



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 6400/1
Permit Holder:	Shire of Waroona
Duration of Permit:	16 May 2015 – 16 May 2020

The Permit Holder is authorised to clear native vegetation subject to the following conditions of this Permit.

1. Purpose for which clearing may be done

Clearing for the purpose of maintaining, upgrading and improving the safety of Nanga Brook Road.

2. Land on which clearing is to be done

Lot 2187 on Deposited Plan 221068, Waroona
Lot 2289 on Deposited Plan 26031, Waroona
State Forest 14, Waroona
Nanga Brook Road reserve, Waroona
Lot 2290 on Deposited Plan 26032, Nanga Brook

3. Area of Clearing

The Permit Holder must not clear more than 2.7 hectares of native vegetation within the combined areas hatched yellow on attached Plan 6400/1 (a), Plan 6400/1 (b) and Plan 6400/1 (c).

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.

5. Type of clearing authorised

This Permit authorises the Permit Holder to clear native vegetation for the activities described in condition 1 of this Permit to the extent that the Permit Holder has the power to carry out works involving clearing for those activities under the *Local Government Act 1995* or any other written law.

PART II – ASSESSMENT SEQUENCE AND MANAGEMENT PROCEDURES

6. 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:

- avoid the clearing of native vegetation;
- minimise the amount of native vegetation to be cleared; and
- reduce the impact of clearing on any environmental value.

7. 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 Rankings Summary, regardless of ranking; or
- (c) not indigenous to the area concerned.



Jane Clarkson
A/SENIOR MANAGER
CLEARING REGULATION

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

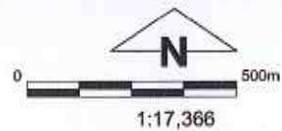
16 April 2015

Plan 6400/1 (a)




Legend

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



(Approximate when reproduced at A4)
GDA 94 (Lat/Long)
Geocentric Datum of Australia 1994


Jane Clarkson Date 16.4.15

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

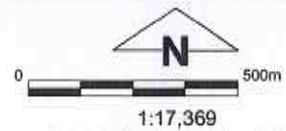
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Plan 6400/1 (b)

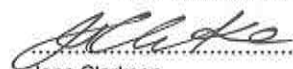


Legend

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



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GDA 94 (Lat/Long)
Geocentric Datum of Australia 1994

 Date 16-4-15
Jane Clarkson

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

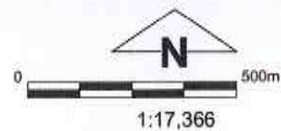


Plan 6400/1 (c)



Legend

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

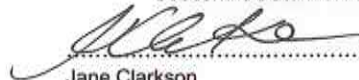


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GDA 94 (Lat/Long)

Geocentric Datum of Australia 1994

 Date 16.4.15
Jane Clarkson

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1. Application details

1.1. Permit application details

Permit application No.: 6400/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Shire of Waroona

1.3. Property details

Property: Nanga Brook Road reserve, Waroona
State Forest 14, Waroona
Lot 2187 on Plan 221068, Waroona
Lot 2289 on Plan 26031, Waroona
Lot 2290 on Plan 26032, Nanga Brook

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 16 April 2015

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description

Mapped Beard Vegetation Association 3 (90 per cent of the application area) is described as Medium forest; jarrah and marri (Shepherd et al, 2001).

Mapped Beard Vegetation Association 4 (10 per cent of the application area) is described as Medium woodland; marri and wandoo (Shepherd et al, 2001).

Mattiske Vegetation Complexes:

He1: Mosaic of open forest of *Corymbia calophylla*-*Eucalyptus patens*-*Eucalyptus marginata* subsp. *marginata* with some *Eucalyptus rudis* on the deeper soils ranging to closed heath and lithic complex on shallow soils associated with granite on steep slopes of valleys in humid and subhumid zones.

