



1. Application details

1.1. Permit application details

Permit application No.: 2256/1
 Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Water Corporation

1.3. Property details

Property: ROAD RESERVE (COOROW 6515)
 Local Government Area: Shire Of Coorow
 Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
12		Mechanical Removal	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
Beard Vegetation Association 1026: Mosaic: Shrublands; Acacia rostellifera, A. Cyclops (S) and Melaleuca cardiophylla (N) thicket.	The area under application is 12 ha and covers 35 km of road reserves and conservation areas. It is spread across an area containing 5 different types of Beard vegetation associations that consist mainly of species of Acacia, Banksia, Calothamnus, Casuarina, Dryandra, Hakea, and Melaleuca (Hopkins et al. 2001, Shepherd et al. 2001).	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	The description and condition of the vegetation under application were obtained through a site visit report provided by the Water Corporation (Water Corporation Site Visit, 2007) and information obtained from Keighery (1994), Hopkins et al (2001) and Shepherd et al (2001).
Beard Vegetation Association 1029: Shrublands; scrub-heath Dryandra-Calothamnus assoc. with B. brionotes on limestone in the northern Swan region. Beard Vegetation Association 1031: Mosaic: Shrublands; hakea scrub-heath / Shrublands; dryandra heath.	Except for locally degraded vegetation at air valve and scour valve sites and the lateral clearance areas within the road reserves, the vegetation in many of the sites assessed was predominantly of 'very good' to 'excellent' condition.		
Beard Vegetation Association 377: Mosaic: Shrublands; scrub-heath on limestone in the northern Swan region / Sparse low woodland; illyarrie. Beard Vegetation Association 393: Shrublands; Melaleuca thyooides thicket with scattered Casuarina obesa.			

(Hopkins et al. 2001, Shepherd et al. 2001)

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 12 ha and covers 35 km of road reserves and conservation areas. It is spread across an area containing 5 different types of Beard vegetation associations that consist mainly of species of Acacia, Banksia, Calothamnus, Casuarina, Dryandra, Hakea, and Melaleuca (Hopkins et al, 2001, Shepherd et al, 2001). The width of the proposed clearing is 5 m (Water Corporation Site Visit, 2007).

Except for locally degraded vegetation at air valve and scour valve sites and the lateral clearance areas within the road reserves, the vegetation in many of the sites assessed was predominantly of 'very good' to 'excellent' condition (Keighery, 1994; Water Corporation Site Visit, 2007).

While the majority of the proposed clearing will occur within conservation areas where the vegetation associations present are part of an area known for its high biodiversity (Desmond and Chant, 2001), the proposal area is small (12 ha) compared to the large areas covered by the conservation areas (i.e. Beekeepers Nature Reserve and Lesueur National Park). In addition, if approved only a 5m-wide band of vegetation is proposed to be cleared along the service corridor. The area under application is therefore not likely to significantly compromise the biodiversity values of the nature reserve and national park, or contain a higher level of biodiversity than that is found in those conservation areas.

Therefore this proposal is not likely to be at variance to this Principle.

Methodology GIS Databases:
- Interim Biogeographic Regionalisation of Australia - EA 18/10/00.
Desmond and Chant (2001)
Hopkins et al (2001)
Keighery (1994)
Shepherd et al (2001)
Water Corporation Site visit (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

Ten records of significant fauna are located within a radius of approximately 10 km from the proposal area. They include two species of Declared Threatened Fauna (Cyclodomorphus branchialis and Shield-backed trapdoor spider), one species of a Priority 2 fauna (the insect Phasmodes jeeba), one species of a Priority 3 fauna (the insect Hemisaga vepreculae), four species of Priority 4 fauna (White-browed Babbler [western wheatbelt], Western Brush Wallaby, Hooded Plover and Australian Bustard), and one species of 'Other Specially Protected Fauna' (Peregrine Falcon). The insect Phasmodes jeeba is located approximately 1.2 km north from the closest point of the proposal area on the Coorow - Greenhead Road, while the Australian Bustard is located approximately 1.4 km south from the southern tip of the Indian Ocean Drive. Others are located farther than 2 km from the vegetation under application.

The area under application could provide habitat for these and other local fauna. However, given that it is situated adjacent to a well vegetated landscape, faunal populations would find similar habitat nearby.

