



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 4595/1
Permit Holder:	Shire of Kellerberrin
Duration of Permit:	5 December 2011 – 5 December 2016

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 construction and widening.

2. Land on which clearing is to be done

Kellerberrin – Bencubbin Road reserve, NORTH KELLERBERRIN
Kellerberrin – Yoting Road reserve, MOUNT CAROLINE
Dowding Street road reserve, KELLERBERRIN

3. Area of Clearing

The Permit Holder shall not clear more than 1.5 hectares of native vegetation within the combined areas cross-hatched yellow on attached Plan 4595/1 (a), Plan 4595/1 (b), Plan 4595/1 (c), Plan 4595/1 (d) and 4595/1 (e).

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. Flora management

(a) Prior to undertaking any clearing authorised under this Permit, the Permit Holder shall engage a *botanist* to inspect the area hatched red on Plan 4595/1 (f), for the presence of rare and priority flora listed below:

- (i) *Acacia merrickiae* (P4)
- (ii) *Leucopogon amplexans* (P2)
- (iii) *Acacia phaeocalyx* (P3)
- (iv) *Torrendia inculta* (P2)
- (v) *Cryptandra dielsii* (P3)
- (vi) *Synaphea constricta* (P3); and
- (vii) *Grevillea dryandroides* subsp *hirsuta* (DRF)

(b) Where rare flora or *priority flora* are identified in relation to condition 8(a) of this Permit, the Permit Holder shall ensure that:

- (i) no clearing occurs within 50 metres of identified rare flora, unless approved by the CEO; and
- (ii) no clearing of identified rare flora occurs unless approved under section 23F (2) of the *Wildlife Conservation Act 1950*.
- (iii) no clearing of identified *priority flora* occurs; and
- (iv) no clearing occurs within 10 metres of identified *priority flora*, unless approved by the CEO.

9. Malleefowl management

(a) Prior to undertaking any clearing authorised under this Permit, the area hatched red on Plan 4595/1 (f), shall be inspected by a *fauna specialist* for the presence of *Leipoa ocellata* (Malleefowl) mounds.

(b) Where *Leipoa ocellata* (Malleefowl) mounds are identified in relation to condition 9(a) of this Permit, the Permit Holder shall ensure that no clearing occurs within 50 metres of the identified *Leipoa ocellata* (Malleefowl) mounds, unless approved by the CEO.

10. Trapdoor Spider management

a) Prior to undertaking any clearing authorised under this Permit, the area(s) shall be inspected by a *fauna specialist* for the presence of *Idiosoma nigrum* (Shield-backed Trapdoor Spider), *Kwonkan eboracum* (Yorkrakine Trapdoor Spider) and *Aganippe castellum* (Tree-stem Trapdoor Spider) burrows.

b) Where *Idiosoma nigrum* (Shield-backed Trapdoor Spider), *Kwonkan eboracum* (Yorkrakine Trapdoor Spider) and *Aganippe castellum* (Tree-stem Trapdoor Spider) burrows are identified in relation to condition 10(a) of this Permit, the Permit Holder shall ensure that no clearing occurs within 10 meters of the identified burrows, unless approved by the CEO.

11. Fauna management

(a) Prior to undertaking any clearing authorised under this Permit, the area hatched red on Plan 4595/1 (f), shall be inspected by a *fauna specialist* who shall identify tree(s) that contain hollows suitable to be utilised as *habitat tree(s)* by fauna listed in the *Wildlife Conservation (Specially Protected Fauna) Notice 2010(2)*.

- (b) Prior to clearing, any *habitat tree(s)* identified by condition 11(a) shall be inspected by a *fauna specialist* for the presence of fauna listed in the *Wildlife Conservation (Specially Protected Fauna) Notice 2010(2)*.
- (c) Where fauna is identified in relation to condition 11(b) of this Permit, the Permit Holder shall ensure that no clearing occurs of the *habitat tree(s)*, unless approved by the CEO.

12. Weed control

- (a) 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*:
 - (i) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area hatched red on Plan 4595/1 (f);
 - (ii) ensure that no *weed*-affected soil, *mulch*, *fill* or other material is brought into the area hatched red on Plan 4595/1 (f), and
 - (iii) restrict the movement of machines and other vehicles to the limits of the area hatched red on Plan 4595/1 (f).
- (b) At least once in each 12 month period for the term of this Permit, the Permit Holder must remove or kill any *weeds* growing within areas hatched red on Plan 4595/1 (f).

