



1. Application details

1.1. Permit application details

Permit application No.: 2177/1
 Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Electricity Networks Corporation (Western Power)

1.3. Property details

Property: JILBADJI LOCATION 4 (SOUTHERN CROSS 6426)
 CROWN RESERVE 8849 (SOUTHERN CROSS 6426)
 CROWN RESERVE 8849 (SOUTHERN CROSS 6426)
 LOT 44 ON PLAN 89830 (SOUTHERN CROSS 6426)

Local Government Area: Shire Of Yilgarn
 Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
3.6		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: 1068: Medium woodland; salmon gum, morrel, gimlet & Eucalyptus sheathiana (Shepherd 2006).	The proposed clearing of 3.6ha will occur within Crown Reserve 8849, Crown Reserve 18425, Lot 44 on Plan 89830 and Lot 1017 on Plan 219134 in the Shire of Yilgarn, for the purpose of installing a power line and an associated access track.	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	Vegetation clearing description based on a 2007 Flora and Vegetation Survey Report produced by Woodman Environmental Consulting. (TRIM Ref: DOC39496)
	Vegetation within the area under application can be described as Woodlands of mixed Eucalyptus spp. over a sparse shrub layer.		
	During a flora and vegetation survey (2007) of the area under application, four structural plant communities were identified in the applied area:		
	- W1: ~55% of the vegetation is described as Mixed Low Woodland of Eucalyptus horistes, E. melanoxydon and E. oleosa subsp. oleosa over mixed Open Scrub.		
	- W2: ~30% of the vegetation is described as Low Woodland of Eucalyptus horistes and E. oleosa subsp. oleosa over Scrub dominated by		

Melaleuca pauperiflora
subsp. fastigiata and
Atriplex lindleyi subsp.
inflata.

- W3: ~10% Low Woodland
of Eucalyptus corrugata
and Eucalyptus spp, over
Scrub dominated by
Atriplex spp. With emergent
Eremophila ionantha.

- W4: Less than 5% of the
vegetation is Low
Woodland of Eucalyptus
corrugate over Thicket of
Acacia burkittii,
Allocasuarina helmsii and
Beyeria brevifolia var.
brevipes.

The vegetation is
considered to be in very
good condition as several
sections have a lack of
understorey structure and
bare areas. Previous
disturbances to the area
include grazing, historical
clearing for fences, access
tracks and drilling
operations.

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 majority of the area under application (~85%) occurs on the northern edge of Crown Reserve 8849, a large remnant over 1000ha zoned rural/mining. A vegetation survey of the area under application in 2007 identified 4 structural plant communities within the applied area. The vegetation can be broadly described as Woodlands of mixed Eucalyptus spp. over a sparse shrub layer in very good condition. Although there is evidence of previous disturbance from historical clearing, grazing, drilling operations and access tracks the area under application still contains a high level of species diversity (Woodman Environmental Consulting Pty Ltd 2007).

The sparse understorey layer is not considered to comprise significant habitat for ground dwelling fauna. The Eucalyptus species within the applied area are Mallees which do not readily form hollows and therefore not considered likely to provide significant habitat for native fauna.

In addition, the vegetation under application is contained within the section of the Yilgarn Shire that has been extensively cleared for agriculture and any vegetation in these highly cleared areas may be considered significant.

Given the vegetation under application is in very good condition, comprises a high level of species diversity in an area extensively cleared, 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:

- Woodman Environmental Consulting Pty Ltd (2007) (TRIM Ref: DOC39496)

GIS Databases:

- Cadastre - DLI

- SAC Bio datasets (14/11/07)

- Southern Cross Holleton 1.4m Orthomosaic - DOLA99

(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 are 5 known records of 4 Declared Threatened or Priority Fauna in the local area (~20km radius) which have the potential to utilise the vegetation under application. These include: Chuditch (*Dasyurus geoffroi*, VU), Tree-stem Trapdoor Spider (*Aganippe castellum*, EN), Carnaby's Black Cockatoo (*Calyptrorhynchus latirostris*, EN), and the Crested Bellbird (*Oreoica gutturalis gutturalis*, P4).

