



## 1. Application details

### 1.1. Permit application details

Permit application No.: 2918/1

Permit type: Area Permit

### 1.2. Proponent details

Proponent's name: Jason Willoughby on behalf of Lawley Bell Pty Ltd

### 1.3. Property details

Property: LOT 154 ON DIAGRAM 20014 (PINJARRA RD, FURNISSDALE 6209)

Local Government Area: Shire Of Murray

Colloquial name:

### 1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
2.03		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: 1000- Mosaic: Medium forest; jarrah-marri / Low woodland; banksia / Low forest; teatree (Melaleuca spp.) (SAC Bio datasets 017/02/2009; Shepherd 2007).	The proposal is to clear 2.03 ha of native vegetation for site development on Lot 154 Pinjarra Road.  The vegetation under application comprises of Banksia and Allocasuarina low woodland over tall open shrubland of Kunzea glabrescens and a dense herb layer in a Very Good condition. Species included but are not limited to Banksia attenuata, Banksia menziesii, Allocasuarina fraseriana, Eucalyptus marginata, Nuytsia floribunda, Woolly Bush, Jacksonia sp., Conostylis sp., Macrozamia fraseri, Xylomelum occidentale, Acacia sp. Dasypogon sp., Patersonia occidentalis and Desmocladius sp.	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	Vegetation clearing description is based on information obtained from a site visit undertaken on the 20 February 2009.
Heddlie 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. tottiana in the vicinity of Perth (Heddlie et al. 1980).			
As above	Weeds species including Ehrharta sp. and Briza sp. were limited to localised area of disturbance. The vegetation near the house was also in a Degraded condition with many introduced species occurring.	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (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

The vegetation under application is described as Banksia and Allocasuarina low woodland over an open shrubland of Kunzea glabrescens with a dense herb layer in a Very Good condition. Species included but are not limited to Banksia attenuata, Banksia menziesii, Allocasuarina fraseriana, Eucalyptus marginata, Nuytsia floribunda, Woolly Bush, Jacksonia sp., Conostylis sp., Macrozamia fraseri, Xylomelum occidentale, Acacia sp. Dasypogon sp., Patersonia occidentalis and Desmocladius sp (DEC 2009).

A flora and vegetation survey of the area including the area under application, was undertaken during August and October 2008 (Nuts About Natives 2008). This survey identified 88 native plant species and 24 exotic species occurring within the area under application.

The area under application may contain suitable habitat for species of conservation significance such as the Quenda (*Isoodon obesulus fusciventer*) which have been recorded in the local area (~5km radius). In addition, the area under application may form part of a significant remnant of vegetation in the local area as it may act as a 'stepping stone' for avian fauna between the Serpentine River and Geogrup Lake Nature Reserve in the north to the Peel - Harvey estuarine wetlands in the south.

Given that the area under application has relatively high species richness, with the majority being in Very Good condition, may contain suitable habitat for conservation significant fauna and may form a portion of a significant remnant of vegetation in the local area, it may be considered likely for the area under application to be at variance to this Principle.

**Methodology**    References  
-DEC (2009)  
-Nuts About Natives (2008)  
GIS Databases  
- SAC bio datasets (17/02/09)

**(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 may be at variance to this Principle**

There are six fauna species of conservation significance occurring in the local area (~5 km radius).

A site inspection (DEC 2009) of the area under application identified the vegetation as *Banksia* and *Allocasuarina* low woodland. The area under application included a diverse, dense understorey which would provide suitable habitat for ground dwelling fauna such as the Quenda (*Isoodon obesulus fusciventer*), which has been recorded 3.1 km north of the area under application.

In addition, the area under application may form part of a significant remnant of vegetation in the local area as it may act as a 'stepping stone' for avian fauna between the Serpentine River and Geogrup Lake Nature Reserve in the north to the Peel - Harvey estuarine wetlands in the south.

Given that the area under application contains suitable habitat for species of conservation significance and is linked to other bush remnants facilitating fauna movement in the local area, it is considered that the proposed clearing may be at variance to this Principle.

