



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: 5618/1
File Number: 2011/006893-2
Duration of Permit: From 23 November 2013 to 23 November 2015

PERMIT HOLDER

Shire of Serpentine Jarrahdale

LAND ON WHICH CLEARING IS TO BE DONE

Kargotich Road reserve (Oldbury 6121, Mardella 6125) (PIN: 11608178, PIN: 11608176 and PIN: 11609981)
Richardson Street road reserve (Serpentine 6125) (PIN: 11609544)

AUTHORISED ACTIVITY

The Permit Holder shall not clear more than 0.6 hectares of native vegetation within the combined areas hatched yellow on attached Plan 5618/1a and Plan 5618/1b and Plan 5618/1c.

CONDITIONS

1. Dieback and weed control

When undertaking any clearing or other activity authorised under this Permit, the Permit Holder must take the following steps to minimise the risk of the introduction and spread of *weeds* and *dieback*:

- clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- shall only move soils in *dry conditions*;
- ensure that no *dieback* or *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared; and
- restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

DEFINITIONS

The following meanings are given to terms used in this Permit:

dieback means the effect of *Phytophthora* species on native vegetation;

dry conditions means when soils (not dust) do not freely adhere to rubber tyres, tracks, vehicle chassis or wheel arches;

fill means material used to increase the ground level, or fill a hollow;

mulch means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation;

weed/s means any plant -

- that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*; or
- published in the former Department of Environment and Conservation Regional Weed Assessments, regardless of ranking; or
- not indigenous to the area concerned.

A handwritten signature in black ink, appearing to read "M Warnock", written over a horizontal line.

M Warnock
MANAGER
NATIVE VEGETATION CONSERVATION BRANCH







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

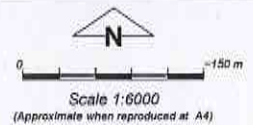
24 October 2013

Plan 5618/1a



LEGEND

-  Road Centrelines
-  Cadastre for labelling
-  Clearing Instruments
-  Areas Applied to Clear
-  Areas Subject to Conditions (cont)
-  Areas Approved to Clear
- Perth Metropolitan Area**
Central 15cm Orthomosaic -
Landgate 2012



Geocentric Datum Australia 1994
 Note: the data in this map have not been projected. This may result in geometric distortion or measurement inaccuracies.

M Warnock Date 24/10/13
 M Warnock

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

Information derived from this map should be confirmed with the data custodian acknowledged by the agency acronym in the legend.



Government of Western Australia
 Department of Environment Regulation

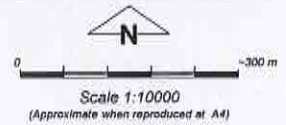
WA Crown Copyright 2002

Plan 5618/1b



LEGEND

-  Road Centrelines
-  Cadastre for labelling
-  Clearing Instruments
-  Areas Applied to Clear
-  Areas Subject to Conditions (cont)
-  Areas Approved to Clear
-  Perth Metropolitan Area
-  Central 15km Orthomosaic - Landgate 2012



Geocentric Datum Australia 1994
 Note: the data in this map have not been projected. This may result in geometric distortion or measurement inaccuracies.






M Warnock Date *26/10/13*
 M Warnock

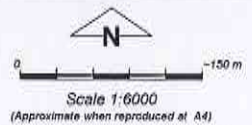
Officer with delegated authority under Section 20 of the Environmental Protection Act 1986
 Information derived from this map should be confirmed with the data custodian acknowledged by the agency acronym in the legend.

Plan 5618/1c



LEGEND

-  Road Centrelines
-  Cadastre for labelling Clearing Instruments
-  Areas Applied to Clear
-  Areas Subject to Conditions (cont)
-  Areas Approved to Clear
- Perth Metropolitan Area Central 15cm Orthomosaic - Landgate 2012**



Geocentric Datum Australia 1994
 Note: the data in this map have not been projected. This may result in geometric distortion or measurement inaccuracies.

M Warnock Date *24/10/13*
 M Warnock

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

Information derived from this map should be confirmed with the data custodian acknowledged by the agency acronym in the legend.



