



## 1. Application details

### 1.1. Permit application details

Permit application No.: 4507/1  
Permit type: Area Permit

### 1.2. Proponent details

Proponent's name: John Boyle

### 1.3. Property details

Property: LOT 57 ON DIAGRAM 54682 (House No. 179 JACKSON OLDBURY 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:
2		Mechanical Removal	Extractive Industry

### 1.5. Decision on application

Decision on Permit Application: Refusal  
Decision Date: 1 December 2011

## 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
The vegetation within the application area is described as:	The application is to clear 2 hectares of native vegetation for the purpose of sand extraction.	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)	The condition and types of the vegetation under application was determined through a Department of Environment and Conservation (DEC) site investigation (DEC 2011a) and assessment of aerial photography.
Beard vegetation association: 968 medium woodland; jarrah, marri and wandoo (Shepherd 2009).	The application area was previously cleared in June 2010.	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)	
Heddle vegetation complex: Serpentine Complex described as closed scrub and fringing woodland (Heddle et al, 1980).	The vegetation pre-clearing is likely to have consisted of scattered Banksia illicifolia, Eucalyptus rudis and Melaleuca sp. over Kunzea sp. over a scrubland of Macrozamia riedlei and Pteridium esculentum.		

## 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 at variance to this Principle**

The application is to clear 2 hectares of native vegetation on Lot 57 Jackson Road, Oldbury for the purpose of sand extraction. The application area has previously been cleared.

The vegetation within the application area currently consists of scattered Banksia illicifolia over Macrozamia riedlei and Pteridium esculentum in the western portion of the property and an isolated stand of five Eucalyptus rudis and scattered Kunzea sp. over Macrozamia riedlei and Pteridium esculentum in the eastern portion of the property (DEC 2011a). It is expected that pre-clearing, the application area also contained more of the aforementioned species as well as Melaleuca sp. and Kunzea sp near the wetland to the south.

The vegetation is currently in a completely degraded to degraded (Keighery 1994) condition. Based on the intact vegetation in other portions of the property and past aerial photography, the vegetation is considered to have been in a good to degraded (Keighery 1994) condition prior to clearing. The areas of good (Keighery 1994) condition are likely to have occurred toward the northern end of both application areas and the eastern end of the eastern application area.



The eastern and southern portion of the eastern application area is likely to have been comprised of an over and understorey vegetation which provides habitat to a number of fauna including reptiles, small mammals, amphibians and birds. The landscape connectivity of the application area to the wetland and bushland to the immediate south indicates that there was likely to be a diverse range of flora in these transitional wetland/bushland environments which provide habitats to a diverse range of fauna.

The area under application has recently been subject to impacts through clearing (that was the subject of an investigation), but the sand in the area has not been excavated. If the vegetation is left to regenerate, the environmental values of the area under application will recover therefore, the assessment considered the regenerative capacity of the vegetation under application. In order to assess the regenerative capacity of the area under application DEC considered the condition of the remaining native vegetation adjacent to the project area (determined through a DEC site inspection) and the vegetation that has regenerated since the clearing.

Given the size and good (Keighery, 1994) condition of the vegetation under application, its low vegetation representation, contribution to an ecological bushland/wetland linkage and the ability of the vegetation to regenerate to its natural state, it is considered that the vegetation under application comprises a high level of biological diversity. The vegetation may also be suitable habitat for a number of priority flora species and fauna species, including small mammals and bird species.

Considering the application area pre clearing would have been in a good to degraded (Keighery, 1994) condition and supported ecological linkages and habitat to a range of fauna species requiring a wetland/bushland transition environment, the proposed clearing is at variance to principle (a).

**Methodology**    References:  
DEC (2011a)  
Keighery (1994)

GIS Database:  
- Clearing Regulations - Environmentally Sensitive Areas  
- Geomorphic Wetlands Swan Coastal Plain dataset  
- ICMS Polygons - DEC current  
- Swan Coastal Plain Central 20cm Orthomosaic - Landgate 2009

**(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**

Due to the pre-clearing presence of under and overstorey vegetation, the application area is likely to have provided habitat for and been utilised by a number of fauna such as reptiles including snakes, small mammals including quenda, amphibians including frogs and birds. The landscape connectivity of the application area to the wetland and bushland to the immediate south indicates that there was likely to be a diverse range transitional wetland/bushland habitats required by a diverse range of fauna. These fauna would have utilised the application area only in association with the wetland and Bush Forever site.