**Methodology**    References  
-DEC (2007)  
-DEC (2009)  
GIS Databases  
- SAC bio datasets (17/02/09)

**(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 four rare flora species recorded in the local area (5 km radius) including *Drakaea elastica*, *Diuris drummondii*, *Diuris micrantha* and *Caladenia huegelii*, the closest being 2.9 km south of the area under application.

*D. micrantha*, *D. drummondii* and *D. elastica* are tuberous, perennial herbs which are found in or near winter-wet swamps and low lying depressions (Western Australian Herbarium 1998- ). The area under application does not contain nor is in association with, wet winter swamps, which these species prefers and therefore it is unlikely for this species to occur within the applied area. In addition, a flora survey of the area under application did not identify these species (Nuts About Natives 2008).

*C. huegelii* is a tuberous, perennial herb growing from 0.25 to 0.6 m high with green, cream and red flowers during Sep and Oct. It grows in deep sandy soil in mixed woodland of jarrah and *Banksia* (Brown et al. 1998).

The area under application contains chief soils of leached sands (Northcote et al. 1960-68) and the vegetation consists of *Banksia* and *Allocasuarina* woodland (DEC 2009).

Although the area under application contains suitable habitat for this species, a flora survey of Lot 154 and 155 undertaken during August and October 2008 did not identify *C. huegelii* as occurring on site (Nuts About Natives 2008). Given this, it is therefore not considered likely for the proposed clearing to be at variance to this Principle.

**Methodology**    References  
-Brown et al. (1998)

- DEC (2009)
- Northcote et al. (1960-68)
- Nuts about Natives (2008)
- Western Australian Herbarium (1998-)
- GIS Databases
- SAC Bio Databsets 17/02/09

**(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 Threatened Ecological Communities (TEC) that occur within the local area (5 km radius) that being Floristic Community Type (FCT) 07: Herb rich saline shrublands in clay pans occurring 4.2 km to the south and FCT 15: Forest and woodlands of deep seasonal wetlands occurring 4.9 km to south of the area under application.

The flora report (Nuts About Natives 2008) and the site inspection (DEC 2009) identified a mixed woodland of jarrah, Allocasuarina and banksia species occurring within the area under application. In addition, no wetland dependent species were recorded in the area under application (Nuts About Natives 2008).

Given the distance to the closest TEC and the lack of wetland dependent species such as Melaleuca sp that can occur in the TECs listed above (Gibson et al. 1994), it is not considered likely for the area under application to comprises of or be necessary for the maintenance of a threatened ecological community.

**Methodology References**

- DEC (2009)
- Gibson et al. (1994)
- Nuts About Natives (2008)
- GIS Databases
- SAC Bio Datasets 17/02/09

**(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**

The vegetation under application is associated with Beard Vegetation Association 1000 of which there is approximately 28.6% pre-European extent remaining (Shepherd 2007). The vegetation under application is associated with the Heddle Vegetation Bassendean Complex - Central and South, which has 27.0% pre-European vegetation extent remaining (EPA 2006).

The State Government is committed to the National Objectives and Targets for Biodiversity Conservation which includes a target that prevents a clearance of ecological communities with an extent below 30% of that present pre-European settlement (Commonwealth of Australia 2001). The mapped vegetation types associated within the area under application are below the State Governments target of 30%.

In addition, the area under application may form part of a significant remnant of vegetation in the local area as it may act as a 'stepping stone' for avian fauna between the Serpentine River and Geogrup Lake Nature Reserve in the north to the Peel ? Harvey estuarine wetlands in the south. Therefore, it may be considered likely for the proposed clearing to be at variance to this Principle.

