



1. Application details

1.1. Permit application details

Permit application No.: 2163/1
 Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: City of Wanneroo

1.3. Property details

Property: LOT 1002 ON PLAN 47324
 ROAD RESERVE
 ROAD RESERVE
 LOT 19 ON DIAGRAM 48705
 Local Government Area: City Of Wanneroo
 Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
3.75		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: 6 - Medium Woodland; tuart & jarrah.	The proposal is to clear up to 3.75ha of vegetation along Pinjar Rd and Caporn Rd in the City of Wanneroo for the purpose of constructing a dual carriageway on Pinjar Rd.	Completely Degraded: No longer intact; completely/almost completely without native species (Keighery 1994)	The vegetation and clearing description is based on information obtained during the site inspection (DEC, 2007).
Hedde: Karrakatta Complex - Central and South - predominantly open forest of <i>E. gomphocephala</i> - <i>E. marginata</i> - <i>E. calophylla</i> and woodland of <i>E. marginata</i> - <i>Banksia</i> species.	The vegetation under application on Pinjar Rd (~2.5km) is ~1.8ha on the western side of the road reserve. The vegetation is best described as completely degraded with isolated remnants of native vegetation consisting of <i>Eucalyptus</i> or <i>Banksia</i> over <i>Xanthorrhoea</i> with an understorey dominated by grass weeds. A section of the road reserve under application has been landscaped with native species. Other areas along the road reserve have isolated native trees with an understorey of weeds.		Vegetation condition ranges from Completely Degraded in the Pinjar Road reserve to Good to Excellent in the Caporn St road reserve.
As above	Approximately 1.7ha of the vegetation under application occurs within the Caporn St road reserve. The vegetation is associated with Bush Forever Site 469 and the condition ranges from good to excellent. Vegetation at the intersection of Caporn St and Pinjar Rd is in good condition and best described as Open Tuart/ <i>Banksia</i> Woodland over <i>Grevillea vestita</i> and <i>Dryandra sessilis</i> with an understorey dominated by weeds. The vegetation under application east along Caporn St is in very good to excellent condition and best described as a Low Open Forest of <i>Banksia</i> , <i>Jarra</i> and <i>Marri</i> over <i>Xanthorrhoea</i> with a diverse shrub layer including <i>Hibbertia</i> sp., <i>Jacksonia</i> sp., <i>hakea</i> sp., <i>Acacia</i> sp., <i>Conostylis</i> sp., and <i>Mesomelaena</i> sp.. Disturbances to this area include fire breaks and access tracks.	Very Good: Vegetation structure altered; obvious signs of disturbance (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 is at variance to this Principle**

The vegetation under application on Pinjar Rd (~1.8ha) is completely degraded and best described as isolated remnants of native vegetation consisting of Eucalyptus or Banksia over Xanthorrhoea with an understorey dominated by grass weeds (DEC, 2007). Given the absence of understorey, low species diversity and level of disturbance, the vegetation on Pinjar Rd is not considered to comprise a high level of biological diversity.

Vegetation under application in the Caporn St road reserve (~1.7ha) varies from good to excellent condition. A flora survey conducted by Ecoscape Australia (2007) identified 46 different native species within the area under application including the Priority species *Acacia benthamii* (P1) and *Jacksonia sericea* (P4).

The vegetation towards the eastern corner of the area under application in the Caporn St road reserve is best described as Low Open Forest of Banksia, Jarrah and Marri over Xanthorrhoea with a diverse shrub layer including *Hibbertia* sp., *Jacksonia* sp., *hakea* sp., *Acacia* sp., *Conostylis* sp., and *Mesomelaena* sp. in very good to excellent condition (DEC, 2007). The dense understorey in this section may be considered to be suitable habitat for ground dwelling fauna.

Given the high level of species diversity in the eastern portion of the Caporn St road reserve, presence of Priority flora and suitable habitat for ground dwelling fauna, the proposed clearing is considered to comprise a high level of biodiversity is considered to be at variance to this Principle.