My1: Open forest of *Eucalyptus marginata* subsp. *marginata*-*Corymbia calophylla*-*Eucalyptus patens* on valley slopes to woodland of *fs24 Eucalyptus rudis*-*Melaleuca rhaphiophylla* on the valley floors in humid and subhumid zones.

D1: Open forest of *Eucalyptus marginata* subsp. *marginata*-*Corymbia calophylla* on lateritic uplands in mainly humid and subhumid zones.
(Mattiske and Havel, 1998)

Clearing Description

This application proposes to clear 2.7 hectares of native vegetation within Lot 2187 on Deposited Plan 221068, Lot 2289 on Deposited Plan 26031, Nanga Brook Road reserve and State Forest 14, Waroona and Lot 2290 on Deposited Plan 26032, Nanga Brook, for the purpose of maintaining, upgrading and improving the safety of Nanga Brook Road.

Vegetation Condition

Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)

To

Completely Degraded: No longer intact; completely /almost completely without native species (Keighery 1994)

Comment

The condition and description of the vegetation was determined via aerial imagery and photographs provided by the applicant.

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

This application proposes to clear 2.7 hectares of native vegetation within Lot 2187 on Deposited Plan 221068, Lot 2289 on Deposited Plan 26031, Nanga Brook Road reserve, State Forest 14, Waroona and Lot 2290 on Deposited Plan 26032, Nanga Brook, for the purpose of maintaining, upgrading and improving the safety of Nanga Brook Road. The vegetation under application ranges from completely degraded to good (Keighery, 1994) condition.

Several priority flora species have been recorded in the local area (10 kilometre radius). The closest of these is a priority 4 species that has been mapped 320 metres west of the application area on the same soil and vegetation type. Priority 4 species are considered to have been adequately surveyed, and are considered not currently threatened or in need of special protection, but could be if present circumstances change. Given that there are other suitable areas of extensive undisturbed vegetation nearby, particularly within the extensive Dwellingup State Forest, the proposed clearing is unlikely to impact on the conservation status of this species.

One record (1994) of a rare flora species is mapped within the local area (10 kilometre radius). This species has been mapped within a claypan in a low lying area approximately 4.3 kilometres west of the application area. The claypan and corresponding vegetation at this locality is recognised as a threatened ecological community (TEC) based on a set of discrete characteristics. This TEC is not mapped anywhere within the application area, which has largely been mapped as acid red earths with associated soils containing ironstone gravel on spurs and ridge tops. Therefore, the application area is not likely to contain this species.

There are no priority ecological communities mapped within the local area of the proposed clearing.

The local area surrounding the application is extensively vegetated and contains approximately 60 per cent native vegetation. The Shire of Waroona retains approximately 54 per cent of its pre-European vegetation extent (Government of Western Australia, 2013). A significant portion of the application area (approximately 50 per cent) lies adjacent to Dwellingup State Forest, which occupies an area of approximately 180,000 hectares.

Several conservation significant fauna species have been mapped within the local area. Given the relatively small size and linearity of the proposed clearing, it is not likely that the vegetation under application contains significant habitat for fauna, particularly given that higher quality habitat exists within Dwellingup State Forest.

The proposed clearing will increase the risks of weeds and dieback spreading into adjacent vegetated areas, and particularly within Dwellingup State Forest. Weed and dieback mitigation measures will assist in minimising this risk.

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

Methodology References:
-Keighery (1994)
-Government of Western Australia (2013)

GIS Databases:
-SAC Bio Datasets (accessed March 2015)
-NLWRA, Current Extent of Native Vegetation

(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 banksii* subsp. *naso* (forest red-tailed black-cockatoo), *Calyptorhynchus baudinii* (Baudin's cockatoo) *Calyptorhynchus latirostris* (Carnaby's cockatoo), *Phascogale tapoatafa* subsp. *tapoatafa* (Southern brush-tailed phascogale), *Myrmecobius fasciatus* (numbat), *Dasyurus geoffroii* (chuditch) and *Isodon obesulus* subsp. *fusciventer* (quenda) (DPaW, 2007-).

