



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 3327/1
Permit holder:	Shire of Capel
Duration of Permit:	4 December 2009 – 4 December 2014

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

PART I – CLEARING AUTHORISED

1. Purpose for which clearing may be done

Clearing for the purpose of road reconstruction.

2. Land on which clearing is to be done

Mallokup Road Reserve (Stirling Estate, 6271)
Weld Road Reserve (Capel River, 6271)

3. Area of Clearing

The Permit Holder must not clear more than 1.15 hectares of native vegetation within the area cross hatched yellow on attached Plans 3327/1a and 3327/1b.

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 activities to the extent that the permit holder has the power to clear native vegetation for those activities under the *Local Government Act 1995* or any other written law.

6. Compliance with Assessment Sequence and Management Procedures

Prior to clearing any native vegetation under conditions 1, 2 and 3 of this Permit, the Permit Holder must comply with the Assessment Sequence and the Management Procedures set out in Part II of this Permit.

PART II – ASSESSMENT SEQUENCE AND MANAGEMENT PROCEDURES

7. 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.

8. 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) shall not move soils in wet conditions;
- (c) ensure that no *dieback* or *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared; and
- (d) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

9. Fauna management

- (a) Prior to undertaking any clearing authorised under this Permit, the areas shall be inspected by a fauna specialist who shall identify tree(s) that contain hollows suitable to be utilised as habitat by fauna listed in the Wildlife Conservation (Specially Protected Fauna) Notice 2008.
- (b) Prior to clearing, any habitat tree(s) identified by condition 9(a) shall be inspected by a fauna specialist for the presence of fauna listed in the Wildlife Conservation (Specially Protected Fauna) Notice 2008.
- (c) Prior to clearing, the Permit Holder shall ensure that any fauna identified by condition 9(b) shall be removed and relocated by a fauna clearing person, in accordance with a licence issued by the Department.

PART III – OFFSETS

10. Offsets

The Permit Holder must develop and implement an *offset* in accordance with conditions 10(a) and 10(b) of this Permit for clearing of native vegetation identified as requiring an *offset* in the *decision report* and indicated in Plans 3327/1c and 3327/1d.

- (a) Determination of *offsets*:
 - (i) in determining the *offset* to be implemented with respect to a particular area of native vegetation proposed to be cleared under this Permit, the Permit Holder must have regard to the *offset* principles contained in condition 10(b) of this Permit;
 - (ii) once the Permit Holder has developed an *offset proposal*, the Permit Holder must provide that *offset proposal* to the CEO for the CEO's approval prior to undertaking any clearing to which the *offset* relates, and prior to implementing the *offset*;
 - (iii) clearing may not commence until and unless the CEO has approved the *offset proposal* to which the clearing relates;
 - (iv) the Permit Holder shall implement the *offset proposal* approved under condition 10(a)(iii); and
 - (v) each *offset proposal* shall include a *direct offset*, timing for implementation of the *offset proposal* and may additionally include *contributing offsets*.

- (b) For the purpose of this condition, the *offset* principles are as follows:
- (i) *direct offsets* should directly counterbalance the loss of the native vegetation;
 - (ii) *contributing offsets* should complement and enhance the *direct offset*;
 - (iii) *offsets* are implemented only once all avenues to avoid, minimise, rectify or reduce environmental impacts have been exhausted;
 - (iv) the environmental values, habitat, species, *ecological community*, physical area, ecosystem, landscape, and hydrology of the *offset* should be the same as, or better than, that of the area of native vegetation being *offset*;
 - (v) a ratio greater than 1:1 should be applied to the size of the area of native vegetation that is offset to compensate for the risk that the *offset* may fail;
 - (vi) *offsets* must entail a robust and consistent assessment process;
 - (vii) in determining an appropriate *offset*, consideration should be given to ecosystem function, rarity and type of *ecological community*, vegetation *condition*, habitat quality and area of native vegetation cleared;
 - (viii) the *offset* should either result in no net loss of native vegetation, or lead to a net gain in native vegetation and improve the *condition* of the natural environment;
 - (ix) *offsets* must satisfy all statutory requirements;
 - (x) *offsets* must be clearly defined, documented and audited;
 - (xi) *offsets* must ensure a long-term (10-30 year) benefit; and
 - (xii) an *environmental specialist* must be involved in the design, assessment and monitoring of *offsets*.

PART IV – RECORD KEEPING AND REPORTING

11. Records must be kept

The Permit Holder must maintain the following records for activities done pursuant to this Permit:

- (a) In relation to the clearing of native vegetation authorised under this Permit:
 - (i) the species composition, structure and density of the cleared area;
 - (ii) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings;
 - (iii) the date that the area was cleared; and
 - (iv) the size of the area cleared (in hectares).
- (b) In relation to fauna management pursuant to condition 9 of this Permit:
 - (i) the location of each habitat tree identified recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings;
 - (ii) the species name of fauna reasonably likely to utilise, or that have been observed utilising, the habitat tree(s); and
 - (iii) the location and date where relocated fauna was released, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings.
- (c) In relation to the *offset* of areas pursuant to condition 10:
 - (i) the location of any area of *offsets* recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings;
 - (ii) a description of the *offset* activities undertaken; and
 - (iii) the size of the *offset* area (in hectares).

12. Reporting

- (a) The Permit Holder must provide to the CEO, on or before 30 June of each year, a written report of records required under condition 11 of this Permit and activities done by the Permit Holder under this Permit between 1 January and 31 December of the preceding year.