Methodology **References:**

- Ecoscape Australia (2007)
- DEC (2007)

GIS databases:

- SAC Bio datasets (13/12/2007)
- Swan Coastal Plain North 20cm Orthomosaic - DLI06

(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**

Ten fauna species of conservation significance have been recorded in the local area (~5km radius):

The closest known record is Carnaby's Black Cockatoo which has been sighted in Bush Forever Site 469. DEC Fauna Habitat Notes (2007) indicate Carnaby's move around seasonally in flocks and feed in areas of proteaceous scrubs and heaths and eucalypt woodlands as well as pine plantations and breed in mature hollow trees. The vegetation under application comprises Open Tuart/Banksia Woodland and Low Open Forest of Banksia, Jarrah and Marri over Xanthorrhoea (DEC, 2007). There are mature Eucalypts within the area under application which may contain hollows. It is considered these trees may provide suitable habitat for indigenous fauna.

A majority of the bird species recorded in the local area are associated with habitat provided by nearby wetlands and lakes. Given the vegetation under application is ~500m from the closest lake; the proposed clearing is not likely to comprise significant habitat for these bird species.

Both the Quenda and Brush Wallaby prefer dense understorey (DEC Fauna Habitat Notes, 2007). A small portion of the vegetation under application within Bush Forever Site 469 is in excellent condition best described as Low Open Forest of Banksia, Jarrah and Marri over Xanthorrhoea with a diverse shrub layer including *Hibbertia* sp., *Jacksonia* sp., *Hakea* sp., *Acacia* sp., *Conostylis* sp., and *Mesomelaena* sp. (DEC, 2007). This dense understorey may provide suitable habitat for ground dwelling fauna.

Given the area under application comprises of mature Eucalypts which may contain tree hollows and dense understorey within Bush Forever site 469, it is considered that the area under application may comprise significant habitat for indigenous fauna.

Methodology **References:**

- DEC Fauna Habitat Notes (2007)
- DEC (2007)

GIS Databases:

- SAC Bio datasets (13/12/2007)

(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 no known records of rare flora within the local area.

A flora survey conducted by Ecoscape Australia (2007) did not identify any rare within the area under application, however, the Priority species *Acacia benthamii* and *Jacksonia sericea* were identified within the area under application in the Caporn St road reserve.

Given that no rare flora has been identified during the flora survey and the principle is specifically limited in its application to 'rare' flora as defined in Section 23 F of the Wildlife Conservation Act the vegetation under application is not likely to be necessary for the continued existence of rare flora.

Methodology Reference:

- Ecoscape Australia (2007)

GIS databases:

- SAC Bio datasets (13/12/2007)

- Soils, Statewide

- Swan Coastal Plain North 20cm Orthomosaic - DLI06

(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 records of Threatened Ecological Communities (TEC) within the local area. The closest records are Floristic Community Type (FCT) 20a - *Banksia attenuata* woodlands over species rich dense shrublands ~7.2km south east and FCT 26a - *Melaleuca huegelii* and *Melaleuca systema* shrublands of limestone ridges ~7.4km north of the applied area. Vegetation and soil mapping associated with these FCT differ to those associated with the area under application.

A flora survey conducted by Ecoscape Australia (2007) identified FCT 20a and FCT 26a within the local area; however, no known occurrences of these or any other TEC were recorded within the area under application.

Given the distance to the nearest TEC and the different soil types and vegetation associations, it is considered that the vegetation under application does not comprise or is necessary for the maintenance of any threatened ecological community. Therefore, the proposed clearing is not considered likely to be at variance to this Principle.

Methodology Reference:

- Ecoscape Australia (2007)

GIS Databases:

- Heddle Vegetation Complexes

- Pre-European Vegetation

- SAC Bio datasets (13/12/2007)

- Soils, Statewide

(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

The Heddle vegetation complex identified in the area under application is the Karrakatta Complex-Central and South which has a pre-European representation level of 29.5% remaining (EPA, 2006). Beard Vegetation Association 6 is identified within the applied area with a current representation level of 26.2% (Shepherd, 2006). In addition, there is ~47.5% of native vegetation remaining in the local area.

The State Government is committed to the National Objectives Targets for Biodiversity Conservation which includes a target that prevents clearance of ecological communities with an extent below 30% of that present pre-1750 (Commonwealth of Australia, 2001).

Beard Vegetation Association 6 has a remaining extent of 26.2% and the Heddle Complex has 29.5% remaining. Although these vegetation associations and complexes have less than the recommended 30% minimum of Pre-European extent remaining, the applied area is considered to be within a constrained area. The EPA (2006) recognises the Perth Metropolitan Region as a 'constrained area', providing for the reduction of vegetation complexes to a minimum of 10% of the Pre-European extent.

