



1. Application details

1.1. Permit application details

Permit application No.: 675/1
Permit type: Area Permit

1.2. Proponent details

Proponent's name: Michele Monte

1.3. Property details

Property: LOT 52 ON PLAN 9474
LOT 53 ON PLAN 9474
Local Government Area: City Of Wanneroo
Colloquial name: Old Yanchep Rd - Lots 52 and 53 on Plan 9474

1.4. Application

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

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 1948: Low woodland; banksia on limestone.	Lot 52: The applied area covers the whole of Lot 52 which has an overall vegetation condition rating of very good condition. The vegetation consists of Banksia sp, Marri (Corymbia sp) and Jarrah (Eucalyptus marginate) over Grass trees (Xanthorrhoea sp) and other small shrubs. The area around the shed on the eastern boundary has been subject to edge effects due to rubbish being dumped in the area resulting in vegetation being in a degraded condition. The condition of vegetation in the north eastern portion of the property appears to be in excellent condition however there are obvious signs of disturbance towards the base of the hill and near the centre of the applied area. The vegetation leading to the north western boundary is in a much more degraded state. It appears as though the area may have been logged previously. Mr Monte indicated that there had been approximately 35 cattle roaming the area in the past. There is obvious signs of weeds present throughout this area with small regrowth of Marris visible.	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	Information pertaining to the description of the vegetation to be cleared was obtained from a site inspection of the property on 5/5/2006 (DOC 6607).
6: Medium woodland; tuart & jarrah (Hopkins et al. 2001, Shepherd et al. 2001).	The vegetation condition continues in a degraded state along the western boundary up until the midway point of the property. The vegetation towards the southern end of the western boundary does appear to get better. However the final 100m of the southern boundary suffers from heavy weed infestation which appears to have come from the neighbouring market garden south of the property.		
Heddlle vegetation complex: Cottesloe Complex - Central and South: Mosaic of woodland of E. gomphocephala and open forest of E. gomphocephala - E. marginata - E. calophylla; closed heath on the Limestone outcrops (Heddlle et al 1980)	There is a road that traverses the centre of the property. An old disband shed is located towards the middle of the block and there is weed infestation in the area. There is evidence of sand extraction which has occurred in the past which is covered in regrowth. Lot 53: The applied area makes up approximately 25% of the total lot size. Vegetation within lot 53 is considered to have areas ranging from good condition due to edge effects near the fire breaks to excellent condition particularly in the south eastern portion. The vegetation is made up of Marri (Corymbia sp), Banksia sp, Dyandra sp over Grass trees (Xanthorrhoea sp) and other understorey. There is an area of weed infestation within the northern section of the block of vegetation outside of the proposed area.		

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 areas under application comprise 24.5ha of native vegetation spread over lots 52 (20.1 ha) and 53 (4.4 ha) on Old Yanchep road in Carabooda.

Lot 53 is located immediately south of Old Yanchep Rd adjacent to Bush Forever Site 381 on the north eastern side and cleared blocks of native vegetation to the south. 90% of the vegetation within Bush Forever Site 381 is in excellent to pristine condition with the remaining 10% in very good condition (Government of W.A. 2000). Vegetation in Lot 53 is considered to have areas ranging from good condition due to edge effects near fire breaks, to excellent condition.

Lot 52 is fully vegetated with the property to the west uncleared, predominantly cleared land to the north and market gardens to the east and south. The condition of the native vegetation of the neighbouring property on the west appeared to be in very good to excellent condition (Field Inspection 2006).

Vegetation in Lot 52 has an overall vegetation condition rating of very good. Some areas of vegetation have been subject to edge effects due to rubbish dumping, resulting in the degradation of vegetation condition. Other areas within the vegetation appear to be in excellent condition. It appears that there may have been some historic logging and grazing within the area under application.

Given the overall very good condition of the vegetation under application, with areas of vegetation in excellent condition, the vegetation may consist of high biodiversity and the clearing as proposed may be at variance to this principle.

Methodology Field Inspection (2006) Trim ref: DOC6607
Government of Western Australia (2000)

(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**

The areas under application cover 24.5ha of native vegetation consisting of a Marri, Jarrah and Tuart woodland with some areas of Banksia, ranging from degraded to excellent condition (Field Inspection 2006). The areas lie between Gngalara-Moore River State Forest and Yanchep National Park. CALM (2006) report that it is likely that a number of fauna species would utilise the notified area as habitat for a range of needs, including moving between areas of remnant vegetation. The proposal will have some impact upon the connectivity and reduce the available habitat for local fauna populations. However the large areas of surrounding remnant vegetation and CALM managed land that are adjacent to the area under proposal are likely to provide habitat equal to that utilised for indigenous fauna in the area.

