



1. Application details

1.1. Permit application details

Permit application No.: 2145/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Water Corporation of Western Australia

1.3. Property details

Property: ROAD RESERVE (BROOKDALE 6112)
Local Government Area: City Of Armadale
Colloquial name: Trees in Wetland

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
	13	Cutting	Infrastructure 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
<p>The area under application is to clear 13 native trees for the purpose of replacing water sewer pipeline. Much of the proposed clearing will be undertaken on areas previously cleared for instalment of the pipeline containing some regrowth, primarily dominated by weed species. Photographs and aerial photography indicate that the vegetation condition ranges from good to completely degraded. Other vegetation to be cleared under the application consists of <i>Corymbia maculata</i> (spotted gums), which are not endemic to Western Australia and as clearing will be under the 1ha exemption as stated in the Environmental Protection Act 1986, a permit is not required to remove these trees.</p> <p>Beard (999): Medium Woodland, Marri</p> <p>Hedde: Southern River Complex: Open Woodland, zome - Swan Coastal Plain</p>	<p>Much of the proposed clearing will be undertaken on areas previously cleared for instalment of the pipeline containing some regrowth, primarily dominated by weed species. Photographs and aerial photography indicate that the vegetation condition ranges from good to completely degraded. Other vegetation to be cleared under the application consists of <i>Corymbia maculata</i> (spotted gums), which are not endemic to Western Australia and as clearing will be under the 1ha exemption as stated in the Environmental Protection Act 1986, a permit is not required to remove these trees.</p>	<p>Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)</p>	<p>Vegetation condition was determined from photographs supplied by GHD (2007).</p>

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 area under application is to clear 13 native trees for the purpose of replacing water sewer pipeline. Much of the proposed clearing will be undertaken on areas previously cleared for instalment of the pipeline containing

some regrowth, primarily dominated by weed species. Photographs (GHD, 2007) and aerial photography indicate that the vegetation condition ranges from good to completely degraded (Keighery, 1994). The vegetation structure consists of isolated trees and shrubs.

Given the size and condition of the area under application the proposed clearing is not likely to comprise a high level of biological diversity.

Methodology GIS Layer: Swan Coastal Plain 20cm Orthomosaic-DL106
Keighery (1994)
GHD (2007)

(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

There have been 14 reported sightings of rare or endangered fauna within a 5km radius of the proposed clearing site. They include 4 sightings of the priority 5, *Isoodon obesulus fusciventer* (Quenda); 1 sighting of the endangered *Leioproctus douglasiellus* (insect); 2 reports of the endangered *Neopasiphe simplicior* (insect); and 4 sightings of the classified vulnerable *Myrmecobius fasciatus* (numbat).

The closest *Myrmecobius fasciatus* is approximately 450m from the clearing. There are no apparent vegetation corridors that link the reported sighting with the proposed clearing area, limiting the likelihood of the *Myrmecobius* and also the *Isoodon obesulus fusciventer*, requiring the application area as a habitat.

All the rare and endangered fauna reported within a 5km radius from the proposed clearing area, were sighted on the same soil type as the application area. This may be important for the endangered insects reported, but given the distance from the proposed clearing area, it would seem unlikely that it is a significant habitat for these species.

Given the area under application consists of isolated trees and shrubs of a degraded condition and the surrounding area (1km radius) supports intact vegetation structures, native vegetation in the proposed clearing area is not considered to be necessary for the maintenance of a significant habitat for fauna indigenous to Western Australia

Methodology GIS Layers:
Swan Coastal Plain 20cm Orthomosaic-DL106
Fauna

(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 22 known records of declared rare flora (DRF) and priority flora within a 5km radius of the proposed clearing site. They range from 700m to 5km from the application area.

All DRF and priority flora are found within the soil complex Cb38 (sandy dunes) also found within the proposed clearing area. The closest DRF (*Diuris purdiei*) is located in an area that has been disturbed.

Given the area under application is considered to be degraded and consists of isolated trees and shrubs, native vegetation in the proposed clearing area is not likely to be necessary for the continued existence of rare flora.

Methodology GIS Layer:
Swan Coastal Plain 20cm Orthomosaic-DL106
Flora

(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 27 records of TEC's within a 5km radius of the proposed clearing area. they consists of:

10 records of SCP08
9 records of SCP10a
7 records of SCP20b
and 1 record of Muchaa Limestone

The closest 800m from the proposed clearing area is SCP10a, Shrublands on dry clay flats, with SCP08, Herb rich shrublands on clay pans 1km from the application area. Both these fall within the same soil complex as the proposed clearing site.

Given the small nature, condition and amount of non-native tree and weed species within the application area, it

is unlikely to be necessary for the maintenance of a Threatened Ecological Community.

Methodology GIS Layer:
Swan Coastal Plain 20cm Orthomosaic-DL106
TEC

(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			Conservation Status**
	Pre-European (ha)*	Current Extent Remaining (ha)*	(%)*	
IBRA Bioregion: Jarrah Forest	1,501,456.5 5	571,758.6 6	41.8	Depleted
Shire: Armadale ***	55,884.586*	42911 *	76.79 *	Least Concern
Beard Unit 999 (Medium woodland; marri)	115712.46	15161.478	13.1	Vulnerable
Hedde: Southern River Unit	57979.30	11500.96	19.8	Vulnerable

*Shepherd et al. 2001

**Department of Natural Resources and Environment 2002

***Within the Intensive Land Use Zone (Inside the Clearing Line)

The proposed clearing area is within the Swan Coastal Plain IBRA region, where the area of vegetation remaining is 41.8%. Within the Shire of Armadale 76.79 of pre-European vegetation remains (Shepherd, 2001). The clearing application consists of the Hedde Unit Southern River Complex which currently is at 19.87% extent remaining, classifying it vulnerable.

