



1. Application details

1.1. Permit application details

Permit application No.: 1932/1
 Permit type: Area Permit

1.2. Proponent details

Proponent's name: Water Corporation

1.3. Property details

Property: LOT 161 ON PLAN 195358 (BULLABULLING 6429)
 Local Government Area: Shire Of Coolgardie
 Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
9.99		Mechanical Removal	Building or Structure

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: 8: Medium woodland; salmon gum and gimlet (Shepherd 2006).	The proposed clearing is for 9.99ha of vegetation in Reserve 17101 located ~2km north west of the Bullabulling townsite, within the Shire of Coolgardie, for the construction of a 15ML drinking water storage tank and upgrade of associated pipeline infrastructure. The area is currently zoned 'recreation'. Three distinct vegetation types have been identified within the applied area (GHD 2006): The majority (~8ha) of the vegetation under application is in excellent condition and has been identified as Open Woodland of Eucalyptus salubris and Eucalyptus calcygona subsp. calcygona over Low Shrubland of Diocirea microphylla with scattered larger shrubs. The remaining vegetation under application (~1.9ha), occurring along the proposed pipeline upgrade and the western border of the applied area, is degraded where disturbance has occurred along the access tracks. Approximately 1.4ha of this vegetation has been identified as Woodland of Eucalyptus salmonophloia, Eucalyptus livida and	Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery 1994)	Vegetation condition and description based on information provided in the Water Corporation Environmental Field Survey Report (GHD 2006, TRIM Ref: DEC3484).

Eucalyptus horistes over mixed scrub of Acacia, Allocasuarina and Eremophila species.

The remaining area (~0.5ha) has been identified as Low Woodland of Eucalyptus celastroides and Eucalyptus salubris over scrub of Melaleuca pauperiflora subsp. fastigiata (GHD 2006).

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 may be at variance to this Principle**

The proposal includes clearing of 9.99ha in Reserve 17101, Bullabulling, for the construction of a 15ML drinking water storage tank. This site is zoned for recreation, pending a request to re-zone the area under application so that it is included in an existing, adjacent Reserve (38388) zoned water supply.

The area under application is in the Coolgardie IBRA Region which has a current pre-European extent of 98% (Shepherd 2006). The Reserve and adjacent land is predominantly undisturbed native vegetation, with areas of isolated disturbance associated with communications, power and water supply infrastructure. The area under application (9.99ha) has partly been disturbed by the clearing of the access track to the existing water storage tank located north of the applied area. The majority (~8ha) of the vegetation under application is in excellent condition (GHD 2006).

Two species of Priority Three Flora (*Acacia crenulata* and *Diocirea microphylla*) have been identified as common components in the understorey of the vegetation under application (GHD 2006). Both Priority species are known to occur adjacent to the area under application. Database searches indicate a further 6 records of *Diocirea microphylla* and 4 records of *Acacia crenulata* have been identified within a 10km radius of the applied area.

Given the vegetation under application is in excellent condition with Priority species common in the understorey, the applied area is considered to represent a relatively high level of biodiversity and the proposed clearing may be at variance to this principle.

Methodology References:
- GHD (2006)
- Shepherd (2006)

GIS Databases:
- Cadastre - DLI
- SAC Bio datasets (29/08/2007)

(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**

Database searches indicate the vulnerable Malleefowl (*Leipoa ocellata*) is known to occur in the local area (~10km). DEC Fauna Habitat Notes (2007) indicate this species prefers woodland or shrubland with an abundant litter layer that provides essential material for the construction of its nest mound.

The presence of Malleefowl was identified ~5.8km north east in an area with the same vegetation association as the area under application. However, during a reconnaissance fauna survey in August 2006, no fauna of conservation significance were identified in the applied area and no fauna species are considered to use the applied area exclusively (GHD 2006).

Given the above and the abundant, intact habitat in surrounding bushland, it is considered unlikely that the vegetation under application provides significant habitat in the local area.

It is noted that the applicant intends to identify and retain any habitat trees where possible, and retain felled trees to provide habitat for terrestrial species.

