



1. Application details

1.1. Permit application details

Permit application No.: 1815/1
 Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: City of Armadale

1.3. Property details

Property: ROAD RESERVE
 Local Government Area: City Of Armadale
 Colloquial name: Land adjacent to Ranford Road in the MRS Regional Road Reserve

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
0.48	66	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 Vegetation Association: 1001 - Medium very sparse woodland; jarrah, with low woodland; banksia & casuarina (Shepherd 2006, Hopkins et al. 2001).	The vegetation under application comprises of two spatially separated areas adjacent to Ranford Rd on the western side of the current bitumised road within the zoned road reserve. The first area (Area 1) extends from Wright Rd to the southern boundary of Lot 104 on Diagram 29689. The second area (Area 2) extends from the corner of Ranford Rd and Warton Rd to ~586m south. Both areas are surrounded by Urban and Rural zoned areas, with encroaching residential development on the northern and southern sides of Ranford Rd.	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)	The clearing description is based on orthomosaics and information obtained during a site inspection (2007) (TRIM Ref. DOC26748).
Hedde Vegetation Complex: Southern River - Open woodland of C.calophylla-E.marginata-Banksia species with fringing woodland of E.rudis-M.rhaphiophylla along creek beds (Hedde et al. 1980).	The vegetation within Area 1 is in a completely degraded condition and ranges from low-medium density Melaleuca sp. with occasional Allocasuarina, Adenanthos and Banksia species over a weed understorey to scattered Xanthorrhoea preissii and introduced Eucalyptus sp. over a weed understorey. This area has a low level of biological diversity.		
	The vegetation within Area 2 can be separated into three distinct vegetated areas, being: - in a completely degraded condition with no native		

species and a weed understorey;
- Melaleuca preissiana-
Melaleuca raphiophylla-
Kunzea woodland ranging from degraded to excellent in condition; and
- Banksia woodland ranging from degraded to very good in condition.

Overall Area 2 has a medium level of biological diversity and is considered to be in a good to very good condition.

Both areas of vegetation are separated by a maintained cleared road reserve adjacent to the current bitumised area, with a fire break also present behind verge vegetation within Area 2 adjacent to Lots 80 and 82.

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 of two spatially separated areas adjacent to Ranford Rd on the western side of the current bitumised road within the zoned road reserve. The first area (Area 1) extends from Wright Rd to the southern boundary of Lot 104 on Diagram 29689. The second area (Area 2) extends from the corner of Ranford Rd and Warton Rd to ~586m south. Both areas are zoned predominantly 'other regional roads' with small sections zoned Urban and Rural, with encroaching residential development on the northern and southern sides of Ranford Rd.

Overall Area 1 is in a completely degraded condition with a low level of biological diversity. Area 2 is in considered to be in an overall good to very good condition with a medium level of biological diversity.

Whilst a portion of vegetation within Area 2 is considered to comprise a high level of biological diversity, the majority of the native vegetation applied to be cleared across the two sites is considered as being in a completely degraded to good condition with scattered patches of vegetation in a very good to excellent condition (Site inspection 2007). Overall there were obvious signs of disturbance with weeds predominant in Area 1.

Being a relatively small area (0.48ha over 1.6ha) of vegetation with an overall low to medium level of biological diversity, the clearing as proposed is not likely to be at variance to this Principle.

Methodology

Reference:

- Site inspection (2007) (TRIM Ref. DOC26748)

GIS Databases:

- Swan Coastal Plain Central 20cm Orthomosaic - DLI06

- Metropolitan Regional Scheme - DPI 07/10/05

(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 vegetation under application comprises of two spatially separated areas adjacent to Ranford Rd on the western side of the current bitumised road within the zoned road reserve. The first area (Area 1) extends from Wright Rd to the southern boundary of Lot 104 on Diagram 29689. The second area (Area 2) extends from the corner of Ranford Rd and Warton Rd to ~586m south. Both areas are zoned predominantly 'other regional roads' with small sections zoned Urban and Rural, with encroaching residential development on the northern and southern sides of Ranford Rd.

Overall Area 1 is in a completely degraded condition with a low level of biological diversity, comprised predominantly of a weed dominated understorey (Site inspection 2007). Given the sparse nature of vegetation within this area, lack of native vegetation and close proximity to a main transport route (Ranford Rd) the vegetation under application within this area is not considered to provide or comprise significant habitat for indigenous fauna.

Area 2 is considered to be in an overall good to very good condition with a medium level of biological diversity (Site inspection 2007). Whilst a portion of vegetation within Area 2 is considered to provide suitable habitat for native fauna, given the high level of disturbance to the site from the adjacent Ranford Rd and fragmentation of the area through verge clearing and firebreaks, the vegetation within this area is unlikely to be considered significant for local native fauna.