The proposed removal of vegetation in a narrow corridor (5 m wide) is not likely to significantly reduce the quality of the habitat. Thus the proposal is not likely to significantly impact upon the local Fauna or contain significant habitat.

Methodology GIS Databases:
- SAC Bio Datasets (040308)

(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 15 records of Declared Rare Flora (DRF) and over 35 records of Priority Flora within a radius of about 10 km, with the closest occurrence being approximately 1.4 km from the eastern tip of the area under application. The proposal is to clear a narrow strip of vegetation (5 m wide) mainly along road reserves.

The DRF includes several records of *Acacia forrestiana* and a few records of *Eucalyptus suberea*, *Hemiandra gardneri* and *Thelymitra stellata*. The closest known DRF occur approximately 2.1 km from the area under application.

Except for the Priority 2 species such as *Dampiera tephrea* and *Pithocarp corymbulosa* and Priority 4 species *Eucalyptus pendens*, all records of Declared Rare and Priority Flora occur on soil types that are different from the soil types existing within the area under application.

Given that the soil types are different and the area proposed to be cleared is small (12 hectares with a clearing width of 5 m) compared to the large expanse of the Lesueur National Park and Beekeepers Nature Reserve, where most of the DRF occur, it is unlikely that the proposal area is necessary for the continued existence of Rare Flora.

Therefore this proposal is not likely to be at variance to this Principle.

Methodology GIS Databases:
 - Declared Rare and Priority Flora list - CALM 01/07/05
 - Clearing Regulations - Environmentally Sensitive Areas - DoE 30/05/05
 - SAC Bio Datasets (60308)

(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 is one known Threatened Ecological Community (TEC) within a radius of approximately 10 km from the proposal area. It is known as a *Petrophile chrysantha* low heath on Lesueur dissected uplands. It is situated approximately 7.1 km southeast of the area under application.

The soil types within the area under application are different from those of the TEC. Therefore, a similar TEC is not likely to exist within the area under application.

Similarly, due to the distance, the proposed clearing is unlikely to have any impact on the environmental values of the TEC.

Methodology GIS Databases:
 - Threatened Ecological Communities - CALM 12/04/05
 - SAC Bio Datasets (060308)

(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**

Pre-European	Current area (ha)	Remaining Reserves/CALM- extent (ha)	%*	managed land, %
IBRA Bioregion - **				
Geraldton Sandplains	3,136,277	1,324,440	42.2	35.6
Shire - Coorow **	424,583	164,895	38.8	Not available
Beard veg type - 377	63,099	62,787	99.5	75.5
Beard veg type - 393	5,004	4,644	92.9	82
Beard veg type -1026	70,700	63,150	89.3	52.7
Beard veg type - 1029	71,035	53,212	74.9	33.9
Beard veg type - 1031	269,505	93,975	34.9	38.5

* (Shepherd et al. 2001, Shepherd 2006)
 ** Area within the Intensive Land use Zone

The vegetation under application is a component of Beard Vegetation Association 377, 393, 1026, 1029 and 1031 (Hopkins et al. 2001) of which there is 99.5 %, 92.9 %, 89.3 %, 74.9 % and 34.9% of the pre-European extent remaining, respectively (Shepherd, 2006). The vegetation under application also falls within the Geraldton Sandplains Bioregion and the Shire of Coorow of which there is 42.2 % and 38.8 % of pre-European extent remaining, respectively (Shepherd, 2006).

The area under application falls within the Intensive Landuse Zone as described under the EPA Position Statement No. 2. Given that a narrow strip of vegetation (5 m wide) is proposed to be removed along a 35 km stretch, the proposed clearing is unlikely to have a significant impact on the extent of the vegetation.

On the basis that the pre-European extent of the Beard Vegetation Associations, Geraldton Sandplains Bioregion and the Shire of Coorow meet the National Objectives Targets for Biodiversity Conservation 2001-2005, being 30 % of that present pre-1750 (AGPS, 2001), this proposal is not likely to be at variance to this Principle.