	Pre-European (ha)	Current extent (ha)	Remaining (%)	In secure tenure (%)
IBRA Bioregion*				
Swan Coastal Plain^	1,501,209	583,141	38.8	32.5
Shire of Murray*	177,618	99,614	56.1	84.9
Local Area (~5km radius)		7850	3100	39.0
Beard vegetation type*				
1000	99,835	28,540	28.6	15.7
Heddle vegetation complex**				
Bassendean Complex 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)  
- Shepherd (2007)  
**GIS Datasets**  
- Heddl Vegetation Complexes  
- SAC Bio Datasets 17/02/2009

**(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**  
There are numerous wetlands occurring within the local area (~5 km radius) with the nearest being a Resource Enhancement Wetland (REW) occurring ~380m north east of the area under application. The nearest watercourse is the Serpentine River ~550m north of the area under application.

The area under application is comprised of a Banksia and Allocasuarina low woodland on sandy soils (DEC 2009).

A minimum wetland buffer of 50 m is required for all proposed developments to protect wetland values and functions (Water and Rivers Commission 2001). Given the distance to the nearest wetlands and watercourses and given that no wetland vegetation was observed during the site inspection (DEC 2009) or flora survey (Nuts About Natives 2008), the proposed clearing is not considered likely to be at variance to this Principle.

**Methodology**    **References**  
- DEC (2009)  
- Nuts About Natives (2008)  
- Water and Rivers Commission (2001)  
**GIS Databases**  
- Geomorphic Wetland (Mgt Categories), Swan Coastal Plain  
- Hydrography, 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 area under application occurs on subdued dune-swale terrain with chief soils of leached sands and occurs within the Bassendean Dune System (Northcote et al. 1960-68). These soils have a high to very high risk of wind erosion and phosphorus export (Department of Agriculture, 2005).

The high wind erosion potential is due to the sandy nature of the topsoil and without appropriate ground cover, windbreaks or adequate dust suppression on exposed surfaces the proposal would be likely to cause land degradation.

Given the sandy soils present within the areas under application, it is considered that the proposed clearing of 2.03 ha of native vegetation may cause appreciable land degradation in the form of wind erosion. Therefore, it is considered that the proposed clearing may be at variance to this principle.

**Methodology**    **References**  
- Department of Agriculture (2005)  
- Northcote et al. (1960-68)  
**GIS databases**  
- Soils, 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 may be at variance to this Principle**  
The nearest conservation reserves to the area under application are an unnamed nature reserve occurring 1.6 km northeast and Geogrup Lake Nature Reserve occurring 2.3 km north of the area under application. In addition, the Peel Harvey estuarine wetlands which are registered as National Estate occur 2.4 km south of the area under application. The closest Bushforever site is 395: Paganoni Swamp and adjacent bushland, Karnup which is located 10.3 km north of the area under application.

The area under application may form part of an ecological 'stepping stone' for avian fauna between the Serpentine River and Geogrup Lake Nature Reserve in the north to the Peel - Harvey estuarine wetlands in the south. Therefore, it is considered that the proposed clearing may be at variance to this Principle.

**Methodology** GIS Databases  
- Bushforever  
- Cadastre  
- DEC Managed Lands and Waters

**(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**

There are numerous wetlands occurring within the local area (~5 km radius) with the nearest being a Resource Enhancement Wetland (REW) occurring ~380m north east of the area under application. The nearest watercourse is the Serpentine River ~550m north of the area under application.

A minimum wetland buffer of 50 m is required for all proposed developments to protect wetland values and functions (Water and Rivers Commission 2001). Given the distance to the nearest wetland and watercourse the proposed clearing is not considered likely to cause deterioration to the quality of surface water in the local area.

Salinity risk and groundwater salinity for the area under application is considered low to moderate.

Given the low to moderate risk of salinity and groundwater salinity, the distance to local wetlands and watercourses and the relatively small area to be cleared (2.03 ha), the proposed clearing is not considered likely to cause deterioration to the quality of groundwater in the local area.

**Methodology** Reference  
- Waters and Rivers Commission (2001)  
GIS Databases:  
- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain  
- Groundwater Salinity, Statewide  
- Hydrography, linear  
- Salinity Risk LM 25m

**(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**

There are numerous wetlands occurring within the local area (~5 km radius) with the nearest being a Resource Enhancement Wetland (REW) occurring ~380m north east of the area under application. The nearest watercourse is the Serpentine River ~550m north of the area under application.