Methodology Reference:
- Site inspection (2007) (TRIM Ref. DOC26748)
GIS Databases:
- Swan Coastal Plain Central 20cm Orthomosaic - DLI06
- Metropolitan Regional Scheme - DPI 07/10/05

(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 four Declared Rare Flora (DRF) species and eight Priority Flora species within a 5km radius of the vegetation under application. The closest DRF population being a population of *Caladenia huegelii* located ~200m from the northern area of vegetation under application. Other known populations of DRF within a 5km radius include:

- 10 extant and 9 extinct populations of *Caladenia huegelii*;
- 1 extant and 1 extinct population of *Drakaea elastica*;
- 3 extant and 8 extinct populations of *Diuris purdiei*; and
- 1 extant population of *Drakaea micrantha*.

All of these DRF species are known to occur within the same Beard and/or Heddle vegetation communities as the vegetation under application, and are in close proximity to the vegetation under application.

Advice from the DEC Conservation Officer (2007) based on the Site Inspection (2007) report indicates that the vegetation within the northern area proposed to be cleared is potential habitat for *Drakaea elastica* and *Caladenia huegelii*, however neither of these species have been identified during previous surveys of the area.

Furthermore, the vegetation under application is not considered suitable habitat for *Drakaea micrantha* or *Diuris purdiei*, with both species not identified during previous surveys of the area (DEC Conservation Officer 2007a).

Given the above the proposed clearing is considered not likely to include, or be necessary for the continued existence of, rare flora.

Methodology References:
- DEC Conservation Officer (2007) (TRIM Ref. DOC27716)
- DEC Conservation Officer (2007a) (TRIM Ref. DOC28829)
- Site inspection (2007) (TRIM Ref. DOC26748)
GIS Databases:
- DEC SAC Bio Datasets, Date accessed 18/06/2007
- Pre-European Vegetation - DA 01/01
- Heddle Vegetation Complexes - DEP 21/06/95

(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 three mapped occurrences of Threatened Ecological Communities (TEC) within a 5km radius of the vegetation under application. The closest occurrence is Floristic Community Type (FCT) 10a known as 'Shrublands on dry clay flats' (Gibson et al. 1994), located ~2.8kms from the vegetation under application. FCT 8, known as 'Herb rich shrublands in clay pans' is also known to occur within a 5km radius of the vegetation under application.

An environmental assessment of the vegetation within Lots 80 and 82 Ranford Rd, Forrestdale did not identify any TEC within the study area on these properties (ATA Environmental 2002). Furthermore, advice from a DEC Conservation Officer (2007) advises that the proposed clearing will not impact on any known occurrences of Threatened Ecological Communities.

Given the vegetation and clearing description and distance to nearby known occurrences and above information, the vegetation under application is not considered to comprise the whole or a part of, or be necessary for the maintenance of a TEC.

Methodology References:
- DEC Conservation Officer (2007) (TRIM Ref. DOC27716)
- ATA Environmental (2002)

- Gibson et al. (1994)
- GIS Database:
- DEC SAC Bio Datasets, Date accessed 18/06/2007

(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 vegetation under application is a component of Beard Vegetation Association 1001 (Hopkins et al. 2001) and Heddle Vegetation Complex Southern River (Heddle et al. 1980) of which 26.5% (15,241ha) and 20.0% (11,501ha) of Pre European extent remain respectively (Shepherd et al. 2001).

	Pre-European (ha)	Current extent (ha)	Remaining (%)	Conservation***% In reserves/CALM status	managed land
IBRA Bioregions					
Swan Coastal Plain*	1,529,235	657,450	43.0	Depleted	
City of Armadale*	55,885	42,911	76.8	Least concern	
Beard Vegetation Association: 1001***	57,412	15,241	26.5	Vulnerable	3.9
Heddle Vegetation Complex: Southern River	57,979	11,501	20.0	Vulnerable	8.0

- * (Shepherd et al. 2001)
- ** (Department of Natural Resources and Environment 2002)
- *** (Shepherd 2006)

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

Both Beard Vegetation Association 1001 and Heddle Southern River Complex are below the State Government's Biodiversity Conservation Target of 30%.

Based on the clearing description, the vegetation within Area 1 is not considered to be representative of the vegetation communities associated with the local area and is therefore, not considered significant as a remnant of native vegetation.

Whilst Area 2 does comprise areas of native vegetation in very good-excellent condition with a high level of biological diversity, given the high level of disturbance to the area and small area to be cleared (~0.48ha over 1.6ha), the vegetation under application within this area is not considered to be significant as a remnant of native vegetation.