PART III - RECORD KEEPING AND REPORTING

13. 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 flora management pursuant to condition 8 of this Permit:
 - (i) the location of each rare and/or priority flora species, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
 - (ii) the species name of each rare and/or priority flora species identified; and
 - (iii) a copy of the botanists flora survey report.
- (c) In relation to malleefowl management pursuant to condition 9 of this Permit, the location of each *Leipoa ocellata* (Malleefowl) mound recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees.
- (d) In relation to trapdoor Spider management pursuant to condition 10 of this Permit:
 - (i) the location of each trapdoor spider identified recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
 - (ii) the species name of each trapdoor spider identified; and
 - (iii) a copy of the fauna specialist's report.
- (e) In relation to fauna management pursuant to condition 11 of this Permit:
 - (i) the location of each tree that contains hollows, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
 - (ii) the species name of fauna reasonably likely to utilise, or that have been observed utilising, the trees that contain hollows;
 - (iii) the location of surrogate trees for relocation with vacant hollows, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94),

- expressing the geographical coordinates in Eastings and Northings or decimal degrees;
and
- (iv) 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 or decimal degrees.

14. Reporting

- (a) The Permit Holder must provide to the CEO on or before 30 June of each year, a written report:
- (i) of records required under condition 13 of this Permit; and
 - (ii) concerning activities done by the Permit Holder under this Permit between 1 January and 31 December of the preceding year.
- (b) Prior to 5 September 2016, the Permit Holder must provide to the CEO a written report of records required under condition 13 of this Permit where these records have not already been provided under condition 14(a) of this Permit.

DEFINITIONS

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

botanist means a person with specific training and/or experience in the ecology and taxonomy of Western Australian flora;

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;

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;

priority flora means those plant taxa 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);

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*.



Kelly Faulkner
MANAGER
NATIVE VEGETATION CONSERVATION BRANCH

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

10 November 2011

CPS 4595/1, 10 November 2011

Page 4 of 4

Plan 4595/1 (a)



LEGEND

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

Trayning 50cm Orthomosaic - Landgate 2004
 Kellerberrin 50cm Orthomosaic - Landgate 2004



Scale 1:29999
 (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.

Date 10/10/02

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

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Plan 4595/1 (b)



LEGEND

- Road Centrelines
- Trayning 50cm Orthomosaic - Landgate 2004
- Local Government Authorities
- Kellerberrin 50cm Orthomosaic - Landgate 2004
- Clearing Instruments
- Areas Approved to Clear



0 ————— 750 m

Scale 1:30025
(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.

Date 15/06/11

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



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Plan 4595/1 (c)



LEGEND

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

Trayning 50cm Orthomosaic - Landgate 2004

Kellerberrin 50cm Orthomosaic - Landgate 2004



0 750 m

Scale 1:30038

(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.