Given the extent of vegetation remaining in the local area (~47.5%) and the current representation levels of the Heddle complex and Beard vegetation associations, it is not considered likely that the vegetation under

application is significant as a remnant in an area that has been extensively cleared.

	Pre-European (ha)	Current extent (ha)	Remaining (%)	In secure tenure (%)
IBRA Bioregion*				
Swan Coastal Plain [^]	1,501,208	583,140	38.8	
City of Wanneroo*	67,697	33,637	49.7	
Beard vegetation type*				
6	56,343	14,749	26.2	34.2
Hedde vegetation complex**				
Karrakatta Complex-Central And\South	49,912	14,729	29.5	2.5

* (Shepherd, 2007)

** (EPA, 2006)

[^] Area within Intensive Land Use Zone

Methodology

References:

- Commonwealth of Australia (2001)
- EPA (2006)
- Shepherd (2007)

GIS Databases:

- Hedde Vegetation Complexes
- Interim Biogeographic Regionalisation of Australia
- Pre-European Vegetation
- NLWRA, Current Extent of Native Vegetation

(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 no watercourses within the local area. Nineteen wetlands occur within the local area, 13 of these are un-named. The closest wetlands are Lake Mariginup and Lake Joondalup ~500m from the area under application.

The vegetation under application consists of Open Eucalypt Banksia Woodland or Low Open Forest of Banksia, Jarrah or Marri (DEC, 2007). The flora survey (Ecoscape Australia, 2007) did not identify any wetland dependant vegetation and given the distance to the nearest watercourse or wetland, the vegetation under application is not considered likely to be associated with a watercourse or wetland.

Methodology

References:

- DEC (2007)
- Ecoscape Australia (2007)

GIS databases:

- EPP, Lakes
- EPP, Wetlands 2004 (DRAFT)
- Hydrography, linear
- Hydrography, linear (hierarchy)

(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 is associated with an undulating dune landscape underlain by limestone at depth. Chief soils are brown sands (Northcote et al. 1968). Generally, these soils have a high risk of wind erosion and a low risk of water erosion due to the high infiltration rates associated with sands.

The majority of the area under application has a low risk of salinity. The salinity risk increases in the low lying areas and nearby lakes.

The proposed clearing has a high risk of wind erosion given the sandy associated with the area under

application, and without appropriate management for exposed surfaces the proposal may cause appreciable land degradation.

It is noted that appropriate management practices such as dust suppression and the installation of a bituminised surface would likely limit land degradation caused by wind erosion.

Methodology Reference:
- Northcote et al. (1968)

GIS Databases:
- Salinity Risk LM 25m - DOLA 00
- Soils, Statewide
- Topographic Contours, 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 is at variance to this Principle**

There are eight DEC conservation areas within the local area including four A Class Reserves; Gngangara-Moore River State Forest (~4km east), Neerabup National Park (~4km west), Lake Joondalup Nature Reserve (~500m west) and an unnamed conservation park (~2.5km west); and four C Class reserves including Jandabup Nature Reserve (~2.5km east). Given the distance to these conservation areas the proposed clearing is not likely to have an impact on the environmental values.

In addition, there are 14 Bush Forever sites within the local area. The area under application is within Bush Forever Site 469 (known as Caporn Street Bushland, Mariginup) and adjacent to Bush Forever Site 147 (Mariginup Lake and Adjacent Bushland, Mariginup). The proposed clearing will have a direct impact on Bush Forever Site 469 and the potential to indirectly impact Bush Forever Sites 469 and 147 through the spread or introduction of dieback and weed by machinery. There are serious consequences associated with the spread of such exotic species into areas reserved for conservation, including the potential local extinction of species.

Given the area under application occurs within Bush Forever Site 469, the proposed clearing will have a direct impact on this conservation reserve and therefore the proposal is considered to be at variance to this Principle.

An offset condition and dieback and weed management condition have been placed on the permit to mitigate the impacts on Bush Forever site 147.

Methodology GIS Databases:
- Bushforever
- CALM Managed Lands and Waters
- EPP, Areas

(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 is ~4km from the proclaimed groundwater area, Gngangara Underground Water Pollution Control Area (a Priority 1 Public Drinking Water Source Area (PDWSA)). Groundwater generally flows east/west and depth varies from ~5-25m within the applied area. Given the relatively small amount of clearing (3.5ha over ~3km), depth to groundwater and distance to the nearest PDWSA the proposed clearing is not considered likely to cause a deterioration in the quality of groundwater.

