



1. Application details

1.1. Permit application details

Permit application No.: 2584/1
Permit type: Area Permit

1.2. Proponent details

Proponent's name: **Strategen Environmental Consultants Pty Ltd**

1.3. Property details

Property: LOT 1996 ON PLAN 183890 (Lot No. 1996 STOVEHILL STOVE HILL 6714)
Local Government Area: Shire Of Roebourne
Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
5.2		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
Hummock grasslands, grass steppe; hard spinifex, Triodia wiseana	The application area is comprised of vegetation in varying condition, the majority in a degraded (Keighery, 1994) condition (Astron, 2008).	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)	Vegetation condition was assessed through a vegetation survey of the site (Astron, 2008) and aerial photography.

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 application is to clear 5.2 hectares of vegetation for construction of a power station. The area to be cleared consists of Beard vegetation associations 157 of which there is approximately 99.9% of the Pre-European extent remaining (Shepherd et al., 2006). The vegetation on site has obvious signs of disturbance (DEC, 2008) and the condition of the vegetation is classified as degraded (Keighery, 1994), with approximately 50% of the site previously disturbed (Astron, 2008).

Given the high extent of vegetation remaining and the highly disturbed condition of the site (DEC, 2008), the application area is unlikely to represent an area of higher biodiversity value when compared to representative vegetation in a local and regional context.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology Astron (2008)
DEC (2008)
Keighery (1994)
Shepherd et. al. (2006)
GIS Layers:
- Dampier Legendre 50cm orthomosaic - DL04

(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 fauna habitats within the proposed area to be cleared are well represented elsewhere within the local and regional area. The area to be cleared does not represent a fauna corridor and therefore the clearing will not remove an ecological linkage that is necessary for the maintenance of fauna. Given, the degraded (Keighery, 1994) condition of the majority of the application area, it is unlikely to be necessary for the maintenance of, a

significant habitat for fauna indigenous to Western Australia.

Methodology Keighery (1994)
GIS Database
- Sac Biodatasets 310708

(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 records of rare flora within a 20 km radius of the application area. Furthermore, no DEC Listed Rare and Endangered or Priority Flora was recorded from the site (Astron, 2008). The flora recorded on site is all relatively well represented in the Karratha area (Astron, 2008).

Given the above, and the degraded (Keighery, 1994) condition of the vegetation within the application site, it is unlikely that this proposal is at variance to this principle.

Methodology Astron (2008)
Keighery (1994)
GIS Database:
- Sac biodatasets (310708)

(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 at variance to this Principle

There are no recorded occurrences of Threatened Ecological Communities within 20 kilometres of the area under application. No TECs have been identified within the vegetation under application (Astron, 2008), therefore this proposal is not at variance to this principle.

Methodology Astron (2008)
GIS Database
- Sac biodataset (310708)

(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

Approximately 99.9% and 99.2% of the Pre-European vegetation remains in the IBRA Pilbara bioregion and Roebourne IBRA sub-region respectively, within which this proposal is located (Shepherd et al., 2006).

The vegetation applied to be cleared is part of Beard Vegetation association 157, which has approximately 99.8% of the Pre-European extent remaining and therefore the 5.2 ha area proposed to be cleared is not considered to be a significant remnant of native vegetation within an extensively cleared area.

Based on the above, the proposed clearing is not at variance to this Principle.

Methodology Shepherd et al. (2006)
GIS Layers:
- Pre European Vegetation - DA 01/01
- Interim Biogeographic Regionalisation of Australia (subregions) - EA 18/10/00.
- 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 likely to be at variance to this Principle

There is no wetland-dependent vegetation within the area under application. Shallow drainage features and road drains were noted within the application area (Astron, 2008). A minor perennial watercourse exists on 20m from the eastern boundary.

Given that there are no defined watercourses or wetland-dependent vegetation within the area under application, this proposal is unlikely to be at variance to this principle.

Methodology Astron (2008)
GIS Database
- Topographic Contours Statewide (DOLA September 2002)
- Dampier 2m Orthomosaic (DOLA 2000)

(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 topography of the proposed clearing is of low relief (30-40m AHD), and is situated on rocks of low permeability. The site is described as a combination of alluvial plains and steep stony hills and ranges on metamorphosed basic and ultrabasic rocks. Chief soils are shallow earthy loams (Northcote et al. 1960-68).