The applicant has advised that the proposed clearing will largely occur within 1.5 metres either side of the road, spanning over a distance of approximately nine kilometres. A significant portion of the application area (approximately 50 per cent) lies adjacent to Dwellingup State Forest, which occupies an extensive area of approximately 180,000 hectares. Although portions of the application area are in a good (Keighery, 1994) condition and may provide suitable habitat for fauna, it is unlikely that the application area provides significant habitat, given the presence of high quality vegetation within the bordering Dwellingup State Forest, and small size and linearity of proposed clearing.

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

Methodology References:
-DPaW (2007-)
-Keighery (1994)

(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**
The closest rare flora to the application area has been mapped 4.3 kilometres west. This species is a rhizomatous, clumped perennial, grass-like or herb (sedge), to 0.4 metres high with a preference for clay and sandy loams that is emergent in freshwater creeks and clay pans (Western Australian Herbarium, 1998-).

One record (taken in 1994) of this species was mapped at the abovementioned location within a claypan in a low lying area classified as a conservation category palusplain.

This area is also recognized as a threatened ecological community known as 'Shrublands on dry clay flats'. The classification of TECs is based on a set of discrete characteristics. There are no TECs mapped within the application area.

There are no palusplain wetlands mapped within the application area and given that the application area has largely been mapped as acid red earths with associated soils containing ironstone gravel on spurs and ridge tops, it is not likely to contain this species.

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

Methodology References:
 -Western Australian Herbarium (1998-)

GIS Databases:
 -SAC Bio Datasets (accessed March 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 **Proposal is not likely to be at variance to this Principle**
 The closest threatened ecological communities (TECs) occur approximately 4.3 kilometres west of the application area. This relatively thin strip (200 metres wide) of remnant vegetation is mapped as three different TEC's, these being, 'Eucalyptus calophylla – Kingia australis woodlands on heavy soils, Swan Coastal Plain', 'Shrublands on dry clay flats', and 'Herb rich shrublands in clay pans'. This area is also largely recognized as a conservation category palusplain wetland and contains rare and priority flora occurrences.

Given the distance of these TECs to the proposed clearing, and relatively small size and linear shape of the application area, it's not likely that the proposed clearing will impact on these communities.

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

Methodology GIS Databases:
 -SAC Bio Datasets (accessed March 2015)
 -Geomorphic Wetlands, Swan Coastal Plain

(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**
 There is approximately 60 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 Jarrah Forest Bioregion, Shire of Waroona, mapped Beard Vegetation Association (BVA 3) and mapped Mattiske vegetation complexes all retain greater than the 30 per cent threshold. BVA 4 retains 29 per cent of its pre-European vegetation within the Jarrah Forest Bioregion (Government of Western Australia, 2013), and is just below the abovementioned 30 per cent threshold. However, the figure for the extent of the BVA within the Shire of Waroona is considerably greater than that for the Bioregion. BVA 4 retains approximately 54 per cent of its pre-European extent within the Shire (Government of Western Australia, 2013).

Given that extensively vegetated areas surround the relatively small linear application area, it is not likely to be considered a significant remnant in an extensively cleared area.

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

	Pre-European (hectares)	Current Extent (hectares)	Remaining (%)	Extent in DPaW Lands (%)
IBRA Bioregion*				
Jarrah Forest	4,506,660	2,457,731	54	68
Shire*				
Shire of Waroona	83,233	44,990	54	79
Beard Vegetation Association				
3	2,390,591	1,629,894	68	80
4	1,022,713	292,975	29	22
Mattiske Vegetation Complexes				
He1	15,843	12,234	77	42
My1	68,618	53,380	78	66
D1	208,273	186,731	90	85

Methodology References:
-Commonwealth of Australia (2001)
-Government of Western Australia (2013)
-Mattiske and Havel (1998)

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 **Proposal is at variance to this Principle**

Several minor perennial watercourses intersect the application area, and a minor tributary crosses the application area near the centre portion. A multiple use wetland is also mapped over this area.