The vegetation under application is 3.6ha over 3km and broadly described as Woodlands of mixed Eucalyptus spp. over a sparse shrub layer in very good condition with some previous disturbance from historical clearing, grazing, drilling operations and access tracks (Woodman Environmental Consulting Pty Ltd 2007). It is considered that the low density in the shrub layer and previous disturbance may limit the habitat potential for ground dwelling fauna in the local area.

The Eucalypt species in the applied area may provide some feeding habitat for bird species such as Carnaby's Black Cockatoo, however this is not considered likely to be significant given the limited vegetation under application in these areas and the existing remnant vegetation within Crown Reserve 8849 and unallocated Crown land in the local area. In addition, the Eucalyptus species within the applied area are Mallees which do not readily form hollows and therefore are not considered likely to provide significant habitat for native fauna.

The vegetation under application is contained within the section of the Yilgarn Shire that has been extensively cleared for agriculture. However, the proposed clearing of 3.6ha over 3km is not considered likely to be significant given the linear nature of the clearing and the existing remnant vegetation within Crown Reserve 8849 (>1000ha) and unallocated Crown land in the local area.

Given the linear nature of the clearing, low density of the vegetation under application, lack of hollow bearing trees and the extent of remnant vegetation within the local area, the vegetation under application is not considered likely to provide significant habitat for indigenous fauna in the local area.

- Methodology** **References:**
- Woodman Environmental Consulting Pty Ltd (2007) (TRIM Ref: DOC39496)
- GIS Databases:**
- Cadastre - DLI
 - SAC Bio datasets (14/11/07)
 - Southern Cross Holleton 1.4m Orthomosaic - DOLA99

(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**
- The closest known records of DRF and Priority Flora are *Daviesia microcarpa* (DRF), *Hakea pendens* (P2) and *Stylidium choreanthum* (P2) which occur ~500m south and ~300m north of the area under application.
- There are 9 known records of 2 Declared Rare Flora (DRF) species and 48 known records of 14 Priority Flora species within the local area.
- Of these species *Daviesia microcarpa* (DRF), *Acacia desertorum* var. *nudipes* (P1), *Goodenia heatheriana* (P1), *Millotia newbeyi* (P1), *Hakea pendens* (P2), *Lissanthe scabra* (P2), *Stylidium choreanthum* (P2), *Acacia cylindrica* (P3) and *Acacia ficifolia* (P3) may be present within the area under application as they occur in similar vegetation associations and soil types.
- However, a Flora Survey conducted in September 2007 did not identify any DRF or Priority Flora within the area under application (Woodman Environmental Consulting Pty Ltd 2007).
- Given the appropriately timed flora survey did not identify DRF in the area under application the proposed clearing is not considered likely to be at variance to this principle.

- Methodology** **References:**
- Woodman Environmental Consulting Pty Ltd (2007) (TRIM Ref: DOC39496)
- GIS Databases:**
- Pre-European Vegetation - DA 01/01
 - SAC Bio datasets (14/11/07)
 - 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 known as Plant assemblage of the Parker Range System ~49km south-east of the applied area.
- Although this community is known to occur in the same vegetation association and soil types, this PEC is specific the Parker Range System and therefore not considered to be associated with the area under application.
- Given the above and the distance to the nearest PEC and the absence of TEC's within the local area, the vegetation under application is not considered likely to comprise whole or part of, is or necessary for the

maintenance of and TEC or PEC.

- Methodology** GIS Databases:
- Pre-European Vegetation - DA 01/01
 - SAC Bio datasets (14/11/07)
 - 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 1068 is also associated with the applied area which has a current representation level of 50.5% (Shepherd 2006).

The vegetation under application is broadly described as Woodlands of mixed Eucalyptus spp. over a sparse shrub layer in very good condition with some previous disturbance from historical clearing, grazing and access tracks (Woodman Environmental Consulting Pty Ltd 2007).

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).