 Date 10/01/11
K Faulkner

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

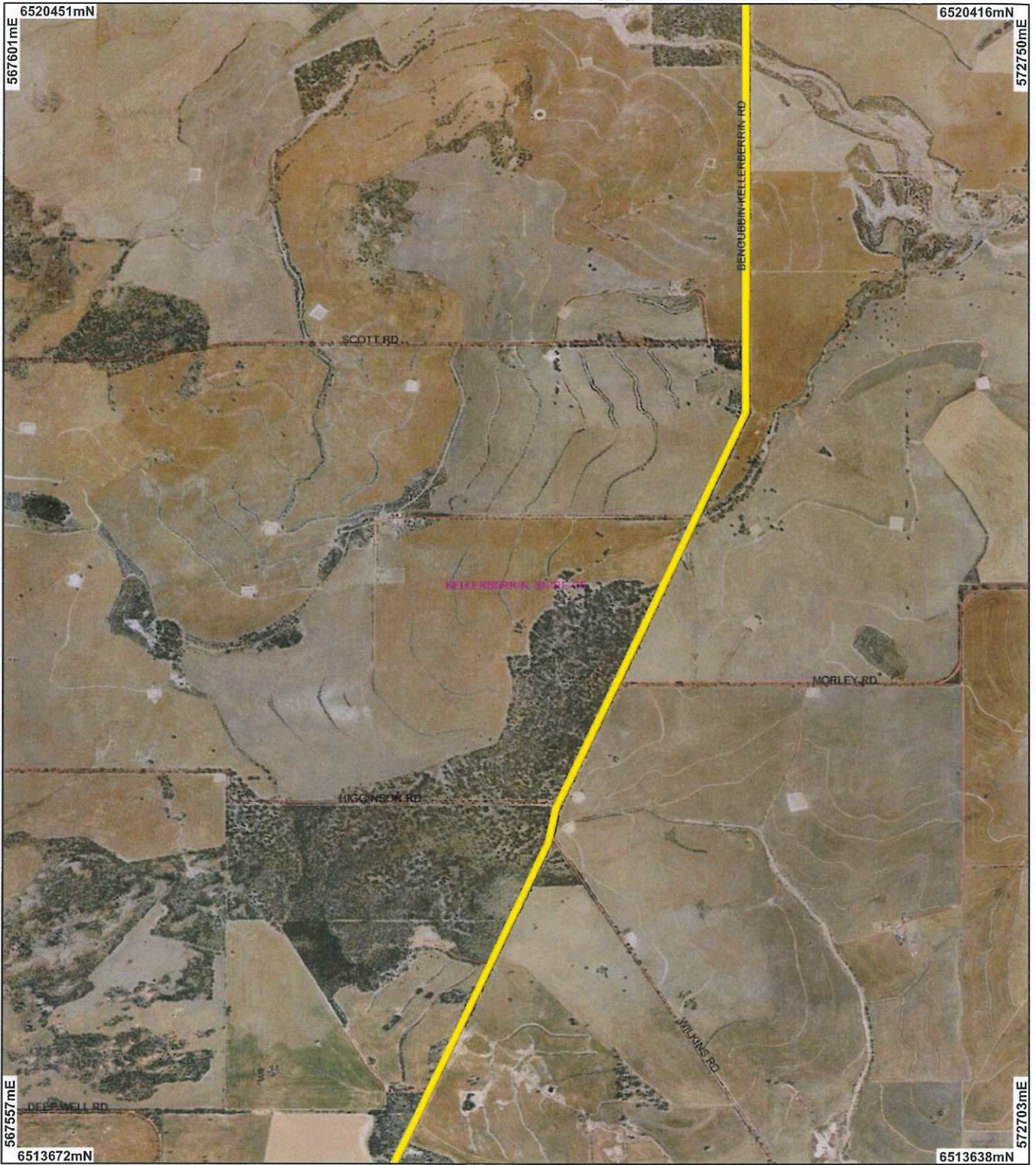
Information derived from this map should be confirmed with the data custodian acknowledged by the agency acronym in the legend.



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Plan 4595/1 (d)



LEGEND

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

Traying 50cm Orthomosaic - Landgate 2004

Kellerberrin 50cm Orthomosaic - Landgate 2004



0 750 m

Scale 1:30050

(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.