The closest conservation significant fauna is the western brush wallaby mapped 2.3km northwest of the application area. No fauna were observed during the site inspection (DEC 2011a).

Due to the adjacent wetland/bushland providing the main habitat and linkage, the application area is not likely to be at variance to principle (b).

**Methodology**    References:  
DEC (2011a)

GIS Database:  
- Bush Forever  
- Geomorphic Wetlands Swan Coastal Plain dataset  
- Hydrography linear  
- SAC Biodatasets - accessed August 2011

**(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**

No declared rare flora (DRF) were mapped within the application area. The closest recorded DRF, are *Caladenia huegelii* and *Verticordia plumosa* var. *pleiobotrya* which are recorded within 5km of the application area in similar soil and wetland vegetation types as the application area (WA Herbarium, 1998 -). The application area is therefore likely to hold habitat for these species.

Due to the good (Keighery 1994) pre-clearing condition of a large portion of the application area, the proposed clearing may be at variance to principle (c).



**Methodology** References:  
Keighery (1994)  
WA Herbarium (1998 -)

GIS Database:  
- SAC Biodatasets - accessed August 2011

**(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**

No threatened ecological communities (TEC) are mapped within the application area. The closest mapped TEC is recorded approximately 1km west of the application area. This TEC is critically endangered and is a tumulus mound spring associated with wetlands. Due to the TEC's association with wetlands, it may be hydrologically linked to the wetland upstream near the application area.

The vegetation under application is not a TEC however a TEC is located in the vicinity of the application area that may be hydrologically linked to the wetland and its buffer which is part of the application area. The application area may be necessary for the maintenance of this TEC and therefore the application may be at variance to principle (d).

**Methodology** GIS Database:  
- Geomorph Wetlands Swan Coastal Plain dataset  
- Hydrography linear  
- SAC Biodatasets - accessed August 2011

**(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 at variance to this Principle**

The application area is within Beard vegetation association 968 of which 7% is remaining in the Swan Coastal Plain bioregion (Shepherd 2009). It is also the most northern occurrence of the Heddle vegetation complex Serpentine, of which 10% remains in the Swan Coastal Plain bioregion. Should clearing be granted, vegetation in the Beard association and Serpentine complex will remain as 7% and 10% respectively.

The national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia 2001).

The application area is connected in the landscape to and acts as a buffer and ecological linkage to the adjacent wetland and Bush Forever site which are in good (Keighery 1994) condition.

Remnant vegetation on the eastern side of the Swan Coastal Plain is significant as this area has been highly cleared. Within the local area of 5km radius, approximately 20% of native vegetation is remaining.

As the application supports significant biodiversity values including a buffer and linkage to a wetland and Bush Forever site, may support DRF, is representative of a vegetation complex with a low percentage remaining and is in an extensively cleared area, the application is at variance to principle (e).

**Methodology** References:  
Commonwealth of Australia (2001)  
Keighery (1994)  
Heddle et al (1980)  
Shepherd (2009)

GIS Database:  
- Local Government Authorities  
- IBRA bioregion  
- Pre European Vegetation  
- SAC Biodatasets - accessed August 2011

**(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 ranges from 13m to 20m from the edge of a Resource Enhancement management category sumpland. Resource Enhancement management categories are priority wetlands which may



have been partially modified but still support substantial ecological attributes and functions and their ultimate aim is for manage, restore and protect towards improving their conservation value In addition, 0.2ha of the application is within the Environmental Protection (Swan Coastal Plain Lakes) Policy 1992 (EPP) boundary.

The application area is important in acting as a buffer to maintain the health and functioning of the wetland ecosystem. The recommended buffer distances to protect wetlands from detrimental impacts associated with the adjacent land use is 50m however, a 100m buffer is recommended to reduce sedimentation caused by clearing (DEC 2011b). The application is within this important buffer area and the application therefore does not meet the recommended distance for wetland buffers.

Due to the application area being within the required buffer of a wetland, the application is at variance to principle (f).