Given the distance of the nearest wetland and watercourse to the area under application; and the sandy soils of the area (Northcote et al. 1960-68), the proposed clearing is not considered likely to cause, or exacerbate the incidence or intensity of flooding.

**Methodology** References  
- Northcote et al. (1960-68)  
GIS Databases  
- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain  
- Hydrography, Linear

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

**Comments**

The applicant was sent correspondence on the 26th February 2009. A response letter was received from Coffey Environments Pty Ltd on behalf of Lawley Bell Pty Ltd dated 7th April 2009. The applicant states that a Town Planning Scheme amendment to rezone the area under application is being finalised as well as a Structure Plan for the area. Therefore, development of the site could commence towards the end of 2010 depending on the progress of the planning approvals. The correspondence raised a number of issues that are addressed in the assessment (Coffey Environments 2009).

The area under application is zoned special rural under the Shire of Murray's Town Planning Scheme and urban under the Peel Regional Scheme.

The proposed new land use for the area under application is commercial. Currently, there are no applications to rezone the site from special rural to commercial or to obtain planning approval from the Shire of Murray (Shire of Murray 2009).

There is a high to moderate risk of Acid Sulphate Soils for the whole of the area under application. Therefore, the disturbance of these areas may result in appreciable land degradation through acidity.

Shire of Murray (2009) states that the area under application is within the Peel -Harvey Coastal Plain Catchment and the provisions of Statement of Planning Policy 2.1 apply. This policy includes measures to ensure there is not significant increase in nutrients to the estuary, including the retention of vegetation. For lots over 0.1ha: Existing vegetation should be retained except where there are defined building envelopes approved utility requirements and firebreaks. Where lots do not have defined building envelopes existing vegetation may be removed from an area of up to 1000m squared for the construction of approved buildings, except where special approval is granted for a greater area of clearing. The Shire opposes the proposed clearing as no planning approval applications have been submitted and the vegetation under application is mapped as Bassendean - Central and South vegetation complex which is a priority for protection and retention as only 27% remain on the Swan Coastal Plain.

**Methodology**    **References**  
-Coffey Environments (2009)  
-Shire of Murray (2009)  
GIS Databases  
-Acid Sulfate Soil Risk Map, Swan Coastal Plain  
-Town Planning Scheme Zones  
-Peel Regional Scheme

#### **4. Assessor's comments**

##### **Comment**

The assessable criteria have been addressed and the clearing as proposed may be at variance to Principles (a), (b), (e), (g) and (h).

#### **5. References**

Brown A., Thomson-Dans C. and Marchant N.(1998). Western Australia's Threatened Flora, Department of Conservation and Land Management, Western Australia.

Coffey Environments (2009) Response letter sent 7 April 2009. CPS 2918/1 Lot 154 Pinjarra Road, Furnissdale. TRIM Ref DOC81616.

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

DEC (2007) DEC Fauna Habitat Notes.xls. February 2007. Department of Environment and Conservation, Western Australia.

DEC (2009) Site Inspection Report for Clearing Permit Application CPS 2918/1, Lot 154 Pinjarra Road, Furnissdale. Site inspection undertaken 20/02/2009. Department of Environment and Conservation, Western Australia (TRIM Ref. DOC77105).

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.

Gibson N., Keighery B., Keighery G., Burbidge A. and Lyons M. (1994). A Floristic Survey of the Southern Swan Coastal Plain. Western Australian Department of Conservation and Land Management and the Western Australian Conservation Council.

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.

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.

Nuts About Natives (2008) Flora and Vegetation Survey of Lots 154 and 155 Pinjarra Road, Furnissdale, Prepared for Mobile Dewatering Environmental Services Pty Ltd.

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.

Shire of Murray (2009) Direct Interest Submission. TRIM Ref DOC75545.

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 19/02/09).

## 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)

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