Methodology - (CALM 2006) Trim ref: CRN218203
GIS databases:-
- Swan Coastal Plain North 1m Orthomosaic - DLI 01/05.
- Field Inspection (2006) Trim ref: DOC6607

(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**

The areas under application cover 24.5ha of native vegetation consisting of a Marri, Jarrah and Tuart woodland with some areas of Banksia, ranging from degraded to excellent condition (Field Inspection 2006). There are records for occurrences of 1 Declared Rare Flora (DRF) taxon and 12 priority flora within the local area <10km.

DRF species *Eucalyptus argutifolia* is 1.5m - 4m high has smooth bark and flowers white between March and April. It occurs on shallow soils over limestone in slopes or gullies of limestone ridges and outcrops. Populations of this DRF species have been recorded to the North, North West and South East of the area under application (CALM 2006).

DAWA identified 2 distinctive soil types (listed below) on the property. They were confirmed through a site visit which noted the majority of the property showing yellow deep sands (DAWA 2005).

1. Spearwood sand phase (211Sp_Sp), described as undulating dunes with rocky crests on aeolian sand over limestone. Soil types include brown deep sands, yellow deep sands, yellow / brown shallow sand, stony soil, and bare rock. This landscape unit extends over approximately 70% of the area applied to be cleared.

2. Karrakatta sand yellow phase (211Sp_Ky), described as undulating dunes on aeolin sand over limestone. It contains yellow deep sands, pale deep sands, yellow / brown shallow sand and bare rock. This landscape unit covers approximately 30 % of the area to be cleared (DAWA 200).

Given the description of the soil type and the preference of *Eucalyptus argutifolia* for shallow soils over limestone which have been shown to occur on the property (DAWA 2005) it is possible that *Eucalyptus argutifolia* may occur in the applied area (CALM 2006).

Therefore in the absence of an appropriately timed flora survey the proposed clearing may be at variance to this principle.

- Methodology** (CALM 2006) Trim Ref: CRN218203
 DAWA (2005) TRIM Ref: EI2490 & EI2491
 GIS databases:-
 - Heddle Vegetation Complexes - DEP 21/06/95
 - Swan Coastal Plain North 40cm Orthomosaic - DLI 05.
 - Declared Rare and Priority Flora List - CALM 13/08/03.
 - Pre-European Vegetation - DA 01/01.

(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 seriously at variance to this Principle
 There are 37 occurrences of Threatened Ecological Communities (TECs) within the local area comprising 58 study sites which make up 4 TEC types (CALM 2006). The closest TEC is located 675m west of Lot 52 and is representative of the type Caves SCP01 described as Aquatic Root Mat Community Number 1 of Caves of the Swan Coastal Plain. TEC type SCP26a is also located within close proximity (1.7km). SCP26a is described as *Melaleuca huegelii* - *Melaleuca acerosa* shrublands on limestone ridges (CALM 2006).

TEC type SCP01 is groundwater dependent and is particularly sensitive to hydrological change. A 1000m radius from SCP01 is considered as the zone in which there are likely to be significant hydrological and other impacts from changes in landuse that may affect TEC type SCP01 (CALM 2006).

Monitor bore YN8 is about 1.3km from the proposed area. The result of changes of land use (pine plantations) groundwater extraction (horticulture; Water Corporation; Yanchep National Park) and rainfall trends is that water levels in this monitor bore are trending downwards at about 4.4×10^{-4} m/d (0.16 m/a) (Peck 2006).

The reduction of net recharge to the superficial formations at the proposed market garden would result in an increased rate of fall of the water table in the region of monitor bore YN8 unless compensated by other factors such as extensive logging of nearby pine plantations, or increased rainfall (Peck 2006).

In so far as a falling groundwater level in Twilight Cave and the nearby Gilgie Cave maybe harmful to cave fauna it is considered that the clearing as proposed is seriously at variance to this principle.

- Methodology** (CALM 2006) Trim ref: CRN218203
 (A.J. Peck and Associates 2006) Trim ref: EI5739
 GIS databases:
 - Threatened Ecological Communities CALM 15/7/03
 - Threatened Plant Communities - DEP 06/95.
 - Pre-European Vegetation - DA 01/01

(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 State Government is committed to the National Objectives and Targets for Biodiversity Conservation 2001-2005 which includes a target that prevents clearance of ecological communities with an extent below 30% of that present pre-European settlement (Department of Natural Resources and Environment, 2002).

