



GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: 6550/1

File Number: 2015/000712-1

Duration of Permit: From 30 January 2016 to 30 January 2018

PERMIT HOLDER

Carrolup Capital Pty Ltd

LAND ON WHICH CLEARING IS TO BE DONE

Lot 12 on Plan 16906, Forrestdale

AUTHORISED ACTIVITY

The Permit Holder shall not clear more than four hectares of native vegetation within the area cross hatched yellow on attached Plan 6550/1.

CONDITIONS

Nil.

A handwritten signature in blue ink, appearing to read 'J Widenbar', written over a horizontal line.

J Widenbar
A/SENIOR MANAGER
CLEARING REGULATION

*Officer delegated under Section 20
of the Environmental Protection Act 1986*

31 December 2015

Plan 6550/1



Legend


-  Roads
-  Imagery
-  Clearing Instruments Activities
-  Local Government Authority



1:4,431

(Approximate when reproduced at A4)
GDA 94 (Lat/Long)

Geocentric Datum of Australia 1994

 Date 31/12/2015
J Widenbar

Officer with delegated authority under Section 20 of the Environmental Protection Act 1986



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WESTERN AUSTRALIA
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1. Application details

1.1. Permit application details

Permit application No.: 6550/1
Permit type: Area Permit

1.2. Applicant details

Applicant's name: Carrolup Capital Pty Ltd

1.3. Property details

Property: LOT 12 ON PLAN 16906, FORRESTDALE
Colloquial name:
Local Government Authority: ARMADALE, CITY OF
Localities: FORRESTDALE

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
4		Mechanical Removal	Industrial

1.5. Decision on application

Decision on Permit Application: Granted
Decision Date: 31 December 2015

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
Mapped Beard vegetation association 968: Medium woodland; jarrah, marri & wandoo (Shepherd et al, 2001)	The application is to clear four hectares of native vegetation within Lot 12 on Plan 16906, Forrestdale, City of Armadale for the purpose of a light industrial and service industrial development.	Very Good; Vegetation structure altered; obvious signs of disturbance (Keighery, 1994).	The vegetation under application consists of <i>Kunzea glabrescens</i> , <i>Astartea scorparia</i> , <i>Jacksonia sternbergiana</i> and <i>Hypocalymma angustifolium</i> over mixed herbland. The area under application has been subject to past grazing with the subject land completely cleared in 2000. No grazing has occurred on the property since this time therefore the vegetation within the applied area is considered to be regrowth (PGV Environmental, 2015).
Heddle vegetation complex Southern River Complex: Open woodland of <i>Corymbia calophylla</i> (Marri) - <i>Eucalyptus marginata</i> (Jarrah) - <i>Banksia</i> species with fringing woodland of <i>Eucalyptus rudis</i> (Flooded Gum) - <i>Melaleuca rhapsiophylla</i> (Swamp Paperbark) along creek beds Heddle et al 1980).		To Completely Degraded: No longer intact; completely /almost completely without native species (Keighery, 1994)	The vegetation under application is completely degraded to very good (Keighery, 1994) condition (Cardno, 2010). The structure and condition of the vegetation under application was obtained from supporting information within the application and a site inspection of the applied area undertaken by the Department of Environment Regulation on 11 June 2015.

3. Assessment of application against clearing principles

(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

Comments

Proposed clearing is not likely to be at variance to this Principle

The applicant proposes to clear four hectares of native vegetation within Lot 12 on Plan 16906, Forrestdale, for the purpose of a light industrial and service industrial development. The vegetation under application ranges from completely degraded to very good (Keighery, 1994) condition (Cardno, 2010), with the majority of the vegetation in a very good (Keighery, 1994) condition (Cardno, 2010). The completely degraded areas are small areas that occur along the boundary of the property.

The majority of the vegetation under application consists of *Kunzea glabrescens* regrowth (DER, 2015). The area under application has been subject to past grazing with the subject land completely cleared in 2000. No grazing has occurred on the property since this time therefore the vegetation within the applied area is considered to be regrowth (PGV Environmental, 2015).

The closest priority ecological community (PEC) (priority 3) is mapped approximately 570 metres east of the application area and is known as 'low lying *Banksia attenuata* woodlands or shrublands'. The vegetation under application is not representative of this PEC.

