



1. Application details

1.1. Permit application details

Permit application No.: 1973/1
 Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Commonwealth Bureau of Meteorology & Serpentin Jar

1.3. Property details

Property: LOT 164 ON PLAN 202726 (YANGEDI ROAD, HOPELAND 6125)
 Local Government Area: Shire Of Serpentine-Jarrahdale
 Colloquial name: Construction of new weather radar. Clearing to needs of LGA.

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
0.014	1	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
Hedde Vegetation Complexes:	The proposal includes the clearing of one tree and 0.014 hectares of vegetation for the purpose of constructing a weather tower.	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)	Vegetation clearing description based on a site visit conducted by DEC officers on 18 January 2006 and on 14 December 2006.
Bassendean Central & South - Vegetation ranges from woodland of E. marginate - C. fraseriana - Banksia spp. To low woodland of Melaleuca species, and sedgeland on the moister sites.	The vegetation under application comprises Eucalyptus spp., Banksia spp. and Kunzea glabrescens located on the boundary fence line of the lot.		
Beard Association 1000: Mosaic: Medium forest; jarrah-marri/Low woodland; banksia/low forest; tea-tree (Melaleuca spp.)			

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 vegetation under application is limited to one tree and 0.014 hectares of vegetation in degraded condition located between a firebreak and the boundary fence line. It is therefore not considered likely that the vegetation under application comprises a high level of biodiversity.

Methodology DEC site visit 14/12/06

(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 vegetation under application is limited to one tree and 0.014 hectares of vegetation in degraded condition located between a firebreak and the boundary fence line. When considering this area to the larger adjacent Bush Forever reserve, it is not considered likely that the vegetation under application would comprise significant habitat for indigenous fauna.

Methodology DEC site visit 14/12/06

(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 populations of Declared Rare Flora (DRF) within the local area (5km radius), however there are 10 known populations of Priority flora, with the closest being *Goodenia filiformis* (P3) and *Dillwynia dillwynioides* (P3) located approximately 3.7km to the west of the applied area.

The vegetation under application is in degraded condition and is limited to individual *Eucalypt*, *Banksia* spp. and *Kunzea glabrescens* located on the edge of a firebreak and boundary. It is therefore not considered likely that the vegetation under application includes, or is necessary for the continued existence of, rare flora.

Methodology DEC site visit 14/12/06
GIS Database:
SAC Bio datasets accessed 21/08/07

(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

Within a 10km radius of the area under application there are five known occurrences of the following Threatened Ecological Communities (TEC):

- SCP 15 (Forests and woodlands of deep seasonal wetlands of the Swan Coastal Plain) located approximately 5.7km to the south;
- SCP3a (*Eucalyptus calophylla* - *Kingia australis* woodlands on heavy clay soils),
- SCP10a (Shrublands on dry clay flats) and
- SCP7 (Herb rich saline shrublands in clay pans) all located approximately 7.5km to the northeast.

The vegetation under application is in a degraded condition and comprises individual *Eucalyptus* trees, *Banksia* spp. and *Kunzea glabrescens* located on the edge of a firebreak and property boundary. Given this, and the distance to the nearest TEC, it is not considered likely that the vegetation under application comprises, or is necessary for the maintenance of, a TEC.

Methodology DEC site visit 14/12/06
GIS Database:
SAC Bio datasets accessed 21/08/07

(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

Hedde et al. (1980) defines the vegetation under application as Southern River Complex and Bassendean Complex - Central and South of which there is 19.8% and 27% respectively of pre-European extent remaining (EPA 2006). The vegetation under application is also described as Beard vegetation association 1000 of which there is 26.5% pre-European extent remaining (Shepherd 2007).

The area under application is located within the Shire of Serpentine-Jarrahdale of which there is 58.6% of pre-European extent remaining and the local area (5km radius) which has approximately 31% of pre-European extent remaining.

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 of Pre-European settlement (Commonwealth of Australia 2001). However, given the vegetation under application is limited to 1 tree and 0.014 hectares in a degraded condition, it is not considered likely to be significant as a remnant in an area that has been extensively cleared.