- (b) Prior to 4 September 2014, the Permit Holder must provide to the CEO a written report of records required under condition 11 of this Permit where these records have not already been provided under condition 12(a) of this Permit.

Definitions

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

condition means the rating given to native vegetation using the *Keighery scale* and refers to the degree of change in the structure, density and species present in the particular vegetation in comparison to undisturbed vegetation of the same type;

contributing offsets has the same meaning as is given to that term in the Environmental Protection Authority's *Position Statement No.9 Environmental Offsets*, January 2006;

Department means the Department of Environment and Conservation (Western Australia);

decision report means the decision report outlining the assessment of CPS 3066/1.

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

direct offsets has the same meaning as is given to that term in the Environmental Protection Authority's *Position Statement No.9 Environmental Offsets*, January 2006;

environmental specialist means a person who is engaged by the Permit Holder for the purpose of providing environmental advice, who holds a tertiary qualification in environmental science or equivalent, and has experience relevant to the type of environmental advice that an environmental specialist is required to provide under this Permit;

fauna clearing person means a person who has obtained a licence from the *Department*, issued pursuant to the *Wildlife Conservation Regulations 1970* authorising them to take fauna;

fauna specialist means a person with training and specific work experience in fauna identification or faunal assemblage surveys of Western Australian fauna;

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

habitat tree(s) means trees that have a diameter, at average adult human chest height, of greater than 70cm, healthy but with dead limbs and broken crowns that are likely to contain hollows and roosts suitable for native fauna, or where these are not present then healthy but with the potential to contain hollows and roosts;

Keighery scale means the vegetation condition scale described in *Bushland Plant Survey: A Guide to Plant Community Survey for the Community (1994)* as developed by B.J. Keighery and published by the Wildflower Society of WA (Inc). Nedlands, Western Australia;

local provenance means native vegetation seeds and propagating material from natural sources within 10-40 kilometres of the area cleared.

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;

offset/s means an offset required to be implemented under Condition 11 of this Permit;

offset proposal means an *offset* determined by the Permit Holder in accordance with condition 11 of this Permit;

optimal time means the period from April to May for undertaking *direct seeding*, and the period from May to June for undertaking *planting*;

planting means the re-establishment of vegetation by creating favourable soil conditions and planting seedlings of the desired species;

priority flora taxa means those plant taxa that described as priority flora classes 1, 2, 3 or 4 in the Department's *Declared Rare and Priority Flora List for Western Australia* (as amended);

remedial action/s means, for the purpose of this Permit, any activity that is required to ensure successful establishment of an approved *offset*, and may include a combination of soil treatments and *revegetation*.

weed/s means a species listed in Appendix 3 of the "Environmental Weed Strategy" published by the Department of Conservation and Land Management (1999), and plants declared under section 37 of the *Agriculture and Related Resources Protection Act 1976*.



Keith Claymore
A/ ASSISTANT DIRECTOR
NATURE CONSERVATION DIVISION

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

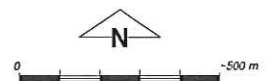
4 November 2009

Plan 3327/1a



LEGEND

- | | |
|-----------------------------|--|
| Clearing Instruments | Bunbury 50cm Orthomosaic - Landgate 2006 |
| Areas Approved to Clear | Donnybrook 50cm Orthomosaic - Landgate 2004 |
| Road Centrelines | |
| Cadastre | |
| Towns | |



Scale 1:18015
(Approximate when reproduced at A4)

Geocentric Datum Australia 1994

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

K Claymore Date 4/11/09
K Claymore

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

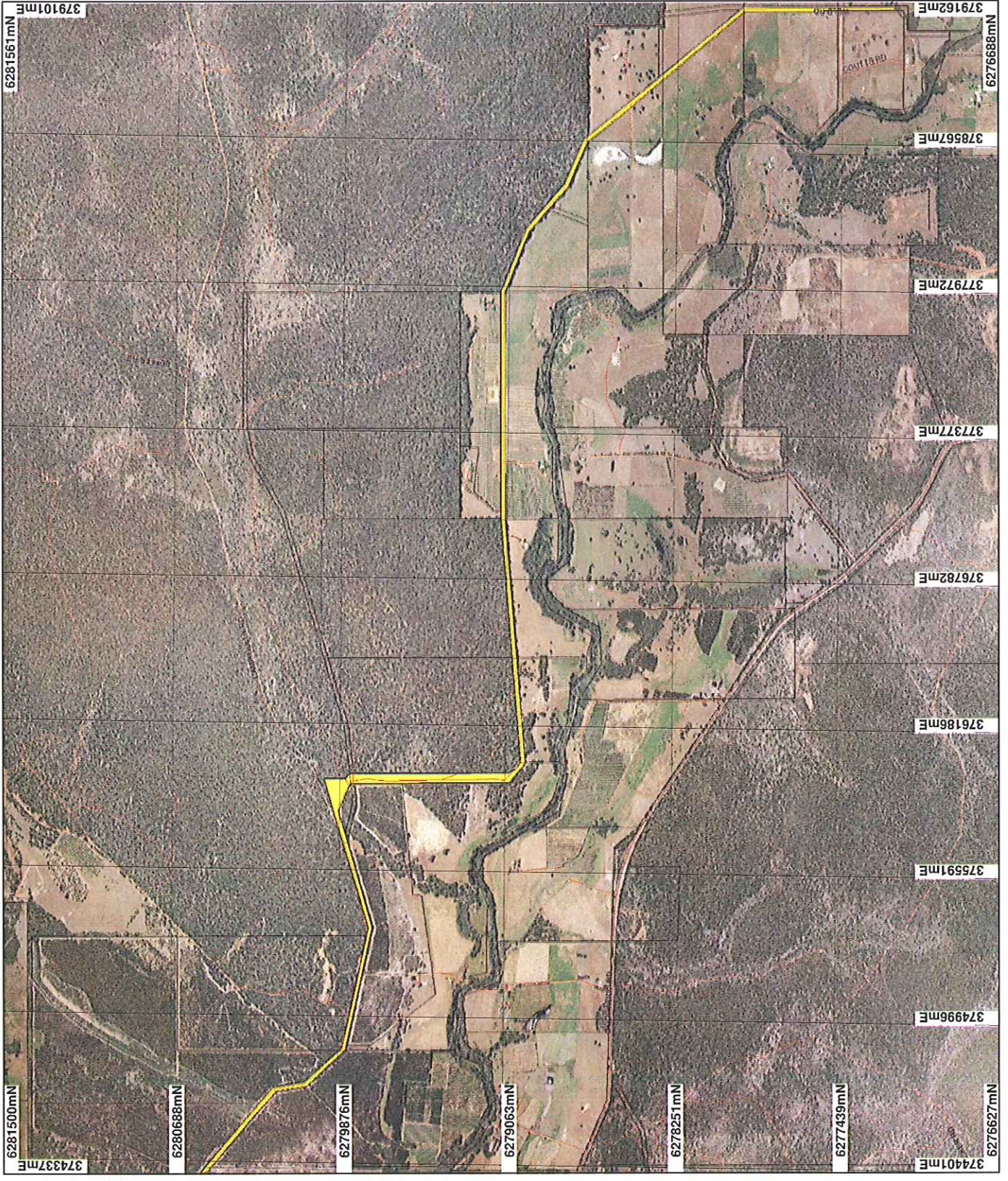
Information derived from this map should be confirmed with the data custodian acknowledged by the agency acronym in the legend.



