



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 5797/1
Permit Holder:	Stuart-Wayne Threadgold
Duration of Permit:	8 March 2014 –8 March 2019

PART I – CLEARING AUTHORISED

- 1. Purpose for which clearing may be done**
Clearing for the purpose of road widening.
- 2. Land on which clearing is to be done**
Haag Road reserve (PIN 11469325), Carburnup River
- 3. Area of Clearing**
The Permit Holder shall not clear more than 0.3 hectares of native vegetation within the area shaded yellow on attached Plan 5797/1.
- 4. Application**
This Permit allows the Permit Holder to authorise persons, including employees, contractors and agents of the Permit Holder, to clear native vegetation for the purposes of this Permit subject to compliance with the conditions of this Permit and approval from the Permit Holder.

PART II – MANAGEMENT CONDITIONS

- 5. Avoid, minimise etc clearing**
In determining the amount of native vegetation to be cleared authorised under this Permit, the Permit Holder must have regard to the following principles, set out in order of preference:
 - (a) avoid the clearing of native vegetation;
 - (b) minimise the amount of native vegetation to be cleared; and
 - (c) reduce the impact of clearing on any environmental value.
- 6. 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*:
 - (a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
 - (b) ensure that no *dieback* or *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared; and
 - (c) 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;

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 -

- (a) that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*; or
- (b) published in a Department of Parks and Wildlife Regional Weed Summary, regardless of ranking; or
- (c) not indigenous to the area concerned.



M Warnock
MANAGER
NATIVE VEGETATION CONSERVATION BRANCH

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

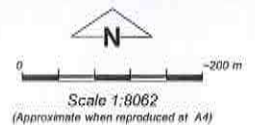
6 February 2014

Plan 5797/1



LEGEND

-  Road Centrelines
-  Cadastre
-  Local Government Authorities
-  Clearing Instruments
-  Areas Approved to Clear



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 6/2/14
 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

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* Project Data. This data has not been quality assured. Please contact map author for details.



1. Application details

1.1. Permit application details

Permit application No.: 5797/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Stuart-Wayne Threadgold

1.3. Property details

Property: ROAD RESERVE (CARBUNUP RIVER 6280)
Local Government Area: City of Busselton
Colloquial name: Haag Road reserve

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 6 February 2014

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 37 is described as shrublands comprising teatree thicket (Shepherd et al, 2001).	The amended area of proposed clearing consists of 0.3 hectares of native vegetation within Haag Road reserve, Carbanup River, for the purpose of widening the road.	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	The condition of the vegetation was established via aerial imagery (Busselton 50cm Orthomosaic 2007 - Landgate).
Mapped Beard Vegetation Association 1181 is described as medium woodland, jarrah & Eucalyptus haematoxyton (Whicher Range) (Shepherd et al, 2001).		To	
Mapped Mattiske Vegetation Yelverton (Y) Complex consists of woodland of Eucalyptus marginata subsp. Marginata, Corymbia calophylla, Allocasuarina fraseriana, Agonis flexuosa and open woodland of Corymbia calophylla on low undulating uplands in the humid zone (Mattiske and Havel, 1998).		Completely Degraded: No longer intact; completely/almost completely without native species (Keighery 1994)	
Mapped Mattiske Vegetation Yelverton (Yd) Complex consists of woodland of Allocasuarina fraseriana, Eucalyptus marginata subsp. Marginata, Xylomelum occidentale, Banksia attenuata on sandy slopes in the humid zone (Mattiske and Havel, 1998).			
Mapped Mattiske Vegetation Yelverton (Yw) Complex consists of woodland of Allocasuarina fraseriana, Nuytsia floribunda, Agonis flexuosa, Banksia attenuata on slopes and open forest of Corymbia calophylla, Eucalyptus patens, Eucalyptus marginata subsp. marginata on the lower slopes and woodland of Eucalyptus rudis and Melaleuca raphiophylla on valley floors in the humid zone. (Mattiske and Havel, 1998).			
Mapped Mattiske Vegetation Abba (Aw) Complex consists of mosaic of tall shrubland of Melaleuca viminea and woodland of Eucalyptus rudis and Melaleuca raphiophylla with occasional Corymbia calophylla (Mattiske and Havel, 1998).			

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 amended area of proposed clearing consists of 0.3 hectares of native vegetation within the southern portion of Haag Road reserve, Carbanup River, for the purpose of road widening. The vegetation ranges from very good to completely degraded (Keighery, 1994) condition. The proponent has advised that the road is to be widened to allow for two semi-trailers to use the road simultaneously.