Several Priority flora species have been recorded in the local area (10 kilometre radius). The closest of these, a priority 4 species, has been mapped approximately 280 metres from the area under application. This species is an erect shrub with a preference for winter wet depressions (Western Australian Herbarium, 1998-). A flora survey undertaken in October 2010 did not identify the presence of any rare or priority flora species within the application area (Cardno, 2010).

The area under application does not comprise any rare or priority flora and given the historical disturbances to the subject land it is unlikely to comprise a high level of biological diversity. Therefore the proposed clearing is not likely to be at variance to this principle.

Methodology

References:

Cardno (2010)
DER (2015)
Keighery, B.J. (1994)
PGV Environmental (2015)
Western Australian Herbarium (1998-)

GIS Databases:

-SAC Bio Datasets (Accessed December 2015)

(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

Proposed clearing is not likely to be at variance to this Principle

There are several conservation significant fauna species mapped within the local area (10 kilometre radius) including, Baudin's cockatoo (*Calyptorhynchus baudinii*), Carnaby's cockatoo (*Calyptorhynchus latirostris*), chuditch (*Dasyurus geoffroii*), southern brush-tailed phascogale (*Phascogale tapoatafa* subsp. *tapoatafa*), water-rat (*Hydromys chrysogaster*), western brush wallaby (*Macropus irma*) and quenda (*Isodon obesulus* subsp. *fusciventer*) (Parks and Wildlife, 2007-).

The vegetation under application consists predominately of *Kunzea glabrescens* regrowth (DER, 2015). It is unlikely the proposed clearing area would provide any feeding, breeding or roosting habitat for black cockatoos given that *Kunzea glabrescens* is not the preferred habitat for black cockatoos.

The condition of the vegetation on site ranges from completely degraded to very good (Keighery, 1994) with very little ground cover present within the subject property (DER, 2015). Considering this it is unlikely that the proposed clearing area is significant habitat for ground dwelling fauna.

A fauna survey of the local area undertaken by Harewood (2010), which included the area under application, did not identify any conservation significant fauna within the application area (Harewood, 2010).

The proposed clearing is not likely to be at variance to this principle.

Methodology

References:

DER (2015)
Harewood (2010)
Keighery (1994)
Parks and Wildlife (2007-)

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

Comments **Proposed clearing is not likely to be at variance to this Principle**
Four rare flora species have been recorded within 10 kilometres of the area under application with the closest record occurring approximately 1.7 kilometres from the area under application. The closest recorded species grows in sandy soils amongst low heath in winter wet swamps and is associated with *Banksia telmatiaea* and *Calothamnus hirsutus* (Brown et al, 1998).

The area under application has been subject to past grazing with the subject land completely cleared in 2000. Since this time the area has regenerated, with the vegetation now dominated by *Kunzea glabrescens*.

A flora survey of the application area undertaken in October 2010 did not identify the presence of any rare or priority flora species (Cardno, 2010).

Given the above, it is unlikely the area under application includes, or is necessary for the continued existence of rare flora species.

The clearing as proposed, is not likely to be at variance to this principle.

Methodology References:
Brown et al.(1998)
Cardno (2010)

GIS Databases:
-SAC Bio Datasets (Accessed December 2015)

(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 **Proposed clearing is not likely to be at variance to this Principle**
Several threatened ecological communities (TEC) have been recorded within 10 kilometres of the area under application.

The closest TEC's to the application area are the 'Shrublands on dry clay flats' and 'Herb rich shrublands in clay pans', both recognised as endangered, as endorsed by the Minister for Environment. These TEC's are located approximately 380 and 680 metres away from the application area respectively.

The flora survey identified that the vegetation on site is most closely associated with floristic community types 6, 11 and 24 (Cardno, 2010). These community types are not listed as TEC's and the application area has different soil type being sandy soils.

The proposed clearing is not likely to be at variance to this principle.

Methodology References:
Cardno (2010)

GIS Databases:
-SAC Bio Datasets (Accessed December 2015)

(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 **Proposed clearing is not likely to be at variance to this Principle**
The vegetation under application is represented by Beard vegetation association 968 and Heddle vegetation complex Southern River which have 7 and 18 per cent of their pre-European vegetation remaining within the Swan Coastal Plain IBRA Bioregion respectively (Government of Western Australia, 2014 and Parks and Wildlife 2015).