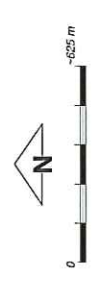
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Plan 3327/1b



- LEGEND**
- Clearing Instruments
 - Areas Approved to Clear
 - Road Centrelines
 - Cadastral
 - Towns
 - Bambury 50cm Orthomosaic - Landgate 2006
 - Donnybrook 50cm Orthomosaic - Landgate 2004



Scale 1:23220
(Approximate when reproduced at A4)

Geocentric Datum Australia 1994

Note: the data in this map have not been checked for accuracy. They may result in geographic distortion or measurement inaccuracies.

K. Claymore
Date

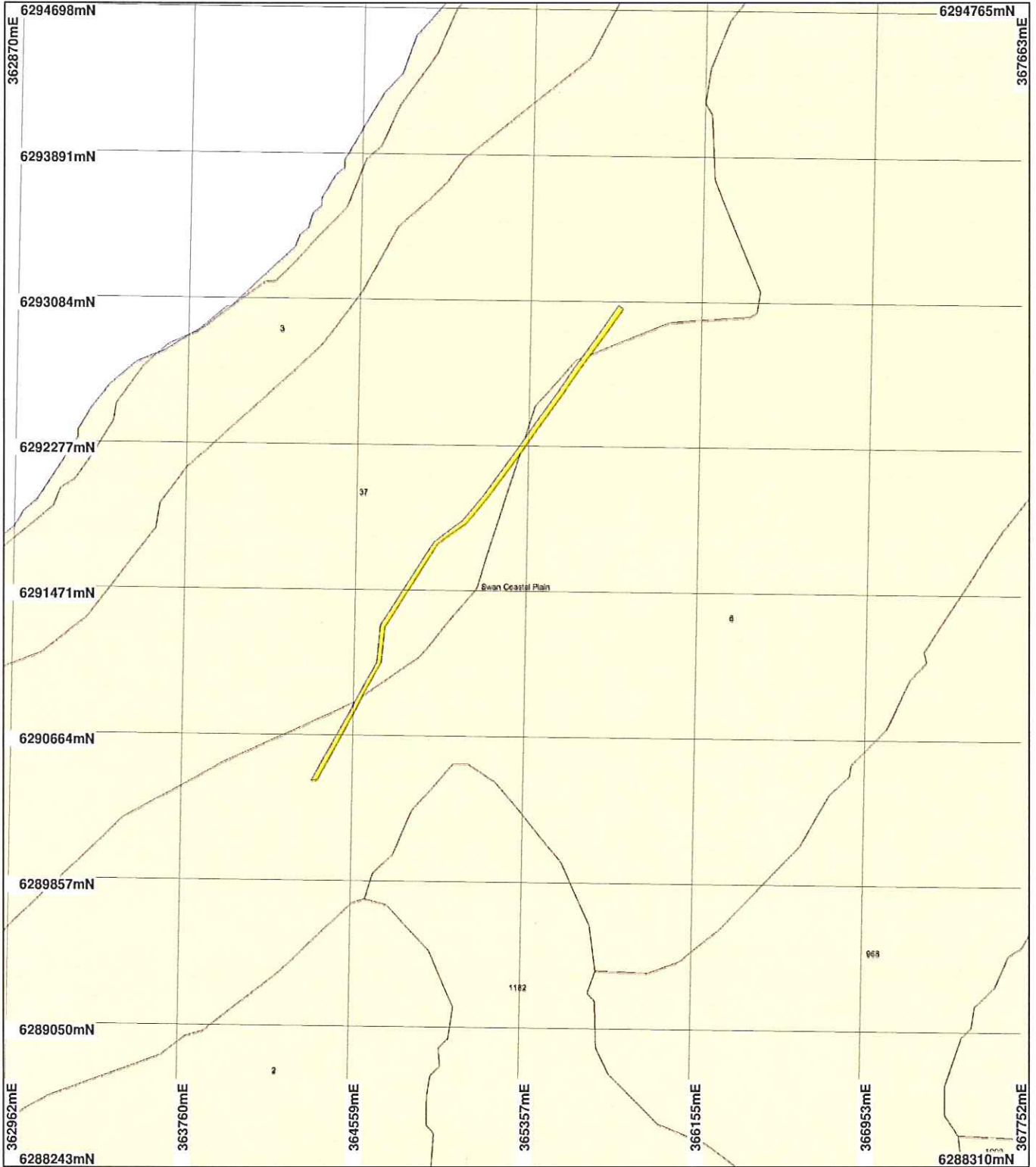
Officer with delegated authority under Section 20 of the Environmental Protection Act 1986

