Department of Environment and Conservation

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 1824/1

Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Ove Arup Pty Ltd**

1.3. Property details

Property: LOT 9 ON PLAN 91722 (NGAANYATJARRA-GILES 0872)
LOT 9 ON PLAN 91722 (NGAANYATJARRA-GILES 0872)
LOT 9 ON PLAN 91722 (NGAANYATJARRA-GILES 0872)

Local Government Area: Shire Of Ngaanyatjarraku

Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
1.2		Mechanical Removal	Infrastructure Maintenance
0.6		Mechanical Removal	Infrastructure Maintenance
0.2		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 19: Low woodland; mulga between sand ridges. Beard vegetation association 39: Shrublands; mulga scrub. Beard vegetation association 233: Shrublands; Acacia bivenosa. (Hopkins et al. 2001; Shepherd et al. 2001)	The proposed clearing is for the construction of water supply infrastructure, which includes two bore rising mains and a new water tank, to service three Aboriginal communities. The areas under application comprise a bore rising main at Jameson Aboriginal Community (approximately 755m long x 8m wide = 0.604ha); a bore rising main at Tjukurla Aboriginal Community (approximately 1430m long x 8m wide = 1.144ha); a water tank at Wanarn Aboriginal Community (approximately 0.2ha); and associated infrastructure (total area is approximately 3ha). The vegetation proposed to be cleared is described as Spinifex (Triodia species) and low lying mulga scrub (Acacia spp.) (Information provided by the proponent 2007) (TRIM Ref ED1790).	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)	The vegetation under application is considered to be in good condition based on the photos provided by the proponent (2007; TRIM Ref ED1790 and ED1804), which show sparse areas of spinifex and low-lying scrub.

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 areas under application are located within the Ranges of the Western Desert (Aboriginal Reserve 17614),

an area listed on the Register of the National Estate. The Ranges, which extend over 8,000,000ha, are registered for natural values and are recognised as having 'Indigenous values of National Estate significance'. Given the linearity and size of the areas under application (up to 8m width over approximately 2km; total area 3ha) relative to the area on the Register, it is unlikely that the clearing as proposed would have a significant impact on the natural values of the wider area.

Given the linearity of the areas under application and the proximity to an existing infrastructure (bore sites, road corridor and powerlines), it is considered unlikely the areas under application comprise a high level of biological diversity.

Methodology GIS databases:
- System 1 to 5 and 7 to 12 Areas - DEP 06/95
- Register of National Estate - EA 28/01/03

(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 areas under application are located within Aboriginal Reserve 17614, an area covering approximately 8,000,000ha, with extensive, well-represented habitat that will offset habitat loss arising from the proposed clearing. The vegetation to be cleared for the proposed water supply infrastructure is sparse, low-lying scrub, in between existing bores sites, which have been previously disturbed.

It is therefore considered that the vegetation in these areas is not likely to be necessary for the maintenance of significant habitat for fauna indigenous to Western Australia and furthermore, comparable habitat is likely to be found in the surrounding areas.

Methodology GIS database:
- Cadastre - DLI 1/12/05

(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 no known records of Declared Rare Flora (DRF) or Priority species in the local area (100km radius) of the three communities. The nearest recorded DRF (Acacia denticulosa) is located over 300km, south-west from the proposed clearing.

Isotropis winneckei is a Priority 1 species which is known to occur 45km and 56km from the proposed clearing. However this species occurs within differing vegetation type and soils as that of the areas under application.

Given the above, it is unlikely that the vegetation proposed to be cleared includes or is necessary for the continued existence of rare flora.

Methodology GIS Databases:
- Pre-European Vegetation - DA 01/01
- SAC Bio Datasets 230607
- 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 records of Threatened Ecological Communities (TECs) within close proximity of the areas under application with the nearest recorded TEC located over 700km from the proposed clearing. It is therefore unlikely that the vegetation proposed to be cleared comprises the whole or part of or is necessary for the maintenance of a TEC.

Methodology GIS Database:
- SAC Bio Datasets 230507

(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 at variance to this Principle**
The State Government is committed to the National Objectives and Targets for Biodiversity Conservation which includes a target that prevents the clearance of ecological communities with an extent below 30% of that present Pre-European settlement (Commonwealth of Australia 2001). The Vegetation types within the areas under application are above the recommended minimum of 30% representation.

	Pre-European (ha)	Current extent (ha)	Remaining (%)	Conservation status***	In reserves/DEC managed land
IBRA Bioregions					
- Central Ranges*	5 132 641	5 132 641	100.0	Least Concern	
- Great Sandy Desert*	29 584 681	29 584 681	100.0	Least Concern	
Shire of Ngaanyatjarraku	No information available				
Vegetation type:					
Beard: Unit 19**	4 385 296	4 384 255	100.0	Least Concern	0.5%
Beard: Unit 39**	6 613 602	6 613 496	100.0	Least Concern	11.8%
Beard: Unit 233**	140 467	140 018	99.7	Least Concern	0.0%

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

Given there is 100% of remnant vegetation remaining within the Bioregions and there is 100% (Beard 19 and 39) and 99.7% (Beard 233) (Shepherd 2006)
of native vegetation remaining, the vegetation proposed to be cleared is not significant as a remnant of native vegetation in the surrounding area.

However, it is noted that the Beard vegetation associations are not well represented in reserves.

