area includes the transition of E. marginata to E. todtiana in the vicinity of Perth. (Hedde et al. 1980)	The vegetation under application is described as Kunzea glabrescens shrubland. The vegetation includes Kunzea glabrescens, Dasypogon sp, Drosera sp and orchids (cowslip orchid and donkey orchid). There was veldt grass and small area of watsonia in the northern area under application. The soils were grey, leached sands.	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	As above

**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**  
 A site inspection (DEC, 2008) of the area under application identified the condition of the vegetation to be very good to excellent with minimal disturbance from weeds including veldt grass and watsonia. The vegetation under application has a moderately dense over-storey, middle storey and understorey, and therefore is likely to provide habitat for Carnaby's Black-Cockatoo or for ground dwelling fauna such as the Quenda, both of which have been recorded in the local area. Furthermore, approximately four tree hollows were observed within one Eucalyptus todtiana (DEC, 2008).

Three rare flora species, *Caladenia huegelii*, *Drakaea elastica* and *Diuris purdiei*, occur in the local area and may occur in the areas under application as they occur in similar soils and vegetation complexes. In addition, three priority flora species may occur in the area under application as they occur in similar soils and vegetation complexes.

Given the area under application may be necessary for the maintenance of rare and priority flora, may provide suitable habitat for fauna in the local area and that the vegetation comprises diverse shrub and herb layers, it is considered the area under application may comprise a high level of biodiversity and the clearing may be at variance to this Principle.

**Methodology** Reference:  
- DEC (2008)  
GIS Database:  
- SAC Bio Datasets 20/10/2008

**(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 is not likely to be at variance to this Principle**  
Five fauna species of conservation significance have been recorded within the local area (5km radius). The nearest recorded fauna species, Quenda, is located approximately 2.8km east of the area under application.

A site inspection (DEC, 2008) of the area under application identified the condition of the vegetation to be very good to excellent with minimal disturbance from weeds including veldt grass and watsonia. The vegetation under application has a moderately dense over-storey, middle storey and understorey, and therefore is likely to provide feeding habitat for Carnaby's Black-Cockatoo or for ground dwelling fauna such as the Quenda, both of which have been recorded in the local area. Furthermore, approximately four tree hollows were observed within one *Eucalyptus todtiana* (DEC, 2008).

However, given the relatively small area under application (0.05ha), it is not considered that the vegetation is likely to comprise significant habitat for fauna.

**Methodology** Reference:  
- DEC (2008)  
GIS Database:  
- SAC Bio Datasets 20/10/2008

**(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 17 known records of five species of rare flora in the local area (5km radius), being:  
- *Caladenia huegelii*;  
- *Drakaea elastica*;  
- *Drakaea micrantha*;  
- *Diuris purdiei*; and  
- *Lepidosperma rostratum*

The closest known records are *C. huegelii* and *D. elastica* located approximately 1.5km north-east of the area under application. Of the five species it is considered *Caladenia huegelii*, *Drakaea elastica* and *Diuris purdiei* may occur in the area under application as they are known from the same soil and vegetation complexes.

*Drakaea elastica* is known from white or grey sand; low-lying situations adjoining winter-wet swamps; *Caladenia huegelii* is generally found in grey or brown sand, clay loam; and *Diuris purdiei* grows in grey-black sand, moist; winter-wet swamps (Western Australia Herbarium, 1998). A site inspection (DEC, 2008) of the area under application observed grey sandy soils, which may provide suitable habitat for these species of rare flora.

Furthermore, there are approximately 17 records of priority flora that occur within the local area including:  
- *Tripterococcus paniculatus* (P1)  
- *Villarsia submersa* (P4)  
- *Apodasmia ceramophila* (P2)  
- *Drosera occidentalis* subsp *occidentalis* (P4)  
- *Verticordia lindleyi* subsp *lindleyi* (P4)  
- *Tetratea* sp. *granite* (P3)  
- *Eremaea asterocarpa* subsp *brachyclada* (P1)

The closest known record is *Eremaea asterocarpa* subsp *brachyclada* located approximately 2.2km west of the area under application. Of the seven species it is considered *Eremaea asterocarpa* subsp *brachyclada*, *Verticordia lindleyi* subsp *lindleyi* and *Tripterococcus paniculatus* may occur in the area under application as they are known from the same soil and vegetation complexes.

