



## CLEARING PERMIT

*Granted under section 51E of the Environmental Protection Act 1986*

<b>Purpose Permit number:</b>	CPS 3825/1
<b>Permit Holder:</b>	Shire of Dowerin
<b>Duration of Permit:</b>	2 January 2011 – 2 January 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.
- 2. Land on which clearing is to be done**  
Namelcatchem Nature Reserve, Hindmarsh 6462 (Crown Reserve 687)
- 3. Area of Clearing**  
The Permit Holder must not clear more than 0.3 hectares of native vegetation within the area hatched yellow on attached Plan 3825/1a.
- 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. 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 to be cleared;
  - (ii) ensure that no *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared; and
  - (iii) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.
- (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 cleared under this Permit.

## 9. Retain vegetative material, revegetation and rehabilitation

The Permit Holder shall *revegetate* and *rehabilitate* Areas 1, 2, 3 and 4 as shaded red on attached Plan 3825/1 by:

- (a) retaining the brush mulch removed by clearing authorised under this Permit and stockpile the vegetative material in an area that has already been cleared.
- (b) Within 3 months following clearing authorised under this permit, The Permit Holder shall;
- (i) rip the ground on the contour to remove soil compaction;
  - (ii) lay the brush mulch retained under condition 9(a);
  - (iii) remove or kill any *weeds* growing within Area 3; and
  - (iv) construct a fence around Area 3 to exclude herbivores.
- (c) within 12 months of carrying out works described under condition 9(b) of this Permit:
- (i) *revegetate* Areas 1, 3 and 4 by deliberately *planting* and/or *direct seeding* native vegetation ensuring only local provenance seeds and propagating material are used ensuring that a density of 300 to 350 plants per area is established.
- (d) within 12 months of deliberately *planting* and/or *direct seeding* on Areas 1, 3 and 4 and laying brush mulch in Area 2 in accordance with condition 9(b) and 9(c) of this Permit:
- (i) engage an *environmental specialist* to determine the species composition, structure and density of the area *revegetated* and *rehabilitated*; and
  - (ii) where, in the opinion of an *environmental specialist*, the composition structure and density determined under condition 9(d)(i) of this Permit will not result in a similar species composition, structure and density to that of pre-clearing vegetation types in that area, *revegetate* the area by deliberately *planting* and/or *direct seeding* native vegetation that will result in a similar species composition, structure and density of native vegetation to pre-clearing vegetation types in that area and ensuring only *local provenance* seeds and propagating material are used.

## PART III - RECORD KEEPING AND REPORTING

### 10. 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 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;
  - (ii) the date that the area was cleared; and
  - (iii) the size of the area cleared (in hectares).



- (b) In relation to the *revegetation* and *rehabilitation* of areas pursuant to condition 9 of this Permit:
- (i) the location of any areas *revegetated* and *rehabilitated*, 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 *revegetation* and *rehabilitation* activities undertaken;
  - (iii) the size of the area *revegetated* and *rehabilitated* (in hectares); and
  - (iv) the species composition, structure and density of *revegetation* and *rehabilitation*.

## 11. 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 10 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 2 October 2015 the Permit Holder must provide to the CEO a written report of records required under condition 10 of this Permit where these records have not already been provided under condition 11(a) (reporting condition) of this Permit.

## Definitions

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

***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;

***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 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*.

***direct seeding*** means a method of re-establishing vegetation through the establishment of a seed bed and the introduction of seeds of the desired plant species;

***local provenance*** means native vegetation seeds and propagating material from natural sources within 50kms kilometres of the area cleared.

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

***regenerate/ed/ion*** means re-establishment of vegetation from in situ seed banks and propagating material (such as lignotubers, bulbs, rhizomes) contained either within the topsoil or seed-bearing *mulch*;

***rehabilitate/ed/ion*** means actively managing an area containing native vegetation in order to improve the ecological function of that area;



