



## 1. Application details

### 1.1. Permit application details

Permit application No.: 1848/1  
 Permit type: Area Permit

### 1.2. Proponent details

Proponent's name: City of Mandurah C/-Bollig Design Group

### 1.3. Property details

Property: LOT 2047 ON PLAN 193031 ( FALCON 6210)  
 Local Government Area: City Of Mandurah  
 Colloquial name: Certificate of Title details indicate that the correct land parcel identifier is Lot 500 on Plan 52496.

### 1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
0.8		Mechanical Removal	Recreation

## 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
Heddlle Vegetation Complex: Cottesloe Complex Central and South - Mosaic of woodland of Eucalyptus gomphocephala and open forest of E. gomphocephala, E. marginata, E. calophylla, closed heath on limestone outcrops.	The proposal is to clear 0.8ha of native vegetation for the purpose of Recreation.  The vegetation under application comprises an open woodland of Eucalyptus spp and Banksia attenuata over a low shrubland dominated by Xanthorrhoea preissi, Hibbertia hypericoides and Macrozamia riedlei with occasional Grevillea spp and Conospermum species. In addition non-native grasses have extensively colonised the area under application, particularly along the edges abutting an existing oval and in open areas within the applied area.	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)	Vegetation clearing description based on a site visit conducted by DEC officers on 7/06/2007.  The majority of the area to be cleared is in a good condition overall, with some areas of very good condition which were confined to the middle portion of the area under application. In addition there are some areas in degraded condition with limited understorey and large patches of bare earth which have been colonised by invasive grass species.
Beard Vegetation Association:  6 y Medium woodland; tuart & jarrah			

## 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 vegetation under application comprises Banksia woodland in good condition, however the understorey is limited to a low number of native species. The vegetation under application is not likely to include rare flora, is not likely to provide significant habitat for fauna and there is limited connectivity to other remnants of native vegetation.  
  
 Given the limited size of the area under application (0.8ha) and the low species diversity, it is not considered likely that the vegetation under application comprises a high level of biodiversity.

Methodology DEC Site visit - 7/06/07

**(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**

Within the local area (10km ) radius there is one recorded population of Threatened (Endangered) Fauna, the Graceful Sunmoth (*Synemon graciosus*), and two recorded species of Priority (P4) Fauna which are the Eastern Curlew (*Numenius madagascariensis*) and the Hooded Plover (*Charadrius rubricollis*).

The Graceful Sunmoth has been recorded approximately 5km northeast of the area under application and has the potential to colonise new areas. DEC Science and Information Branch advise that the larvae of the Graceful Sunmoth are host specific, feeding predominantly on the roots of the Mat-rush *Lomandra hermaphrodita*. Given that this particular species of *Lomandra* was not observed during the site visit by the local DEC Conservation officers, it is not considered likely that the vegetation under application would provide suitable habitat for the Graceful Sunmoth.

The vegetation under application comprises *Eucalyptus* spp and *Banksia attenuata* over understorey that is dominated by *Xanthorrhoea preissi*, *Hibbertia hypericoides* and *Macrozamia riedlei*. Given that the bird species identified above inhabit coastal and estuarine localities (Simpson & Day 2004), the vegetation under application would not provide suitable habitat for these bird species.

During the site inspection no hollows were observed in trees that could potentially be utilized as habitat, with the trees under application not considered to be of hollow-bearing age. Although the vegetation under application may provide some foraging habitat for fauna species in the local area, it is not considered likely to be significant, given the lack of hollows and the limited size of the area under application.

Methodology DEC Site visit - 7/06/07  
Simpson & Day 2004  
GIS Databases:  
-SAC BIO Datasets

**(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 (10km of application) there are 4 known populations of 3 species of Declared Rare Flora (DRF) (*Caladenia huegelii*, *Diuris micrantha* and *Drakaea elastica*), the closest of which *Caladenia huegelii* is located approximately 8.5km southwest of the area under application. There are also 3 known occurrences of Priority species within a 10km radius, of which (*Conostylis pauciflora* subsp *pauciflora*) (P4) is located approximately 9.2km southwest of the applied area.

Of the identified DRF species *Caladenia huegelii* is located within the same vegetation complex as the area under application, but is generally associated with the Bassendean soil type which is not found at the applied area. In addition the DRF species *Drakaea elastica* and *Diuris micrantha* are found on different vegetation complexes and usually in low lying soils associated with winter wet areas.