Methodology References:
- DEC Fauna habitat notes.xls February 2007
- GHD (2006)

GIS Databases:
 - SAC Bio datasets (16/08/2007)

(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.

Comments Proposal is not likely to be at variance to this Principle

Declared Rare and Priority Flora mapping identifies 27 records of 1 species of Declared Rare Flora and 11 records of 3 species of Priority Flora within a 10km radius of the area under application. Of these species, it is considered that *Gastrolobium graniticum* (Rare), *Acacia crenulata* (P3), *Allocasuarina eriochlamys* subsp. *grossa* (P3) and *Diocirea microphylla* (P3) may be present, due to proximity and habitat preferences.

A flora survey of the applied area conducted in August 2006 identified two Priority Three species, *Acacia crenulata* and *Diocirea microphylla*, as common components of the mid storey and understorey of the vegetation under application. *A. crenulata* is known to occur in scattered groups in the area under application. Supplementary information provided by the applicant estimates the proposed clearing will impact ~200 individual plants from a population of over 5,000 individuals (TRIM Ref: DEC3484). *D. microphylla* is a dominant species in the understorey of the vegetation under application. The 2006 flora survey estimates the proposed clearing will impact a maximum of 1,500 to 2,000 plants of a population of over 20,000 individual plants (TRIM Ref: DEC3484).

Both *Acacia crenulata* and *Diocirea microphylla* are known to occur outside of the area under application. Database searches indicate a further 6 records of *D. microphylla* and 4 records of *A. crenulata* have been identified within a 10km radius of the applied area.

In addition, Priority 3 species are known from several populations and the taxa are not believed to be under immediate threat, either due to the number of known populations or the size of known populations.

Given the above, it is considered that the proposed clearing is not likely to significantly impact the conservation status of these other less significant species.

Methodology GIS Databases:
 - Pre-European Vegetation - DA 01/01
 - SAC Bio datasets (29/08/2007)
 - Soils, Statewide - DA 11/99

(d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.

Comments Proposal is not likely to be at variance to this Principle

There are no Threatened Ecological Communities (TEC) or Priority Ecological Communities (PEC) in the area under application. The closest community of conservation significance is a PEC >100km from the applied area known as 'Plant assemblages of the Bremer Range System'. Vegetation and soil mapping associated with the PEC differ to those in the applied area. Given the vast distance to the nearest PEC (>100km) and the different soil types and vegetation associations it is considered that the vegetation under application is not associated with any TEC's or PEC's.

Methodology GIS Databases:
 - Pre-European Vegetation - DA 01/01
 - SAC Bio datasets (14/08/2007)
 - Soils, Statewide - DA 11/99

(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 area under application is part of the Coolgardie IBRA Region with a current pre-European representation of 98.4% (Shepherd 2006). Beard Vegetation Association 8 (Hopkins et al 2001) is also identified within the applied area and has a current representation level of 47.4% (Shepherd 2006).

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

reserves/DEC-	Pre-European area (ha)	Current extent (ha)	Remaining %	Conservation status***	% in managed land
IBRA Bioregion **					
- Coolgardie	12,912,208	12,707,623	98.4	Least concern	13.2
Shire of Coolgardie*	-	-	-	-	-

Beard vegetation associations**					
- 8	694,643	329,592	47.4	Depleted	13.1

* (Shepherd et al. 2001)

** (Shepherd 2006)

***(Department of Natural Resources and Environment 2002)

The majority (~8ha) of vegetation under application is in excellent condition. There is a limited extent of vegetation in degraded condition where disturbance has occurred along existing access tracks. Examination of aerial photography illustrates a vast expanse of existing natural vegetation in the local area. Given the current representation of the IBRA Region and Beard vegetation associations is well above the 30% Target for Biodiversity Conservation (98.4% and 47.7% respectively) and the extent of intact natural vegetation within Reserve 17101 and adjacent lots, it is considered that the vegetation under application is not a significant remnant in an area that has been extensively cleared.