Date 10/06/00
K Faulkner

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

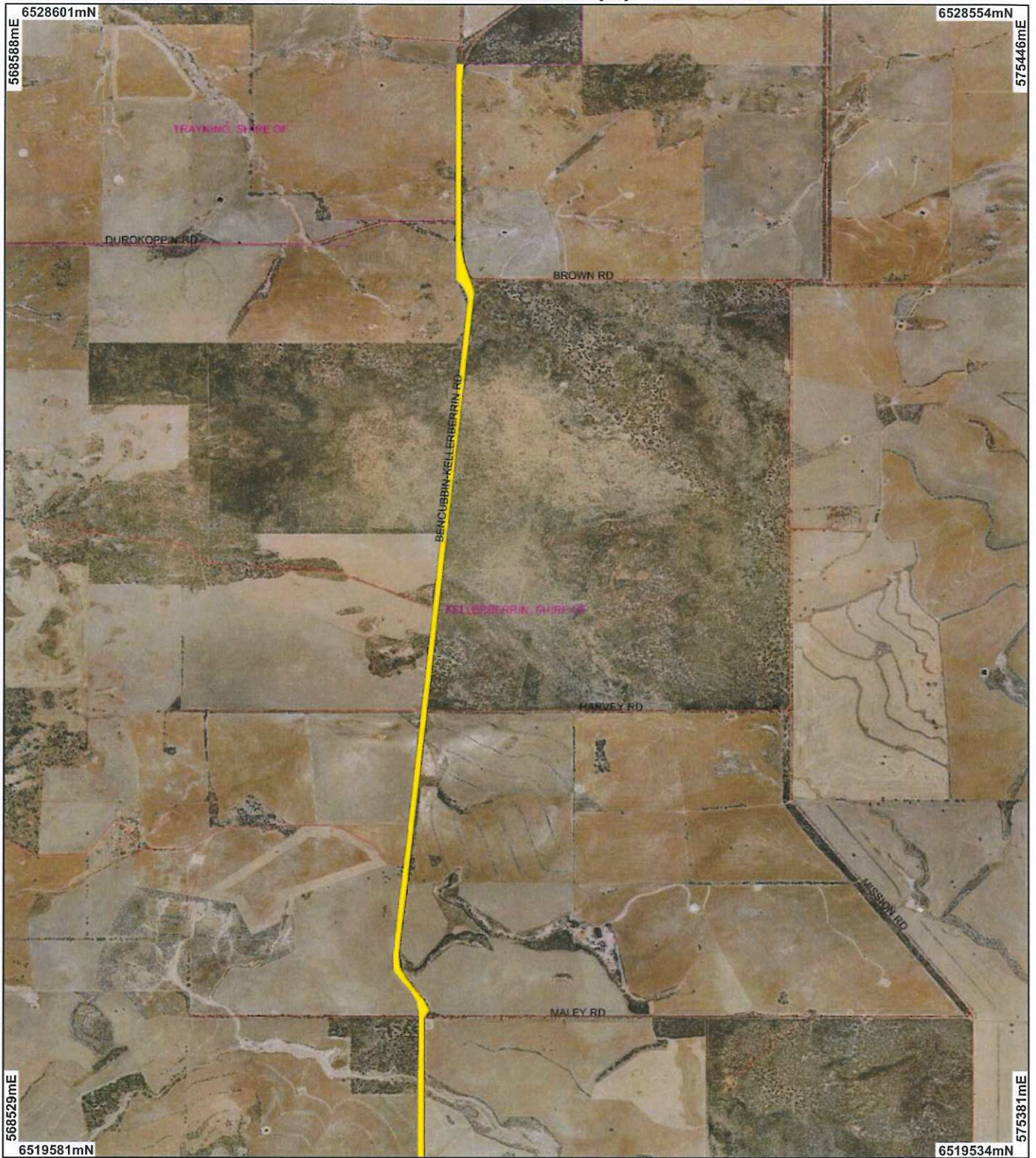
Information derived from this map should be confirmed with the data custodian acknowledged by the agency acronym in the legend.



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Plan 4595/1 (e)



LEGEND

-  Road Centrelines
-  Trayning 50cm Orthomosaic - Landgate 2004
-  Local Government Authorities
-  Kellerberrin 50cm Orthomosaic - Landgate 2004
- Clearing Instruments**
-  Areas Approved to Clear

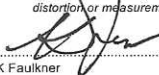


0 ————— 1 km

Scale 1:40000
(Approximate when reproduced at A4)

