



1. Application details

1.1. Permit application details

Permit application No.: 2450/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: City of Armadale

1.3. Property details

Property: ROAD RESERVE (HARRISDALE 6112)
Local Government Area: City Of Armadale
Colloquial name: Ranford Road Reserve

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
0.8		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).	The area of vegetation under application occurs on the southern side of the existing Ranford Road, and extends up to 20m south from the current bitumen edge into the existing road reserve (>6m wide) and neighbouring Lot 120 Hatch Court (residential) and Lot 506 (Balannup Lake Nature Reserve) (14m wide).	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)	The vegetation clearing description is based on information obtained during a site inspection undertaken 06/06/2008 (TRIM Ref. DOC55723).
Hedde Southern River Complex: Open woodland of <i>E. calophylla</i> - <i>E. marginata</i> - <i>Banksia</i> species with fringing woodland of <i>E. rudis</i> - <i>M. raphiophylla</i> along creek beds (Hedde et al. 1980).	The area under application can be approximately separated into three vegetated areas. The northern portion of the area under application from Hatch Court to the southern boundary of Lot 120 Hatch Ct (~190m in length) (Area 1) comprised an overall sparse <i>Melaleuca raphiophylla</i> - <i>Melaleuca preissiana</i> - <i>Eucalyptus rudis</i> overstorey with a grassy weed understorey, and was considered to be in degraded condition. The second vegetated area (Area 2) is located within the northern and southern extents of Balannup Lake Nature Reserve, extending from the northern boundary to ~115m south, and from the southern boundary (Balannup Rd intersection) to ~100m north. The vegetation within this area generally comprised scattered <i>Eucalyptus rudis</i> and <i>Melaleuca</i>	Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery 1994)	

rhaphiophylla-Melaleuca preissiana, over dense Kunzea glabrescens and Melaleuca thickets, and a dense sedge understorey of sedges including Lepidosperma sp.. The vegetation within this area was considered to be in very good to excellent condition.

The third vegetated area (Area 3) is located within the middle portion of Balannup Lake Nature Reserve adjacent to, and including the road reserve, and covers a length of approximately 224m. The vegetation within this area comprised large, mature Melaleuca rhaphiophylla-Melaleuca preissiana with occasional Eucalyptus rudis. The understorey comprised a predominantly sparse herb, sedge and grass layer, typical of seasonally waterlogged/inundated and heavily shaded areas within wetlands with a dense overstorey. Vegetation within this area was considered to be in an overall good condition, with localised areas of disturbance and weed invasion.

Regeneration of local native species was observed throughout Areas 2 and 3 within Balannup Lake Nature Reserve and the adjacent road reserve.

Within Areas 2 and 3 (within and adjacent to Balannup Lake Nature Reserve) weeds were generally limited to the edge of the road reserve, or were located within localised areas of disturbance.

Several large mature trees are present within the application area, however no hollows suitable for nesting were observed at the time of the site inspection.

Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)

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

There are three distinct vegetated areas within the area under application (Site Inspection 2008). The northern portion of the area under application (Area 1) comprised an overall sparse Melaleuca rhaphiophylla-Melaleuca preissiana-Eucalyptus rudis overstorey with a grassy weed understorey, and was considered to be in a degraded condition (Site Inspection 2008).

The second vegetated area (Area 2), located within the northern and southern extents of Balannup Lake Nature Reserve, generally comprised scattered Eucalyptus rudis and Melaleuca rhaphiophylla-Melaleuca preissiana, over dense Kunzea glabrescens and Melaleuca thickets, and a dense sedge understorey of sedges including

Lepidosperma sp.. The vegetation within this area was considered to be in very good to excellent condition (Site Inspection 2008).

The third vegetated area (Area 3) located within the middle portion of Balannup Lake Nature Reserve comprised large, mature *Melaleuca raphiophylla*-*Melaleuca preissiana* with occasional *Eucalyptus rudis* and an understorey of sparse herbs, sedges and grasses. Vegetation within this area was considered to be in an overall good condition, with localised areas of disturbance and weed invasion (Site Inspection 2008).