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



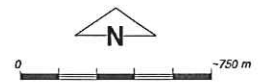
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Plan 3327/1c



LEGEND

- | | |
|--|---------|
| Interim Biogeographic Regionalisation of Australia | Towns_2 |
| □ Pre-European_Vegetation * Clearing Instruments | ○ A |
| ■ Areas Approved to Clear | ○ B |
| | ○ C |



Scale 1:28380
(Approximate when reproduced at A4)

Geocentric Datum Australia 1994

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

K Claymore Date *4/1/09*

K Claymore
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.

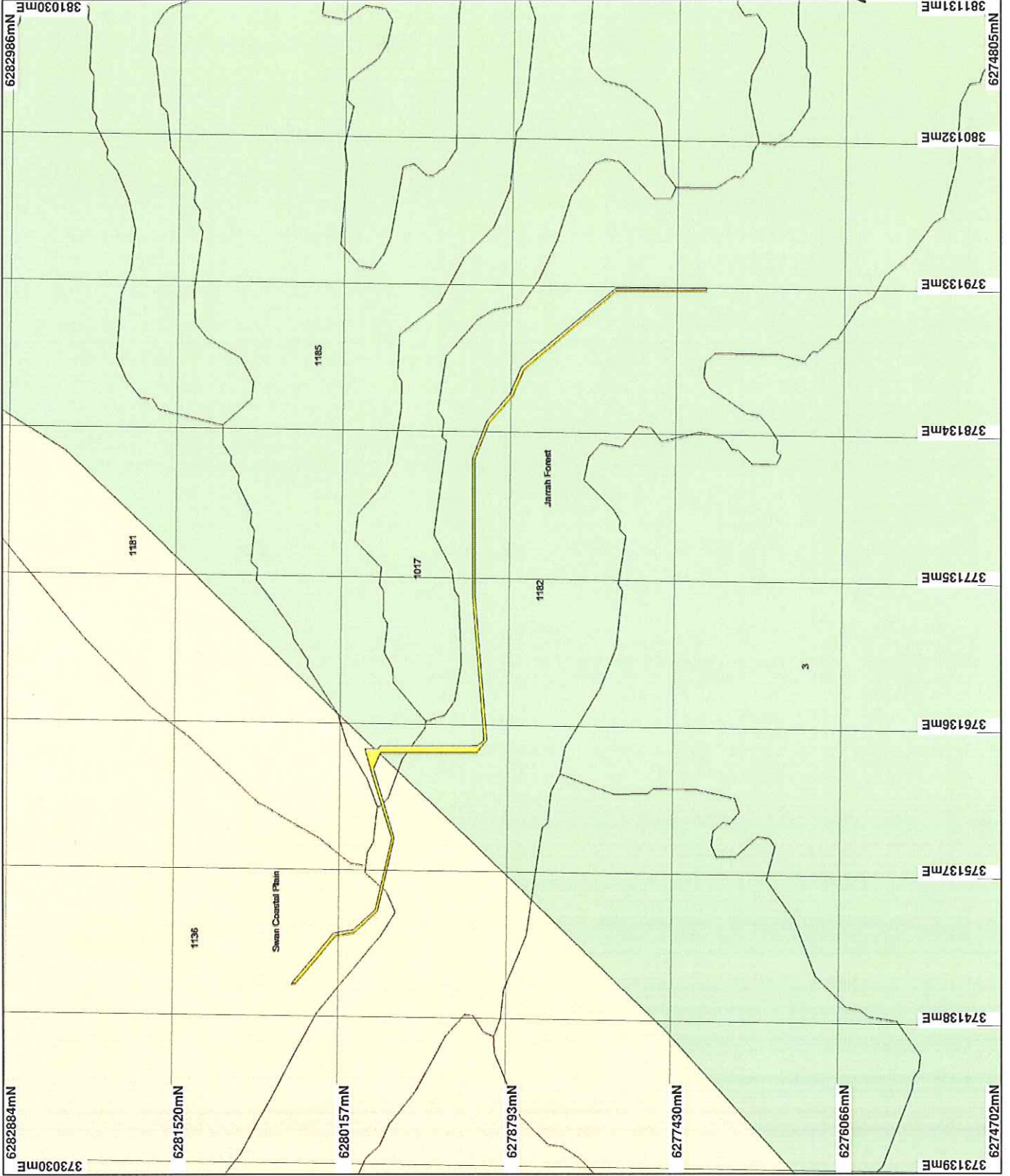


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* Project Data is denoted by asterisk. This data has not been quality assured. Please contact map author for details.

