Department of Environment
Government of Western Australia

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 1912/1
Permit type: Area Permit

1.2. Proponent details

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

1.3. Property details

Property: LOT 2 ON DIAGRAM 83919 (Lot No. 2 SHENTON JOONDALUP 6027)
Local Government Area: City Of Joondalup
Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
1.7		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
Heddle Vegetation Complex: Cottesloe Complex-Central and/ South - Mosaic of woodland of E. gomphocephala and open forest of E. gomphocephala - E. marginata - E. calophylla; closed heath on the Limestone outcrops. Beard Vegetation Associations: 998 - Medium woodland; tuart 1948 ý Low woodland; banksia on limestone	The proposal is for the clearing of up to 1.7 hectare of native vegetation for the construction of a new substation. The area consists of the four following community types; Community 1: Open Woodland of occasional Eucalyptus rudis over Banksia attenuata, Banksia menziesii and Allocasuarina huegeliana over Dryandra sessilis over Xanthorrhoea preissii over Hibbertia hypericoides and mixed annual weeds in white sands with limestone; Community 2: Low Woodland of Banksia attenuata and Banksia menziesii over Xanthorrhoea preissii, Macrozamia riedlei and Acacia pycnantha over Hibbertia hypericoides and various annual weeds in white sands with limestone; Community 3: Closed Shrubland of Dryandra sessilis, Acacia saligna, with occasional Xanthorrhoea preissii over Hibbertia hypericoides and various annual weeds in white sands with limestone; and Community 4: Degraded area of various weeds, predominantly *Ehrharta calycina, *Euphorbia terracina, *Pelargonium capitatum and *Bromus	Completely Degraded: No longer intact; completely/almost completely without native species (Keighery 1994)	Vegetation condition was deemed to be very good to completely degraded (Keighery, 1994) from photographs supplied by ENV Australia (2007), consultant report (Maunsell 2006) and aerial photographs.

	diandrus in white sands with limestone. (Mansuell, 2007) The condition of the vegetation ranges from Very Good to Completely degraded. The majority of the vegetation is in Good condition. However, several pockets on the southern edge of the survey area, and adjacent to a track near these pockets on the northern boundary are Completely Degraded. Weed invasion in the area is moderate.		
See Above	See Above	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)	See Above
See Above	See Above	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)	See Above
See Above	See Above	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	See Above

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 is for the clearing of up 1.7 hectares of native vegetation for the construction of a 132/133kV substation.

The vegetation under application to be cleared ranges in condition from completely degraded to very good (Keighery 1994, Maunsell 2006). The area is likely to provide a food source and habitat for aerial species in the area. In addition there is the possibility of declared rare flora (DRF), priority flora and priority ecological communities being present in the area. Based on these factors the area under application may comprise a high level of biological diversity. To address the loss of vegetation comprising a significant habitat for fauna, a condition has been imposed to offset the values of the area to be cleared. In addition conditions have been placed requiring surveys to be undertaken to identify DRF, priority flora and priority ecological communities.

Introduced flora (weeds) comprise a very high proportion of the species recorded. One of the recorded weed species, Moraea flaccida, is listed as a Declared Plant by the Department of Agriculture and requires control measures to prevent infestation spreading beyond the existing boundaries of infestation. In addition, two areas of dieback were identified on the site. To mitigate the risk of the spread of dieback and weed species, conditions have been placed on the permit to ensure that hygiene practices associated with dieback and weeds are adhered to during the clearing process.

Methodology

Keighery (1994)
Maunsell (2006)
GIS database:
-Swan Coastal Plain North 20cm Orthomosaic - DLI06

(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 may be at variance to this Principle

The proposal is for the clearing of approximately 1.7 hectare of native vegetation for the construction of a substation. Within the local area (10km radius from the proposed area for clearing) there are 20 known records of Declared Threatened Fauna (DTF) and 28 known records of Priority fauna. The site is part of a larger isolate of bushland which lacks connectivity to other bushland areas, being surrounded by Residential development,

Shenton Avenue and the Perth Railway line. Furthermore, the western section of the site is fenced off. These factors are likely to pose major constraints for fauna movement into and out of the site. However, aerial species do have access to the site and bird species with limited home ranges and or those reliant on coastal heathland and banksia woodland vegetation types are highly likely to still utilise the site. There are 31 species that are of local conservation importance. These species are not listed under State or Federal Acts, but most are listed in Bush Forever. These species are known to have restricted distributions on the Swan Coastal Plain, either naturally or as the result of European settlement. The dense shrublands on the site are likely to be of high importance to these species. Of the Declared Threatened Fauna records, 13 are Carnaby's Black-Cockatoo, the closest being 1.6km North West of the clearing. Shrub species know to be used as food resources for Carnaby's Black-Cockatoo, namely Banksia and Dryandra, are present within the site. Thus the site may serve as a possible foraging ground for this species.