As the surrounding area has a similar level of topography it is likely that during earth works, soil erosion may occur. Clearing should therefore occur after the wet season to ensure sedimentary runoff is minimised.

Rainfall and evapotranspiration rates for the local area (40km radius) are both 300mm, suggesting that there is a low risk of water logging within the proposed clearing area.

Given the above, it is unlikely that the application will cause appreciable land degradation.

Methodology Northcote (1960-68)

GIS Layers:

- Topographic contours statewide - DOLA and ARMY 12/09/02
- Hydrography, linear - DOW 13/7/06

(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 areas occurring within 10 kilometres of the under application. Given that the closest DEC-managed reserve is located approximately 22 kilometres from the area under application, the proposal is unlikely to be at variance to this principle.

Methodology GIS Layers:

- Ramsar wetlands (CALM February 2003)
- System 1-5 and 7-12 Areas (DOE June 1995)
- CALM Managed Lands and Waters (CALM July 2005)
- Clearing Regulations - Environmentally Sensitive Areas (DOE May 2005)

(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

Clearing of 5.2 hectares of vegetation is unlikely to have a significant impact on groundwater in the proposed area given the average annual rainfall of the site is 300mm, with most rainfall occurring over the summer months, and an evapotranspiration rate of 300mm per annum. Groundwater salinity is rated as low being 1000-3000mg/L.

Furthermore, the existing vegetation is shallow rooted grass and shrub species and thus the proposed clearing is unlikely to have a significantly impact the level or quality of the groundwater table.

Given the above, and the degraded (Keighery, 1994) condition of the vegetation proposed to be cleared, it is unlikely that the application is at variance to this principle.

Methodology Keighery (1994)

GIS Layers:

- Evapotranspiration Isopleths - WRC 29/09/98
- Groundwater Salinity Statewide DoW 13/07/06
- Hydrographic catchments, catchments - DoW 01/06/07
- Hydrography, linear - DOW 13/7/06
- RIWI Act, Groundwater Areas - DoW 13/07/06
- Topographic Contours, Statewide - DOLA 12/09/02

(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 limited amount of clearing proposed (5.2 hectares) in comparison with the extent of the Port Hedland coastal catchment area (which is approximately 744,300 hectares) is unlikely to result in an increase in peak flood height or flood peak duration.

Clearing of 5.2ha is unlikely to have a significant impact on quality or quantity of groundwater given the mean annual rainfall for the site is 300 millimetres with most rainfall occurring around the summer months, and an evapotranspiration rate of 300 millimetres per annum.

Given the above, it is unlikely that the proposed clearing will cause or exacerbate the incidence or intensity of flooding.

- Methodology** GIS Layers:
- Evapotranspiration Isoleths - WRC 29/09/98
 - Groundwater Salinity Statewide DoW 13/07/06
 - Hydrographic catchments, catchments - DoW 01/06/07
 - Mean Annual Rainfall Isohytes (1975 - 2003) - DEC 02/08/05

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

Comments

The proposed area lies within The Pilbara Groundwater Area as proclaimed under the Rights in Water and Irrigation Act 1914. Any groundwater extraction and/or taking or diversion of surface water for the purposes other than domestic and/or stock watering is subject to licence by the Department of Water.

The developers of the proposed power plant are exempt under the Shire of Roebourne Town Planning Scheme No. 8 from requiring the planning approval of Council (DEC TRIM Ref: DOC60514).

The Shire of Roebourne have no objections to the native vegetation clearing permit being issued subject to adequate erosion control measures being put in place and that the land area subject to clearing is not larger than the area required for development (DEC TRIM Ref: DOC60514).

- Methodology** GIS Layers:
- Native Title Claims - LA 2/5/07
 - RIWI Act, Groundwater Areas - DoW 13/07/06

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 is not at variance to Principle (e), and is not likely to be at variance to the remaining clearing Principles.

5. References

- Astron (2008). Karratha Power Station Flora and Vegetation Survey April 2008. Astron Environmental Services.
- DEC (2008) Site Inspection Report for Clearing Permit Application CPS 2008/1, Lot 1996 Stovehill Road, Karratha. Department of Environment and Conservation, Western Australia (TRIM Ref. DOC59110).
- 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.
- 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.

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

