



## 1. Application details

### 1.1. Permit application details

Permit application No.: 921/1  
 Permit type: Area Permit

### 1.2. Proponent details

Proponent's name: City of Bunbury

### 1.3. Property details

Property: LOT 454 ON PLAN 210577 (Lot No. 454 RICHTER DAVENPORT 6230)  
 Local Government Area: City Of Bunbury  
 Colloquial name:

### 1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
0.75		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: Unit 1000 - Mosaic: Medium forest; jarrah-marri / Low woodland; banksia / Low forest; tea-tree (Melaleuca spp.)	Over storey species include Corymbia calophylla (Marri), Banksia grandis (Bull Banksia), Banksia littoralis (Swamp Banksia), Nuytsia floribunda (Christmas Tree), Acacia spp. and Melaleuca preissiana.  Understorey consists of many weed species. Native species identified included Macrozamia riedlei (Zamia palms), Petrophile linearis (Pixie mops), Dasyogon bromeliifolius (Pineapple Bush) and Patersonia occidentalis (Purple Flag).	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)	Vegetation condition established through site visit.
Unit 998 - Medium woodland; tuart		Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)	
Heddle: Yoongarillup Complex - Dominated by a woodland of tuart, characteristically features a large number of peppermints (Agonis flexuosa).  Southern River Complex - Open-woodland of marri-jarrah-banksia.		Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)	

### 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 condition of the vegetation proposed to be cleared is Good to Degraded (Harewood, 2006) and is considered to retain basic vegetation structure.

Site visit (2005) established the over storey consists predominantly of Marri (*Corymbia calophylla*), other species found on site are Bull Banksia (*Banksia grandis*), Swamp Banksia (*Banksia littoralis*), Christmas Tree (*Nuytsia floribunda*), Acacia spp. and Melaleuca preissiana. The under storey consisted of Zamia palms (*Macrozamia riedlei*), Pixie mops (*Petrophile linearis*), Purple Flag (*Patersonia occidentalis*), *Dasyogon bromeliifolius*, *Kingia australis* and *Xanthorrhoea preissii*. Although there is the presence of many weed species there is still an abundance of native species within the over storey and under storey.

Ortho-photography indicates that there are larger areas of remnant vegetation that are potentially less disturbed within the local area (5km radius of the application area), particularly to the south. Therefore the relatively small, partly Disturbed (Harewood, 2006) area of vegetation within the application area is unlikely to represent an area of outstanding biodiversity within the local area.

**Methodology**      Harewood (2006) [ref SWD47171 and SWD47172]  
Site visit (2005)  
GIS database  
- Bunbury 1m Orthomosaic - DLI 03

#### (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 at variance to this Principle**

The vegetation proposed to be cleared is in Good (Keighery 1994) condition and contains a high number of native flora species (Site visit, 2005).

A dead Western Ringtail Possum (*Pseudocheirus occidentalis*) (WRP) was found on the road 30m east of the area proposed to be cleared on January 16 2006 by a DEC officer. WRP's are listed as 'threatened' under the Wildlife Conservation Act 1950 and listed as 'vulnerable' under the Environmental Protection and Biodiversity Act 1999. The regional Wildlife Officer advised that WRP's have been found within the area under application. At least one WRP was identified by an Environmental Officer from the City of Bunbury, and the photographs taken were forwarded to DEC for consideration.

A fauna survey targeted to the WRP was conducted in May 2006 by Zoologist Greg Harewood. The survey was conducted over two nights. Three WRP's were observed on the first night within Lot 454, with a total of 22 WRP's identified within the survey area (500m radius from Lot 454). Three WRP's were also observed on the second survey night within Lot 454, with a total of 26 WRP's recorded within the entire survey area.

One of the major factors thought to be contributing to the decline of this species includes habitat loss and/or modification (DEC, 2007). The vegetation of the application area is also believed to have value as an ecological linkage for local WRP's. It is stated in the fauna survey report that the site does have some limited value as an ecological linkage (Harewood, 2006).

Western Ringtail Possums, a species of conservation significance under State and Commonwealth legislation, are utilising the vegetation of the clearing application area. Clearing of the vegetation within the application area is therefore at variance to this principle.

**Methodology**      Harewood (2006)  
Keighery (1994)  
Site visit (2005)  
GIS database:  
- Bunbury 1m Orthomosaic - DLI 03

#### (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**

Six Priority 3 flora species have been recorded within the local, and five Priority 4 flora species have been recorded within the local area.