Fourteen native flora species were recorded during flora surveys undertaken within October 2005 in the road reserve (ATA Environmental 2007), indicating a low level of floral diversity. A further site inspection of the road reserve verified that floral diversity within this area is generally low due to the maintenance of cleared areas along the road reserve and high level of disturbance and edge effects, resulting in areas of high weed invasion (Site Inspection 2008).

Notwithstanding, vegetation under application beyond the extent of the road reserve (~6-20m from current bitumen extent) within the Balannup Lake Nature Reserve, was not surveyed as part of the 2005 flora and vegetation surveys. A brief field survey of vegetation within this area identified areas of diverse sedge, grass and herb understorey in good to excellent condition (Site Inspection 2008).

In addition the vegetation under application, particularly beyond the extent of the road reserve, is considered to provide fauna habitat for a number of local native species, including amphibians, birds and ground-dwelling mammals, given the presence of a dense overstorey, middle storey and understorey (in parts) and availability of water, and associated presence of food (e.g. aquatic invertebrates, aquatic plants) (Site Inspection 2008). A variety of passerine birds and frogs were heard at the time of the site inspection (Site Inspection 2008).

Therefore, whilst the area proposed to be cleared is relatively small (0.8ha), given the presence of diverse vegetated areas in good to excellent condition (particularly in Areas 2 and 3) and the presence of suitable habitat for a number of local wetland fauna, the vegetation under application may comprise areas with a high level of biological diversity.

Methodology References:
- ATA Environmental (2007)
- Site Inspection (2008)
GIS Database:
- CALM Managed Lands and Waters

(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 at variance to this Principle**
The area under application comprises three distinct vegetated areas, ranging in condition from degraded (Area 1), to good condition (Area 3), with a portion of the area comprising dense wetland vegetation in very good to excellent condition (Area 2) (Site Inspection 2008).

Five fauna species of conservation significance have been recorded within the local area (5km radius), being:
- *Leioproctus contrarius* (Insect) (Priority 3);
- *Neopasiphe simplicor* (Insect) (Endangered);
- Numbat (*Myrmecobius fasciatus*) (Vulnerable);
- Quenda (*Isoodon obesulus fusciventer*) (Priority 5); and
- Western Brush Wallaby (*Macropus irma*) (Priority 4).

All of the above species are known to inhabit and/or utilise vegetation similar to the area under application. The vegetation under application is also considered likely to provide habitat for a diverse range of local fauna species including waterbirds, amphibians, reptiles and ground-dwelling mammals, given the presence of suitable habitat including large, mature trees and dense understorey and middle storey vegetation, presence of foraging and feeding plants/animals and availability of water.

In addition, a portion of the vegetation under application is located within the Balannup Lake Nature Reserve, Bush Forever Site 413, and the Gibbs Road Swamp System, an ANCA wetland of national importance. Quenda have previously been identified as a significant fauna species within the Nature Reserve (Government of Western Australia 2000).

Given the presence of suitable habitat for local indigenous fauna including conservation significant fauna species, and the vegetation's location within a Nature Reserve and ANCA wetland, the vegetation under application is considered to comprise part of significant habitat for local indigenous fauna.

Methodology References:
- DEC (2007)
- Government of Western Australia (2000)
- Site Inspection (2008)

- GIS Databases:
- ANCA, Wetlands
 - CALM Managed Lands and Waters
 - SAC Bio Datasets, Accessed 17/06/2008

(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 five species of rare flora known to occur within the local area (5km radius) within the same vegetation communities and soils as the area under application, being:

- *Caladenia huegelii*;
- *Diuris purdiei*;
- *Drakaea elastica*;
- *Drakaea micrantha*; and
- *Lepidosperma rostratum*.

The closest known occurrence of rare flora is a record of *Caladenia huegelii*, located 500m from the area under application.

Caladenia huegelii is typically found within areas deep sandy soil, in *Eucalyptus marginata* and *Banksia* woodland (Brown 1998). Local occurrences of this species are typically found within these upland vegetation complexes adjacent to mapped wetland areas. Therefore, given that the area under application comprises predominantly *Melaleuca* wetland vegetation, this species is not considered likely to occur within the area of vegetation proposed to be cleared.