The National Objectives and Targets for Biodiversity Conservation include a target that prevents the clearance of ecological communities with an extent below 30 per cent of that present pre-European settlement (Commonwealth of Australia, 2001). However, the Environmental Protection Authority (EPA) recognises the Perth Metropolitan Region as a constrained area, which provides for the reduction of vegetation complexes to a minimum of 10 per cent of the pre-European extent (EPA, 2006).

Beard vegetation association 968 is below the 10 per cent threshold recommended by the EPA. Beard vegetation association 968 is described as medium woodland; jarrah, marri & wandoo (Shepherd et al, 2001). The vegetation under application consists of *Kunzea glabrescens*, *Astartea scorparia*, *Jacksonia sternbergiana* and *Hypocalymma angustifolium* over mixed herbland (Cardno, 2010). Considering this, Beard vegetation association 968 is not represented in the area under application therefore, the proposed clearing will not further reduce the pre-European extent that remains.

Approximately 35 per cent of pre-European vegetation remains within five kilometres of the area under application. This includes large remnants within Bush Forever sites in close proximity to the applied area.

Given the above, the vegetation under application is not considered to occur within an extensively cleared landscape and the proposed clearing is not likely to be at variance to this principle.

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Extent in Parks and Wildlife Managed Lands (%)
IBRA Bioregion				
Swan Coastal Plain*	1,501,221	586,975	39	36.5
Shire				
City of Armadale *	55,948	43,054	77	75
Beard Vegetation Association in Bioregion				
968*	136,188	9,795	7.2	16.5
Hedde Vegetation Complex				
Southern River Complex**	57,970	10,698	18.4	1.5

Methodology References:
Commonwealth of Australia (2001)
EPA (2006)
Government of Western Australia (2014)*
Parks and Wildlife (2015)**
Shepherd et al (2001)
Cardno (2010)

GIS Databases:
-NLWRA, Current Extent of Native Vegetation

(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 **Proposed clearing is at variance to this Principle**
No watercourses have been mapped within the application area.

The area under application is within a geomorphic wetland referred to as a resource enhancement wetland. Resource enhancement wetlands have been identified as priority wetlands and should be managed with an objective of restoration and protection towards improving their conservation value (Water and Rivers Commission 2001). The wetland was not identified in the original 1996 mapping of wetlands on the Swan Coastal Plain but was identified following a review of the mapping within the Forrestdale Business Park West area in 2011. The wetland has not been classified into a wetland type, however, it is considered to be most likely consistent with a dampland, seasonally waterlogged basin (Parks and Wildlife, 2015a).

The proposed clearing will result in the loss of four hectares of native vegetation growing within a wetland. Given the history of disturbance on site, the wetland is unlikely to be of high conservation value. Further, the loss of vegetation from the wetland is not considered likely to significantly impact on the areas local hydrology (Parks and Wildlife, 2015a).

The application is at variance to this principle.

Methodology References:
Parks and Wildlife (2015a)
Water and Rivers Commission (2001)

GIS Databases:
-Hydrography, Linear

(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

Comments **Proposed clearing is not likely to be at variance to this Principle**
The soil within the area under application has been described as sandy dunes with intervening sandy and clayey swamp flats: chief soils are leached sands, sometimes with a clay horizon below five feet, on the dunes and sandy swamps (Northcote et al 1960 - 1968).

Given the presence of a sandy soil type which is predominately associated with the top layer of the soil profile, the proposed clearing may contribute toward land degradation in the form of wind erosion.

However, any wind erosion is likely to be minimal given the relevant small size of the application area and proposed imminent development of the site post clearing.

The application is not likely to be at variance to this principle.

Methodology References:
Northcote, et al. (1960-68)

GIS Databases:
Soils, Statewide

(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 **Proposed clearing is not likely to be at variance to this Principle**
The closest nature reserve to the proposed clearing area is the Forrestdale Lake Nature Reserve approximately 1.3 kilometres from the area under application. Bush Forever site 342 is located approximately 200 metres east of the area under application. The vegetation within the application area is not linked to vegetation within the nearby Bush Forever site as it is separated by cleared land. Therefore the proposed clearing is unlikely to impact on the Bush Forever site.

The proposed clearing is unlikely to act as a corridor or linkage to facilitate the movement of fauna between areas of vegetation as large areas of remnant vegetation in an equal or better condition than the area under application occur in the local area (10 kilometre radius).

Given the above the proposed clearing is not likely to be at variance to this principle.