	Pre-European (ha)*	Current extent (ha)*	Remaining (%)*	Conservation**% status	In reserves/CALM managed land
IBRA Bioregions					
Swan Coastal Plain***	1 529 235	657 450	43	Depleted	NA
City of Wanneroo	78 809	45 361	57.6	Least concern	NA
Vegetation type:					
Beard: Unit 1948	81 022	17 315	21.4	Vulnerable	15.6
Beard: Unit 6	79 001	18 398	23.3	Vulnerable	14.5
Heddle:					
Cottesloe Central and South	44 995	18 473	41.1	Depleted	8.8

- * (Shepherd et al. 2001)
- ** (Department of Natural Resources and Environment 2002)
- *** Within the Intensive Landuse Zone

Heddle et al (1980) defines the vegetation under application as Cottesloe Complex - Central and South, which is recognised as having a representation of 41.1% and is classified as a mosaic of woodland of *E. gomphocephala* and open forest of *E. gomphocephala* - *E. marginata* - *E. calophylla*; closed heath on the Limestone Outcrops.

However, the vegetation under application is also classified as Beard vegetation associations 1948 and 6 (Shepherd et al. 2001). These associations have representations of 21.4% and 23.3% of their pre-European extent respectively, and are therefore below the recommended threshold.

Therefore the proposed clearing of vegetation is considered at variance to this Principle.

Methodology (Heddle et al 1980)
 (Shepherd et al 2001)
 Department of Natural Resources and Environment 2002, EPA 2000
 GIS databases:
 - Pre-European Vegetation - DA 01/01
 - Interim Biogeographic Regionalisation of Australia - EA 18/10/00
 - Heddle Vegetation Complexes - DEP 21/06/95.

(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 may be at variance to this Principle

There are four significant wetlands within the local area (<5km): Loch McNess System (ANCA Wetland), is situated 4km North West of the proposed clearing site, a Multiple Use Wetland (MUW), Conservation Category Wetland (CCW) and Resource Enhancement Wetland (REW) are all located within 1.5km of the area under application. Multiple Use Wetland Mindarie Lake is the closest wetland and is approximately 320 metres west from the area under proposal.

Monitor bore YN8 is about 1.3km from the proposed area. The result of changes of land use (pine plantations) groundwater extraction (horticulture; Water Corporation; Yanchep National Park) and rainfall trends is that water levels in this monitor bore are trending downwards at about 4.4×10^{-4} m/d (0.16 m/a) (Peck 2006).

The reduction of net recharge to the superficial formations at the proposed market garden would result in an increased rate of fall of the water table in the region of monitor bore YN8 unless compensated by other factors such as extensive logging of nearby pine plantations, or increased rainfall (Peck 2006).

The remaining vegetation between the proposed clearing and the significant wetlands will provide an adequate physical buffer (300m) to the wetlands. As the proposed clearing and subsequent landuse are considered likely to impact on groundwater levels within the local area (Peck, 2006), it is considered that the proposed clearing may be at variance to this Principle.

Methodology Peck (2006)
 Government of Western Australia (1997)
 GIS databases:
 - Geomorphic wetlands (Mgmt Categories) - Swan Coastal Plain - DOE 15/09/04.
 - ANCA wetlands - CALM 08/01.
 - Clearing Regulations - Environmentally Sensitive Areas - DOE 8/03/05

(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

Comments Proposal is at variance to this Principle

The areas under application are identified as being within a low salinity risk area (<500mg/l), and also recognised as having a Class 3 risk of Acid Sulphate Soil (ASS). This classification is defined as having no known risk of ASS or potential ASS, and thus is considered unlikely that the proposed clearing will impact on ASS.

The property consists of two soil landscapes Spearwood sand phase extending over approximately 70% of the proposed area and Karrakatta sand yellow phase covering approximately 30% of the applied area. The land is gently undulating with a couple of steeper areas with slopes of up to 10% (DAWA 2005).

Within the Spearwood sand phase map unit ten percent is considered to be at high risk and five percent at

very high risk of water erosion, five percent is considered to have a very high risk of wind erosion and five percent is rated as having a very high risk of phosphorus loss. All other forms of land degradation for the Spearwood sand phase are considered low (DAWA 2005).

Within the Karrakatta sand yellow phase seven percent is considered as having a very high risk of wind erosion and seven percent is considered as having an extreme risk of water erosion. The risk of water erosion is associated with slopes greater than ten percent. All other forms of land degradation for the Karrakatta sand phase are considered low (DAWA 2005).

It is therefore considered that this proposal is likely to cause appreciable land degradation.