Diuris purdiei, *Drakaea elastica*, *Drakaea micrantha* and *Lepidosperma rostratum* are known to occur within areas of similar geology within, and fringing, areas subject to winter inundation (Brown 1998, Western Australian Herbarium 1998-).

A flora survey undertaken in October 2005 did not identify any of the above rare flora species (ATA Environmental 2007). Therefore, the proposed clearing is considered not likely to be at variance to this Principle.

Methodology References:

- ATA Environmental (2007)
 - Brown (1998)
 - Western Australian Herbarium (1998-)
- GIS Databases:
- Geomorphic Wetlands (Classification), Swan Coastal Plain
 - Hedde Vegetation Complexes
 - SAC Bio Datasets, Accessed 13/06/2008
 - Soils, Statewide

(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

Three Threatened Ecological Communities (TEC) are known to occur within a 5km radius of the vegetation under application, being;

- Swan Coastal Plain (SCP) Floristic Community Type (FCT) 8: Herb rich shrublands in clay pans;
- SCP FCT 10a: Shrublands on dry clay flats ; and
- *Muchea* Limestone: Shrublands and woodlands on *Muchea* Limestone.

The closest known occurrence of a TEC is that of SCP FCT 10a, located ~1.9km from the area of vegetation under application.

The vegetation under application predominantly comprises *Melaleuca raphiophylla*-*Melaleuca preissiana* and *Eucalyptus rudis* overstorey, with areas of dense *Kunzea* thickets and dense sedge understorey (Site Inspection 2008).

A flora and vegetation survey of the vegetation under application within the road reserve found that the vegetation within this area resembled FCT 4: *Melaleuca preissiana* damplands, and FCT 11: Wet Forests and Woodlands (ATA Environmental 2007). Neither of these FCT are listed threatened ecological communities.

Given the description of the vegetation within the area under application, and distance to the closest known occurrence of a TEC, the vegetation under application is not considered to comprise the whole or a part of, or be necessary for the maintenance of a threatened ecological community.

Methodology References:

- ATA Environmental (2007)

- Gibson et al. (1994)
- Site Inspection (2008)
- GIS Database:
- SAC Bio Datasets, Accessed 13/06/2008

(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 associated with Beard Vegetation Association 1001 which has 26.5% pre-European vegetation extent remaining (Hopkins et al. 2001, Shepherd 2006). The vegetation under application is also associated with Heddle Southern River Complex (Heddle et al. 1980). Heddle's Southern River complex is recognised as having current representation levels of 19.8% within the System 6 region and Swan Coastal Plain portion of the System 1 Region (EPA 2006), and 17.0% within Swan Coastal Plain portion of the Perth Metropolitan Region (Government of Western Australia 2000).

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

Beard Vegetation Association 1001 and Heddle's Southern River Complex are both below the State Government's biodiversity conservation target of 30%, and therefore considered to be under-represented. In addition, the area under application comprises areas of vegetation in good or better condition (Site Inspection 2008), and comprises a portion of Balannup Lake Nature Reserve.

Notwithstanding the area under application is located within the 'constrained area', and given that the vegetation communities are above the 10% minimum level recommended by the EPA (2006) and the relatively small area applied to be cleared (0.8ha), the proposed clearing is considered not likely to be at variance to this Principle.

	Pre-European (ha)	Current extent (ha)	Remaining (%)	% In reserves/ DEC managed land	
IBRA Bioregion					
Swan Coastal Plain**	1,501,456	571,758	38.1		
Local area (~5km radius)		~7,850	~2,566	~32.6	
City of Armadale*	55,885	42,911	76.8		
Beard Vegetation Association					
- 1001**	57,412	15,241	26.5	4.8	
Heddle Vegetation Complex					
- Southern River (Swan Coastal Plain)***		57,979	11,501	19.8	1.8
- Southern River (Perth Metro Area)****		31,148	5,370	17.0	