To mitigate any loss of habitat within the areas proposed to be cleared, conditions will be placed on the permit to ensure that potential habitat trees for specially protected fauna under the Wildlife Conservation Act are inspected by a fauna specialist prior to clearing and, where applicable, translocation of fauna is undertaken. In addition, to address the loss of vegetation comprising a significant habitat for fauna, a condition has been imposed to offset the values of the area to be cleared.

Methodology ENV Australia (2007)
GIS Database:
- Fauna - SAC Bio datasets 12/07/07
-Swan Coastal Plain North 20cm Orthomosaic - DLI06

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

Comments

Proposal may be at variance to this Principle

A desktop study found 8 known records of two species of Declared Rare Flora (DRF) and 20 records of 5 Priority flora species occurring in the local areas (10km radius). Though many of these species occur in similar vegetation and soil types a spring survey of the area under application found no species listed as Declared Rare Flora or Priority species (Maunsell 2006). However Species and Communities Branch have advised that the method section is inadequate to evaluate the validity of conclusions.

To ensure all DRF and priority species are identified and managed accordingly, a condition will be placed on the permit to ensure surveys are undertaken by a flora specialist to identify the presence of any DRF or priority species within proposed clearing sites associated with the roads listed above. Where DRF species are identified the proponent will be required to submit the records to the Department of Environment and Conservation ensuring no species are removed unless approved by the CEO.

Methodology Maunsell (2006)
GIS Database:
- DEFL SAC Bio datasets 12/07/07
-Swan Coastal Plain North 20cm Orthomosaic - DLI06

(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 may be at variance to this Principle

There are a total of 25 threatened ecological communities, representing two community types, within 10km of the proposed clearing. The communities, Limestone ridges and Banksia attenuate woodland species over species rich dense shrublands, are not likely to occur in the area under application due to different vegetation, soil type and the absence of limestone ridges. However the community types identified by Maunsell (2006) are consistent with Floristic Community Type (FCT) 24 and 28. In particular Community 3 (Maunsell, 2006) appears to be a good match to FCT 24 which is a Priority 3 Ecological Community. Species and Communities Branch have advised that the Maunsell Report (2006) notes that contrary to EPA guidance 51, plots were not established. This means that the floristic data held in the Maunsell report are then not able to be allocated with any certainty to a Floristic Community Type as data are not comparable.

To ensure all PECs are identified and managed accordingly, a condition will be placed on the permit to ensure surveys are undertaken by an environmental specialist prior to clearing. The proponent will be required to submit a report to the Department of Environment and Conservation and is not permitted to clear this area unless approved by the CEO.

Methodology Maunsell (2006)
GIS Database:
-PEC Points SAC Bio datasets 12/07/07
-TEC Points SAC Bio datasets 12/07/07
-Swan Coastal Plain North 20cm Orthomosaic - DLI06

(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 extent (ha)*	Remaining **status (ha)*	Conservation reserves/CALM (%)*	% In managed land	
IBRA Bioregions					
- Swan Coastal Plain	1501456.550	571758.664	38.1	Depleted	10.4
City of Joondalup	705,670	591,748	83.9	Least Concern	
Vegetation type:					
Beard: Unit 998	51,094	18,320	35.9	Depleted	32.9
Beard: Unit 1948	81022	17315	21.4	Vulnerable	15.6
Heddle:					
Cottesloe Complex Central And/ South	44,995	18,474	41.1	Depleted	

* (Shepherd et al. 2001)
** (Department of Natural Resources and Environment 2002)
*** Within the Intensive Landuse Zone

The area under application is located in the Swan Coastal Plain. The extent of pre-European vegetation within this area is 38.1% (Shepherd et al., 2001).

The area under application is comprised of Heddle vegetation complex Cottesloe Complex Central and South of which there is currently 36% of the original extent remaining (Government of Western Australia 2000). The vegetation also consists of Beard vegetation associations 998 (35.9% remaining) and 1948 (21.4% remaining) (Shepherd et al 2001, Hopkins et al 2001). The State Government is committed to the National Objectives Target for Biodiversity Conservation which includes a target that prevents clearance of ecological communities with an extent below 30% of that present pre-European settlement (Department of Natural Resources and Environment 2002, EPA 2000). Vegetation complexes within this application are above this 30% representation except for the Beard vegetation association 1948 (21.4% remaining).