Methodology **References:**

- Commonwealth of Australia (2001)
- Department of Natural Resources and Environment (2002)
- Shepherd (2006)
- Shepherd et al. (2001)
- Hopkins et al. (2001)
- Heddle et al. (1980)
- Site Inspection (2007) (TRIM Ref. DOC26748)

GIS Databases:

- Pre-European Vegetation - DA 01/01.
- Heddle Vegetation Complexes - DEP 21/06/95.
- Interim Biogeographic Regionalisation of Australia - EA 18/10/00.

(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 at variance to this Principle**
 The vegetation under application comprises of two spatially separated areas adjacent to Ranford Rd on the western side of the current bitumised road within the zoned road reserve. The first area (Area 1) extends from Wright Rd to the southern boundary of Lot 104 on Diagram 29689. The second area (Area 2) extends from the corner of Ranford Rd and Warton Rd to ~586m south.

There are no mapped wetlands or watercourses within Area 1, with the closest surface hydrological feature a

multiple use dampland located ~140m from the vegetation under application. This dampland is associated with the ANCA-listed Gibbs Road Swamp System. ANCA wetlands are defined as wetlands of national importance, listed in A Directory of Important Wetlands in Australia (Australian Nature Conservation Agency (1996). At its closest point, this system is mapped ~54m from the southern end of Area 1.

Several Conservation Category Wetlands (CCW) are also located within a 1km radius of the vegetation under application, with the closest being ~180m from the vegetation under application. However, based on the description of the vegetation (Site inspection 2007) and distance to these areas, Area 1 is not considered to be growing in, or in association with, an environment associated with a watercourse or wetland.

Notwithstanding, a Resource Enhancement Wetland (REW) is mapped within and adjacent to Area 2, with wetland vegetation observed within Area 2 during the site inspection (2007). Therefore, the proposed clearing is at variance to this Principle. An offset condition will be imposed to mitigate the loss of wetland vegetation .

Methodology **References:**

- Australian Nature Conservation Agency (1996)
 - Site inspection (2007) (TRIM Ref. DOC26748)
- GIS Databases:
- ANCA, Wetlands - CALM 08/01
 - Geomorphic Wetlands (Classification), Swan Coastal Plain - DEC
 - Hydrography, linear - DOE 1/2/04
 - Metropolitan Regional Scheme - DPI 07/10/05
 - Swan Coastal Plain Central 20cm Orthomosaic - DLI06

(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 two areas of vegetation under application are associated with soil unit Cb38, which is described as sandy dunes with intervening sandy and clayey swamp flats, with chief soils of leached sands, and associated are various soils in the clayey swamps (Northcote et al. 1960).

The vegetation under application is also associated with a Class 2 Acid Sulphate Soils (ASS) risk. This risk is defined as a low to moderate risk of ASS occurring within 3m of natural soil that could be disturbed by most land development activities.

Given the relatively small area to be cleared (~0.48ha over ~1.6ha) and description of the vegetation under application, the proposed clearing is not considered likely to lead to appreciable land degradation.

Methodology **References:**

- Northcote et al. (1960)
 - Site inspection (2007) (TRIM Ref. DOC26748)
- GIS Databases:
- Soils, Statewide - DA 11/99
 - Acid Sulfate Soil Risk Map, Swan Coastal Plain - DEC

(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 four conservation areas within close proximity (1km radius) of the vegetation under application, the closest to the areas of vegetation under application being Bush Forever Site 253 (Harrisdale Swamp and Adjacent Bushland, Forrestdale) (Government of Western Australia 2000) located ~165m from Area 2. The closest DEC managed area is Balannup Lake Nature Reserve, located ~500m south east Area 1.

Given the completely degraded condition and sparse nature of vegetation within Area 1, the proposed clearing within this area is not considered likely to have an impact on the environmental values of the nearby Bush Forever sites and Balannup Lake Nature Reserve.

Furthermore, whilst Area 2 does comprise vegetation in an overall good to very good condition with a high level of biological diversity (Site inspection 2007), given the relatively small area proposed to be cleared (0.48ha over 1.6ha) and high level of disturbance within this area, the proposed clearing of vegetation within Area 2 is also not considered likely to have an impact on the environmental values of any adjacent or nearby conservation area.

Both areas of vegetation under application are also associated with mapped Environmentally Sensitive Areas (ESA) based on the mapped presence of Declared Rare Flora (DRF). Given that both of the associated populations are now extinct, the proposed clearing is not considered likely to impact on the value of these areas.