---

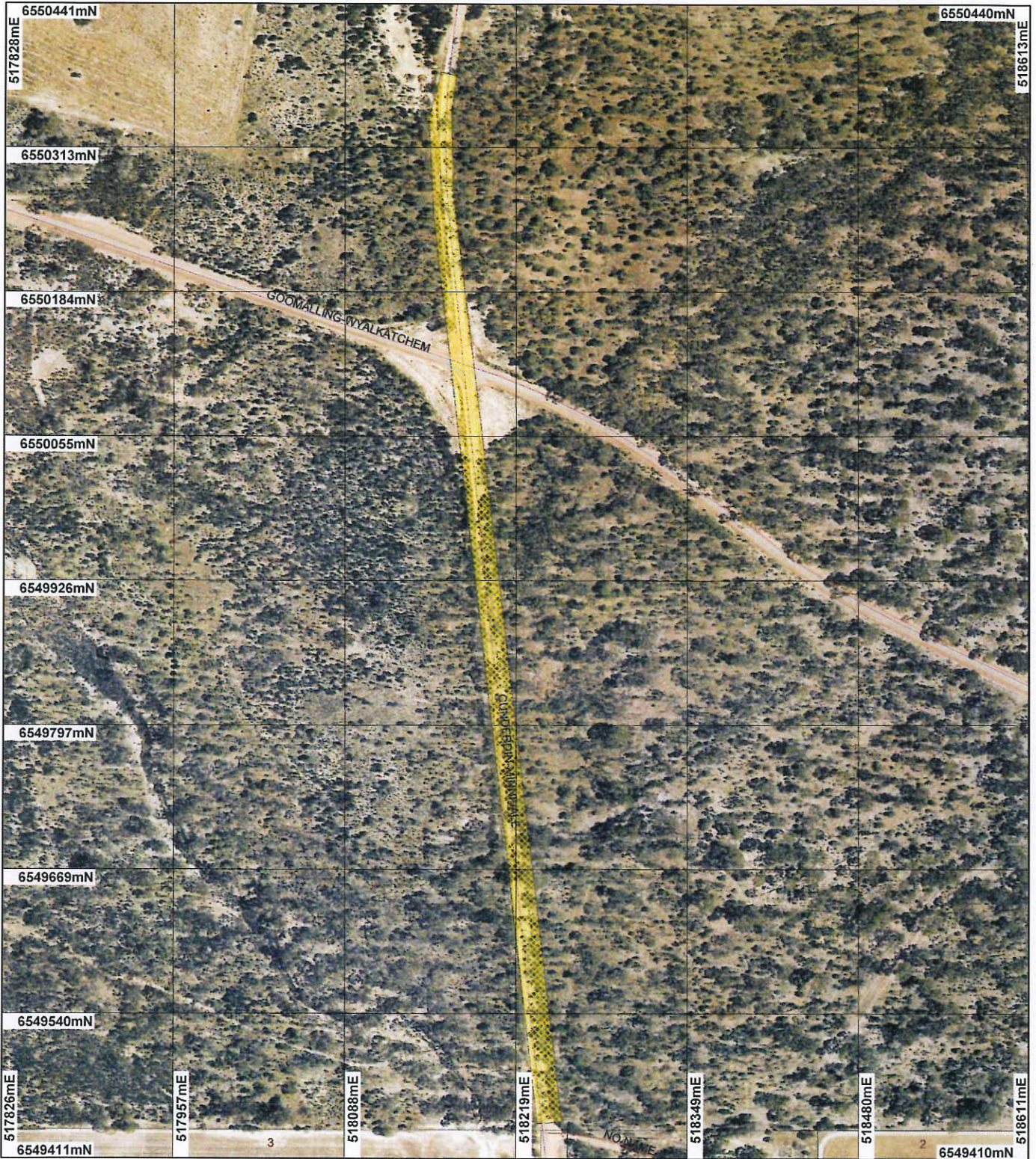
Kelly Faulkner  
MANAGER  
NATIVE VEGETATION CONSERVATION BRANCH

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

8 December 2010

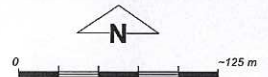


# Plan 3825/1a



## LEGEND

- |                         |   |   |
|-------------------------|---|---|
| Road Centrelines        | <input type="checkbox"/> Freehold                               | <input type="checkbox"/> Public Roads           |
| Clearing Instruments    | <input type="checkbox"/> Crown Reserve                          | <input type="checkbox"/> Unallocated Crown Land |
| Areas Approved to Clear | <input type="checkbox"/> State Forest / Timber Reserve          | <input type="checkbox"/> Water                  |
| Cadastre for labelling  | <input type="checkbox"/> Marine Park                            | <b>Dowerin 50cm Orthomosaic -</b>               |
| (cont)                  | <input type="checkbox"/> Crown Lease                            | <b>Landgate 2004</b>                            |
|                         | <input type="checkbox"/> Lease / Reserve                        |   |
|                         | <input type="checkbox"/> Lease on State Forest / Timber Reserve |   |
|                         | (cont)  |   |