- Methodology** DAWA (2005) TRIM Ref: EI 2490 & EI 2491
GIS databases:
- Acid Sulphate Soil risk map, SCP DOE 01/02/04.
- Salinity Risk, LM 25m - DOLA 00
- Soils, Statewide - DA 11/99
- Topographic Contours, Statewide - DOLA 12/09/02

(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

Gnangara-Moore River State Forrest, which is also Bush Forever site 381, is situated 80 metres east of the area under application and Yanchep National Park is located 1km west of the proposed clearing. Both conservation areas are separated from the proposed area by privately owned remnant vegetation (CALM 2006) which collectively, including the area under application forms a corridor between the conservation areas. A privately owned CALM land for Wildlife site is located adjacent to the eastern portion of the notified area, which is also protected by an AgWA Agreement to reserve.

The benchmark of 15% representation in conservation reserves (Janis Forest Criteria 1997) has been met for Beard vegetation association 1948 with 15.6% of the vegetation remaining in conservation reserves. Both Beard vegetation association 6 and Heddle's Cottesloe complex are below the recommended benchmark, with 14.5% and 8.8% respectively in conservation reserves.

Given that this proposal has potential to impact upon the local hydrology, and thus by association the vegetation, of the nearby Yanchep National Park and Gnangara-Moore River State forest the clearing as proposed maybe at variance to this principle (CALM 2006).

- Methodology** - (CALM 2006) Trim ref: CRN218203
- Janis Forest Criteria 1997
GIS databases:
- CALM Managed Lands and Waters - CALM 1/06/04
- Bushforever - MSP 07/01

(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 property is located in the Coastal catchment area, and is subject to an average annual rainfall of 800mm. Regional groundwater salinity at this site ranges between 0-500mg/L, with a nil to low risk of salinity associated with applied areas. The area under application is approximately 80 metres from the Gnangara Mound, a proclaimed groundwater area. A priority 3 Public Drinking Water Source Area (PDWSA) is mapped 1.8km east of the area under application.

While the proposed removal of native vegetation from Lots 52 and 53 is considered likely to increase the rate of groundwater recharge over the site, given the above points, it is considered unlikely that the proposed clearing would cause the deterioration of surface or groundwater quality.

- Methodology** GIS databases:
- Groundwater Salinity, Statewide - 22/02/00.
- Hydrographic Catchments, Sub-catchments - DOE 01/07/03
- Rainfall, Mean Annual BOM 30/09/01

(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**
No floodways or areas of flooding exist within the area under application. The area shows a general relief in topography to the south-west towards Mindarie Lake. Given the amount of remaining vegetation in the surrounding area and the transmissive nature of the sands at the site, clearing is unlikely to cause or exacerbate the incidence of flooding.

Methodology GIS databases:-
- Topographic Contours, Statewide - DOLA 12/09/02.
- Soils, Statewide - DA 11/99

Planning Instrument, Native Title, Previous EPA decision or other matter.

Comments
The City of Wanneroo will take into consideration the proposed use of the site and if considered warranted can issue approval subject to the Department of Environment and Conservation issuing approval for the clearing of native vegetation.

The applicant is the holder of a water licence (GWL156447) to extract groundwater with an annual allocation of 19,800KL. The licence expiry date is 3/9/2014. There is no other RIWI Act Licence, Works Approval or EP Act Licence that will affect the area that has been applied to clear".

Methodology City of Wanneroo submission - Trim Ref EI1965 and DOC7792

4. Assessor's comments

Purpose	Method Applied	Area (ha)/ trees	Comment
Horticulture	Mechanical Removal	24.51	The application has been assessed and the assessing officer has found that the application is seriously at variance to principle (d) at variance to principle (g), maybe at variance to principles (a), (b), (c), (f), and (h) and unlikely to be at variance to principles (e), (i) and (j).

Therefore the assessing officer recommends that the application be refused.

5. References

- CALM (2006) Land clearing proposal advice. Advice to A/Director General, Department of Environment (DoE). Department of Conservation and Land Management, Western Australia. DoE TRIM ref CRN218203
- DAWA (2005) Land degradation assessment report. Office of the Commissioner of Soil and Land Conservation, Department of Agriculture Western Australia. DoE TRIM ref EI2491
- 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.
- Government of Western Australia (1997) Wetlands Conservation Policy for Western Australia, Department of Conservation and Land Management and the Water and Rivers Commission, Perth WA.
- 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.
- Peck A.J. and Associates (2006) Consultant Hydrologists Report CPS 675 Trim Ref:EI5739
- 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)