Methodology GIS Databases:
 - Interim Biogeographic Regionalisation of Australia - EA 18/10/00
 - Pre-European Vegetation - DA 01/01
 - Local Government Authorities - DLI 08/07/04
 - EPA Position Paper No 2 Agriculture Region - DEP 12/00
 Shepherd et al (2001)
 Shepherd (2006)

(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 proposal area intersects with two perennial swamps along the Coorow - Greenhead Road. Therefore the proposal is at variance to this clearing principal. These areas are subjected to periodic inundation. The proposal

is to clear a narrow strip of vegetation (5 m wide) mainly along road reserves (Water Corporation Site Visit, 2007).

Given the small width (5 m), the clearing as proposed is not likely to adversely impact upon the hydrological and/or ecological values of the swamps. If approved a revegetation condition will be imposed.

Methodology GIS Databases:
- Hydrography, linear - DoE 01/02/04
- Hydrographic Catchments - Catchments - DoE 23/03/05
DOW (2008)
Water Corporation Site Visit (2007)

(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 area under application is situated in a region with a rainfall of 600 mm per annum. Different parts of the proposed clearing traverse across chief soil types such as shallow sands, shallow stony sands, siliceous sands and brown sands. There is a medium risk of salinity on the surrounding land. The proposal is to clear a narrow strip of vegetation (5 m wide) mainly along road reserves (Water Corporation Site Visit, 2007).

Given the small width and the linear pattern, the clearing as proposed is not likely to expose substantial areas of land at any given location. Such a narrow clearing therefore is not likely to cause wind or water erosion. Similarly the area of exposure and the regional rainfall appear to be low for water logging, salinity or flooding to occur.

Therefore this proposal is not likely to be at variance to this Principle.

Methodology GIS Databases:
- Rainfall, Mean Annual - BOM 30/09/01
- Salinity Risk LM 25m - DOLA 00
- Soils, Statewide - DA 11/99
Water Corporation Site Visit (2007)

(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.

Comments **Proposal may be at variance to this Principle**

Approximately two thirds of the area under application is surrounded by the Lesueur National Park and the Beekeepers Nature Reserve.

Given the total size of the proposed clearing (12 ha) and the close proximity to the conservation areas, it is likely that the area under application facilitates the movement of fauna and protects the ecological values of the conservation areas. Therefore, the proposed clearing may be at variance to this Principle.

To mitigate this impact hygiene and rehabilitation conditions will be imposed if clearing is approved.

Methodology GIS Databases:
- CALM Regional Parks - CALM 12/04/02
- CALM Managed Lands & Waters - CALM 01/07/05
- Proposed National Parks FMP-CALM 19/03/03
- Register of National Estate - EA 28/01/03

(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 situated within the Coastal Hydrographic Catchment. The area under application intersects two Public Drinking Water Source Areas (PDWSA's). There are two watercourses (perennial swamps) along parts of the area under application. The depth to groundwater could not be determined from available data. The area subject to this proposal has an average annual rainfall of 600 mm and an evaporation rate of 600 mm per annum. There is a medium risk of salinity on surrounding lands. The groundwater shows salinity levels of 500 -1000 TDS mg/L which is considered to be fresh. There are groundwater dependent ecosystems (GDE's) in the local area. The proposal is to clear a narrow strip of vegetation (5 m wide) mainly along 35 km of road reserves (Water Corporation Site Visit, 2007).

The Department of Water advised that 'the application for clearing bisects the Mount Peron and Leeman (Midway) Water Reserve as proclaimed under the Country Areas Water Supply Act 1947. Part of the clearing will be located within the Wellhead Protection Zone for Bore 3/91 and also within a Priority 1 classification area. As such, the clearing and associated activities must be undertaken to best practice management standards to

minimise the potential for contamination of the water supply. Vegetation clearing through the Water Reserve should be kept at an absolute minimum'. (DOW, 2008a)

Subject to compliance with the DOW (2008a) advice, clearing a narrow, linear strip of vegetation at the given locations is unlikely to have an impact on groundwater quality. Similarly, the clearing is not likely to impact on water quality, salinity, depth or the GDE's in the surrounding areas as it is small and narrow. In addition, rehabilitation conditions will be placed on the permit to restore the site, if clearing is approved.

Therefore this proposal is unlikely to be at variance with this principle.