The original application area included vegetation within the northern portion of Haag Road reserve, which is significant as it includes two mapped priority 1 listed ecological communities (PEC's), one un-mapped priority 1 PEC and associated transitional vegetation (DPaW, 2013). The revised application area includes only the vegetation within the southern portion of the road reserve, and although a portion of this area is recognised as part of a PEC (Shrublands of near permanent wetlands in creeklines of the Whicher Scarp (WHSFCT_G2)), the vegetation within the southern side is separated from the larger portion of the PEC by Haag Road and does not significantly contribute towards the values of this PEC.

The Swan Bioplan project flora survey (Keighery et al, 2008) identified one priority 4 flora species and three regionally significant flora species within Haag Road reserve. The regionally significant species are *Daviesia flexuosa* (the only known occurrence of this species in the Whicher Scarp landform), *Beaufortia squarrosa* (a disjunct range end population) and *Taraxis grossa* (lies within the northern most area of its range) (Keighery et al, 2008). The revised application area will not impact on the significant northern portion of Haag Road reserve, and will reduce the potential impacts to these species.

There were no other priority or rare flora species identified within the application area in the Swan Bioplan project flora survey (Keighery et al, 2008).

The vegetation under application has the potential to contain suitable habitat for *Calyptorhynchus baudinii* (Baudin's cockatoo), *Calyptorhynchus latirostris* (Carnaby's cockatoo), *Pseudocheirus occidentalis* (western ringtail possum) and *Engaewa reducta* (Dunsborough burrowing crayfish). These species are gazetted as 'rare or likely to become extinct' under the Wildlife Conservation Act 1950. Given that the application area has been revised to minimise impacts to significant vegetation, it is unlikely that the proposed roadside clearing will significantly impact the abovementioned species.

There is approximately 25 per cent native vegetation remaining in the local area (10 kilometre radius).

The disturbance associated with the proposed clearing will increase the risk of weeds and dieback spreading into adjacent vegetation, particularly given that the road upgrade starts at the top of a slope, therefore run-off into dieback prone vegetation may occur. Weed and dieback management practices will assist in mitigating this risk.

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

Methodology

References:

- DPaW (2013)
- Keighery et al (2008)
- Keighery (1994)

GIS Databases:

- SAC Bio Datasets (Accessed November 2013)

(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

Several fauna species of conservation significance have been recorded within the local area (10 kilometre radius), including *Calyptorhynchus baudinii* (Baudin's cockatoo), *Calyptorhynchus latirostris* (Carnaby's cockatoo), *Dasyurus geoffroi* (chuditch), *Pseudocheirus occidentalis* (western ringtail possum) and *Engaewa reducta* (Dunsborough burrowing crayfish) (DEC, 2007-).

Beard Vegetation Association 1181 is mapped over approximately 90 per cent of the application area and is described as medium woodland consisting of *Eucalyptus marginata* & *Eucalyptus haematoxylon* (Whicher Range) (Shepherd et al, 2001). Trees with a diameter at breast height of greater than 500 millimetres (most commonly *Eucalyptus marginata* and *Corymbia calophylla*), have the potential to contain hollows large enough to be utilised by Baudin's cockatoo and Carnaby's cockatoo for breeding (Commonwealth of Australia, 2012). The proponent has provided photographs of the application area which indicate that the trees on site are not large enough to contain hollows suitable to be utilised as breeding habitat for these species.

The vegetation under application provides suitable foraging habitat for black cockatoos, however given that the application area has been amended to exclude significant vegetation, and the 0.3 hectares of vegetation to be cleared falls within 3.6 metres of the road edge, it is not likely that the proposed clearing will impact on significant habitat for these species.

The WHSFCT_G2 within Haag Road reserve is predominantly in a very good (Keighery, 1994) condition (DPaW, 2013) and contains suitable habitat for *Engaewa reducta* (Dunsborough burrowing crayfish), which is found along the Busselton Shire boundary, bound by the Carburnup River to the east and the Leeuwin-Naturaliste Ridge to the west. This species only inhabits headwater seepage and swamp areas of drainage systems within this range (Department of the Environment (2013a)). Vegetation associated with these habitats is usually comprised of very dense native heaths dominated by myrtaceous shrubs and soils with a high sand content. The revised application area has excluded a significant portion of the vegetation associated with the WHSFCT_G2, and importantly the higher quality northern portion, therefore, it is unlikely that the revised proposed clearing will impact on significant habitat for this species.

Pseudocheirus occidentalis (western ringtail possum) has been recorded 18 times within the local area with the most recent record taken in 2012 (DPaW, 2007-). This species has a preference for near coastal *Agonis flexuosa* forest and *Eucalyptus gomphocephala* dominated forest with an *Agonis flexuosa* understorey (Department of the Environment (2013b)). Two of the Mattiske Vegetation Complexes (Y and Yw) mapped within the application area include vegetation that is consistent with the above preference, however given that the application area has been amended to exclude significant vegetation, and the 0.3 hectares of vegetation to be cleared falls within 3.6 metres of the road edge, it is not likely that the proposed clearing will impact on significant habitat for this species.