Methodology GIS Databases:
Parks and Wildlife Tenure

(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 **Proposed clearing is not likely to be at variance to this Principle**
The area under application is within a geomorphic wetland. The wetland was not identified in the original 1996 mapping of wetlands on the Swan Coastal Plain but was identified following a review of the mapping within the Forrestdale Business Park West area in 2011. The wetland has not been classified into a wetland type, however, it is considered to be most likely consistent with a dampland, seasonally waterlogged basin (Parks and Wildlife, 2015a).

The area under application may be subject to water inundation, however the applied area is flat. A recent site inspection of the area under application did not identify any surface water (DER, 2015).

Although the proposed clearing will result in a direct loss of wetland values, it is considered unlikely the clearing will significantly impact on local hydrology (Parks and Wildlife, 2015a). This is due to the type of wetland present and the lack of significant surface drainage. Given this, it is unlikely the proposed clearing will cause the deterioration of surface water quality.

Groundwater salinity within the application area ranges between 500 – 1000 total dissolved solids milligrams per litre. The proposed clearing area was completely cleared in 1965 and up until 2000 remained this way as the area was subject to grazing. Since the year 2000 no further grazing has occurred on the property which has allowed natural regeneration to occur. As the application area was previously cleared of native vegetation for an extended period, it is considered unlikely that the proposed clearing will alter groundwater salinity levels.

Given the above, the proposed clearing is not likely to be at variance to this principle.

Methodology References:
Parks and Wildlife (2015a)

GIS Databases:
-Rainfall, Mean Annual
-Hydrography, Linear

-Hydrography, Hierarchy

(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.

Comments Proposed clearing is not likely to be at variance to this Principle

The area under application has been mapped as a wetland and appears to be interconnected with several other wetlands nearby.

The area under application may be subject to water inundation, however the applied area is flat. A recent site inspection of the area under application did not identify any surface water (DER, 2015).

Considering the above, the proposed clearing is unlikely to cause or exacerbate the incidence or intensity of flooding.

The proposed clearing is not likely to be at variance to this principle.

Methodology References:
DER (2015)

Planning instruments and other relevant matters.

Comments Development Approval has been issued for Lot 12, Keane Road, Forrestdale (application area) for the construction of a light industrial and service industrial development area.

No submissions have been received in relation to this application.

There are no Aboriginal Sites of Significance mapped within the application area.

Methodology GIS Databases:
-Aboriginal Sites of Significance, Statewide

4. References

- Brown A., Thomson-Dans C. and Marchant N. (1998). Western Australia's Threatened Flora, Department of Conservation and Land Management, Western Australia.
- Cardno (2010) Flora and Vegetation Survey of Forrestdale Business Park West. Additional information for CPS 5665/1, DER Ref A646113.
- Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.
- DER (2015) Site Inspection Report for Clearing Permit Application CPS 6550/1. Site inspection undertaken 11 June 2015. Department of Environment Regulation, Western Australia (Ref. A919477).
- 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.
- Government of Western Australia (2014) 2014 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of June 2014. WA Department of Parks and Wildlife, Perth.
- Harewood, G. H. (2010) Fauna Survey of Forrestdale Business Park West. Additional information for CPS 5665/1, DER Ref A646111.
- Heddle, 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.
- 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.
- 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.
- Parks and Wildlife (2007-) NatureMap: Mapping Western Australia's Biodiversity. Department of Parks and Wildlife. URL: <http://naturemap.dpaw.wa.gov.au/>. Accessed June 2015
- Parks and Wildlife (2015) 2015 South West Forest and Swan Coastal Plain Vegetation Complex Statistics: a report prepared for the Department of Environment Regulation. Current as of March 2015. Department of Parks and Wildlife, Perth, Western Australia.
- Parks and Wildlife (2015a). wetland advice received in relation to Clearing Permit Application CPS 6550/1, Carrolup Capital Pty Ltd (DER Ref:A933802).
- PGV Environmental (2015) Supporting information within Clearing Permit Application CPS 6550/1. Carrolup Capital Pty Ltd (DER Ref:A910419)
- Shepherd, D.P., Beeson, 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.
- Water and Rivers Commission (2001) Position Statement: Wetlands, Water and Rivers Commission, Perth.
- Western Australian Herbarium (1998-) FloraBase - The Western Australian Flora. Department of Parks and Wildlife. <http://florabase.dpaw.wa.gov.au/> (Accessed June 2015).