* (Del Marco et al. 2004)

** (Shepherd 2006)

*** (EPA 2006)

**** (Government of Western Australia (2000))

Methodology References:

- Commonwealth of Australia (2001)
- Del Marco et al. (2004)
- EPA (2006)
- Government of Western Australia (2000)
- Heddle et al. (1980)
- Hopkins et al. (2001)
- Shepherd (2006)
- Site Inspection (2008)
- GIS Databases:
- CALM Managed Lands and Waters
- Heddle Vegetation Complexes
- Interim Biogeographic Regionalisation of Australia
- Local Government Authorities
- Perth Metropolitan Area Central 20cm Orthomosaic - Landgate07

(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 is located within a mapped Resource Enhancement Wetland (REW), known as Balannup Lake. Balannup Lake is protected under the Environmental Protection (Swan Coastal Plain Lakes) Policy 1992 (EPA 1992), and managed by the Department of Environment and Conservation as part of the Balannup Lake Nature Reserve. A portion of the vegetation under application is also located within the Gibbs Road Swamp System, an ANCA wetland of national importance (Australian Nature Conservation Agency 1996).

The vegetation under application comprises three distinct vegetated areas. All of the vegetated areas comprised wetland vegetation with an overstorey of *Melaleuca rhapsiphyllo*, *Melaleuca preissiana* and *Eucalyptus rudis*, and an understorey of sedges, grasses and herbs (Site Inspection 2008). In addition, aerial photography of the area of vegetation under application indicates that the vegetation particularly within Area 3 is subject to winter inundation.

As the area of vegetation under application is located within the mapped REW and protected Balannup Lake, and comprises wetland vegetation (Site Inspection 2008), the vegetation under application is considered to be growing in an environment associated with a wetland.

Methodology

References:

- Australian Nature Conservation Agency (1996)
- EPA (1992)
- Site Inspection (2008)

GIS Databases:

- ANCA, Wetlands
- CALM Managed Lands and Waters
- EPP, Lakes
- Geomorphic Wetlands (Classification), Swan Coastal Plain
- 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 vegetation under application is located within the Bassendean Dune System (Government of Western Australia 2000), and is associated with sandy dunes with intervening sandy and clayey swamp flats, with chief soils of leached sands and various soils in the clayey swamps (Northcote et al. 1960-68).

The gradient for the area of vegetation under application is level, with an elevation of 23m in the northern portion and southern extent, and 22m within the mapped Resource Enhancement Wetland (REW), known as Balannup Lake.

Bassendean Dune soil complexes are known to have a high risk of wind erosion and low nutrient holding capacity. Given that the area proposed to be cleared is relatively small (0.8ha) and linear in nature, has a level gradient and is surrounded to the west by remnant vegetation within the larger Balannup Lake Nature Reserve, the proposed clearing is not considered likely to lead to appreciable land degradation in the form of wind or water erosion.

Whilst the proposed clearing is located within the mapped REW, Balannup Lake and the loss of vegetation resulting from the proposed clearing may result in eutrophication, given the small, linear area proposed to be cleared the clearing of native vegetation is not considered likely to lead to appreciable land degradation in the form of eutrophication. Therefore the proposal is not likely to be at variance to this Principle.

Methodology

References:

- Government of Western Australia (2000)
- Northcote et al. (1960-68)

GIS Databases:

- Bushforever
- EPP, Lakes
- Geomorphic Wetlands (Classification), Swan Coastal Plain
- Soils, Statewide
- Topographic Contours, Metropolitan Area

(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 vegetation under application is associated with three conservation areas, being:

- Balannup Lake Nature Reserve;
- Bush Forever Site 413: Balannup Lake and Adjacent Bushland, Southern River/Forrestdale; and
- Gibbs Road Swamp System (Government of Western Australia 2000).

Balannup Lake Nature Reserve is recognised as a Class A Nature Reserve. Class A reserves are areas of high conservation or community value, and are therefore afforded the greatest degree of protection (DPI 2003). In addition, the Gibbs Road Swamp System is listed as an ANCA wetland, which are defined as wetlands of national importance (Australian Nature Conservation Agency 1996).