Geocentric Datum Australia 1994

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 Date 10/01/11
K Faulkner

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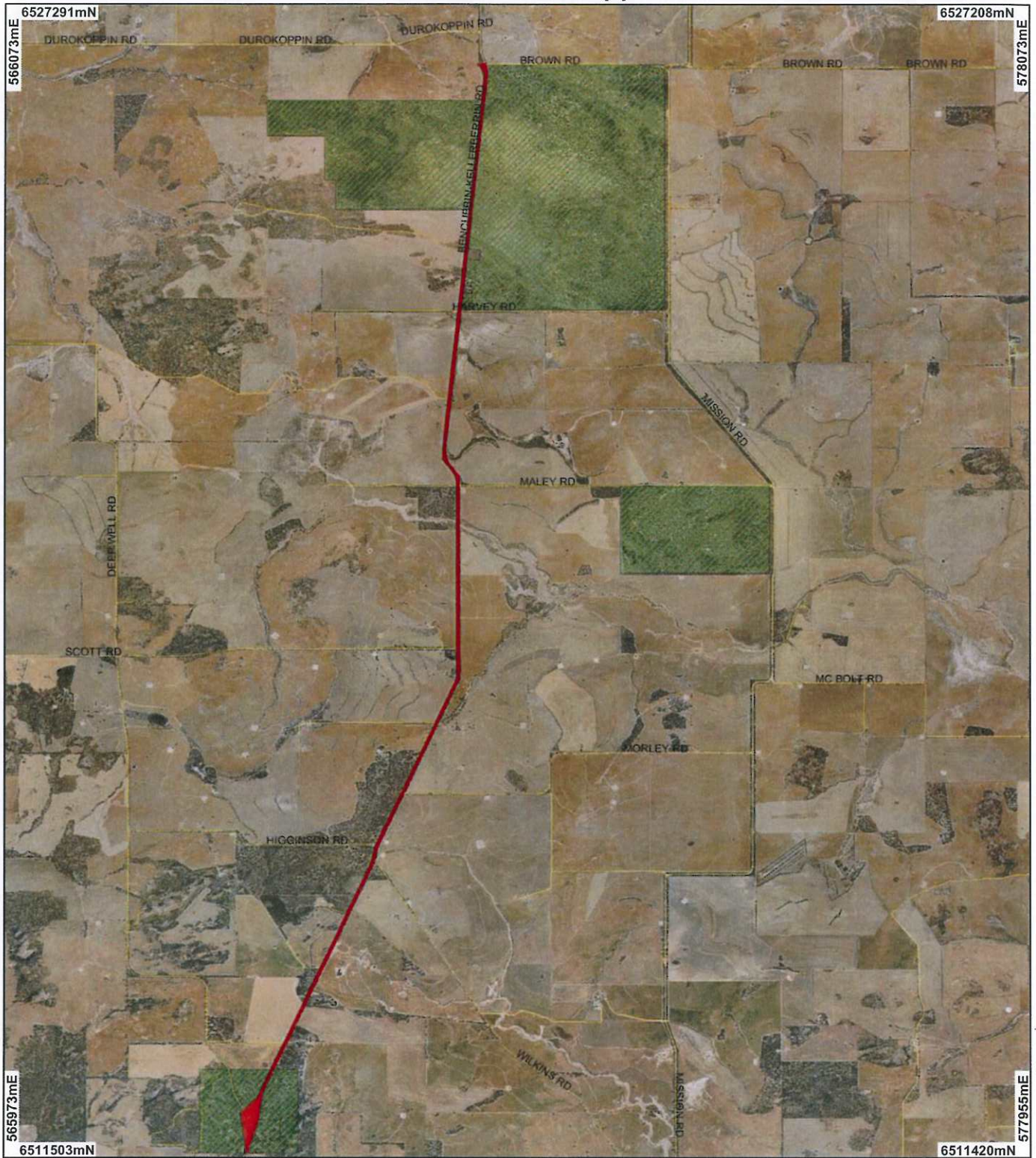
Information derived from this map should be confirmed with the data custodian acknowledged by the agency acronym in the legend.



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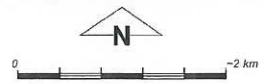
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Plan 4595/1 (f)



LEGEND

- Road Centrelines
 - Clearing Instruments
 - Areas Subject to Conditions
 - DEC Tenure
- Kellerberrin 50cm
 Orthomosaic - Landgate 2004
 Trayning 50cm Orthomosaic -
 Landgate 2004



Geocentric Datum Australia 1994

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

Date 10/10/11

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1. Application details

1.1. Permit application details

Permit application No.: 4595/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Shire of Kellerberrin

1.3. Property details

Property: ROAD RESERVE (KELLERBERRIN 6410)
ROAD RESERVE (NORTH KELLERBERRIN 6410)
ROAD RESERVE (MOUNT CAROLINE 6410)
Local Government Area: Shire of Kellerberrin
Colloquial name: Kellerberrin – Yoting Road reserve, Kellerberrin – Bencubbin Road reserve and Dowding Street road reserve

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 10 November 2011

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 694 is described as shrublands; scrub-heath on yellow sandplain banksia-xyloelum alliance in the Geraldton Sandplain & Avon-Wheatbelt Regions.*	The application is to clear 1.5ha of native vegetation within three road reserves for the purpose of road construction and widening.	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)	The condition of the vegetation was assessed using aerial imagery (Kellerberrin 50cm Orthomosaic - 2004 and Trayning 50cm Orthomosaic - 2004)
Mapped Beard vegetation association 955 is described as mosaic: shrublands; scrub-heath (South East Avon) / Shrublands; Allocasuarina campestris thicket.*		Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)	
Mapped Beard vegetation association 1049 is described as medium woodland; wandoo, York gum, salmon gum, morrel & gimlet.*		Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	

*Shepherd 2009

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 application is for the clearing of 1.5ha of native vegetation within Kellerberrin - Bencubbin Road reserve, Kellerberrin - Yoting Road reserve and Dowding street Road reserve, Shire of Kellerberrin, for the purpose of road construction and widening.