A small portion of vegetation proposed for clearing occurs within the mapped wetland and watercourses, therefore the proposed clearing is at variance to this Principle.

Given the small size of the clearing proposed within these areas, minor nature of the watercourses and multiple use classification of the wetland, the proposed clearing is not likely to significantly impact on the ecological function of these systems.

Methodology GIS Databases:
-Hydrography, linear
-Hydrography, hierachy
-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**

There are two soil types mapped within the application area. Mw31 soils occur within the steep scarp and valley side slopes, on which massive rock outcrops are a feature. The soils are largely acid red earths on the colluvial slope deposits. Associated are soils on moderate to steep upper slopes with some soils containing ironstone gravel on spurs and ridge tops (Northcote et al, 1960-68). JZ1 soils are described as ironstone gravels with sandy and earthy matrices. The soils blanket the slopes and ridges extending down into the upper ends of the minor valleys. They overlie duricrusts comprising recemented ironstone gravels, and or vesicular laterite. Some soils containing ironstone gravels in the surface horizons may occur on the steeper slopes. Yellow loams all overlying pallid-zone clays and/or ironstone gravels at shallow depths, occupy the swampy valley floors (Northcote et al, 1960-68).

The small area of proposed roadside clearing is unlikely to contribute towards either significant water or wind erosion, and is thus unlikely to result in appreciable land degradation.

Given the above 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 March 2015)

(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**

Approximately half of the application area lies adjacent to Dwellingup State Forest. Dwellingup State Forest occupies an area of approximately 180,000 hectares. A small portion of Dwellingup State Forest includes a 160 metre section of Nanga Brook Road. The application area involves minimal clearing within this area.

The proposed clearing may impact upon the State Forest by increasing the risk of weeds and dieback spreading into this area. Weed and dieback mitigation measures will assist in minimising this risk.

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

Several minor perennial watercourses intersect the application area, and a minor tributary crosses the application area near the centre portion. A multiple use wetland is also mapped over this area therefore some sedimentation may occur as a result of clearing. However, given the small size of the clearing proposed and minor nature of the watercourses, deterioration via sedimentation is considered to be negligible.

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

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

Methodology GIS Databases:
-Hydrography, linear
-Hydrography, hierachy
-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 relatively small, linear 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.

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

Comments

This application proposes to clear 2.7 hectares of native vegetation within Lot 2187 on Deposited Plan 221068, Lot 2289 on Deposited Plan 26031, Nanga Brook Road reserve, State Forest 14, Waroona and Lot 2290 on Deposited Plan 26032, Nanga Brook, for the purpose of maintaining, upgrading and improving the safety of Nanga Brook Road. The Shire has advised that works are to be funded by an Australian Government Blackspot Grant to assist in the reduction of the number and severity of accidents experienced within this section of road in the previous five years.

The Roadside Conservation Committee (RCC, 2015) has advised that given the clear safety imperative, and presence of extensive vegetation within Dwellingup State Forest, it does not oppose the proposed clearing. It is recommended that care is taken to limit soil disturbance as much as possible to reduce the impact of weed invasion.

The proposed clearing falls within the Murray River System and Waroona Irrigation District Surface Water Areas proclaimed under the Rights in Water and Irrigation (RIWI) Act 1914. The Department of Water was notified of the proposed clearing and has not provided comment.

Methodology References:
-RCC (2015)

GIS Databases:
-RIWI Surface Water Areas

4. References

- 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 March 2015.
- Government of Western Australia (2013); 2013 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). 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.
- 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
- RCC (2015) Direct Interest Submission for Clearing Permit Application CPS 6400/1. Roadside Conservation Committee, Western Australia. DER Ref A891424.
- 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.
- Western Australian Herbarium (1998-) FloraBase - The Western Australian Flora. Department of Parks and Wildlife. <http://florabase.dpaw.wa.gov.au/> (Accessed March 2015).