Plan 3327/1d



LEGEND

- Interim Biogeographic Regionalization of Australia
- Pre-European_Vegetation *
- Clearing Instruments
- Areas Approached to Clear
- TOWNS_2
- A
- B
- C

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



0 1 km

Scale 1:38985

(Approximate when reproduced at A4)

Geocentric Datum Australia 1994

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

Kirstyanna Claymore
K Claymore Date 20/01/2009

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1. Application details

1.1. Permit application details

Permit application No.: 3327/1
 Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Shire of Capel

1.3. Property details

Property: ROAD RESERVE (STIRLING ESTATE 6271)
 ROAD RESERVE (CAPEL RIVER 6271)
 ROAD RESERVE (THE PLAINS 6237)

Local Government Area:

Colloquial name:

1.4. Application

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

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
Beard Vegetation Associations: 6 - Medium woodland; tuart & jarrah	The proposal is to clear 1.15 hectares of native vegetation within the Mallokup and Weld Road reserves in the Shire of Capel. Road construction work will target the removal of specific trees and vegetation to improve line of sight and visibility.	Completely Degraded: No longer intact; completely/almost completely without native species (Keighery 1994)	The vegetation along Mallokup Road is considered to be in completely degraded condition. The vegetation along Weld Road ranges from completely degraded (where private property occurs on both sides of the road) to excellent (Keighery 1994) condition (DEC 2009).
37- Shrublands; thicket, mixed			
1017 - Medium open woodland; jarrah & marri, with low woodland; banksia			
1136 - Medium woodland; marri with some jarrah, wandoo, river gum and casuarina			
1182 - Medium woodland; Eucalyptus rudis & Melaleuca raphiophylla			
1185 - Medium woodland; jarrah, marri & blackbutt			
Mattiske Vegetation Complex: Cartis - Low open forest to open forest of Eucalyptus marginata subsp. marginata-Corymbia calophylla-Corymbia haematoxylon with some Banksia attenuata and Xylomelum occidentale on slopes of escarpment in the humid zone. Kingia - Open forest of Eucalyptus marginata subsp. marginata-			

Corymbia calophylla-
Allocasuarina fraseriana-
Banksia grandis-
Xylomelum occidentale on
lateritic uplands in
perhumid and humid
zones.

Rosa - Woodland to open
forest of Corymbia
calophylla-Eucalyptus
marginata subsp.
marginata-Xylomelum
occidentale on slopes and
tall shrubland of Agonis
linearifolia in valley floors
in the humid zone.

Kingia - Open forest of
Eucalyptus marginata
subsp. marginata-
Corymbia calophylla-
Eucalyptus patens on
slopes with some
Eucalyptus rudis on broad
terraces in perhumid and
humid zones.

Heddl Vegetation
Complex?s:

Abba Complex ? No
Description

Preston Complex ? No
Description

Jarrah Wood Complex ?
No Description

Kingia Complex ? No
Description

Yoongarillup Complex -
Woodland to tall woodland
of Eucalyptus
gomphocephala (Tuart)
with Agonis flexuosa in the
second storey. Less
consistently an open forest
of Eucalyptus
gomphocephala (Tuart) -
Eucalyptus marginata
(Jarrah) - Corymbia
calophylla (Marri).

Vasse Complex ? No
Description

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 proposal is to clear 1.15 hectares of native vegetation within the Mallokup and Weld Road Reserves in the Shire of Capel, for road reconstruction.

The vegetation within the Mallokup road reserve is completely degraded with no native vegetation understorey. The vegetation communities along Weld Road are predominantly Marri or Marri-Jarrah woodland, with an open understorey ranging in condition from completely degraded to excellent condition (Keighery 1994). The Weld Road reserve borders Boyanup State Forest which retains large areas of vegetation in similar or better condition to that within the area proposed to be cleared.

There are 30 known occurrences of priority or declared rare flora occurring in the local area (5km radius) and

several of these species occur in the same vegetation and soil types as those which occur in the area under application. The Mallokup and Weld Road reserves also contain a number of mature trees which may potentially provide habitat to native fauna (DEC 2009). The road construction work will target the removal of specific trees and vegetation to improve line of sight and visibility.

The Mallokup Road reserve and the eastern section of the Weld Road reserve lie on the Swan Coastal Plain and within the Swan Coastal Plain IBRA Bioregion four of the Beard vegetation associations represented within the area under application are below the 30% threshold level recommended in the National Objectives Targets for Biodiversity Conservation below which, species loss appears to accelerate exponentially at an ecosystem level (EPA 2000).

Given that several of the vegetation associations represented within the area under application are below the recommended threshold level and considering that these road reserves may potentially contain priority flora and provide habitat for fauna in an extensively cleared landscape the areas proposed to be cleared may contain a high level of biodiversity in a local context and the clearing as proposed may be at variance to this principle.

An offset condition will be placed on the permit to mitigate the loss of significant remnant vegetation in a landscape which has been extensively cleared.