The area under application is associated with the Intensive Landuse Zone within the Shire of Yilgarn and is below the State Government's National Objectives and Targets for Biodiversity Conservation of 30% and classed as vulnerable at 23.6% (EPA 2000; Shepherd et al. 2001).

However, it is not considered likely that the 3.6ha of native vegetation applied to be cleared can be considered significant as a remnant, given the areas historical disturbance, linear nature of the proposed clearing and the levels of remnant vegetation present within the immediate surrounding area.

	Pre-European (ha)	Current extent (ha)	Remaining (%)	Conservation status ***	% In reserves DEC Managed Land
IBRA Bioregions*					
Coolgardie	12,912,208	12,707,623	98.4	Least Concern	13.2
LGA**					
Shire of Yilgarn^	727,272	171,915	23.6	Vulnerable	-
Beard Vegetation Type*					
1068	268,901	135,868	50.5	Least Concern	12.3

* (Shepherd. 2006)

** (Shepherd et al. 2001)

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

^ Area within Intensive Land Use Zone

- Methodology** References:
- Commonwealth of Australia (2001)
 - Department of Natural Resources and Environment (2002)
 - EPA (2000)
 - Shepherd (2006)
 - Shepherd et al. (2001)
 - Woodman Environmental Consulting Pty Ltd (2007) (TRIM Ref: DOC39496)
- GIS Databases:
- Clearing Regulations - Environmentally Sensitive Areas - DOE 30/5/05
 - 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

Three minor non-perennial watercourses are within close proximity (<50m) to the area under application. Minor non-perennial watercourses are utilised for drainage flow during significant rainfall events, and thus it is considered they are unlikely to contain wetland dependant vegetation.

The closest major watercourse is the Yilgarn River, ~32km north east of the area under application. A minor river and non perennial lake occurs ~600m from the western edge of the applied area and there is a significant stream ~800m from the eastern edge of the applied area.

Given the type of vegetation under application, Woodland of mixed Eucalyptus spp. over a sparse shrub layer (Woodman Environmental Consulting Pty Ltd 2007); and the distance to the nearest wetland or watercourses it is considered unlikely the vegetation under application is associated with a wetland or watercourses.

Methodology **References:**
- Woodman Environmental Consulting Pty Ltd (2007) (TRIM Ref: DOC39496)
GIS Databases:
- Hydrography, linear - DOE 1/2/04
- Hydrography, linear (hierarchy) y 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**
There are three soil types mapped within the area under application from west to east. The western portion of the applied area (~50%) has undulating plains with low dunes, seasonal lakes and clay pans with chief soils of brown and grey/brown calcareous earths. The mid section of the applied area (~30%) is associated with undulating to low hilly areas associated with greenstones with chief soils of calcareous loams and brown calcareous earths. The remaining area (~20%) to the eastern border of the applied area has rocky ranges and hills of greenstones–basic igneous rocks and chief soils of shallow calcareous loamy soils. (Northcote et al. 1960) Generally, these soils are not considered to be at risk of wind erosion, however, may be at risk of water erosion.

The applied area is associated with a low to nil risk of salinity with the exception of watercourses in the local area which have a high risk of salinity. Given the area under application is narrow, has a low density of vegetation in the understorey over a length of 3km and the distance to nearest high risk watercourse, it is not considered likely that the proposed clearing would have a severe impact on salinity in the local area.

The main land degradation risk associated with the removal of vegetation on the identified soil types is considered to be water erosion; however the area under application is narrow, has a low density of vegetation in the understorey over 3km on a level to very gentle slope and occurs within a low rainfall area. It is therefore not considered likely that the proposed clearing would result in appreciable land degradation.

Methodology **References:**
- Northcote et al. (1960)
GIS Databases:
- Rainfall, Mean Annual - BOM 30/09/01
- Salinity Risk LM 25m - DOLA 00
- Soils, Statewide y DA 11/99
- Topographic Contours, Statewide - DOLA 12/09/02

(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**
The only conservation area within the local area is an un-named nature reserve ~6km north of the vegetation under application. Given the distance to the nearest conservation reserve it is considered unlikely that the conservation values of this reserve would be impacted.