Whilst the proposed clearing is relatively small (0.8ha) and linear in nature, the proposed clearing will result in direct adverse impacts to the three conservation areas associated with the area under application through the loss of floral diversity and fauna habitat. In addition, the proposed clearing is considered likely to impact on the environmental values of the remaining remnant vegetation through increased edge effects and disturbance. The proposed clearing activity may also result in indirect impacts to these conservations through the spread of dieback from vehicles or soil and fill.

Given the direct and indirect adverse impacts likely to result with the loss of vegetation within the area under application, the proposed clearing is considered likely to have an impact on the environmental values of the Balannup Lake Nature Reserve, Bush Forever Site and ANCA wetland.

Permit conditions are considered to reduce the indirect impacts of the proposed clearing on these conservation areas. In addition, the area proposed to be cleared within Balannup Lake Nature Reserve is currently being reviewed for excision from the reserve.

Methodology References:

- Australian Nature Conservation Agency (1996)
- DPI (2003)
- Government of Western Australia (2000)

GIS Databases:

- ANCA, Wetlands
- Bushforever
- Geomorphic Wetlands (Classification), Swan Coastal Plain

(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 vegetation under application is located within the Bassendean Dune System (Government of Western Australia 2000), and is associated with sandy dunes with intervening sandy and clayey swamp flats, with chief soils of leached sands and various soils in the clayey swamps (Northcote et al. 1960-68). The vegetation under application is also located within a mapped Resource Enhancement Wetland (REW), known as Balannup Lake.

Bassendean Dune soil complexes are known to have a low nutrient holding capacity. Whilst area under application occurs within a surface hydrological feature with groundwater expression, and the proposed clearing may result in the mobilisation of nutrients within the local soil profile, given the area of vegetation under application is relatively small (0.8ha) and linear in size, the proposed clearing is not considered likely to cause the deterioration in the quality of surface or underground water.

Methodology References:

- Government of Western Australia (2000)
- Northcote et al. (1960-68)

GIS Databases:

- EPP, Lakes
- Geomorphic Wetlands (Classification), Swan Coastal Plain
- Soils, 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 vegetation under application is located within the Bassendean Dune System (Government of Western Australia 2000), and is associated with sandy dunes with intervening sandy and clayey swamp flats, with chief soils of leached sands and various soils in the clayey swamps (Northcote et al. 1960-68). The vegetation under application is also located within a mapped Resource Enhancement Wetland (REW), known as Balannup Lake, and is subject to winter inundation.

Whilst clearing of deep rooted native vegetation is likely to increase runoff and recharge, given the small size of the area proposed to be cleared (0.8ha), and the vegetation's location within a wetland subject to winter inundation and groundwater expression, the proposed clearing is not considered likely to cause, or exacerbate, the incidence or intensity of flooding.

Methodology

References:

- Government of Western Australia (2000)
- Northcote et al. (1960-68)

GIS Databases:

- Bushforever
- EPP, Lakes
- Geomorphic Wetlands (Classification), Swan Coastal Plain
- Groundwater Contours, Historic Maximum
- Soils, Statewide
- Topographic Contours, Metropolitan Area

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

Comments

The Ranford Road Stage 2B upgrade, is part of a larger upgrade project of Ranford Road in Southern River/Forrestdale to convert the current single carriageway to a dual carriageway. This upgrade was considered necessary due to increased traffic along this transport corridor, and received Commonwealth funding through the Auslink Regional Road to Recovery Programme (ATA Environmental 2007). Three road design options were considered for the upgrade, given the high environmental values of the proposal area. The proposal (Road Design Option 1-2) considered within this assessment was considered to result in the least environmental impacts (ATA Environmental 2007).