	Pre-European (ha)	Current extent (ha)	Remaining (%)	In secure tenure (%)
IBRA Bioregion*				
Swan Coastal Plain [^]	1,501,456	571,758	38.1	
Shire of Serpentine-Jarrahdale				
Local area (5km radius)	90,478 **	53,058	58.6	

	31,400	9,800	~31	
Hedde vegetation complex				
Southern River Complex	57,979	11,501	19.8**	1.5
Bassendean Complex ? Central & South	87,477	23,624	27.0**	0.7
Beard vegetation type*				
1000	99,835	15,241	26.5	4.8
Hedde vegetation complex***				
Bassendean-Central & South	87,477	28,540	28.59	2.87

* (Shepherd, 2007)

** (EPA, 2006)

^ Area within Intensive Land Use Zone

Methodology Commonwealth of Australia (2001)
DEC Site visit 14/12/06
EPA (2000)
Shepherd et al. (2001)
GIS Databases:
Hedde Vegetation Complexes - DEP 21/06/95
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

The area under application is not located within a wetland, with the nearest mapped wetland being a multiple use wetland located approximately 90m to the northeast. The nearest watercourse is Karnet Brook located approximately 2.3km to the southeast.

The vegetation under application comprises individual Eucalyptus spp., Banksia spp. and Kunzea glabrescens. K. glabrescens is generally found at the 'edges of swamps, lakes, rivers, moist depressions' (Western Australian Herbarium 1998-), however the area under application is located on a sandy rise.

Given the location of the area under application on a sandy rise, and given the distance to the nearest mapped wetland, it is not considered likely that the vegetation under application is growing in, or in association with, an environment association with a watercourse or wetland.

Methodology DEC site visit 14/12/06
Western Australian Herbarium (1998)
GIS Database:
Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain - DEC
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

Soils within the area under application are part of the Bassendean B1 phase and comprise deep bleached grey sands sometimes with a pale yellow B horizon. These soils have a moderate to low risk of acid sulphate soils, a very high wind erosion risk, a high phosphorus export risk, and occasionally a moderate to high risk of water logging (State of Western Australia 2005).

The vegetation under application is in degraded condition and is limited to one tree and 0.014 hectares located on the edge of a firebreak and property boundary. Given the limited size of the area under application, it is not considered likely that the proposed clearing would cause appreciable land degradation.

Methodology DEC site visit 14/12/06
State of Western Australia (2005)

(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

Bush Forever has advised that the area under application is located within Bush Forever Site 378. The proposed clearing includes the removal of 0.014 hectares of vegetation and 1 tree that are isolated from the main vegetation remnant.

The proposed clearing has the potential to indirectly impact on the environmental values of the Bush Forever site through the spread or introduction of dieback or weed species by machinery or the importation of fill required for road construction. There are serious consequences associated with the spread of such diseases and exotic species into an area reserved for conservation, including the potential local extinction of species.

Given that the vegetation under application is limited to 0.014 hectares and 1 tree in degraded condition, and is isolated from the main vegetation remnant, it is not considered likely that the proposed clearing would have a direct impact on the environmental values of Bush Forever site 378. It is considered however that the proposed clearing may indirectly impact the Bush Forever site through introduction of weeds or dieback and the proposal therefore may be at variance to this Principle.

If granted the permit will include conditions requiring weed and dieback prevention to minimise the risk of introducing weeds or dieback into the Bush Forever site.

Methodology Bush Forever submission
GIS Database:
Bushforever - MFP 07/01

(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 located approximately 90m southwest of a multiple use wetland and approximately 2.3km to the northwest of Karnet Brook.

The soils mapped within the area under application comprise extremely low to very low relief dunes, undulating sandplain and discrete sand rises with deep bleached grey sands, which have a moderate to low risk of acid sulphate soils and a high phosphorus export risk (State of Western Australia 2005).