The proposed clearing occurs within Crown Reserve 8849, a large area of remnant vegetation (>1000ha) zoned for rural/mining. The proposed clearing may indirectly impact this large remnant through weed invasion. To mitigate the loss of any environmental values of the adjacent Reserve, a condition will be placed on the permit to the introduction and spread of weeds and dieback.

Methodology **GIS Databases:**
- Cadastre - DLI
- CALM Managed Lands and Waters - CALM 1/07/05
- Southern Cross Holleton 1.4m Orthomosaic - DOLA99
- Town Planning Scheme Zones - MFP 8/98

(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 closest major watercourse is the Yilgarn River, ~32km north east of the area under application. A minor river and non perennial lake occurs ~600m from the western edge of the applied area and there is a significant

stream ~800m from the eastern edge of the applied area. Both the stream and minor river are tributaries of the Yilgarn River.

Three minor non-perennial watercourses are within close proximity (<50m) to the area under application. Generally, minor non-perennial watercourses are utilised for drainage flow during significant rainfall events. In addition, the area under application is located in an area associated with low annual rainfall (400mm) and it is not considered likely that these drainage lines receive much surface water flow during normal seasonal rains.

Given the linear nature of the area under application and distance to the nearest significant watercourse it is considered that the proposed clearing is unlikely to cause the deterioration in the quality of surface water.

Groundwater salinity in the local area is between 14,000 - 35,000mg/L and considered to be highly to extremely saline. The proposed linear clearing of 3.6ha over 3km is unlikely to impact the water quality of the regional groundwater.

Methodology GIS Databases:
 - Groundwater Salinity, Statewide - DOW
 - Hydrography, linear - DOE 1/2/04
 - Hydrography, linear (hierarchy) y

(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 closest major watercourse is the Yilgarn River, ~32km north east of the area under application. A minor river and non perennial lake occurs ~600m from the western edge of the applied area and there is a significant stream ~800m from the eastern edge of the applied area.

Three minor non-perennial watercourses are within close proximity (<50m) to the area under application. Generally, minor non-perennial watercourses are utilised for drainage flow during significant rainfall events.

Given the linear nature of the area to be cleared, location within an area of low annual rainfall (400mm) and distance to the significant watercourses it is not considered likely that the proposed clearing would cause or exacerbate the incidence or intensity of flooding.

Methodology GIS Databases:
 - Hydrography, linear - DOE 1/2/04
 - Hydrography, linear (hierarchy) y DOW
 - Rainfall, Mean Annual - BOM 30/09/01

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

Comments
 The proposed clearing is within Crown Reserve 8849, Crown Reserve 18425 and Lot 44 on Plan 89830 which are all zoned rural/mining under the local Town Planning Scheme. Western Power has the authority to access the land under Section 46 of the Energy Operators (Powers) Act 1979.

There are no Aboriginal Sites of Significance or Native Title Claims associated with the area under application.

There is no other RIWI Act Licence, Works Approval, or EP Act Licence at variance to this principle.

Methodology GIS Databases:
 - Aboriginal Sites of Significance - DIA
 - Mining Tenements - DOIR
 - Native Title Claims - DLI
 - Town Planning Scheme Zones - MFP 8/98

4. Assessor's comments

Purpose	Method	Applied area (ha)/ trees	Comment
Infrastructure Maintenance	Mechanical Removal	3.6	The assessable criteria have been addressed and the clearing as proposed may be at variance to Principles (a) and (h).

5. References

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

- 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.
- EPA (2000) Environmental protection of native vegetation in Western Australia. Clearing of native vegetation, with particular reference to the agricultural area. Position Statement No. 2. December 2000. Environmental Protection Authority.
- 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.
- 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.
- Woodman Environmental Consulting Pty Ltd (2007) Southern Cross Pumping Station Distribution Line Route - Flora and Vegetation Survey. Prepared for Western Power.

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)