Although the vegetation under application does include habitat suitable for rare and priority flora found in the local area, given the area under application is limited to 0.05 hectares it is not likely to be necessary for the continued existence of rare flora.

- Methodology** References:
- DEC (2008)
  - Western Australia Herbarium (1998)
- GIS Databases:
- Heddle Vegetation Complexes
  - SAC Bio Datasets 21/10/2008
  - Soils, Statewide
  - Surface Geology

**(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 two occurrences of Threatened Ecological Communities (TEC) within the local area (5km radius); these TEC are identified as Floristic Community Type (FCT) 8 - Herb rich shrublands in claypans and FCT 10a - Shrublands on dry clay flats, located approximately 4.5km and 5km north-east of the area under application.

Given floristic community types 8 and 10a generally occur on the heavier clays of the Pinjarra Plain and are not likely to occur on Bassendean Sands, where the area under application is located; the area under application is not considered to support an occurrence of a TEC and occurs outside of the buffer of a TEC. Therefore, the proposed clearing is not considered likely to be at variance to this Principle.

- Methodology** GIS Databases:
- SAC Bio Datasets 6/11/2008
  - Surface Geology

**(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 vegetation within the areas under application are identified as a component of Beard vegetation type 1001, and Heddle Bassendean Complex Central and South, of which there is 25.3% and 27.0% of Pre-European extent remaining respectively (Shepherd, 2007; EPA, 2006).

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). However, the EPA (2006) recognises the Perth Metropolitan Region as a 'constrained area', providing for the reduction of vegetation complexes to a minimum of 10% of the Pre-European extent.

Given the relatively small area applied to be cleared (0,05ha) and the current representation level of the vegetation complexes associated with this clearing proposal (25.3% and 27%), 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*				
Swan Coastal Plain^	1,501,208	583,140	38.8	
Shire: Serpentine/Jarrahdale*	114,496	71,624	62.5	
Local area (5km radius)	~7,850	~3,500	~45	
Beard vegetation type*				
1001	57,410	14,545	25.3	5.1
Heddle vegetation complex**				
Bassendean Central & South	87,477	23,624	27.0	0.7

\* (Shepherd, 2007)  
 \*\*\* (EPA, 2006)

^ Area within Intensive Land Use Zone

- Methodology**    **References:**
- Commonwealth of Australia (2001)
  - EPA (2006)
  - Heddle et al (1980)
  - Shepherd (2007)
- GIS Databases:**
- Interim Biogeographic Regionalisation of Australia
  - NLWRA, Current Extent of Native Vegetation
  - SAC Bio Datasets 05/11/2008

**(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 at variance to this Principle**
- The vegetation under application is located within a Conservation Category Wetland (CCW), known as Robinson Road wetland, which covers an area of 11.5 ha. CCWs are the highest priority wetlands which support a high level of ecological attributes and functions (WRC, 2001). There should be no further loss or degradation of CCWs and their protection also requires the retention of an adequate buffer (WRC, 2001). In addition, there were some wetland associated species observed within the area under application, including *Dasyopogon* sp and *Kunzea glabrescens* (DEC, 2008).
- There is a Resource Enhancement Wetland (REW) located approximately 30m south-west and south of the area under application. REWs are priority wetlands which may have been partially modified but still support substantial ecological attributes and functions and have the potential to be restored to conservation category (WRC, 2001).
- The minimum recommended buffer distance for wetlands is 50m and this is designed to protect wetlands from potential deleterious impacts while helping safeguard and maintain ecological processes and functions within the wetland and, whenever possible, in the buffer (WRC, 2001).
- Given the area under application occurs within a Conservation Category Wetland; wetland dependant species were observed on site; and that the area under application is within the buffer to a Resource Enhancement Wetland, the vegetation under application is considered to be growing in an environment associated with wetlands that have significant environmental values. Therefore, the clearing as proposed is at variance to this Principle.