There are 19 lakes within the local area. The closest being Lake Mariginup and Lake Joondalup ~500m of the applied area. It is considered any development within 50m the boundary of a wetland can critically influence the wetland and any development within 200m of the wetland boundary would have a secondary influence on the wetland (Hill et al. 1996). Given that the vegetation under application is outside the 200m zone of influence (Hill et al. 1996), the proposed clearing is not considered likely to impact the surface water quality of the Lakes.

Given the depth to groundwater and distance to closest wetland, the vegetation under application is not considered likely to cause deterioration in surface water or groundwater.

Methodology Reference:
- Hill et al. (1996)

GIS Databases:
- EPP, Areas
- Groundwater Contours, Historic Maximum
- Hydrography, linear
- Hydrography, linear (hierarchy)
- Salinity Risk LM 25m - DOLA 00

- Topographic Contours, Statewide

(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 closest wetland is Lake Mariginup and Lake Joondalup ~500m from the area under application. There are no watercourses within the local area.

Given the distance to the nearest water body and high infiltration rates associated with sandy soils, the clearing as proposed is not considered likely to cause or exacerbate the incidence of flooding.

Methodology GIS Databases:
- EPP, Lakes
- EPP, Wetlands 2004 (DRAFT)
- Hydrography, linear (hierarchy)
- Soils, Statewide

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

Comments

The area under application on Pinjar Road is zoned Other Regional Roads and the area under application on Caporn St is zoned Rural under the Metropolitan Regional Scheme. The area under application has been excised as road reserve; however, this road reserve is still within Bush Forever site 469. The City of Wanneroo requires Development Approval from DPI to clear vegetation in the Bush Forever site. The City of Wanneroo (2008) has provided a copy of the WA Planning Commission planning approval.

A submission letter received from Bush Forever (Strategic Biodiversity Planning, 2008) advises all feasible alternatives need to be considered to avoid or minimise any direct loss of regionally significant bushland and any direct loss of bushland mitigated. If the clearing is reasonably justified, Bush Forever recommends the following:

- The area to be cleared is to be offset at a ratio of 2:1 with an area of bushland with Karrakatta Central and South vegetation, and is like for like or better in the quality of vegetation. If this is unachievable, revegetation with locally endemic species at a ratio of 4:1.
- A permanent fence compatible with the natural environment is to be constructed along the boundary of Bush Forever site 469 along Pinjar Rd and Caporn St prior to the commencement of any works.
- Other than the area approved to be cleared, the road construction, including stockpiling, access, drainage an ongoing maintenance, shall not result in the clearing and or disturbance of the vegetation in Bush Forever area 469 and 147.
- No building materials, concrete, rubbish or any other deleterious matter shall be deposited within Bush Forever sites 469 and 147.

There area no Native Title Claims or Aboriginal sites of Significance associated with the area under application.

Methodology There is no other RIWI Act Licence or EP Act Licence that affects the area under application.
References:
- City of Wanneroo (2008)
- Strategic Biodiversity Planning (2008)

GIS Databases:
- Aboriginal Sites of Significance
- Metropolitan Regional Scheme
- Native Title Claims
- Town Planning Scheme Zones

4. Assessor's comments

Comment

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

5. References

City of Wanneroo (2008) copy of WA Planning Commission planning approval. (TRIM Ref: DOC67606)

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

DEC (2007) Site Inspection of Pinjar Road Reserve and Caporn Street Road Reserve, CPS 2163/1, conducted 17 December 2007. (TRIM Ref: DOC43142)

Ecoscape Australia (2007). Environmental Assessment: Pinjar Road Dual Carriageway Project. Prepared for City of Wanneroo, Ecoscape (Australia) Pty Ltd. (TRIM Ref: DOC36411)

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.

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.

Mattiske, E.M. and Havel, J.J. (1998) Vegetation Complexes of the South-west Forest Region of Western Australia. Maps and report prepared as part of the Regional Forest Agreement, Western Australia for the Department of Conservation and Land Management and Environment Australia.

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.

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.

Strategic Biodiversity Planning (2008) Bush Forever Submission Letter. (TRIM Ref: DOC45520)

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)