The road reserves of Kellerberrin-Yoting road, Dowding street and the section of the Kellerberrin-Bencubbin road (Maps a-c), do not contain any known significant conservation values that may potentially be directly impacted upon by the proposed clearing. In contrast, the section of Kellerberrin-Bencubbin road reserve (Maps d-e) that extends through unnamed Department of Environment and Conservation (DEC) Nature Reserve (A26809) and the DEC Durokoppin Nature Reserve (A22921) does contain significant known conservation values (DEC 2011).

Fifteen threatened and priority fauna species have been recorded near the areas under application. Leipoa

ocellata (Malleefowl) (Threatened, Wildlife Conservation Act 1950 and Threatened (Vulnerable), Environment Protection and Biodiversity Conservation Act 1999) and Shield-backed Trapdoor Spider (*Idiosoma nigrum*) (Vulnerable, Wildlife Conservation Act 1950) are recorded just outside the areas under application (DEC 2007-). There is also a critical part of a Mygalomorph Trapdoor Spider Community located approximately 1.8km from Kellerberrin-Bencubbin road (DEC 2011).

One Declared rare flora species, *Grevillea dryandroides* subsp. *hirsuta* (Hairy phalanx grevillea), has been recorded in close proximity to Kellerberrin - Bencubbin Road. This species is found in the Corrigin to Quairading area. One population grows in a natural bush area of low heath. The rest are on disturbed roadsides, which are severely weed infested (Brown et al 1998).

There are 18 priority flora species recorded within the local area (20 kilometre radius). A majority of these species are found on the same soil and vegetation types as the Kellerberrin-Bencubbin road reserve. Priority flora species *Acacia merrickiae* (P4), *Leucopogon amplexans* (P2), *Acacia phaeocalyx* (P3), *Torrendia inculta* (P2), *Cryptandra dielsii* (P3) and *Synaphea constricta* are all recorded in close vicinity to the application area. Therefore the vegetation under application may support flora species of conservation significance.

The three mapped Beard vegetation associations within the areas under application, have less than 30 per cent of their pre-European extent remaining within the Avon Wheatbelt Bioregion, and are therefore considered to be below threshold levels for maintaining biodiversity. In addition, Beard association 1049 has approximately 7 per cent remaining within Avon wheatbelt bioregion (Shepherd 2009).

As the surrounding landscape is extensively cleared (approximately 15 per cent remaining vegetation within the local area) the vegetation connects larger remnants of bushland and therefore may have some values as a biological corridor, particularly for native fauna in a highly cleared landscape.

Given that the area proposed to be cleared is located in a Shire with less than 10 per cent native vegetation remaining and the possibility of conservation significant flora and fauna occurring within the vegetation under application, the areas proposed to be cleared may be representative of an area of high biodiversity when viewed in a local context.

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

Methodology

References:

- Brown et al 1998
- DEC (2007-)
- DEC (2011)
- Keighery (1994)
- Shepherd (2009)
- GIS Database:
 - Pre European Vegetation
 - SAC Biodatasets - accessed October 2011
 - Kellerberrin 50cm Orthomosaic - Landgate 2004
 - Trayning 50cm Orthomosaic - Landgate 2004

(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

Fifteen threatened and priority fauna species have been recorded near the areas under application. *Leipoa ocellata* (Malleefowl) (Threatened, Wildlife Conservation Act 1950; Threatened (Vulnerable), Environment Protection and Biodiversity Conservation Act 1999) and Shield-backed Trapdoor Spider (*Idiosoma nigrum*) (Vulnerable, Wildlife Conservation Act 1950) are recorded just outside the Kellerberrin-Bencubbin road reserve (DEC 2007-). The Tree-stem Trapdoor Spider and the Yorkrakine Trapdoor Spider are also recorded within the Local area. There is also a critical part of a Mygalomorph Trapdoor Spider Community located approximately 1.8km from Kellerberrin-Bencubbin road (DEC 2011).