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Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 5618/1
Permit type: Area Permit

1.2. Proponent details

Proponent's name: Shire of Serpentine - Jarrahdale

1.3. Property details

Property: ROAD RESERVE (OLDBURY 6121)
ROAD RESERVE (MARDELLA 6125)
ROAD RESERVE (SERPENTINE 6125)
Local Government Area: Shire of Serpentine - Jarrahdale
Colloquial name: Richardson Street road reserve and Kargotich Road reserve

1.4. Application

| | | | |
|--------------------|-----------|--------------------|----------------------------------|
| Clearing Area (ha) | No. Trees | Method of Clearing | For the purpose of: |
| 0.6 | | Mechanical Removal | Road construction or maintenance |

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 24 October 2013

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 is described as 'Succulent steppe with sparse woodland & thicket; salmon gum & morrell over teatree & samphire' (Shepherd et al 2001). | Richardson Street and Kargotich Road reserve widening within the Shire of Serpentine Jarrahdale. | Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994) | The vegetation within the proposed clearing area consists predominately of <i>Casuarina obesa</i> over weeds (DEC 2013). The applicant has advised approximately 0.5 metres will be required to be cleared on each side of the road reserves. The vegetation condition and description was determined from a site inspection (DEC 2013). |

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 proposes to clear 0.6 hectares of native vegetation within Kargotich Road reserve, Mardella and Oldbury and Richardson Street road reserve, Serpentine.

The vegetation within the proposed clearing area consists predominately of *Casuarina obesa* over weeds (DEC 2013) and is in a degraded (Keighery 1994) condition.

The Roadside Conservation Values of the application area within Richardson Street road reserve area is 'high' (west side) and 'low' (east side) indicating the vegetation within the reserve is significant. The Roadside Conservation Values of northern application area within Kargotich Road reserve is 'medium low' (west side) and 'low' (east side).

Numerous fauna species listed as rare or likely to become extinct under the Wildlife Conservation Act 1950 have been recorded within the local area (five kilometre radius), including: *Bettongia penicillata* subsp. *ogilbyi* (Woylie), *Calidris ferruginea* (Curlew Sandpiper), *Calyptorhynchus banksii* subsp. *naso* (Forest Red-tailed Black-Cockatoo), *Calyptorhynchus baudinii* (Baudin's Cockatoo (Baudin's Cockatoo), *Calyptorhynchus latirostris* (Carnaby's Cockatoo), *Dasyurus geoffroyi* (Chuditch, Western Quoll), *Leipoa ocellata* (Malleefowl),

Myrmecobius fasciatus (Numbat), *Phascogale tapoatafa* subsp. *tapoatafa* (Southern Brush-tailed Phascogale), *Potorous gilbertii* (Gilbert's Potoroo), *Pseudocheirus occidentalis* (Western Ringtail Possum) and *Setonix brachyurus* (Quokka) (DPaW 2007-). Given the degraded condition, small size of the application area (0.6 hectares) and the long linear shape, the vegetation proposed to be cleared is not likely to contain significant habitat for fauna indigenous to Western Australia.

Numerous priority flora species have been recorded within the local area (10 kilometre radius). Given the application area is in a degraded (Keighery 1994) condition, long and linear in shaped and consists of *Casuarina obesa* with a predominately introduced ground cover (DEC 2013). The vegetation proposed to be cleared is not likely to have a significant impact on the conservation values of priority flora species.

Seven rare flora species have been recorded within the local area (5 kilometre radius). Suitable habitat may be located within the application area for two of these species. A flora survey was conducted by the Shire of Serpentine and Jarrahdale (2013) and no rare or priority flora species were identified.

The application area within Richardson Road reserve is located within Bush Forever Site 365, 'Byford to Serpentine Rail/Road Reserve and Adjacent Bushland'. A small portion of the application area within the most northern area within Kargotich Road reserve is located within Bush Forever site 360 'Mundijong and Watkins Roads Bushland, Mundijong/Peel Estate'.