One Declared Rare Flora (DRF) species, *Diuris drummondii*, has been recorded within the local area (5km radius), approximately 300 metres south-west of the clearing application area. Advice received regarding the likelihood of this species occurring within the clearing application area, based on the limited site descriptions and site photos available, is that the vegetation does not appear to represent habitat in which this species has

been found to occur (Coordinator, Threatened Flora Recovery, DEC, 17 May 2007). The proposal is therefore not likely to be at variance to this Principle.

- Methodology** Harewood (2006)  
GIS databases:  
- Threatened Flora Database (DEFL) - DEC 17/05/07  
- WA Herbarium Database (WAHERB) - DEC 17/05/07  
- Pre European Vegetation - DA 01/01  
- Bunbury 1m Orthomosaic - DLI 03

**(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**

Four Threatened Ecological Communities (TECs) have been identified within the local area (5km radius). The four communities are:

- Dense shrublands on clay flats (SCP09)
- Herb rich shrublands in clay pan (SCP08)
- Herb rich saline shrublands in clay pans (SCP07)
- Shrublands on calcareous silts of the Swan Coastal Plain (SCP18)

These communities occur south-west of the clearing application area, at distances between approximately 850 metres and 2400 metres from that area, with the closest community being SCP09. Two of these communities also occur within the same Pre-European vegetation association as the clearing application area: SCP08 and SCP18. A flora survey and floristic analysis would be required to determine if the vegetation of the clearing application area represents a TEC. Given the condition of the vegetation (Good to Degraded [Harewood, 2006]) the likelihood of the vegetation of the clearing application area representing a TEC is diminished.

- Methodology** Harewood, G. (2006)  
GIS databases:  
- Threatened Ecological Communities - CALM 15/07/2007  
- Threatened Plant Communities - DEP 06/95  
- Pre European Vegetation - DA 01/01  
- Bunbury 1m Orthomosaic - DLI 03

**(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 of the application area is comprised of two Beard (pre-European) vegetation associations. Mapping indicates that it is comprised of vegetation association 998 and vegetation association 1000 (Hopkins et al. 2001). There is 41.5% of the pre-European extent remaining of association 998, which is therefore of a 'depleted' status for biodiversity conservation (Department of Natural Resources and Environment 2002). There is 25.7% of the pre-European extent remaining of association 998 which is therefore of a 'vulnerable' status for biodiversity conservation (Department of Natural Resources and Environment 2002).

According to the Heddle vegetation mapping (Heddle et al. 1980), the vegetation of the application area is comprised of the Yoongarillup and Southern River Complexes. There is 45.0% of the pre-European extent remaining of the Heddle Yoongarillup Complex which is therefore of a 'depleted' status for biodiversity conservation (Department of Natural Resources and Environment 2002). There is 19.8% of the pre-European extent remaining of the Heddle Southern River Complex which is therefore of a 'vulnerable' status for biodiversity conservation (Department of Natural Resources and Environment 2002). Mapping done in 2003-2004 by CALM shows a decline in the remaining extent of the Southern River Complex, now at 18.5%.

Given the aforementioned percentages remaining for the vegetation associations and complexes, that the application area is within a constrained area on the Swan Coastal Plain of the Greater Bunbury Region Scheme, and that the condition of the vegetation of the application area has been classified in parts as Degraded (Harewood, 2006), it is unlikely that the vegetation proposed to be cleared represents a significant remnant of native vegetation. However the City of Bunbury has 3% of its pre-European vegetation remaining, therefore this proposal may be at variance to this principle.

- Methodology** Harewood (2006)  
Keighery (1994)  
Department of Natural Resources and Environment (2002)  
Heddle et al. (1980)  
Hopkins et al. (2001)  
Shepherd et al. (2001)  
GIS databases:  
- Heddle Vegetation Complexes - DEP 21/06/95  
- Interim Biogeographic Regionalisation of Australia - EM 18/10/00

- Local Government Authorities - DLI 8/07/04
- Pre European Vegetation - DA 01/01

**(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 proposed clearing is approximately 1.3km south-west of a major perennial watercourse, Preston River.

There are numerous Resource Enhancement, Multiple Use and Conservation wetlands within the local area (5km radius). Within a 300 metre radius of the proposed clearing area there are conservation category and resource enhancement wetlands.

Given the development surrounding the proposed clearing area, any values there may have been, in regards to buffering or other associations, are considered to be diminished. The area under application is therefore not considered to be growing in or in association with a watercourse or wetland.

**Methodology GIS databases:**

- Geomorphic Wetlands (Mgt Categories) Swan Coastal Plain - DoE 15/9/04
- Hydrography Linear - DoE 1/2/04
- Bunbury 1m Orthomosaic - DLI 03

**(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 area proposed to be cleared has been mapped as having a low risk for Acid Sulphate Soils. In this area (5km radius) groundwater salinity is known to range from 500 to 1000 mg/L and the average annual rainfall is 900mm. Given these factors and the small size proposed to be cleared, the risk of salinity and other land degradation issues is low.

**Methodology GIS databases:**

- Acid Sulfate Soil Risk Map, SCP - DoE 01/02/04
- Salinity Risk LM 25m - DOLA 00.
- Groundwater Salinity, Statewide - 22/02/00
- 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 is not likely to be at variance to this Principle**

Within the local area (5km radius) there is one System 6 conservation reserve. This area is a resource enhancement wetland situated 2.9km to the north west. Given the distance from the conservation area, development surrounding the proposed clearing and small size of the application area, clearing the proposed area is unlikely to impact on the environmental values of this wetland.

**Methodology GIS database:**

- System 6 Conservation Reserves - DEP 06/95
- Bunbury 1m Orthomosaic - DLI 03

**(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 application area is located within the Leschenault Estuary - Preston River catchment area and is within the Bunbury RIWI Act ground water area. The area proposed to be cleared has a low salinity risk (GIS Database) and a groundwater salinity of 500-1000 mg/L (GIS Database). Due to the scale of the proposed clearing it is unlikely to cause deterioration in the quality of surface or underground water.

Within a 300 metre radius of the proposed clearing area there are conservation category and resource enhancement wetlands. As these wetlands are separated by industrial development, road drainage systems and other infrastructure it is unlikely that clearing will result in significant additional impacts to these wetlands.

**Methodology GIS databases:**

- Hydrographic Catchments, Catchments - DoE 3/4/03
- Public Drinking Water Source Areas (PDWSAs) - DOE 29/11/04
- RIWI Act Groundwater Areas WRC 13/06/00
- Salinity Risk LM 25m - DOLA 00.
- Groundwater Salinity, Statewide - 22/02/00

**(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**  
Flooding impacts are unlikely to occur due to the size of the proposed clearing.

**Methodology** GIS databases:  
- Topographic Contours, Statewide - DOLA 12/09/02

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

**Comments**  
Lot 454 currently has 60% zoned as industrial and 40% zoned as parks and recreation. The northern portion of the lot will maintain zoning of industry and the land on the southern side of the road reserve will be zoned parks and recreation.

A submission was received from the South West Environment Centre recommending that DEC reject the application, and comments from the Geographe Catchment Council advised that the vegetation of the application area be maintained. The reasons given by the two groups included that the vegetation provides important habitat and an ecological linkage for the Western Ringtail Possum, and because relocations are unsustainable or only relatively successful. A submission was also received from the Leschenault Catchment Council Inc. regarding concerns about the low vegetation representation, the threatened Western Ringtail Possum (WRP), the EPA position statement No. 2 and translocation of the WRP's.

**Methodology** TRIM ref SWO29970  
TRIM ref DOC4466  
GIS database:  
- Town Planning Scheme Zones - MFP 8/98

**4. Assessor's comments**

Purpose	Method	Applied area (ha)/ trees	Comment
Road construction or maintenance	Mechanical Removal	0.75	The assessment of this clearing application identified the proposal is at variance to Principle (b) and may be at variance to principles (d) and (e). The potential impacts of the clearing will be mitigated through permit conditions. The assessing officer therefore recommends that the permit be granted.

**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 IN25691.

Department of Environment and Conservation (2007). Fauna Species Profiles: Western Ringtail Possum. Accessed on 17 May 2007 from Naturebase Website.

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.

Harewood, G. (2006). Western Ringtail Possum Assessment Survey: Brittain Road Extension Project. Prepared on behalf of the City of Bunbury.

Havel, J.J. and Mattiske Consulting Pty Ltd (2002) Review of management options for poorly represented vegetation complexes, Conservation Commission.

Heddle, 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.

Hill, A.L., Semenuik, C. A, Semenuik, V. Del Marco, A. (1996) Wetlands of the Swan Coastal Plain. Volume 2b, Wetland mapping, classification and evaluation. Wetland Atlas. WRC and DEP. Perth WA.

Hopkins, A.J.M., Beeston, G.R. and Harvey J.M. (2001) A database on the vegetation of Western Australia. Stage 1. CALMScience after J. S. Beard, late 1960's to early 1980's Vegetation Survey of Western Australia, UWA Press.

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., 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
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)