Given that the area under application is unlikely to include habitat that is suitable for the identified DRF species, it is not considered likely that the vegetation under application includes, or is necessary for the continued existence of, rare flora.

Methodology DEC Site visit - 7/06/07  
GIS Databases:  
-Declared Rare and Priority Flora List - CALM 01/07/05  
-Hedde Vegetation Complexes - DEP 21/06/95  
-Soils, Statewide - DA 11/99  
-SAC BIO Datasets

**(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 no known occurrences of Threatened Ecological Communities (TEC) within the local area (5km). The closest TEC is located 9km southeast of the area under application and has been identified as Floristic Community Type 15 - Forests and woodlands of deep seasonal wetlands on sandy, clay soils.

Given that the vegetation under application comprises *Banksia* woodland on Spearwood sands and is not located within a wetland and given the distance to the nearest TEC, it is not considered likely that the vegetation under application would comprise, or be necessary for the maintenance of a TEC.

**Methodology** DEC Site visit - 7/06/07  
 GIS Database:  
 -SAC BIO datasets - 02/05/07

**(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**

Heddle et al (1980) defines the vegetation under application as Cottesloe Complex Central and South of which there is 41.1% of pre-European extent remaining and which is described as being of 'depleted' status for biodiversity conservation (Department of Natural Resources and Environment 2002).

The vegetation under application is also described as Beard vegetation association 6, which has a representative of 26.6% of pre-European extent remaining (Shepherd 2006) and which is considered to be of a 'vulnerable' status for biodiversity conservation (Department of Natural Resources and Environment 2002). The vegetation under application is also within the Swan Coastal Plain of which there is 43% of pre-European extent remaining and the City of Mandurah has 48% remaining.

The Beard vegetation association 6 has less than 30% of pre-European extent remaining as recommended in the National Objectives Targets for Biodiversity Conservation 2001-2005 (Australian Government 2001). The vegetation under application is located within a portion of remnant vegetation which is considered to be significant in the local area, which has been extensively cleared for urban development. However, the proposed clearing of 0.8ha is not considered likely to significantly impact this remnant due to the vegetation under application having a lower diversity than adjacent bushland. The proposal therefore is not likely to be at variance to this Principle.

	(ha)	(ha)	(%)	status **	in reserve/DEC
land					
Swan Coastal Plain	1,529,235	657,450	43.0% **	Depleted	
City of Mandurah	18,611	8,933	48.0% *	Depleted	
Heddle vegetation complex:					
-Cottesloe Complex (Central and South)	44, 995	18, 474	41.1% ***	Depleted	8.8%
Beard vegetation association:					
-Type 6	56, 345	15, 013	26.6% **	Vulnerable	10.9%

\* (Shepherd et al. 2001)

\*\* (Shepherd 2006)

\*\*\*(EPA, 2006)

\*\*\*(Department of Natural Resources and Environment 2002)

**Methodology** Department of Natural Resources and Environment 2002  
 Australian Government 2001  
 Shepherd 2006  
 GIS Databases:  
 -EPA (2006)  
 -Heddle Vegetation Complexes - DEP 21/06/95  
 -Shepherd et al (2001)

**(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 about six Conservation Category Wetlands (CCW) located within a 10km radius of the area under application, the closest is the Peel Inlet which is located approximately 800m east of the applied area. This is a RAMSAR-listed wetland of local and international significance which provides significant habitat for migratory birds. In addition there are about twenty Multiple Use and Resource Enhancement Category wetlands within a 10km radius of the area under application, extending primarily to the northeast.

However, given that urban housing extends from the perimeter of the Peel Inlet Waterbody to within 130m of the eastern edge of the area under application, and that no wetland dependant vegetation was observed during the site visit, the proposed clearing is not considered likely to include vegetation growing in, or in association with, an environment associated with a watercourse or wetland.

**Methodology** DEC Site visit - 7/06/07  
 GIS Datasets:  
 -Geomorphic Wetlands (Classification), Swan Coastal Plain - DEC  
 -Hydrography. Linear (hierarchy) - DOW

**(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 soils within the area under application are described as well-drained Spearwood sands which have a very low risk of land degradation relating to water erosion and waterlogging (State of Western Australia 2005). The soil type was confirmed during a site visit undertaken by DEC staff in June 2007.

The area under application is associated with a nil to low risk of salinity and has a moderate to low risk of acid sulphate soils. Given that the clearing as proposed does not involve deep excavation of the soils, it is therefore not considered likely to have an impact on acid sulphate soils.