Methodology References:

- Commonwealth of Australia (2001)
- Department of Natural Resources and Environment (2002)
- Hopkins et al (2001)
- Shepherd (2006)

GIS Databases:

- Cadastre - DLI
- Interim Biogeographic Regionalisation of Australia - EA 18/10/00
- Pre-European Vegetation - DA 01/01

(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

Comments **Proposal is not likely to be at variance to this Principle**

There are no watercourses or wetlands within the area under application. The closest major watercourse is the Yilgarn River located ~38km west of the applied area. There is a minor non-perennial watercourse ~500m west of the applied area. Minor non-perennial watercourses are utilised for drainage flow during major rainfall events and as such they are not considered to be associated with wetland vegetation. Given the distances to and nature of the local watercourses, native vegetation is not considered to be growing in or associated with any watercourse or wetland.

Methodology GIS Databases:

- Hydrography, linear - DOE 1/2/04
- Hydrography, linear (hierarchy) - DOW

(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**

Mapped soils in the local area are associated with gently undulating valley plains and pediments with some outcrop of basic rock. Chief soils are alkaline red earths with limestone or limestone nodules at shallow depth (< 24 in.) on gently sloping slightly concave plains with low gentle rises of calcareous soils (Northcote et al 1960-1968).

Additional information provided by the applicant has identified clayey sand with medium coarse grained granite in the area applied to be cleared (TRIM Ref: DOC 32553). These soils are not considered to be prone to wind erosion. Water erosion is not likely to be of concern given that there is a 5m gradient over 300m of the applied area which has little surface water flow during seasonal rains due to the high annual evaporation rates (~2,600 - 2,800mm) and low annual rainfall (~300mm).

Salinity risk mapping did not identify any risk associated with the area under application. At this site the groundwater salinity level is between 14,000 mg/l and 35,000 mg/l, which is considered to be high saline to hyper saline. Given the associated soils types, low annual rainfall and high evaporation rates, there is little recharge into regional groundwater table.

Methodology References:

- Northcote et al (1960-1968)

GIS Databases:

- Evaporation Isopleths - BOM 09/9
- Groundwater Salinity, Statewide - DOW
- Rainfall, Mean Annual - BOM 30/09/01

- Salinity Risk LM 25m - DOLA 00
- Soils, Statewide - DA 11/99

(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 no conservation reserves within the area under application, the nearest being three DEC managed lands, Kangaroo Hills Timber Reserve (~16km east), Goldfields Woodland Conservation Park (~18km west) and Goldfield Woodlands National Park (~20km south west).

The area under application is in an IBRA Bioregion that has a current pre-European representation level of 98% (Shepherd 2006). Examination of aerial photography indicates that the surrounding vegetation in Crown Reserve 17101 remains largely intact. There is also a considerably large extent of native vegetation on land parcels in the local area.

Given the remaining extent of vegetation in the local area and the distance to the nearest DEC managed lands, clearing the vegetation under application is unlikely to have an impact on the environmental values of the nearby conservation areas.

Methodology References:
- Shepherd (2006)

GIS Databases:
- CALM Managed Lands and Waters - CALM 1/07/05

(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

With an average annual rainfall of 300mm and an annual evaporation rate of 2,600-2,800mm there is likely to be little surface flow during normal seasonal rains. The closest major watercourse is the Yilgarn River ~38km west. There is a minor non-perennial watercourse ~500m west of the applied area which flows north/south. Minor non-perennial watercourses are utilised as drainage flow during significant rainfall events. Given the nature, location and distances to the watercourses it is considered clearing the vegetation under application is unlikely to cause deterioration in the quality of surface water.

With high annual evaporation rates and low annual rainfall there is little recharge into regional groundwater table. At this site the groundwater salinity level is between 14,000 mg/l and 35,000 mg/l, which is considered to be high saline to hyper saline. Given the above, clearing the vegetation under application is unlikely to cause deterioration in the quality of groundwater.