- Methodology**    **References:**
- DEC (2008)
  - WRC (2001)
- GIS Databases:**
- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain
  - Hydrogeology, linear

**(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**
- Soils within the applied area are part of the Bassendean sands (quartz sands). These soils have a high risk of wind erosion and phosphorus export and low risk of surface water runoff (Department of Agriculture, 2005).
- Salinity risk mapping has identified a high risk of salinity; however, given the limited size (0.05ha) of the area under application, it is not considered likely that the proposal would have an appreciable impact on salinity on or off site.
- The main land degradation risks are considered to be phosphorous export and wind erosion. Given the relatively small area under application (0.05ha), it is not considered that the proposed clearing is likely to cause appreciable land degradation.

- Methodology**    **Reference:**
- Department of Agriculture (2005)
- GIS Databases:**
- Salinity Risk LM 25m - DOLA 00
  - Surface Geology

**(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**

The nearest conservation areas to the area under application are Bush forever site 347 (Wandi Nature Reserve and Anketell Road Bushland) located approximately 700m south and Bush Forever site 345 (Forrestdale Lake and Adjacent Bushland) located approximately 1.9km north-east.

Given the distance to the conservation areas and the relatively small area under application, the proposed clearing is not likely to have direct or indirect impact on the environmental values of any nearby conservation areas.

**Methodology** GIS database:  
- Bushforever

**(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 vegetation under application is located within a Conservation Category Wetland (CCW). There is a Resource Enhancement Wetland (REW) located approximately 30m south-west and south of the area under application.

The area under application has a high risk of salinity and is not located within a Public Drinking Water Source Area (PSWSA). Given the limited size (0.05ha) of the area under application, the clearing as proposed is not considered likely to impact on salinity on or off site.

However, given the proposed clearing is within a wetland, it is considered that it may cause a temporary deterioration in the quality of surface water through sedimentation. Therefore, the proposed clearing may be at variance to this Principle.

**Methodology** GIS Databases:  
- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain  
- Hydrogology, linear  
- Public Drinking Water Source Areas (PDWSAs)  
- Salinity Risk LM 25m - 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 comprises leached Bassendean sands, which are generally considered to have high infiltration rates and therefore a low risk of water logging.

Given the high infiltration rates of the soil mapped within the area under application and the relatively small area under application, the proposal is not considered likely to cause, or exacerbate, the incidence or intensity of flooding.

**Methodology** GIS Database:  
- Surface Geology

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

**Comments**

The area under application has primarily moderate to low acid sulphate soil (ASS) risk with the southern corner having a high to moderate ASS risk. It is not considered likely that the proposed clearing would significantly disturb these soils so that management would be required.

The area under application is within the Proclaimed Groundwater Area of Jandakot. Therefore any abstraction of groundwater would require a licence. As the proposed purpose of the clearing is not associated with groundwater abstraction a groundwater licence is not required.

There is no other RIWI Act Licence, Works Approval or EP Act Licence that affects the area under application.

Lot 1510 on Diagram 97296 is crown land vest with the Shire of Serpentine-Jarrahdale for the land use of water supply; and is zoned Rural under the Metropolitan Regional Scheme.

**Methodology** GIS databases:  
- Acid Sulphate Soil risk map, Swan Coastal Plain  
- Cadastre  
- Metropolitan Regional Scheme

#### 4. Assessor's comments

##### Comment

The assessable criteria have been addressed and the proposed clearing is at variance to Principle (f), and may be at variance to Principles (a), (c) and (i).

#### 5. References

Commonwealth of Australia (2001) National Targets and Objectives for Biodiversity Conservation 2001-2005, AGPS, Canberra.

DEC (2008) Site Inspection Report for Clearing Permit Application CPS 2611/1, Lot 778 Karnup Road, Serpentine. Site inspection undertaken 25/08/2008. Department of Environment and Conservation, Western Australia (TRIM Ref DOC61811).

Department of Agriculture (2005) AgMaps Land Manager CD-rom for the Shires of Serpentine-Jarrahdale, Kwinana, Rockingham, Mandurah, Murray, Boddington, Waroona and Harvey. Department of Agriculture, Western Australia. ISSN: 1448-235X.

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.

Heddl, 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. (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.

Water and Rivers Commission (2001). Position Statement: Wetlands, Water and Rivers Commission, Perth.

Western Australian Herbarium (1998). FloraBase - The Western Australian Flora. Department of Environment and Conservation. <http://florabase.dec.wa.gov.au/> (Accessed 21/10/2008).

#### 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)