Given the degraded condition, small size of the application area (0.6 hectares) and the long linear shape, the vegetation proposed to be cleared is not likely to comprise a high level of biological diversity.

Methodology

References:

- DEC (2013)
- DPaW (2007-)
- Keighery (1994)
- Shire of Serpentine and Jarrahdale (2013)

GIS databases:

- Bush Forever,
- SAC Bio datasets (Accessed June 2013)
- Geomorphic Wetlands, Swan Coastal Plain
- Roadside Conservation Values

(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

Numerous fauna species listed as rare or likely to become extinct under the Wildlife Conservation Act 1950 have been recorded within the local area (five kilometre radius), including: *Bettongia penicillata* subsp. *ogilbyi* (Woylie), *Calidris ferruginea* (Curlew Sandpiper), *Calyptorhynchus banksii* subsp. *naso* (Forest Red-tailed Black-Cockatoo), *Calyptorhynchus baudinii* (Baudin's Cockatoo (Baudin's Cockatoo), *Calyptorhynchus latirostris* (Carnaby's Cockatoo), *Dasyurus geoffroyi* (Chuditch, Western Quoll), *Leipoa ocellata* (Malleefowl), *Myrmecobius fasciatus* (Numbat), *Phascogale tapoatafa* subsp. *tapoatafa* (Southern Brush-tailed Phascogale), *Potorous gilbertii* (Gilbert's Potoroo), *Pseudocheirus occidentalis* (Western Ringtail Possum) and *Setonix brachyurus* (Quokka) (DPaW 2007-).

The vegetation proposed to be cleared is in a degraded (Keighery 1994) condition and consists predominately of *Casuarina obesa*, with an introduced ground cover (DEC 2013).

Given the degraded condition, small size of the application area (0.6 hectares) and the long linear shape, the vegetation proposed to be cleared is not likely to contain significant habitat for fauna indigenous to Western Australia.

Methodology

References:

- DPaW (2007-)
- DEC (2013)
- Keighery (1994)

GIS Databases:

- SAC Bio datasets (Accessed June 2013)

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

Comments **Proposal not likely to be at variance to this Principle**
Seven rare flora species have been recorded within the local area (5 kilometre radius). Suitable habitat may be located within the application area for two of these species.

The vegetation within the proposed clearing area consists predominately of *Casuarina obesa* over weeds (DEC 2013).

The first species has three records approximately 50 metres east of the southern application area within Kargotich Road reserve. This species grows in seasonally wet clay and sandy loam flats in shrubland with emergent marri (*Corymbia calophylla*), stinkwood (*Jacksonia furvellata*), drumsticks (*Kingia australis*) and grasstrees (*Xanthorrhoea*) (Brown et al 1998-). These records are located in areas of no understorey except for dead grasses. Therefore, the vegetation proposed to be cleared may contain suitable habitat for this species.

The second rare flora species is found on sandy soil with lateritic pebble, near winter-wet flat, in low woodland with weedy grasses. A species has been located within close proximity to the application area and therefore, the application area may contain this rare species. Given the above, the vegetation proposed to be cleared may contain suitable habitat for this rare flora species.

A flora survey was conducted by the Shire of Serpentine and Jarrahdale's botanist (2013) and no rare flora species were identified.

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

Methodology **References:**
Brown et al (1998)
Shire of Serpentine and Jarrahdale (2013)
Western Australian Herbarium (1998-)

GIS Databases:
- SAC Bio datasets (Accessed June 2013)

(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**
A threatened ecological community (TEC) 'Herb rich shrubland in clay pan' is located approximately 20 metres south of the most northern application area within Kargotich Road reserve. Mundijong Road separates the application area from this TEC.

The vegetation under application is not representative of this TEC. Given the long linear nature of the proposed clearing area in degraded (Keighery 1994) condition, the proposed clearing of 0.6 hectares is not likely to have a significant impact upon this TEC.

The proposed clearing may cause weed and dieback to spread into this TEC. Weed and dieback management practices will help mitigate impacts to this TEC.

Given the above the clearing as proposed may be at variance to this principle.

Methodology **References:**
-Keighery 1994

GIS Databases:
- SAC Bio datasets (Accessed June 2013)

(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 may be at variance to this Principle**
The area under application is located within the Swan Coastal Plain Interim Biogeographic Regionalisation of Australia (IBRA) bioregion. This IBRA bioregion has approximately 39 per cent of its Pre European vegetation extent remaining (Government of Western Australia 2013).

The vegetation under application is mapped as Beard Vegetation Association 968 and Hedde Vegetation Complexes 'Guildford' and 'Beermullah', which have approximately 7 and 6 and 5 per cent of their Pre-European extent remaining in the Swan Coastal Plain bioregion respectively (Government of Western Australia 2013).

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).

Digital imagery (Perth Metropolitan Area Central 15 cm Orthomosaic - Landgate 2012) indicates that the local area (five kilometre radius) surrounding each of the areas under application retains less than 20 per cent vegetation cover and therefore is located within an extensively cleared landscape.

A portion of the vegetation proposed to be cleared along Richardson Street is located within a Bush Forever Site and Conservation Category Wetland, however the vegetation proposed to be cleared is in a degraded (Keighery 1994) condition. Therefore the vegetation proposed to be cleared may be considered to be a significant remnant.

Given the above, the clearing as proposed may be at variance to this principle.

| | Pre-European (ha) | Current Extent (ha) | Remaining (%) | Extent in DEC Managed Lands (%) |
|---|----------------------|------------------------|------------------|--|
| IBRA Bioregion* | | | | |
| Swan Coastal Plain | 1,501,209 | 587,889 | 39.1 | 33.3 |
| Shire* | | | | |
| Shire of Serpentine Jarrahdale | 90,048.42 | 49,448.11 | 54.91 | 82.45 |
| Beard Vegetation Association in Bioregion* | | | | |
| 968 | 136,188.20 | 9,795.86 | 7.19 | 16.05 |
| Hedde Complex** | | | | |
| Beermullah | 6,707.27 | 435.93 | 6.50 | 2.06 |
| Guildford | 92,462.90 | 4,863.30 | 5.26 | 0.29 |

* Government of Western Australia (2013)

** Hedde et al (1980)

Methodology

References:

- Government of Western Australia (2013)
- Commonwealth of Australia (2001)
- Hedde et al (1980)

GIS Databases:

- IBRA Australia
- Local Government Authority
- Perth Metropolitan Area Central 15 cm Orthomosaic - Landgate 2012
- Pre-European vegetation
- Hedde 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

Proposal is at variance to this Principle

Numerous wetlands are located within the local area (five kilometre radius). All three areas under application are mapped within a multiple use wetland. The Water and Rivers Commission (2001) considers Multiple Use Category wetlands as having few important attributes and functions remaining.

The application area along Richardson Road is mapped adjacent to a conservation category wetland (CCW). CCW's are considered to support a high level of ecological attributes and functions (Water and Rivers Commission 2001). The proposed clearing may impact upon the buffer of this CCW and cause weed and dieback to spread into this CCW. Weed and dieback management practices will help mitigate impacts to this CCW.

Serpentine River is located approximately 450 metres south of the application area within Richardson Road reserve.

A site inspection (DEC 2013) identified wetland vegetation within the application areas.

Given the above, the clearing as proposed is at variance to this principle.

Methodology References:
-Water and Rivers Commission (2001)
- DEC (2013)

GIS databases:
- Hydrography, linear
- SAC Bio datasets (Accessed June 2013)
- Geomorphic Wetlands, Swan Coastal Plain

(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 soils within the application area can be described as plain: chief soils are sandy acidic yellow mottled soils (some of which contain ironstone gravel. Associated are acid yellow earths. Other soils include containing ironstone gravel, low dunes of soils and some swamps with variable soils (Northcote et al (1960-1968).

Given the small area under application (0.6 hectares) and the long linear shape in a degraded (Keighery 1994) condition. The vegetation proposed to be cleared is not likely to cause appreciable land degradation.