Methodology GIS Databases:
- Evaporation Isopleths - BOM 09/98
- Groundwater Salinity, Statewide - DOW
- Hydrography, linear - DOE 1/2/04
- Rainfall, Mean Annual - BOM 30/09/01

(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 associated with an average rainfall of 300mm and evaporation rates of 2600-2800mm, therefore, there is likely to be little surface water run-off during normal seasonal rains. The closest major watercourse is the Yilgarn River, ~38km west of the area under application. There is minor non-perennial watercourse ~500m west of the applied area which flows north/south. Minor non-perennial watercourses are utilised for drainage flow and offer relief during major rainfall events.

Given the location and low annual rainfall and high evaporation rates it is considered that the proposed clearing is unlikely to cause/increase the incidence or intensity of flood events.

Methodology GIS Databases:
- Evaporation Isopleths - BOM 09/98
- Rainfall, Mean Annual - BOM 30/09/01

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

Comments

The area under application is subject to an Exploratory Mining Licence held by Monarch Gold Mining. Monarch Gold have provided correspondence confirming their consent to the Water Corporation's proposal proceeding (TRIM Ref: DEC3484).

Shire of Coolgardie has advised that the area under application is in a reserve that is currently zoned recreation. The Water Corporation have submitted an application to State Land Services to amend the area required for the proposed water storage tank to be rezoned as 'water supply' and to be included in Crown Reserve 38388. Once rezoning is approved, the proposed development (construction of a drinking water supply tank) will be consistent with the land zoning and as such, development approval from the Shire will not be required.

Goldfields Groundwater Area is proclaimed under the Rights to Water and Irrigation Act. The management plan for this area is currently being reviewed. If groundwater extraction is required for the project it is recommended further information be sought from the Department of Water.

There are no Native Title Claims associated with the local area. Database searches identify two Aboriginal Sites in close proximity to the applied area. They are: - 20136 Bullabulling 1 located ~20m west, and - 20137 Bullabulling 2 located ~280m west.

An archaeological investigation carried out by Garry Quartermaine (2006) confirmed the presence of the two registered archaeological sites and did not consider them to be Aboriginal sites. During the archaeological investigation (2006), no newly discovered archaeological sites were located in the applied area. Consultation with registered applicants of the Central West Goldfields, Gubrun and Kelmaia kabu(d)n native title groups confirmed that the registered sites were not of significance to the Aboriginal people and as such would have no objection to their disturbance (R & E O'Connor Pty Ltd 2006). The representatives of the native title groups also provided signed approval of the project (R & E O'Connor Pty Ltd 2006).

There is no other EP Act Licence issues that will affect the proposal.

Paul Rogoysky (Water Corporation) has provided a copy of the Shire of Coolgardie council minutes dated 24 July 2007, confirming the Shire approves the rezoning (TRIM ref: DOC60582).

Methodology

References:

- Garry Quartermaine (2006)
- R & E O'Connor Pty Ltd (2006)

GIS Databases:

- Aboriginal Sites of Significance - DIA
- RIWI Act, Groundwater Areas - DOW
- Native Title Claims - DLI

4. Assessor's comments

Comment

The application has been assessed against the clearing principles, planning instruments and other matters in accordance with s51O of the Environmental Protection Act 1986, and the proposed clearing may be at variance to Principle a and is not likely to be at variance to the remaining Principles.

5. References

- Commonwealth of Australia (2001). National Targets and Objectives for Biodiversity Conservation 2001-2005, AGPS, Canberra.
- DEC Fauna habitat notes.xls February 2007 (Accessed 30/08/2007)
- 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.
- Garry Quartermaine (2006). Report on an Archeological Investigation for Aboriginal Sites. Water Storage Upgrade, Bullabulling Tank. Prepared for GHD Pty Ltd. (TRIM Ref: DEC3484)
- GHD (2006). Report for Bullabulling Tank and Pipeline, Environmental Field Survey Results October 2006. Prepared for Water Corporation. (TRIM Ref: DEC3484)
- 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.
- R & E O'Connor Pty Ltd (2006). Report on an Ethnographic Survey of a Proposed Water Corporation Installation at Bullabulling near Coolgardie. Prepared for GHD Pty Ltd. (TRIM Ref: DEC3484).
- 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 ANZWA105000124.

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)