Scale 1:4573  
(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 8/12/10

K. Faulkner  
Officer with delegated authority under Section 20 of the Environmental Protection Act 1985

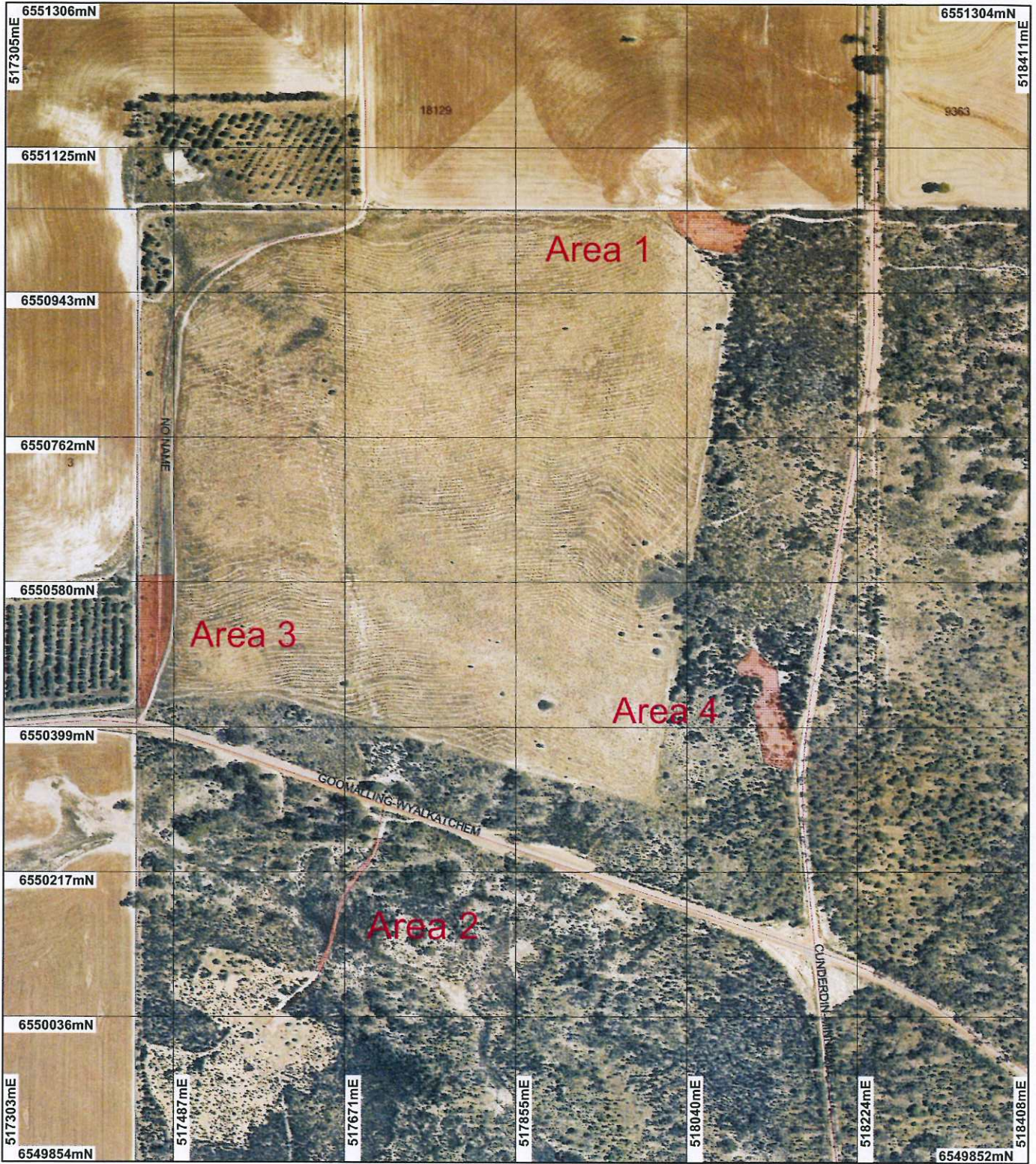
Information derived from this map should be confirmed with the data custodian acknowledged by the agency acronym in the legend.



Department of Environment and Conservation  
Our environment, our future  
VIA Crown Copyright 2002

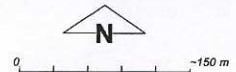


# Plan 3825/1b



## LEGEND

- |                             |   |                        |
|-----------------------------|---|------------------------|
| Road Centrelines            | Crown Reserve                                 | Public Roads           |
| Clearing Instruments        | State Forest / Timber Reserve                 | