



## 1. Application details

### 1.1. Permit application details

Permit application No.: 1567/1  
 Permit type: Area Permit

### 1.2. Proponent details

Proponent's name: The Cox Group Pty Ltd

### 1.3. Property details

Property: LOT 560 ON PLAN 35335 (Lot No. 560 DETTMAN COLLEGE GROVE 6230)  
 Local Government Area: City Of Bunbury  
 Colloquial name:

### 1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
2.3		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 6: Medium woodland; tuart & jarrah (Hopkins et al. 2001; Shepherd et al. 2001).	The proposal involves the clearing of up to 2.3ha of a medium woodland for the expansion of a University campus.	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)	The description of the clearing application area is based on a site inspection conducted by DEC officers on 11 April 2007.
Hedde Vegetation Complex - Spearwood Complex (Hedde et al. 1980).	The vegetation under application consists of a woodland of Eucalyptus gomphocephala (tuart), E. marginata (jarrah), Corymbia calophylla (marri) with Agonis flexuosa (WA peppermint); Banksia attenuata as mid-storey trees; and an understorey including Macrozamia riedlei (zamia), Xanthorrhoea preissii (grass tree), Hibbertia hypericoides (yellow buttercups) Acacia pulchella (prickly moses) and predominately exotic annual grass species (DEC Site Visit 2007).		
	The vegetation contains limited species diversity with evidence of physical disturbance (vehicles and overgrazing by kangaroos) and extensive weed invasion. The vegetation belongs to a complex that is well conserved on the SCP; on site the condition varies between good to degraded, with a scattered, patchy distribution (DEC Site Visit 2007).		

### 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 of 2.3ha is for senior high school development and is zoned for public purpose reservation, university under the Greater Bunbury Regional Scheme proposal (WAPC, 2000).

The condition of the vegetation within the clearing application area appeared mostly in Very Good condition (85%); however there was clear evidence of past disturbance due to logging and fire, etc. (Keighery, 1994; DEC Site Visit, 2007).

A flora survey of the site in September 2006 (ENV Australia, 2006 (a) found the area under application to lack species richness for the identified floristic community, as per Gibson et al. (1994). A fauna survey in August 2006 (ENV Australia, 2006 (b) also found low species diversity for the area.

Considering the above, the proposal not lik to be at variance to this Principle.

**Methodology** DEC Site Visit (2007);  
ENV Australia (2006(a);  
ENV Australia (2006(b);  
Keighery (1994);  
WAPC (2000)  
GIS Databases:  
- CALM Managed Lands and Waters - CALM 1/06/04;  
- Bunbury 50cm ORTHOMOSAIC - DLI04

#### (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**

The vegetation proposed to be cleared contains dense woodland vegetation, mostly in Very Good condition (Keighery, 1994; DEC Site Visit, 2007), which may hold habitat value for native fauna in the local area.

The local area is approximately 30% vegetated and the area under application is almost completely surrounded by urban development, save a small corridor linking a large vegetated Crown Reserve to the south.

Surveys carried out by consultants ENV Australia (ENV Australia 2006 (a); ENV Australia 2006 (b) determined that the area under application may be utilised by a small number of Western Ringtail Possums (WRPs); however subsequent surveys in 2007 (ENV Australia, 2007) concluded although no WRPs were utilising the area proposed for clearing..

Whilst the surveys undertaken by ENV Australia 2007 did not sight WRPs in previous studies undertaken in 2006 (ENV Australia) sightings of WRP within the area under application where recorded. Given the above a fauna management condition will be imposed if clearing is approved.

**Methodology** DEC Site Visit (2007);  
Keighery (1994);  
ENV Australia (2007);  
ENV Australia (2006 (b);  
ENV Australia (2006 (c).

#### (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**

Within the local area there is one record of Declared Rare Flora (DRF). This record is of *Diuris drummondii*, which is a perennial herb that occurs in low-lying depressions in peaty and sandy clay swamps that contain water into summer (Florabase; DEC, 1998). The likelihood of this species occurring within the area under application is negligible, given the area is higher up in the landscape on sandy soils (DEC Site Visit, 2007).

A flora survey undertaken in September (ENV Australia, 2006) did not record any threatened flora. However, several of the rare or priority flora, particularly orchids, known to occur close to the site do not flower until later in spring, and would not be identifiable at the time the search was conducted (e.g. *Diuris drummondii* (DRF); *Caladenia speciosa* (P4); given the degraded condition of the vegetation it is considered unlikely threatened flora would be present within the area under application.

Therefore, it is unlikely the proposal is at variance to this Principle.

**Methodology** DEC Site Visit (2007);

Florabase (2007);  
CALM (1998);  
ENV Australia (2006 (a));  
GIS Database:  
- Threatened Flora Database (DEFL) - DEC 17/04/07

**(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**

A Threatened Ecological Community (TEC) is located 500 m east of the site proposed to be cleared.

An inspection of the site by the Regional Flora Conservation Officer together with the report prepared by the consultant (ENV Australia 2006 (a)) confirm there is no TEC within the area under application. The vegetation on the site is connected by native vegetation to the nearby TEC; but it is not considered to impact on or be necessary for the maintenance of that TEC.

Therefore, the proposal is unlikely to be at variance to this Principle.

**Methodology** DEC Site Visit (2007);  
ENV Australia (2006 (a));  
GIS Databases:  
- Threatened Ecological Communities - CALM 12/04/05;  
- Threatened Plant Communities - DEP 06/95;  
- Environmentally Sensitive Areas - DoE 30/05/05

**(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 proposed clearing of 2.3ha is for senior high school development and is zoned for public purpose reservation, university under the Greater Bunbury Regional Scheme proposal (WAPC, 2000). The area is also recognised within the constrained area (urban development area) of the Greater Bunbury Regional Scheme (EPA, 2003).

Additionally the area under application is within the Maidens / Preston River Ecological Linkage, as recognised by EPA (2003).

The vegetation at the site is a component of Beard Vegetation Association 6 (Hopkins et al. 2001) of which there is 23.3% (Shepherd et al. 2001) of the pre-1750 extent remaining. This vegetation type is therefore of a Vulnerable status for biodiversity conservation (Department of Natural Resources and Environment & Conservation, 2002).

The vegetation also lies within the Spearwood Vegetation Complex (Hedde et al. 1980), of which there is 49.0% of its original vegetation remaining, of which about 52% occurs on Crown land. This vegetation type is therefore of a Depleted status for biodiversity conservation (Department of Natural Resources and Environment & Conservation, 2002).

Mapping (GIS Databases) indicates approximately 30% vegetation is remaining within the local area (10km radius). High vegetation representation within the local area indicates that the proposed clearing is not within an extensively clear area, however given the area is recognised within a regionally significant ecological linkage the proposed clearing is considered to be a significant remnant of vegetation within the Greater Bunbury Regional Area and is therefore at variance to this principle.

**Methodology** Hopkins et al. (2001);  
Shepherd et al (2001);  
Department of Natural Resources and Environment & Conservation (2002);  
EPA (2003)  
Hedde et al. (1980);  
WAPC (2000)  
GIS Databases:  
- Hedde Vegetation Complexes -  
- Local Government Authorities - DLI 8/07/04;  
- Pre European Vegetation - DA 01/01;  
- Bunbury 50cm ORTHOMOSAIC - DLI04

**(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 at variance to this Principle**

The remnant vegetation proposed to be cleared under this vegetation is not growing in, or in association with, an environment associated with a watercourse or wetland.

Therefore, the proposal is not at variance to this Principle.

**Methodology GIS databases:**

- ANCA, Wetlands - CALM 08/01
- EPP Areas - DEP 06/95
- EPP Lakes - DEP 28/07/03
- Geomorphic Wetlands (Mgt Categories) Swan Coastal Plain - DoE 15/9/04
- Hydrography Linear - DoE 1/2/04
- RAMSAR, Wetlands - CALM 21/10/02
- Bunbury 50cm ORTHOMOSAIC - DLI04

**(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 a low salinity risk (GIS Database) and a groundwater salinity of 500-1000mg/L (GIS Database). Given the above and the scale of the proposed clearing, appreciable land degradation is unlikely to occur.

**Methodology GIS databases:**

- Salinity Risk LM 25m - DOLA 00.
- Groundwater Salinity, Statewide - 22/02/00

**(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 area under application is within the Maidens / Preston River Ecological Linkage, as recognised by EPA (2003).

There are no formal conservation reserves within 10 km of the area proposed to be cleared. Informal conservation reserves on land vested in the City of Bunbury (Manea Park and Hay Park) are situated 200-300 m to the east and west.

Given the proposed clearing is within a recognised ecological linkage in close proximity to informal conservation reserves the area under application is at variance to this clearing principle.

**Methodology EPA (2003)**

**GIS Databases:**

- CALM Managed Lands and Waters - CALM 1/06/04;
- Register of National Estate - EA 28/01/03;
- System 6 Conservation Reserves - DEP 06/95
- Bunbury 50cm ORTHOMOSAIC - DLI04

**(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 is no permanent surface water or watercourse within 500 m of the proposed clearing. Groundwater salinities and salinity risk are low and the area is mapped as having no known acid sulphate risk. Clearing of the vegetation is not considered likely to cause deterioration in the quality of surface or underground water; therefore the proposal is unlikely to be at variance to this Principle.

**Methodology GIS Databases:**

- Hydrographic Catchments, Catchments - DoE 3/4/03
- Acid Sulphate Soil risk map, SCP DOE 01/02/04;
- Salinity Risk LM 25m - DOLA 001

**(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 proposed clearing is not considered likely to cause, or exacerbate the incidence or intensity of flooding because of its sandy soils, small scale and the location from the nearest waterway. About 50% of the site will remain vegetated.

Therefore, the proposal is unlikely to be at variance to this Principle.

**Methodology GIS Databases:**

- Topographic Contours, Statewide - DOLA 12/09/02;
- Bunbury 50cm ORTHOMOSAIC - DLI04

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

**Comments**

The clearing proposed is for a senior high school, funded project by the Department of Housing and State Works.

The area under application is zoned Public Purposes: Tertiary Education under the City of Bunbury TPS No.6. and is also zoned public purpose reservation, university under the Greater Bunbury Regional Scheme proposal (WAPC, 2000).

**Methodology**

**4. Assessor's comments**

Purpose	Method	Applied area (ha)/ trees	Comment
Building or Structure	Mechanical Removal	2.3	Assessable criteria have been addressed and the assessment of the vegetation under application revealed the proposal is at variance to Principle (e) and (h), may be at variance to Principles (b), is not likely to be at variance to Principles (a), (c), (d), (g), (i), or (j) and is not at variance to Principle (f).  A fauna management condition has been recommended to be imposed if clearing is approved.

**5. References**

Department of Conservation and Land Management (1998). Western Australia's Threatened Flora, Department of Conservation and Land Management, Western Australia.

Department of Environment and Conservation (2007). Florabase Website. Site accessed 29 May 2007.

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.

ENV Australia (2006 (a). Manea College Bunbury: Flora and Vegetation Assessment, ENV Australia, Perth.

ENV Australia (2006 (b). Manea College Bunbury: Fauna Assessment (Level 1), ENV Australia, Perth.

ENV Australia (2007). Additional Western Ringtail Possum (*Pseudocheirus occidentalis*) Survey for Manea Expansion Site Bunbury, ENV Australia, Perth.

EPA (2003) Greater Bunbury Regional Scheme - Bulletin No. 1108, September 2003.

Gibson, N., Keighery, B.J., Keighery, G.J., Burbidge, A.H. and Lyons, M.N. (1994). A Floristic Survey of the Southern Swan Coastal Plain. Unpublished Report for the Australian Heritage Commission, prepared by Department of Conservation and Land Management and the Conservation Council of Western Australia (Inc.).

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.

Hopkins, A.J.M., Beeston, G.R. and Harvey J.M. (2001) A database on the vegetation of Western Australia. Stage 1. CALM Science 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.

WAPC (2000) Greater Bunbury Regional Scheme y Scheme Report, August 2000.

**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)