The vegetation under application is located within an area protected under the Environmental Protection (Swan Coastal Plain Lakes) Policy 1992 (EPA 1992). The Environmental Protection (Swan Coastal Plain Lakes) Policy 1992 states that a person shall not fill, excavate, mine, discharge or dispose effluent within a lake unless 'the person is authorised under the Act' (EPA 1992). The proposal has been referred to the Environmental Protection Authority (EPA), where the level of assessment was subsequently set at 'Not Assessed - Managed under Part V of the EP Act (Clearing)'. Under Clause 10(b) this is considered authorisation for this Policy. This does not negate the requirement for a clearing permit.

A portion of Lot 120 Hatch Court was required to be compulsorily acquired for the proposed roadworks. Settlement has occurred on this property and is now being finalised by the Department of Planning and Infrastructure (City of Armadale 2008b).

A portion of Balannup Lake Nature Reserve, vested with the Conservation Commission WA, is also required for the proposed roadworks. The Conservation Commission and Department of Environment and Conservation, as managers of the reserve, have previously advised that there is no objection to the proposal to excise a portion of Balannup Lake Nature Reserve for the project (City of Armadale 2008). The City of Armadale have applied for the excision of this area from the Nature Reserve, which requires the Minister to seek approval from both houses of Parliament under the Land Administration Act 1997. This process is currently being managed by the Department for Planning and Infrastructure (City of Armadale 2008b).

The City of Armadale has also made a rezoning application under the Metropolitan Region Scheme for the resumed areas to be rezoned to 'Other Regional Roads'. This process is still being undertaken (ATA Environmental 2008).

The applicant is currently in negotiations with the Bush Forever Office in regards to offsetting the proposed clearing within Bush Forever Site 413.

The area under application is located with a high Acid Sulfate Soil risk area. The City of Armadale has committed to employing a consultant to undertake an Acid Sulfate Soil Investigation and preparing an Acid Sulfate Soil Management Plan (City of Armadale 2008).

The area under application is located within a Resource Enhancement Wetland, with a Conservation Category Wetland located on the opposite side of Ranford Road, ~13m from the northern edge of applied area. Therefore, the clearing as proposed is located within the recommended minimum buffer distance of 50m (Water and Rivers Commission 2001).

There are no Aboriginal Sites of Significance located within the area proposed to be cleared.

Methodology

References:

- ATA Environmental (2007)
- City of Armadale (2008)
- City of Armadale (2008b)
- EPA (1992)

- Water and Rivers Commission (2001)
- GIS Databases:
 - Aboriginal Sites of Significance
 - Acid Sulfate Soil Risk Map, Swan Coastal Plain
 - EPP, Lakes
 - Geomorphic Wetlands (Classification), Swan Coastal Plain

4. Assessor's comments

Comment

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

5. References

- ANCA (1996) A Directory of Important Wetlands in Australia. Second Edition. Australian Nature Conservation Agency, Canberra
- ATA Environmental (2007) Environmental Impact Assessment: Ranford Road Upgrade Stage 2B - Southern River Road to Hatch Court. Version 3. July 2007. Report No. 2007/114. ATA Environmental, Western Australia.
- Brown A., Thomson-Dans C. and Marchant N.(1998). Western Australia's Threatened Flora, Department of Conservation and Land Management, Western Australia.
- City of Armadale (2008) Documents provided with Clearing Permit Application. Received 04/04/2008 (TRIM Ref. DOC49688).
- City of Armadale (2008b) Correspondence from City of Armadale re compulsory acquisition and excision of Nature Reserve. Received 18/06/2008 (TRIM Ref. DOC55711).
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- EPA (1992) Environmental Protection (Swan Coastal Plain Lakes) Policy 1992. Western Australian Government Gazette, 24 December, 1992, pp 6287-93
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- Gibson N., Keighery B., Keighery G., Burbidge A. and Lyons M. (1994). A Floristic Survey of the Southern Swan Coastal Plain. Western Australian Department of Conservation and Land Management and the Western Australian Conservation Council.
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- 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.
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- 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.
- Water and Rivers Commission (2001). Position Statement: Wetlands, Water and Rivers Commission, Perth.
- Western Australian Herbarium (1998-). FloraBase - The Western Australian Flora. Department of Environment and Conservation. <http://florabase.calm.wa.gov.au/> (Accessed 13/06/2008).

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)