Methodology EPA (2000)
Shepherd et al (2007)
DEC (2009)
Keighery (1994)
GIS database:
- Mattiske Vegetation (01/03/1998)
- Heddle Vegetation Complexes - DEP 22/06/95
- Pre European Vegetation - DA 01/01
- Donnybrook 50cm Orthomosaic - Landgate 2004
- Bunbury 50cm Orthomosaic - Landgate 2006
- SAC Biodatasets - accessed 7 October 2009

(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 may be at variance to this Principle

The following threatened fauna species are recorded within the local area (5 km radius):

Mallokup Road:

- Black Bittern - P3
- Chuditch - Vulnerable
- Western Ringtail Possum - Vulnerable
- Quenda - P5
- Brush-tailed Phascogale - Vulnerable
- Carpet Python - P4

Weld Road:

- Quenda - P5
- Brush-tailed Phascogale - Vulnerable
- Chuditch - Vulnerable
- Forest Red Tailed Black Cockatoo - Vulnerable
- Carnaby Black Cockatoo - Endangered

The proposal is to clear 1.15 hectares of native vegetation within 10km of road reserve in the Shire of Capel, for road reconstruction. The vegetation along Mallokup Road is considered to be completely degraded. The vegetation along Weld Road ranges from completely degraded (where private property occurs on both sides of the road) to excellent condition (DEC 2009, Keighery 1994).

The overstorey species composition within the Mallokup road reserve ranges from *Melaleuca* spp. with *Agonis flexuosa* (Peppermint Tree), to a mixed overstorey of Peppermint and *E. gomphocephala* (Tuart). There is some canopy connectivity between the Peppermint and Tuart and small hollows were observed in the mature Tuart trees during a site inspection. The Peppermint and Tuart trees within this road reserve may provide possum habitat, however no scats were observed (DEC 2009). This site visit was not a survey.

The vegetation communities along Weld Road are predominantly Marri or Marri-Jarrah woodland, with an open understorey. Understorey condition is more degraded where the road borders private property on both sides, and is in very good to excellent condition (Keighery 1994) adjacent to state forest. The road reserve contains a number of mature Marri trees which may potentially provide habitat. During a site inspection observations were made of Forest Red-tailed Black Cockatoos in pairs or threes adjacent to the Weld Road. A potential breeding pair with a juvenile were observed (DEC 2009).

The vegetation within the Mallokup Road Reserve and part of the Weld Road Reserve lies within the Swan Coastal Plain in an area that has been extensively cleared and it is considered that this remaining vegetation may comprise the whole or a part of, or be necessary for the maintenance of, a significant habitat for fauna in a local context and as such the clearing may be at variance to this principle.

A fauna management condition has been placed on the permit to minimise the potential for clearing to impact upon threatened fauna.

Methodology DEC (2009)
Keighery (1994)
GIS database:
- Donnybrook 50cm Orthomosaic - Landgate 2004
- Bunbury 50cm Orthomosaic - Landgate 2006
- SAC Biodatasets - accessed 7 October 2009

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

Comments **Proposal is not likely to be at variance to this Principle**
There are 6 records of DRF recorded in the local area (5km Radius).

- Caladenia busselliana
- Drakaea elastica
- Verticordia densiflora var pedunculata
- Diuris drummondii
- Banksia squarrosa subsp argillacea
- Lechenaultia laricina

The proposal is to clear 1.15 hectares of native vegetation within the Mallokup and Weld Road reserves in the Shire of Capel, for road reconstruction. The vegetation along Mallokup Road is considered to be in completely degraded condition (Keighery, 1994). The vegetation along Weld Road ranges from completely degraded (where private property occurs on both sides of the road) to excellent (Keighery, 1994) condition (DEC 2009).

Of the DRF recorded in the local area only *Verticordia densiflora var pedunculata* occurs in the same mapped vegetation type as that which occurs within the Mallokup road reserve. *Verticordia densiflora var pedunculata* is an erect to spreading shrub occurring in yellow sands and sandy loams in winter wet low lying areas (WA Herbarium 1998). The vegetation within the Mallokup road reserve is classified as completely degraded condition (Keighery, 1994) with no native vegetation understorey (DEC 2009). A site inspection did not identify any DRF within the area under application. It is therefore unlikely that DRF occurs in the area under application and the clearing as proposed is not likely to be at variance to this principle.

Methodology DEC (2009)
Keighery (1994)
WA Herbarium (1998)
GIS database:
- Matiske Vegetation (01/03/1998)
- Heddle Vegetation Complexes - DEP 22/06/95
- Pre European Vegetation - DA 01/01
- SAC Biodatasets - accessed 7 October 2009
- Soils, Statewide DA 11/99

(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**
There are 3 known records of Threatened Ecological Communities (TECs) within the local area (5km radius). These are SCP3a, SCP02 and SCP07 which occur in poorly drained clays and dark soils. These TECs do not occur in the same soil or vegetation types as the areas under application.

These TECs are located 3km south of Weld Road. The vegetation along Weld Road ranges from completely degraded (where private property occurs on both sides of the road) to excellent condition (DEC 2009, Keighery 1994).

Given that the soil types associated with these TECs do not represent those in the areas under application and considering the small size of the clearing (1.15ha spread over 10km of road reserve) it is not likely that the vegetation proposed to be cleared is necessary for the maintenance of these TECs and the clearing is not likely to be at variance to this principle.