Dasyurus geoffroi (chuditch) has been recorded three times within the local area, the most recent of which dates from 1988 (DEC, 2007-). Given the date of the most recent record and the limited number of records within the local area, it is unlikely that the vegetation under application provides significant habitat for this species.

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

Methodology References:
-DPaW (2007-)
-Shepherd et al (2001)
-Commonwealth of Australia (2012)

(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**
Several species of rare flora have been mapped within the local area (10 kilometre radius). The closest of these to the application area is an erect, sparsely branched shrub with a preference for sandy loams and seasonally inundated plains (Western Australian Herbarium, 1998-). This species has been mapped approximately two kilometres south east of the application area.

A floristic survey of the Whicher Scarp, which included the vegetation under application, did not identify any rare flora species (Keighery et al, 2008).

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

Methodology References:
-Western Australian Herbarium (1998-)
- Keighery et al (2008)

GIS Databases:
-SAC Bio Datasets (Accessed November 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 is not likely to be at variance to this Principle**
The closest threatened ecological community (TEC) to the application area is mapped 1.5 kilometres north and is known as 'Shrublands on Southern Swan Coastal Plain Ironstones'. This TEC is listed as Critically Endangered, as endorsed by the Minister for Environment.

A floristic survey of the Whicher Scarp, which included the vegetation under application, did not identify the presence of this TEC within the application area (Keighery et al, 2008).

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

Methodology References:
-Keighery et al (2008)

GIS Databases:
-SAC Bio Datasets (Accessed November 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

There is approximately 25 per cent native vegetation remaining in the local area (10 kilometre radius).

The national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001).

The Swan Coastal Plain and City of Busselton retain approximately 39 and 43 per cent pre-European vegetation respectively. The vegetation associations and complexes mapped within the application area retain equal to or greater than the 30 per cent threshold, with the exception of Mattiske Vegetation Abba Complex and Yelverton (Yw) Complex, which retain approximately 5 and 24 cent pre-European vegetation respectively. The amount of vegetation proposed for clearing within Abba vegetation complex is approximately 0.032 hectares and 0.082 hectares within Yelverton (Yw) complex (Government of Western Australia, 2013).

The application area includes approximately 0.08 hectares of vegetation mapped as Yelverton (Yd) Complex (Mattiske and Havel, 1998) and while the percentage of this complex remaining is above the 30 percent threshold, the actual amount remaining for this complex is below the recommended retention level of 1,500 hectares (Molloy et al, 2009). For this reason, any remnant vegetation of these complexes should be regarded as being regionally significant.

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

The proponent has amended the application area to minimise impacts to vegetation located within the significant northern portion of Haag Road reserve.

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Extent in DEC Managed Lands (%)
IBRA Bioregion*				
Swan Coastal Plain	1,501,222	507,709	39	35
Shire*				
City of Busselton	146,478	62,332	43	66
Beard Vegetation Association				
37	15,618	5,618	36	38
1181	9,239	3,700	40	41
Mattiske Vegetation				
Abba (Aw) Complex	9,094	478	5	0.2
Yelverton (Y) Complex	7,637	2,309	30	12
Yelverton (Yd) Complex	1,767	1,024	58	3
Yelverton (Yw) Complex	3,841	927	24	5

*Government of Western Australia (2013)

**Mattiske and Havel (1998)

Methodology

References:

- Mattiske and Havel (1998)
- Government of Western Australia (2013)
- Commonwealth of Australia (2001)
- Molloy et al (2009)

(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

The application area includes an area mapped as a conservation category sumpland, a multiple use sumpland and lies within 35 metres of a resource enhancement palusplain.

Conservation category wetlands are the highest priority wetlands for protection and conservation as they support a high level of ecological functions and attributes (Water and Rivers Commission, 2001).

Given the above, the vegetation under application is growing in an environment associated with a watercourse or wetland, therefore the proposed clearing is at variance to this Principle.

The proponent has amended the application area to reduce the area of proposed clearing and minimise impacts to vegetation located within the significant northern portion of Haag Road reserve, including vegetation associated with the abovementioned conservation category sumpland.

Methodology References:
-Water and Rivers Commission (2001)

SAC Bio Datasets:
-Geomorphic Wetlands, Swan Coastal Plain
-Hydrography, linear
-Hydrography, hierachy

(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 have been mapped by Northcote et al (1960-68) as acid Fey earths often in association with leached sands that have a clay D horizon at depths of 3 to 8 feet. Associated are small areas of soils containing ironstone gravels.

Earthy sands and leached sands are highly susceptible to wind erosion, however given the small size and linear shape of the application area, it is not likely that the proposed clearing will result in wind erosion causing appreciable land degradation.