Given that proposed clearing is limited to one tree and 0.014 hectares of vegetation in degraded condition, it is not considered likely that it would result in salinity or acid sulphate soils causing a deterioration in groundwater quality. In addition, given the high infiltration rates of the soils, and the low relief on site, it is not considered likely that the proposed clearing would result in a deterioration in surface water quality.

Methodology State of Western Australia (2005)
GIS Database:
Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain - DEC
Hydrography, linear (hierarchy) - 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 likely to be at variance to this Principle

The area under application is located at an elevation of 15m, approximately 90m to the southwest of a multiple use wetland and is associated with well-drained sandy soils (State of Western Australia 2005).

Given the high infiltration rates of the soils within the area under application, and given that the proposed clearing is limited to one tree and 0.014 hectares of vegetation, it is not considered likely that it would cause or exacerbate the incidence of flooding.

Methodology DEC site visit 14/12/06
State of Western Australia (2005)
GIS Databases:
Topographic Contours, Statewide - DOLA 12/09/02

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

Comments

The area under application is Crown Reserve that is vested in the Shire of Serpentine Jarrahdale for 'recreation' and is leased by the Sport Aircraft Builders Club. Comments were received from the South West Aboriginal Land and Sea Council with concern that Aboriginal heritage issues may not have been addressed and that a heritage survey should be conducted for their consideration. The Council also advise that Native

Title Parties may request that Aboriginal monitors be present during the clearing process. Advice has been provided to the proponent in this regard.

The Shire of Serpentine Jarrahdale advise that they recommend all cleared vegetation, including vegetation cleared during recent firebreak upgrades, should be mulched and spread over cleared areas near the site.

The Shire of Serpentine Jarrahdale Council supports in principle the proposal by the Bureau of Meteorology subject to conditions including a formal development application being submitted to the Shire. In a submission the Shire of Serpentine Jarrahdale request that the proponent be advised to mulch cleared vegetation (including that cleared during the recent firebreak maintenance) and spread over cleared areas near the site.

Bush Forever recommended the proposed weather tower and building is located within Bush Forever site 378 and recommends the preparation of an Environmental Management Plan including a flora/fauna survey, vegetation condition, offsets at a ratio of 2:1, weed, dieback and bushfire management; fencing of the proposed weather tower and equipment; that no construction material, debris or waste be deposited in the Bush Forever site, and that removal of vegetation be minimised. Conditions will be imposed on a clearing permit if that require Weed and Dieback management.

The applicant has received Development Approval from the Serpentine-Jarrahdale Shire. TRIM ref: DOC65065.

The applicant has received lease approval for the radar site from the Serpentine-Jarrahdale Shire. TRIM ref: DOC64179.

Methodology

4. Assessor's comments

Comment

The assessable criteria have been addressed, and the proposed clearing may be at variance to Principle h.

5. References

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

Department of Agriculture (2005) AgMaps Land Manager CD-rom for the Shires of Serpentine-Jarrahdale, Kwinana, Rockingham, Mandurah, Murray, Boddington, Waroona and Harvey. Department of Agriculture, Western Australia. ISSN: 1448-235X.

EPA (2006) Guidance for the Assessment of Environmental Factors - Level of Assessment for Proposals Affecting Natural Areas Within the System 6 Region and Swan Coastal Plain Portion of the System 1 Region. Guidance Statement No 10. Environmental Protection Authority, Western Australia.

Hedde, E. M., Loneragan, O. W., and Havel, J. J. (1980) Vegetation Complexes of the Darling System, Western Australia. In Department of Conservation and Environment, Atlas of Natural Resources, Darling System, Western Australia.

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. (2007). 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.

Site Visit 14 December 2006, Department of Environment and Conservation (DEC), Western Australia. TRIM ref DOCxxxx.

Submission, Direct Interest Submission, 18/10/2007. TRIM Ref: DOC37447.

Submission, Direct Interest Submission, 22/08/2007, TRIM. Ref: DOC32037.

Western Australian Herbarium (1998-). FloraBase - The Western Australian Flora. Department of Environment and Conservation. <http://florabase.calm.wa.gov.au/> Accessed on Tuesday, 21 August 2007.

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)