Methodology TEC Database (Accessed 29 October 2009)
 DEC (2009)
 Keighery (1994)
 GIS database:
 - Mattiske Vegetation (01/03/1998)
 - Heddle Vegetation Complexes - DEP 22/06/95
 - Pre European Vegetation - DA 01/01
 - SAC Biodatasets - accessed 7 October 2009
 - Soils, Statewide DA 11/99

(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 at variance to this Principle		
	Pre-European (ha)	Current extent (ha)	Remaining (%)
IBRA Bioregions*			
Swan Coastal Plain [^]	1501208	583140	38.8
Jarra Forest [^]	4671 007	2601026	55.6
Shire*			
Capel	55863	19213	34.4
Mattiske Vegetation Complex** (Weld Road Only)			
CSs	156	61	40
RO	16514	13020	78.8
KI	10240	97808	96
Heddle Vegetation Complex***			
Abba	37176	2292	6.2
Preston (no figures)			
Jarraewood			
Kingia			
Yoongarillup	24767	11140	45
Vasse	11190	3287	29.4
Beard Vegetation Association*			
6	56343	14749	26
37	39107	22763	58
1182	23437	6548	28
1136	48124	3241	7
1185	15168	14009	92
1017	17528	11478	65
Beard Vegetation Association with Bioregion*			
Jarra Forest			
6			NA
37	2492	1829	73
1182	11127	5143	46
1136	6	5	76.3
1185	15158	14001	92
1017	11846	9326	79
Swan Coastal Plain			
6	56343	14749	26
37	15704	4894	17
1182	12309	1404	11
1136	48118	3236	7
1185	10.14	8.7	86
1017	5681	2151	37

* (Shepherd et al. 2007)

** (Mattiske Consulting 1998)

*** (Heddle 1980)

[^] Area within Intensive Land Use Zone

The proposal is to clear 1.15 hectares of native vegetation within the Mallokup and Weld Road reserves in the Shire of Capel, for road reconstruction.

The areas under application have a border with parts of the South West Regional Ecological Linkage area which have a proximity value of 1a: a patch within an edge touching or <100m from a linkage (Molloy et al, 2009). Given that the clearing is for 1.15ha of clearing within 10km of road reserves which border the ecological linkage area the impacts on the linkage are considered unlikely to be significant.

The Environmental Protection Authority (EPA) supports the retention of remnant native vegetation to a 30% threshold level as recommended in the National Objectives Targets for Biodiversity Conservation below which, species loss appears to accelerate exponentially at an ecosystem level (EPA 2000).

The Mallokup Road reserve and the western section of the Weld Road reserve lie on the Swan Coastal Plain and within the Swan Coastal Plain IBRA Bioregion Beard vegetation associations 6, 37, 1182 and 1136 represented within the area under application are below the 30% threshold level. The Abba and Vasse Hedde vegetation complexes also retain less than this 30% threshold.

Given that several of the vegetation associations represented within the area under application are below the recommended threshold level the clearing as proposed is at variance to this principle.

An offset condition will be placed on the permit to mitigate the loss of significant remnant vegetation in a landscape which has been extensively cleared.

Methodology EPA (2000)
Hedde (1980)
Mattiske Consulting (1998)
Molloy et al. (2009)
Shepherd et al. (2007)

GIS Databases:

- Donnybrook 50cm Orthomosaic - Landgate 2004
- Bunbury 50cm Orthomosaic - Landgate 2006
- Hedde Vegetation Complexes - DEP 22/06/95
- Interim Biogeographic Regionalisation of Australia - EA 18/10/00
- Local Government Authorities - DLI 8/07/04
- Mattiske Vegetation - CALM 1/03/1998
- Pre European Vegetation - DA 01/01
- SAC Biodatasets - accessed 7 October 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 may be at variance to this Principle

The Capel River runs within 300 metres of the areas under application. One minor perennial watercourse crosses the western end of Mallokup Road and there are two perennial lakes, two perennial swamps and four areas subject to inundation within close proximity to Mallokup Road. The areas under application on Mallokup Road are mapped within a multiple use palusplain wetland and an EPP lake is also located within 200 metres of the road.

The overstorey species composition of Mallokup Road ranges from *Melaleuca* spp. with *Agonis flexuosa* (Peppermint Tree), to a mixed overstorey of Peppermint and *E. gomphocephala* (Tuart). *Melaleuca raphiophylla* over a degraded understorey exists within the western end of the Weld Road reserve (DEC 2009).

The proposal is to clear 1.15 hectares of native vegetation within 10km of road reserve in the Shire of Capel, for road reconstruction. Although the clearing will occur within road reserves which have existing infrastructure including culverts and bridges some vegetation cleared may be growing in association with watercourses and wetlands and the clearing as proposed may be at variance to this principle.

Methodology GIS Databases:
- Donnybrook 50cm Orthomosaic - Landgate 2004
- Bunbury 50cm Orthomosaic - Landgate 2006
- SAC Biodatasets - accessed 7 October 2009
- ANCA wetlands - Environment Australia 26/3/99
- CALM Managed Lands and Waters - CALM 01/06/05
- EPP Lakes Policy Area - DEP 14/05/97
- EPP, Wetlands 2004 (DRAFT) - EPA 21/7/04
- Hydrography linear - DOW 13/7/06
- Hydrography linear (hierarchy) - DoW 13/7/06
- Ramsar wetlands - DEC 03

(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 proposal is to clear 1.15 hectares of native vegetation within 10km of road reserve in the Shire of Capel, for road reconstruction. Road construction work will target the removal of specific trees and vegetation to improve line of sight and visibility.

Given the nature of the clearing application, localised land degradation may occur during the construction period however this will be short term and these issues should be minimal given the roadside infrastructure which is in place to prevent land degradation. The proposed clearing is not likely to be at variance to this principle.

Methodology GIS database:

- Average Annual Rainfall Isohyets - WRC 29/09/98
- Annual Evaporation Contours (Isopleths) - WRC 29/09/98
- Hydrogeology, statewide - DOW 13/07/06
- Hydrographic catchments, catchments - DoW 01/06/07
- Hydrography, linear - DOW 13/7/06
- Salinity Risk LM 25m - DOLA 00
- Soils, Statewide DA 11/99
- Topographic contours statewide - DOLA and ARMY 12/09/02
- Hydrogeology, Statewide 05 Feb 2002

(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 Tuart Forest National Park lies 1km north and south of Mallokup Road and the Boyanup State Forest borders Weld Road to the north. The Boyanup State Forest is part of the South West Regional Ecological Linkage area which has a proximity value of 1a: a patch within an edge touching or <100m from a linkage (Molloy et al, 2009). Road construction work will target the removal of specific trees and vegetation to improve line of sight and visibility.