Methodology References:
Commonwealth of Australia (2001)
Department of Natural Resources and Environment (2002)
Hopkins et al. (2001)
Shepherd (2006)
Adapted from: Shepherd et al (2001)
GIS Databases:
- Pre-European Vegetation - DA 01/01
- 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 not at variance to this Principle

There are no watercourses or wetlands within the areas under application with the nearest watercourse, a minor non-perennial watercourse, approximately 1.7km north of the proposed clearing at Jameson Aboriginal Community, a non-perennial watercourse approximately 18km north of the Wanarn Aboriginal Community and a non-perennial lake approximately 4.8km north of the proposed clearing at Tjukurla Aboriginal Community. Therefore the vegetation within the areas under application is not considered to be growing in, or in association with a watercourse or wetlands.

Methodology GIS Databases:
- Hydrography, linear - DOE 01/02/04
- ANCA wetlands - CALM 08/01

(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 landscape of the proposed clearing at Jameson Aboriginal Community and surrounds can be described as steep hills, ranges, outwash plains and dissected fan and terrace formations flanking ranges of sedimentary and some metamorphic, volcanic, and granite rocks with bare rock outcrop common (DAWA 2004). The chief soils are shallow and often stony sandy loams, sandy clay loams, neutral red earths and red earthy sands (DAWA 2004).

The landscape of the proposed clearing at Wanarn Aboriginal Community and surrounds can be described as Dune fields (longitudinal and ring dunes) and some small clay pans (DAWA 2004). The chief soils are red siliceous sands on the dunes, some of which have mobile crests with red earthy sands in some interdune areas (DAWA 2004).

The landscape of the proposed clearing at Tjukurla Aboriginal Community and surrounds can be described as plains with scattered dunes (DAWA 2004). The chief soils are red earths and red earthy sands (DAWA 2004).

Given, the linearity (up to 8m width) of the proposed clearing, and the occurrence of sparse vegetation in the

area, it is unlikely that the clearing of three areas (1.144ha, 0.604ha and 0.2ha) for the construction of water supply infrastructure would lead to appreciable land degradation.

Methodology Reference:
DAWA (2004)
GIS databases:
- 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**
The areas under application are located within Ranges of the Western Desert (Aboriginal Reserve 17614), an area listed on the Register of the National Estate. The Ranges, which extend over 8,000,000ha are registered for natural values and are recognised as having 'Indigenous values of National Estate significance'. Given the linearity and size of the areas under application (up to 8m width over approximately 2km; total area 3ha) relative to the area on the Register, it is unlikely that the clearing as proposed would have a significant impact on the natural values of the wider area.

The nearest DEC managed land is Gibson Desert Nature Reserve, which is located approximately 130km west of the Wanarn Aboriginal Community, 150km north-west of the proposed clearing at Jameson Aboriginal Community and 260km south-west of the proposed clearing at Tjukurla Aboriginal Community. Given the distance between the areas under application and the DEC managed lands the proposed clearing is not likely to have an impact on the environmental values of the surrounding conservation areas.

Methodology GIS databases:
- System 1 to 5 and 7 to 12 Areas - DEP 06/95
- DEC Managed Lands and Water - CALM 01/07/05
- 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 at variance to this Principle**
The areas under application are mapped within the Mackay and Warburton Basins of the Western Plateau Division. With an average annual rainfall of approximately 250mm and an annual evaporation rate of approximately 3,400mm there is likely to be little surface flow during normal seasonal rains.

With high annual evaporation rates and low annual rainfall there is little recharge into regional groundwater table, which at this site has a salinity level of between 1,000 mg/l and 7,000 mg/l, which is considered to be marginal to brackish. Considering the linearity and relatively small size of the proposed works and the magnitude of the Musgrave (3,240,400ha), Canning (46,575,378ha) and Amadeus (2,781,860ha) Groundwater Provinces, the proposed clearing is unlikely to have an impact on regional groundwater.

Methodology GIS Databases:
- Evaporation Isopleths - BOM 09/98
- Isohyets - BOM 09/98
- Groundwater Salinity, Statewide - DOW
- Hydrography, linear - DOE 01/02/04
- Groundwater Provinces - DOW

(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 at variance to this Principle**
With an average annual rainfall of approximately 250mm and an annual evaporation rate of approximately 3,400mm there is little surface flow during normal seasonal rains. Given the low annual rainfall and the linearity of the proposed clearing (up to 8m width over approximately 2km), clearing the vegetation under application is unlikely to cause or exacerbate the incidence or intensity of flooding.

Methodology GIS Databases:
- Evaporation Isopleths - BOM 09/98
- Isohyets - BOM 09/98

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

Comments

The area under application is within the Proclaimed Groundwater Area of East Murchison. Therefore any abstraction of groundwater would require a licence. However, this application for a water pipeline is not associated with ground water extraction.

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

No submission was received from the Shire of Ngaanyatjarraku.

There are three Aboriginal Sites of Significance listed within the areas under application, the applicant will be advised of their obligations under the Aboriginal Heritage Act 1972.

There is one Native Title Claim over the area under application. The Department of Environment and Conservation's advertising of the application in the West Australian newspaper 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.

Methodology

GIS databases:
- Aboriginal Sites of Significance - DIA 28/02/03
- Cadastre - DLI 1/12/05
- Native Title Claims - DLI 7/11/05
- RIWI Act, Groundwater Areas - WRC 13/06/00
- RIWI Act, Surface Water Areas - WRC 18/10/02

4. Assessor's comments

Purpose	Method	Applied area (ha)/ trees	Comment
Infrastructure Maintenance	Mechanical Removal	1.2	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 not likely to be at variance to the Clearing Principles.
Infrastructure Maintenance	Mechanical Removal	0.6	As above
Infrastructure Maintenance	Mechanical Removal	0.2	As above

5. References

Commonwealth of Australia (2001). National Targets and Objectives for Biodiversity Conservation 2001-2005, AGPS, Canberra.

DAWA (2004) Soil-landscape mapping, Department of Agriculture Western Australia, Date accessed 01/05/04.

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.

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.

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)