The abovementioned soils are highly permeable, however given that a portion of the application area lies within a sumpland, there is the potential for water erosion on site. Given the small size and linear shape of the application area, it is not likely that the proposed clearing will lead to water erosion causing appreciable land degradation.

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

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

GIS Databases:
-SAC Bio Datasets (Accessed November 2013)

(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 is not likely to be at variance to this Principle**

The closest conservation area to the proposed clearing is Haag Nature Reserve, located approximately 750 metres west of the application area.

Given the small size and linear shape of the application area, it is unlikely that the proposed clearing will impact upon this conservation area.

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

Methodology GIS Databases:
-DEC 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 **Proposal may be at variance to this Principle**

The application area includes an area mapped as a conservation category sumpland, a multiple use sumpland and lies within 35 metres of a resource enhancement palusplain.

The proposed clearing may result in minor water erosion and sedimentation of the wetlands, particularly given that the conservation category sumpland sits at a lower level of elevation than the western portion of the road reserve. Therefore there is the potential for increased surface water run-off into this area.

Groundwater salinity within the application area is mapped between 500 to 1000 milligrams per litre (marginal). Given this low salinity level, and the small size of the application area, it is not likely that the proposed clearing will lead to a perceptible rise in the watertable and thus an increase in groundwater salinity levels.

The proposed clearing may be at variance to this Principle.

The proponent has amended the application area to reduce the area of proposed clearing and minimise impacts to vegetation located within the significant northern portion of Haag Road reserve, including vegetation associated with the abovementioned conservation category sumpland. This will aid in minimising impacts to surface water through sedimentation.

Methodology GIS Databases:
-Geomorphic Wetlands, Swan Coastal Plain
-Hydrography, linear
-Hydrography, hierachy
-Groundwater Salinity, Statewide

(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 size and linear shape of the application area, the proposed clearing is not likely to cause or exacerbate the incidence or intensity of flooding.

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

Methodology GIS Databases:
-Geomorphic Wetlands, Swan Coastal Plain

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

Comments

This proposed clearing of 0.3 hectares of native vegetation within Haag Road reserve, Carbanup River, is for the purpose of road widening. The vegetation ranges from very good to completely degraded (Keighery, 1994) in condition.

The proponent has submitted a separate application to clear within Lot 75 on Diagram 98087 (CPS 5606/1) for the purpose of extracting sand. A permit was granted to the proponent for extraction on Monday 27 January 2014. The proponent has obtained Planning Consent from the City of Busselton for the sand extraction. One of the conditions of the Planning Consent requires Haag Road to be upgraded to a standard that is suitable to allow two semi-trailers to drive simultaneously along this road (City of Busselton, 2013).

The City of Busselton has advised that it endorses the proposed clearing within Haag Road reserve (City of Busselton, 2013).

The initial proposed road upgrade had the potential to increase the spread of dieback into the highly sensitive PEC vegetation and a mapped conservation category wetland (CCW). The drainage from Haag Road is currently being directed towards these areas, which sit at lower elevation than the vegetation within the western portion of the road reserve. The proponent has amended the application area to reduce the area of proposed clearing and minimise impacts to vegetation within the highly sensitive PEC vegetation, therefore the potential for weed and dieback spread into these areas has been reduced.

Methodology References:
-DPaW (2013)
-City of Busselton (2013)
-Keighery (1994)

4. References

- City of Busselton (2013) Additional Information for Clearing Permit Application CPS 5797/1. DER Ref A671695.
- Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.
- Commonwealth of Australia (2012) EPBC Act referral guidelines for three threatened black cockatoo species, Canberra.
- Department of the Environment (2013a) *Engaewa reducta* in Species Profile and Threats Database, Department of the Environment, Canberra.
- Department of the Environment (2013b) *Pseudocheirus occidentalis* in Species Profile and Threats Database, Department of the Environment, Canberra.
- DPaW (2007 -) NatureMap: Mapping Western Australia's Biodiversity. Department of Parks and Wildlife, Western Australia. URL: <http://naturemap.dec.wa.gov.au/>. Accessed November 2013.\
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- 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.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Keighery, B.J., Keighery, G.J., Webb, A., Longman, V.M and Griffin, E.A (2008) A Floristic Survey of the Whicher Scarp. A report for the Department of Environment and Conservation (Western Australia) as part of the Swan Bioplan Project.
- Mattiske, E.M. and Havel, J.J. (1998) Vegetation Complexes of the South-west Forest Region of Western Australia. Maps and report prepared as part of the Regional Forest Agreement, Western Australia for the Department of Conservation and Land Management and Environment 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.

Water and Rivers Commission (2001) Position Statement: Wetlands, Water and Rivers Commission, Perth.

Western Australian Herbarium (1998-) FloraBase - The Western Australian Flora. Department of Environment and Conservation. <http://florabase.dec.wa.gov.au/> (Accessed November 2013).