Leipoa ocellata (Malleefowl) populations have greatly declined (nearly by half) over the past century as a result of several factors including habitat fragmentation and predation by foxes (Benshemesh 2007). They usually inhabit arid and semi-arid zones in shrublands and low woodlands, particularly those dominated by mallee and/or acacias (Benshemesh 2007). Malleefowl breed annually with an average breeding life of 15 years, mainly nesting in the same general area year after year with breeding pairs having a small home range (Benshemesh 2007). It is considered that the protection of existing nesting mounds is important as well as the maintenance of healthy habitat to allow for the development of future nesting mounds, to ensure the decline of the species is halted or reversed. In addition to the impact to a nesting mound and potential habitat for malleefowl, the clearing proposal will fragment the native vegetation in the local area resulting in the vegetation being susceptible to further disturbances and declining value as part of an ecological linkage.

Idiosoma nigrum (Shield-backed Trapdoor Spider) is in decline and is a long-lived species that is very sensitive to disturbance (DEC 2007). This Trapdoor Spider is only known from a short endemic range and much of their

habitat has been modified or destroyed through land clearing. This spider is vulnerable to disturbance as they are sedentary creatures with poor dispersal ability (Wheatbelt NRM 2011). The proposed clearing may have an impact on this species.

The areas under application may also provide habitat for the other conservation significant fauna species listed above however these species are more mobile than the Shield-backed Trapdoor Spider and the Malleefowl and occur in habitats less vulnerable to disturbance and will be able to disperse more easily into adjacent remnants.

The vegetation under application may provide significant habitat for Trapdoor Spiders and Malleefowl therefore the proposed clearing may be at variance to this principle.

A Fauna management condition will minimise and mitigate the impacts to fauna species within the proposed clearing area.

Methodology References:
Benshemesh 2007
DEC (2007)
DEC (2007-)
DEC (2011)
Wheatbelt NRM (2011)

GIS Database:
- Pre European Vegetation
- SAC Biodatasets - accessed October 2011
- Kellerberrin 50cm Orthomosaic - Landgate 2004
- Trayning 50cm Orthomosaic - Landgate 2004

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

Comments Proposal may be at variance to this Principle

One Declared rare flora species, *Grevillea dryandroides* subsp *hirsuta* (Hairy phalanx grevillea), has been recorded within Durokoppin Nature reserve which is adjacent to Kellerberrin - Bencubbin Road. This species is only formally protected within two Department of Environment and Conservation (DEC) managed Nature Reserves within the Central Wheatbelt District (DEC 2011).

This species is found in the Corrigin to Quairading area. One population grows in a natural bush area of low heath. The rest are on disturbed roadsides, which are severely weed infested (Brown et al 1998).

Given the suitability of habitat, it is possible that *Grevillea dryandroides* subsp *hirsuta* may occur within the application area. Considering the above, the proposed clearing may be at variance with this principle.

A flora management condition will minimise and mitigate the impacts to flora species within the proposed clearing area.

Methodology References:
Brown et al (1998)
DEC (2011)

GIS Databases:
- Pre-European vegetation
- SAC Biodatasets - October 11
- Soils, Statewide - October 11

(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 no known records of threatened ecological communities (TEC) within the local area (40 km radius). Therefore the proposed clearing is not likely to be at variance to this principle.

Methodology GIS Databases
- SAC Biodatasets - accessed September 2011

(e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.

Comments Proposal may be at variance to this Principle

The area under application falls within the Avon Wheatbelt IBRA bioregion which has approximately 18 per cent

of its pre-European extent of vegetation coverage remaining. The Shire of Kellerberrin has approximately 9 per cent native vegetation remaining.

The three mapped Beard vegetation associations within the area under application 694, 955 and 1049, have 7 percent, 11 percent and 6.8 percent remnant vegetation remaining respectively and are therefore considered to be below threshold levels for maintaining biodiversity.

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 vegetation varies from a degraded (Keighery 1994) condition to very good (Keighery 1994) condition and conservation significant flora and fauna may occur within the vegetation under application. Therefore the vegetation may be significant as a remnant.

The proposed clearing may result in the clearing of significant native vegetation in an extensively cleared landscape. Therefore the proposed clearing may be at variance to this principle.