The main land degradation risk associated with the removal of vegetation on the identified soil type is considered to be phosphorous export and wind erosion (State of Western Australia 2005). The clearing of 0.8ha of native vegetation is unlikely to impact on the export of phosphorous.

The high wind erosion potential is due to the sandy nature of the soils and the winds associated with the coastal position of the area under application. Without appropriate vegetation cover or windbreaks, wind erosion may result in erosion causing land degradation. Given that the area under application is small (0.8ha) and has surrounding vegetation which will reduce wind velocity, with appropriate management, it is considered that the risk of wind erosion is low. It is therefore considered that the proposal is unlikely to cause appreciable land degradation.

**Methodology** DEC Site visit - 7/06/07  
State of Western Australia (2005)  
GIS Databases:  
-Acid Sulfate Soil Risk Map, Swan Coastal Plain - DEC  
-Salinity Mapping LM 25m - DOLA 00  
-Soils, Statewide - DA 11/99

**(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**

There are 6 areas reserved for conservation purposes within a 10km radius of the area under application, the closest is the Creery Island Nature Reserve which is located approximately 3.8km east of the applied area. There are also 8 System 6 Conservation Reserves located within the local area (10km), the closest is situated 3.4km northeast of the applied area.

In addition there are about six Conservation Category Wetlands (CCW) located within a 10km radius of the area under application, the closest is the Peel Inlet (RAMSAR-listed wetland) which is located 800m east of the applied area.

Given that the area under application is 0.8ha and given the distance to the nearest reserve, it is not considered likely that the proposed clearing would impact on the environmental values of any nearby conservation reserves.

**Methodology** GIS Databases:  
-CALM Managed Lands and Waters - CALM 1/07/05  
-System 6 Conservation Reserves - DEP 06/95

**(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 area under application has a nil to low risk of salinity and is not located within a Public Drinking Water Source Area (PDWSA). The proposed clearing is therefore considered unlikely to have an impact on groundwater quality.

The nearest watercourses are the Peel Inlet which is located approximately 800m east of the applied area, and a perennial lake situated 950m to the east of the area under application. Whilst the identified soil type is considered to have a high phosphorous export risk, the removal of 0.8ha is not considered likely to have an impact on the surface quality of these water bodies.

**Methodology** DEC Site visit - 7/06/07  
GIS Databases:  
-Groundwater Salinity, Statewide - DOW  
-Hydrography, linear (hierarchy) - DOW

- Public Drinking Water Source Areas (PDWSAs) - DOW
- 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 soils identified within the area under application are described as sandy soils which are associated with a low to nil risk of waterlogging due to their poor water holding capacity (State of Western Australia 2005).

Given the high infiltration rates of the sandy soils on site and the small area under application, the proposed clearing of vegetation is not considered likely to cause or exacerbate the incidence or intensity of flooding.

- Methodology**
- DEC Site visit - 7/06/07
  - State of Western Australia 2005
  - GIS Databases:
    - Geomorphic Wetlands (Mgt. Categories), Swan Coastal Plain - DEC
    - Hydrography, linear (hierarchy)

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

**Comments**

No submissions were received.

Lot 2047 Merlin Street is Crown Land and is part of a Native Title Claim, however the City of Mandurah have a management order for the designated purpose of 'Public Recreation' and therefore the clearing as proposed should not fall under the future acts process of the Native Title Act.

The application of fertilizers on the proposed grassed oval is likely to increase the risk of phosphorous export, however, it is considered that this risk can be minimised and managed through the use of phosphorous-free fertilizers.

**Methodology**

**4. Assessor's comments**

Purpose	Method	Applied area (ha)/ trees	Comment
Recreation	Mechanical Removal	0.8	The assessable criteria have been addressed and the proposed clearing is not likely to be at variance to any of the Principles.

**5. References**

Australian Government - National Objectives Targets for Biodiversity Conservation 2001-2005

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.

EPA (2006) Guidance for the Assessment of Environmental Factors -level of assessment of proposals affecting natural areas within the System 6 region and Swan Coastal Plain portion of the System 1 Region. Report by the EPA under the Environmental Protection Act 1986. No 10 WA.

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.

Shepherd (2006) 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

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.

Simpson, K. and Day, N. (2004) Field Guide to the Birds of Australia. Penguin, Australia.

State of Western Australia (2005) AGMAPS Land Manager CD Rom.

**6. Glossary**

Term	Meaning
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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)