Methodology GIS Databases:
- Public Drinking Water Sources (PDWSAs) - DOE 09/08/05
- Hydrographic Catchments - Catchments - DOE 23/03/05
- Hydrography, linear - DoE 01/02/04
- Current WIN data sets
- Mean Annual Rainfall Isohyets (1975 - 2003) - DOW
- Salinity Risk LM 25m - DOLA 00
- Groundwater Salinity, Statewide - 22/02/00
- Potential Groundwater Dependant Ecosystems - DOE 2004
DOW (2008a)
Water Corporation Site Visit (2007)

(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 area under application is situated in a region with a rainfall of 600 mm per annum. The proposal site trails across flat and gently sloping landscapes. Different parts of the proposed clearing traverse soil types that consist mostly of shallow sands, shallow stony sands, siliceous sands and brown sands. The proposal is to clear a narrow strip of vegetation (5 m wide) mainly along road reserves (Water Corporation Site Visit, 2007).

Due to the high infiltration rates of the sandy soils, low average annual rainfall and the small amount of vegetation removal, it is unlikely that the proposed clearing will contribute to water logging or flooding.

Therefore, this proposal is not likely to be at variance with this Principle.

Methodology GIS Databases:
- Rainfall, Mean Annual - BOM 30/09/01
- Soils, Statewide - DA 11/99
- Topographic Contours, Statewide - DOLA 12/09/02

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

Comments

The Shire of Coorow has not indicated if there are any planning requirements or approvals that would affect the clearing.

The Department of Water advised that 'the road reserve is not situated in a proclaimed surface water area as such a permit to interfere with bed and banks is not required' (DOW, 2008)

The Department of Water advised that 'the application for clearing bisects the Mount Peron and Leeman (Midway) Water Reserve as proclaimed under the Country Areas Water Supply Act 1947. Part of the clearing will be located within the Wellhead Protection Zone for Bore 3/91 and also within a Priority 1 classification area. As such, the clearing and associated activities must be undertaken to best practice management standards to minimise the potential for contamination of the water supply. The Department's Water Quality Protection Notes outline best management practices for a range of activities. The following Water Quality Protection Notes that may relate to this Proposal include: Contaminant spills- emergency response; Toxic and hazardous substances - storage and use; and Vegetation buffers to sensitive water resources. Vegetation clearing through the Water Reserve should be kept at an absolute minimum'. (DOW, 2008a)

There is no further requirement for a RIWI Act Licence or Works Approval.

The area under application falls within the Intensive Landuse Zone as described under EPA Position Statement No 2. This has been addressed under Principle (e).

There is a Native Title claim over the area under application. The advertisement of the application in the West Australian newspaper by the Department of Environment and Conservation constitutes legal notification of the native title representative body for the purpose of the future act procedures under the Native Title Act 1993. No response was received from the representative body.

There are no Aboriginal Sites of Significance in the area under application.

There are two Environmental Impact Assessments (EIA's) over the area under application however these EIA's do not affect the proposed clearing.

Methodology GIS databases:
 - Native Title Claims - DLI 7/11/05
 - Aboriginal Sites of Significance - DIA 26/04/07
 - Environmental Impact Assessments
 - EPA Position Paper No 2 Agriculture Region - DEP 12/00
 DOW (2008)
 DOW (2008a)

4. Assessor's comments

Purpose	Method Applied	area (ha)/ trees	Comment
Infrastructure Maintenance	Mechanical Removal	12	The assessable criteria have been addressed and the proposal may be at variance to Principle (h). To mitigate the impacts of clearing on conservation areas hygiene and rehabilitation conditions will be imposed if clearing is approved.

5. References

- AGPS (2001) The national objective and targets for biodiversity conservation 2001-2005. Commonwealth of Australia, Canberra.
- Desmond, A. and Chant, A. (2001) Geraldton Sandplain 3 (GS3 - Lesueur Sandplain Subregion). In: A biodiversity audit of Western Australia's 53 biogeographical subregions. Conservation and Land Management, Western Australia.
- DOW (2008) Advice. Department of Water, Western Australia. DEC TRIM ref DOC48076.
- DOW (2008a) Advice. Department of Water, Western Australia. DEC TRIM ref DOC48176.
- 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.
- 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.
- Water Corporation Site Visit (2007). Water Corporation, Western Australia. DEC TRIM ref DOC47648.

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)