The area subject to the proposal is covered by flora studies conducted by Beard (Shepherd et al 2001) and Heddle (Government of Western Australia 2000). Beard's study is significantly broader and more dated than Heddle's which is primarily confined to the Swan Coastal Plain and more detailed. In this instance, for the same area of native vegetation, they provide a disparity in pre-European vegetation representation (32.9%, 21.4% and 68.1% for Beard and 36.0% for Heddle). If the more comprehensive Heddle Vegetation Complexes were used to the exclusion of Beard's Vegetation Associations, the proposal would not be at variance to this Principle.

Methodology

Keighery, 1994
EPA (2000)
Shepherd et al (2001)
Hopkins et al., 2001
Department of Natural Resources and Environment (2002)
GIS Database:
- Pre-European Vegetation - DA 10/01
- Interim Biogeographic Regionalisation of Australia - EA 18/10/00
- Heddle Vegetation Complexes - DEP 21/06/95
-Swan Coastal Plain North 20cm Orthomosaic - DLI06

(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 wetlands or watercourses within or associated with the area under application. The nearest wetland is Lake Joondalup, which is approximately 1.7km east. It is unlikely that the proposed clearing would impact on this wetland.

Methodology

GIS Database:
- Hydrography, Linear - DOE 1/2/04
- EPP Lakes - DEP 1/12/92
-ANCA wetlands - CALM 08/01

-Geomorphic Wetlands, Swan Coastal Plain - DEC
-Swan Coastal Plain North 20cm Orthomosaic - DLI06

(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 proposed to be cleared has no known Acid Sulphate Soils disturbance risk. The risk of wind erosion and water erosion causing land degradation are considered to be low based on soil type, short slope lengths, low slope gradients, hydrogeology and rainfall.

The proposed clearing is unlikely to cause appreciable land degradation due to its size

Methodology

GIS Database:
-Acid Sulphate Soil Risk Map, Swan Coastal Plain - DEC
-Soils, Statewide - 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

The areas proposed to be cleared do not lie within or adjacent to areas set aside for conservation. The area under application is situated in proximity to a number of conservation reserves. These include the Marmion Marine Park (approx 3.4km to the west), Neerabup National Park (approx 2km north) and Joondalup Nature Reserve (approx 1.5 km east). Due to the size of the proposed clearing it is unlikely to significantly impact these conservation areas.

Methodology

GIS Database:
- CALM Managed Lands and Waters - CALM 1/07/05
- Swan Coastal Plain North 20cm Orthomosaic - DLI06

(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 in a Priority 3 (P3) Public Drinking Water Source Area. These P3 areas allow for the co-existence of water quality protection and other land-uses including residential, commercial and light industrial (Department of Environment 2004). Management of these areas is via guidelines rather than restrictions on landuse (Department of Environment 2004). According to these guidelines, the proposed clearing is unlikely to have a significant impact on the groundwater or surface water quality.

Methodology

Dept of Environment (2004)
GIS Database:
- Hydrographic Catchments - Catchments - DOE 23/03/05
- Rainfall, Mean Annual - BOM 30/09/01
- Groundwater Salinity, Statewide - 22/02/00
- Swan Coastal Plain North 20cm Orthomosaic - DLI06
- Public Drinking Water Source Areas (PDWSA) 29/11/04

(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

Due to the scale and nature of the proposed clearing, it is unlikely to cause or exacerbate flooding within the local area.

Methodology

GIS Database:
- Topographic Contours, Statewide - DOLA 12/09/02
-Swan Coastal Plain North 20cm Orthomosaic - DLI06

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

Comments

The City of Joondalup submitted a letter stating that they have no objections to the clearing application.

Methodology

4. Assessor's recommendations

Purpose	Method	Applied area (ha)/ trees	Decision	Comment / recommendation
Building or Structure	Mechanical Removal	1.7	**The assessable criteria have been addressed and the proposal may be at varance to Principles (a), (b), (c) and (d); and it is not likely to be at variance to Principles (e), (f), (g), (h), (i) and (j).**	

5. References

Department of Environment (2004) Water Quality Protection Notices: Land use compatibility in PDWSAs.

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.

ENV Australia Pty Ltd (2007) Lot 2 Shenton Avenue, Joondalup, Fauna Assessment (Level 1). Prepared for Western Power

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.

Maunsell Australia Pty Ltd (2006) Spring Flora and Vegetation Survey Report. Prepared for Western Power Corporation.

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
CALM	Department of Conservation and Land Management
DAWA	Department of Agriculture
DEP	Department of Environmental Protection (now DoE)
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 DoE)