Therefore the clearing as proposed is not likely to be at variance to this principle.

Methodology References:
- Northcote et al (1960-1968)

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 **Proposal may be at variance to this Principle**
The application area within Richardson Road reserve is located within Bush Forever site 365, 'Byford to Serpentine Rail/Road Reserve and Adjacent Bushland'. A small portion of the application area within the most northern area within Kargotich Road reserve is located within Bush Forever site 360 'Mundijong and Watkins Roads Bushland, Mundijong/Peel Estate'.

The clearing as proposed may impact on the environmental values of the Bush Forever sites located within the proposed clearing areas. The proposed clearing may cause weed and dieback to spread into the two Bush Forever sites. Weed and dieback management practices will help mitigate the impacts of the proposed clearing.

Give the above, the clearing as proposed may be at variance to this principle.

Methodology GIS databases:
- Bush Forever

(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 may be at variance to this Principle**
Numerous wetlands are located within the local area (five kilometre radius). All three areas under application are mapped within a multiple use wetland. The Water and Rivers Commission (2001) considers Multiple Use Category wetlands as having few important attributes and functions remaining.

The application area along Richardson Road is mapped adjacent to a conservation category wetland (CCW). CCW's are considered to support a high level of ecological attributes and functions (Water and Rivers Commission 2001). The proposed clearing may increase run off into this adjacent CCW and cause deterioration in the quality of surface water of this wetland.

Ground water salinity is mapped as between 500 - 3000 mg/L-1 which is considered to be Marginally to Moderately saline. Given the small area (0.6 hectares) under application, the clearing as proposed is not likely to cause deterioration in the quality of underground water.

Give the above, the clearing as proposed may be at variance to this principle.

Methodology References:
-Water and Rivers Commission (2001)

- GIS databases:
- Groundwater Salinity
 - Hydrography, linear
 - SAC Bio datasets (Accessed June 2013)
 - Geomorphic Wetlands, Swan Coastal Plain

(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

Given the small area under application (0.6 hectares) and the long linear shape in a degraded (Keighery 1994) condition. The vegetation proposed to be cleared is not likely to cause or exacerbate the incidence or intensity of flooding.

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

Methodology

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

Comments

No submissions have been received.

The application area is located within the Aboriginal Site of Significance 'Serpentine River'. The applicant has been notified of their obligations under the Aboriginal Heritage Act 1972.

Methodology

- GIS Database:
- Aboriginal Sites of Significance

4. References

- Brown A., Thomson-Dans C. and Marchant N.(1998). Western Australia's Threatened Flora, Department of Conservation and Land Management, Western Australia.
- Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.
- DPaW (2007 -) NatureMap: Mapping Western Australia's Biodiversity. Department of Parks and Wildlife. URL: <http://naturemap.dec.wa.gov.au/>. Accessed June 2013
- DEC (2013) Site Inspection Report for Clearing Permit Application CPS 5618 /1Kargotich Road reserve, Oldbury and Mardella and Richardson Street road reserve, Serpentine. Site inspection undertaken 24 June 2013. Department of Environment and Conservation, Western Australia (DEC Ref: A646659)
- Government of Western Australia. (2013). 2012 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of October 2012. WA Department of Environment and Conservation, Perth.
- 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.
- 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., Beeston, G.R., and Hopkins, A.J.M. (2001), Native Vegetation in Western Australia. Technical Report 249. Department of Agriculture Western Australia, South Perth.
- Shire of Serpentine Jarrahdale (2013) Flora survey conducted on 21 August 2013 and then verified on the 14 October 2013 targeting DRF on proposed clearing sites. Western Australia. (DER Ref: A687604)
- Water and Rivers Commission (1996) Policy and Guidelines: Granting of Licences to Clear Indigenous Vegetation in Catchments Subject to Clearing Control Legislation. Water and Rivers Commission, Western Australia.
- Western Australian Herbarium (1998-) FloraBase - The Western Australian Flora. Department of Environment and Conservation. <http://florabase.dec.wa.gov.au/> (Accessed June 2013).