Methodology **References:**
 - Government of Western Australia (2000)
 - Site inspection (2007) (TRIM Ref. DOC26748)
GIS Databases:
 - Bushforever - MFP 07/01
 - CALM Managed Lands and Waters - CALM 1/07/05
 - Clearing Regulations - Environmentally Sensitive Areas - DOE 30/5/05
 - DEC SAC Bio Datasets, Date accessed 18/06/2007
 - Swan Coastal Plain Central 20cm Orthomosaic - DLI06

(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 areas of vegetation under application are not located within a Public Drinking Water Source Area (PDWSA) or PDWSA Protection Zone.

Given the completely degraded condition and sparse nature of vegetation within Area 1, the proposed clearing is not considered likely to cause deterioration in the quality of surface or underground water.

Whilst Area 2 is associated with a Resource Enhancement Wetland (REW), given the relatively small amount of vegetation to be cleared within this area, the proposed clearing of vegetation within this area is not considered likely to cause deterioration in the quality of surface or underground water.

Methodology **GIS Databases:**
 - Soils, Statewide - DA 11/99
 - Public Drinking Water Source Areas (PDWSAs) - DOW
 - Groundwater Salinity, Statewide - DOW
 - Geomorphic Wetlands (Classification), Swan Coastal Plain - DEC

(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 vegetation under application comprises of two spatially separated areas adjacent to Ranford Rd on the western side of the current bitumised road within the zoned road reserve. The first area (Area 1) extends from Wright Rd to the southern boundary of Lot 104 on Diagram 29689. The second area (Area 2) extends from the corner of Ranford Rd and Warton Rd to ~586m south.

Both areas of vegetation are associated with chief soils of leached sands (Northcote et al. 1960). Given this and the relatively small amount of vegetation to be removed (0.48ha over 1.6ha), the proposed clearing is not considered likely to cause, or exacerbate, the incidence or intensity of flooding.

Methodology **GIS Databases:**
 - Metropolitan Regional Scheme - DPI 07/10/05
 - Swan Coastal Plain Central 20cm Orthomosaic - DLI06
 - Soils, Statewide - DA 11/99
 - Geomorphic Wetlands (Classification), Swan Coastal Plain - DEC

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

Comments
 A portion of the vegetation under application falls within the privately owned Lots 80 and 82 on Plan 29102 and Lots 100-104 on Diagram 49689. The City of Armadale is currently in the process of compulsorily acquiring this land for the road upgrade (TRIM Ref. DOC26221).

There are no Aboriginal Sites of Significance or Native Title Claims associated with the two areas of vegetation under application. Therefore, the clearing as proposed does not fall under the future acts process of the Native Title Act 1993.

There is no other RIWI Act Licence, Works Approval or EP Act Licence that affects the area under application.

Methodology **GIS Databases:**
 - Aboriginal Sites of Significance - DIA
 - Native Title Claims - DLI

4. Assessor's comments

Purpose	Method	Applied	Comment
		area (ha)/ trees	

Road construction or maintenance	Mechanical Removal	0.48	66	The clearing application has been assessed against the clearing principles, planning instruments and other matters in accordance with s51O of the Environmental Protection Act 1986. The clearing as proposed is at variance to Principle (f) and is not likely to be at variance to the remaining Principles.
----------------------------------	--------------------	------	----	--

5. References

- ATA Environmental (2002). Lot 80 & 82 Ranford Road, Forrestdale. Environmental Assessment. Version 2. Report Number 2002/08. Prepared for Landstart. July 2002.
- Australian Nature Conservation Agency (1996). "A Directory of Important Wetlands in Australia." Second Edition, ANCA, Canberra. ISBN 0 642 21378.
- Commonwealth of Australia (2001). National Targets and Objectives for Biodiversity Conservation 2001-2005, AGPS, Canberra.
- 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.
- Gibson et al. (1994). A Floristic Survey of the Southern Swan Coastal Plain. Western Australian Department of Conservation and Land Management.
- Government of Western Australia (2000) Bush Forever Volumes 1 and 2. Western Australian Planning Commission, Perth WA.
- 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.
- 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.
- Northcote, K. H. with Beckmann G G, Bettenay E., Churchward H. M., van Dijk D. C., Dimmock G. M., Hubble G. D., Isbell R. F., McArthur W. M., Murtha G. G., Nicolls K. D., Paton T. R., Thompson C. H., Webb A. A. and Wright M. J. (1960-68): 'Atlas of Australian Soils, Sheets 1 to 10, with explanatory data'. CSIRO and Melbourne University Press: Melbourne.
- Shepherd, D.P. (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.

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)