Given the above and also as the proposed clearing area consists of 13 native tree spread over a 1km area, it is unlikely that the application area is significant as a remnant vegetation in an area that has been extensively cleared.

Methodology Shepherd (2001)
DEWR (2002)

(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 application is for the removal of 13 *Melaleuca raphiophylla* which is necessary for replacement of an existing sewer pressure main pipeline. An easement of cleared vegetation already exists, and therefore as assessed by photographs (GHD, 2007), shows a reduction in the amount of clearing required.

The proposed clearing area falls within the Australian Nature Conservation Agency (ANCA) wetland area of Gibbs Road Swamp System which has been identified as having threatened or potentially threatened water regimes. This system is listed as an ANCA wetland as it is under threat of excessive groundwater extraction from public and private entities (Directory of Important Wetlands, 2007). Excessive groundwater extraction may adversely affect ecosystems within this area that are ground water dependant (deh.gov.au, 2007).

Additionally within a 5km radius of the proposed clearing area, 349 wetlands are apparent, most are unnamed and they included damplands, sumplands and artificial lakes, ranging from 50 metres from the proposed clearing area to 5kms. One is a RAMSAR wetland, Forrestdale Lake (RAMSAR site no. 5AU035) and is located 2kms west of the proposed clearing. None of these wetlands come in contact with the proposed clearing area on Waterworks Road.

Given the proposed clearing area is within an ANCA wetland area, the vegetation is considered to be

associated with wetland vegetation and is therefore at variance.

Due to the small and fragmented size of the application area (13 trees spread sporadically over an area of 0.5kms), and lack of noticeable ecological linkages to the surrounding wetlands the proposed clearing is not likely to have significant impact on the values of wetlands.

Methodology GIS Layers:
Swan Coastal Plain 20cm Orthomosaic - DL106
ANCA Wetland - CALM 08/01
EPP, Areas - DEP 06/95
EPP, Lakes - DEP 1/12/92
RAMSAR Wetlands - CALM 14/02/03

(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**
As the application is to clear 13 native trees from an area that has previously been cleared and contains regrowth and some non native trees and weed species, the clearing of native vegetation is unlikely to cause appreciable land degradation.

Methodology GIS Layer:
Swan Coastal Plain 20cm Orthomosaic-DL106

(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**
Forrestdale Lake situated 2kms west of the proposed clearing area and is classified as a Register of National Estate and Calm Managed Land - Nature Reserve. The Lake is also part of a system 6 Conserve Reserve (670m from proposed clearing area) and a Bush Forever site (180m from the application area).

Given the small and degraded condition of the application area, it is unlikely that the proposed clearing area will have an impact on the environmental values of any adjacent or nearby conservation reserves.

Methodology GIS Layer:
Swan Coastal Plain 20cm Orthomosaic-DL106
CALM Managed Land and Water - CALM 1/7/05 (category)
System 6 Conservation Reserves - DEP 06/95
Bush Forever - MFP 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**
Acid sulphate soils (ASS) caused by oxygenated iron sulphides within certain soils can cause acidic runoff into nearby water sources, this can cause fish kills and damage riparian vegetation. There is a high to moderate likelihood that clearing within the western section of the application area will cause ASS, and a moderate to low possibility within the eastern side. The topography of the application area is 20-25m AHD with a low relief. Due to the small, fragmented size and low relief of the proposed clearing area it would be highly unlikely that clearing will cause ASS.

There are no substantially ecological linkages apparent between the proposed clearing area and any lakes or other surface water bodies within a 5km radius, and therefore not likely to lead to sedimentation entering the water bodies. Furthermore due to the small area of vegetation proposed to be cleared, it is unlikely to have a detrimental effect on water regimes within surface or underground water.

Groundwater salinity within the area is 500-1000mg/L, which is in the marginal to low brackish range. Although Melaleuca species have an extensive root system, the small portion of trees being cleared should not have an adverse affect on the salinity level of groundwater within the region.

Given the above, the clearing of 13 Melaleuca raphiophylla is not likely to cause deterioration in the quality of surface or underground water.

Methodology GIS Layer:
Swan Coastal Plain 20cm Orthomosaic - DL106

(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**

Given the small, isolated and degraded nature of the proposed clearing area (previous clearing has occurred on the site), it is unlikely that the clearing will cause, or exacerbate the incident of flooding.

Methodology GIS Layer:
Swan Coastal Plain 20cm Orthomosaic - DL106

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

Comments

The Water Corporation of Western Australia advise in their proposal that after replacement of the pressure main all land surface levels will be reinstated to pre-existing condition (GHD, 2007).

The application area abutts (but does not overlap) an Aboriginal Site of Significance.

Methodology GIS Layer:
Aboriginal Sites of Significance - DOA
GHD (2007)

4. Assessor's recommendations

Purpose	Method	Applied	Decision	Comment / recommendation
Infrastructure Cutting Maintenance		area (ha)/ trees 13	The proposed clearing area is found within an ANCA wetland and therefore is at variance to principle f. Though given the small degraded size of the application area the permit should be granted.	

5. References

6. Glossary

Term	Meaning
CALM	Department of Conservation and Land Management
DAWA	Department of Agriculture
DEP	Department of Environmental Protection (now DoE)
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 DoE)