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Extent in DEC Managed Lands (%)
IBRA Bioregion*				
Avon Wheatbelt	9 517 109	1 736 214	18.24	9.51
Shire*				
Shire of Kellerberrin	191 574	17 884	9.34	14.04
Beard Vegetation Association in Bioregion*				
694	173 921	12 198	7.01	12.9
Beard Vegetation Association in Bioregion*				
955	120 564	12 882	10.7	8.52
Beard Vegetation Association in Bioregion*				
1049	833 384	56987	6.84	5.71

*Shepherd 2009

Methodology References:
Commonwealth of Australia (2001)
Keighery (1994)
Shepherd (2009)
GIS Databases:
- Trayning 50cm Orthomosaic - Landgate 2004
- Kellerberrin 50cm Orthomosaic - Landgate 2004
- Pre-European Vegetation - DA

(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

There are multiple non-perennial watercourses that intersect the application area and as such sections of vegetation to be cleared may be growing in association with a watercourse.

Existing infrastructure including culverts and bridges occur within the applied clearing area and the amount of vegetation that is to be disturbed along the watercourses is minimal. Therefore the proposed clearing may be at variance to this principle.

Measures to avoid and minimise the clearing along the watercourses, as well as the upgrade of infrastructure such as culverts and bridges, will assist in preventing any long term impacts to the waterways from the road widening.

Methodology GIS Databases:
- Hydrography, linear - DoW

(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

Given the nature of the application, localised land degradation is likely to occur during the works, however this is likely to be only short term. These issues should be minimal as the existing roads already have roadside infrastructure in place to prevent land degradation associated with roads.

Given the linear nature of the application area, it is unlikely that the proposed clearing of native vegetation would cause appreciable land degradation. Therefore the proposed clearing is not likely to be at variance to this principle.

Methodology GIS database:
- Soils, Statewide - DA
- Hydrogeology, Statewide - DoW

(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

Durokoppin Nature Reserve (R2291) and Reserve 26809 are located adjacent to Kellerberrin - Bencubbin road and both hold high conservation value.

The clearing may impact on environmental values and could increase the spread of weed species into these conservation areas. Therefore, the proposal may be at variance to this principle.

Weed management practices will assist in mitigating the potential for introduction or spread of invasive weed species.

Methodology GIS Databases:
- Kellerberrin 50cm Orthomosaic 2004
- Trayning 50cm Orthomosaic 2004
- 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 is not likely to be at variance to this Principle

Groundwater salinity is mapped as ranging from 14000 to greater than 35000 mg/L total dissolved solids. Significant clearing of native vegetation has already occurred within the local area for agricultural purposes, the clearing of 1.5ha across three road reserves is not likely to further increase groundwater salinity.

The proposed road widening and maintenance may result in the clearing of some riparian vegetation and as such may result in temporary localised sedimentation within the watercourses during the clearing process however, this is unlikely to cause long term deterioration to the quality of surface water in the local area.

Therefore, this proposal is considered not likely to be at variance to this principle.

Methodology GIS Databases:
- Groundwater Salinity, Statewide - DoW
- Hydrography, linear (hierarchy) - DoW
- RiWI Act, Surface Water Areas, Irrigation Districts - DoW
- Topographic Contours, Statewide - DOLA and ARMY

(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

As the proposal is for the clearing of 1.5ha along three road reserves, the clearing will be linear and given the small scale of the proposed clearing, it is unlikely to cause or exacerbate the incidence or intensity of flooding.

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

Methodology GIS Databases
- Soils, Statewide - DA
- Hydrography, linear - DoW

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

Comments

The application is for the clearing of 1.5ha of native vegetation within Kellerberrin - Bencubbin Road reserve, Kellerberrin - Yoting Road reserve and Dowding street Road reserve, Shire of Kellerberrin, for the purpose of road construction and widening.

The application areas fall within the Surface Water ?Avon River System? Surface Water area covered by the Rights in Water and Irrigation Act 1914.

Town Planning Scheme zoned for road reserves.

Area defined in EPA position Statement No 2., but not for agriculture.

Methodology

GIS Databases:

- Cadastre
- Town Planning Scheme Zones
- RIWI Act, Surface water areas, Irrigation districts
- EPA Position paper No 2 Agricultural Region

4. References

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5. 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)