**Methodology** References:  
DEC (2011b)

GIS Database:  
- EPP Lakes  
- Geomorphic Wetlands (Mt 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 may be at variance to this Principle**

The vegetation under application is located in low-lying, poorly drained flats with gilgais (Northcote et al, 1960-68). Due to the application being within the Bassendean Sands, removal of the native vegetation may cause the sand to become loose and prone to wind erosion. Erosion of the soil is also likely to cause sedimentation in the adjacent wetland. The risk of water erosion and waterlogging is documented to be low (Commissioner 2011). The application does not outline methods to manage or mitigate land degradation issues.

With reference to the above information the application may be at variance to principle (g).

**Methodology** References:  
Northcote et al (1960-68)  
Commissioner (2011)

GIS Database:  
- Geomorphic Wetlands Swan Coastal Plain dataset  
-Soils  
- Hydrogeology, Statewide

**(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 at variance to this Principle**

The application is to clear 2 hectares of native vegetation within Lot 57 on Diagram 546682. The centre portion of this property, including 0.3ha of the application area, is located within Bush Forever site 68 Jackson Road Bushland, Peel Estate (Government of Western Australia 2000). This bushland was identified to be important in Bush Forever as it is part of a regionally significant bushland/wetland linkage, contains plant communities representative of the eastern side of the Swan Coastal Plain, significant mammal species and rarity (Government of Western Australia 2000).

As the Bush Forever area is long and linear, it is highly sensitive to disturbance factors such as weed invasion and sand drift which is why the vegetation within the application area provides an important biological connection and buffer for the Bush Forever areas (Shire of Serpentine Jarrahdale 2011).

The application is part of a conservation area and provides an important buffer to maintaining this conservation area. The application is at variance to principle (h).

**Methodology** References:  
Government of Western Australia (2000)  
Shire of Serpentine Jarrahdale (2011)

GIS Database:  
- DEC Tenure  
- Bush Forever



**(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 application is adjacent to a Resource Enhancement sumpland which is seasonally inundated. The quality of the surfacewater in this wetland is likely to deteriorate due to the disturbance and displacement of the topsoil during clearing of the native vegetation. As the application is located on Bassendean Sands this soil is highly mobile and prone to wind erosion indicating that there is a high risk that the wetland will be subject to sedimentation (Shire of Serpentine Jarrahdale 2011).

The application did not specify mechanisms to reduce sedimentation or alleviate water quality issues.

Due to the proximity of the wetland and the risk of surface water quality issues, the application may be at variance to principle (i).

**Methodology**

**References:**

Shire of Serpentine Jarrahdale (2011)

**GIS Database:**

- Hydrographic linear
- Geomorphic Wetlands Swan Coastal Plain dataset

**(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 removal of vegetation in the application area is not expected to contribute to flooding due to the soil types present (Commissioner 2011). However, the removal of vegetation within the EPP Lake and close to the wetland may cause waterlogging or inundation due to the hydrology of the wetland being classified as seasonally inundated.

The application is not likely to be at variance to principle (j).

**Methodology**

**Reference:**

Commissioner (2011)

**GIS Database:**

- Hydrogeology, Linear
- Geomorphic Wetlands Swan Coastal Plain dataset
- Hydrogeology, Statewide

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

**Comments**

The application area was cleared in June 2010 and is currently under investigation as part of ICMS 18723.

A portion of approximately 0.3ha is mapped as an environmentally sensitive area due to the presence of Bush Forever site 68 and an EPP Lake. The application area also ranges from 13m to 20m from the edge of a Resource Enhancement management category wetland.

The application is to clear native vegetation to enable sand to be excavated to the topographical depth of the wetland. As the wetland is a sumpland (seasonally inundated basin) its basin shape is required for it to function hydrologically. Excavation of the application area, also described as the wetland buffer area and the dune causing the basin shape, will alter the wetlands geomorphology resulting in a loss of hydrological and ecological function of the wetland. The loss of wetland function will ultimately reduce the values of the wetland on the property and downstream into adjacent properties.

The application area is currently zoned Rural.

The Land Conservation District Committee (2011) has advised that the application is not supported due to the likelihood that the clearing will lead to soil erosion and loss of nutrients into the catchment. Fencing of the Bush Forever site should be a high priority for the purpose of stock exclusion, protection from clearing encroachment and use as a thoroughfare. There is also a high to moderate risk of acid sulphate soils within the application area which can, if exposed, cause significant land degradation and acidity of the application area and the nearby wetland.

The Commissioner of Soil and Land Conservation (2011) outlines that the removal of the top soil, to a depth of 1m and top dressed onto lower parts of the property, will cause a very high risk of wind erosion causing land degradation to the application area. As the application area is within Bassendean Sands, the removal of native vegetation may cause the sand to become loose and prone to wind erosion. The wind erosion risk may be



mitigated if the top soil is stripped and stock piled for return to the extraction area once sand removal has been completed and the site landscaped. The applicant did not advise of mitigation and management actions to prevent erosion.

The Department of Planning has indicated that the application is within Bush Forever site 68 and are recommending that an offset package is prepared prior to clearing and; no vegetation, earth spoil or any other debris is to be disposed of within the boundary of the Bush Forever site (DoP 2011).

The Shire of Serpentine Jarrahdale (2011) has indicated that the application is not supported. If granted the Shire recommends that the Bush Forever site is fenced, stock is excluded for the Bush Forever site, no filling of the creek occur to get machinery across and, no further use of other tracks as thoroughfares that will degraded the Bush Forever site.

In addition, as the Bush Forever area is long and linear, it is highly sensitive to disturbance factors such as weed invasion and sand drift which is why the vegetation within the application area provides an important biological connection and buffer for the Bush Forever areas (Shire of Serpentine Jarrahdale 2011).

The Shire (2011) also advised that a development application for the removal of sand in the northern portion of the property and fill of the southern portion has been approved subject to attainment of a clearing permit.

The Department of Water advised that the property lies within the Serpentine Byford groundwater area of the Rights in Water and Irrigation Act 1914 and a license is required to access groundwater sources.

#### Methodology

#### References;

Commissioner (2011)  
DEC (2011)  
DoP (2011)  
DoW (2011)  
Land Conservation District Committee (2011)  
Shire of Serpentine Jarrahdale (2011)

#### GIS Database:

ICMS DEC Polygons  
Acid Sulphate Soils  
Bush Forever  
Geomorphic Wetlands Swan Coastal Plain dataset  
EPP Lakes dataset  
SAC Biodatasets - accessed August 2011  
Town Planning Scheme

## 4. References

Commissioner of Soil and Land Conservation (2011); Land Degradation Advice and Assessment Report for clearing permit application CPS 4507/1 received 26/08/2011; Department of Agriculture and Food Western Australia.

DEC (2011) Site Inspection Report for Clearing Permit Application CPS 4507/1, Lot 57 on Diagram 546682, Oldbury. Site inspection undertaken 23/08/2011. Department of Environment and Conservation, Western Australia.

DEC (2011b) Wetland Management in WA. Accessed 12 September 2011. Department of Environment and Conservation website <http://www.dec.wa.gov.au/content/view/3503/1936/>

DoP (2011) Direct Interest Submission for clearing permit application CPS 4507/1. Received 30/9/2011. Strategic Biodiversity Planning team, Department for Planning & Infrastructure, Western Australia.

DoW (2011) Direct Interest Submission for clearing permit application CPS 4507/1. Received 26/08/2011. Department of Water, Western Australia.

EPA (1992) Environmental Protection (Swan Coastal Plain Lakes) Policy 1992. Western Australian Government Gazette, 24 December 1992, pp 6287-93.

Government of Western Australia (2000) Bush Forever Volumes 1 and 2. Western Australian Planning Commission, Perth WA.

Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.

LCDC (2011) Direct Interest Submission for clearing permit application CPS 4507/1. Received 25/9/2011. Serpentine Jarrahdale District, Land Conservation District Committee, Western Australia

Shepherd, D.P. (2009) Adapted from: Shepherd, D.P., Beeston, G.R., and Hopkins, A.J.M. (2001), Native Vegetation in

Shire of Serpentine Jarrahdale (2011) Direct Interest Submission for clearing permit application CPS 4507/1. Received 29/8/2011 and 2/9/2011. Shire of Serpentine Jarrahdale, Western Australia.

## 5. 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)