Given the close proximity of the Boyanup State Forest the clearing may impact on the environmental values of this area through the increased potential for the intrusion of dieback or weed species and the proposed clearing maybe at variance to this principle.

To mitigate these environmental impacts weed and dieback management conditions will be placed on the permit.

Methodology Molloy et al. (2009)

GIS Databases:

- Register of National Estate - Environment Australia, Australian and world heritage division 12 Mar 02
- System 1 to 5 and 7 to 12 areas DEC 11/7/06
- CALM Managed Lands and Waters - CALM 01/06/05
- Donnybrook 50cm Orthomosaic - Landgate 2004
- Bunbury 50cm Orthomosaic - Landgate 2006

(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 at variance to this Principle

Given the nature of the application, localised deterioration in surface water quality may occur during the construction period however this will be short term and these issues should be minimal given the presence of existing roadside infrastructure. It is not likely that the proposed clearing of native vegetation will cause deterioration in the quality of surface or underground water and the clearing as proposed is not likely to be at variance to this principle.

Methodology GIS database:

- Evapotranspiration Isopleths - WRC 29/09/98
- Groundwater Salinity Statewide DoW 13/07/06
- Hydrographic catchments - DoW 01/06/07
- Hydrography, linear - DOW 13/7/06
- Mean Annual Rainfall Isohytes (1975 - 2003) - DEC 02/08/05
- Salinity Risk LM 25m - DOLA 00
- Topographic Contours, Statewide - DOLA 12/09/02

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

Comments Proposal is not likely to be at variance to this Principle

The proposal is to clear 1.15 hectares of native vegetation within 10km of road reserve in the Shire of Capel, for road reconstruction. Road construction work will target the removal of specific trees and vegetation to improve line of sight and visibility and as such is not likely to increase the incidence or intensity of flooding.

Methodology GIS database:

- Evaporation Isoleths - WRC 29/09/98
- Hydrographic catchments - DoW 01/06/07
- Hydrography, linear - DoW 13/7/06
- Mean Annual Rainfall Isohytes (1975 - 2003) - DEC 02/08/05
- Topographic Contours, Statewide - DOLA 12/09/02

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

Comments

The proposed clearing is located within the Busselton and Capel RIWI groundwater area. The proponent is not proposing to take any groundwater, therefore, no RIWI licences are required.

Methodology GIS database:

- Native Title Claims - LA 2/5/07
- Aboriginal Sites of Significance 26 April 2007
- Country Area Water Supply Act (Part IIA) Clearing Control Catchments 29/06/2006
- RIWI Act, Groundwater Areas - DoW 13/07/06
- RIWI Act, Irrigation Districts - DoW 13/07/06

4. Assessor's comments

Comment

The application has been assessed against the clearing principles, planning instruments and other matters in accordance with s51O of the Environmental Protection Act 1986, and the proposed clearing is at variance to Principle (e), may be at variance to (a), (b), (f) and (h) and is not likely to be at variance to the remaining clearing principles.

5. References

- DEC (2009) Site Inspection Report for Clearing Permit Application CPS 3327/1, Weld and Mallokup Road, Shire of Capel. Site inspection undertaken 21/09/2009. Department of Environment and Conservation, Western Australia (TRIM Ref: doc103091)
- EPA (2000) Environmental protection of native vegetation in Western Australia. Clearing of native vegetation, with particular reference to the agricultural area. Position Statement No. 2. December 2000. Environmental Protection Authority, Western Australia.
- Hedde, E. M., Loneragan, O. W., and Havel, J. J. (1980) Vegetation Complexes of the Darling System, Western Australia. In Department of Conservation and Environment, Atlas of Natural Resources, Darling System, Western Australia.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- 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.
- Molloy, S., Wood, J., Hall, S., Wallrodt, S. and Whisson, G. (2009) South West Regional Ecological Linkages Technical Report. Western Australian Local Government Association and Department of Environment and Conservation, Perth.
- 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.
- Sac Bio Datasets (7/10/2009). Department of Environment and Conservation, Sac Bio Datasets, Kensington, Western Australia.
- Shepherd, D.P. (2007). Adapted from: Shepherd, D.P., Beeston, G.R., and Hopkins, A.J.M. (2001), Native Vegetation in Western Australia. Technical Report 249. Department of Agriculture Western Australia, South Perth. Includes subsequent updates for 2006 from Vegetation Extent dataset ANZWA1050000124.
- Western Australian Herbarium (1998-). FloraBase - The Western Australian Flora. Department of Environment and Conservation. <http://florabase.dec.wa.gov.au/> Accessed on Monday, 31 March 2008

6. Glossary

Term	Meaning
BCS	Biodiversity Coordination Section of DEC
CALM	Department of Conservation and Land Management (now BCS)
DAFWA	Department of Agriculture and Food
DEC	Department of Environment and Conservation
DEP	Department of Environmental Protection (now DEC)
DoE	Department of Environment
DoIR	Department of Industry and Resources
DRF	Declared Rare Flora
EPP	Environmental Protection Policy
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
TEC	Threatened Ecological Community
WRC	Water and Rivers Commission (now DEC)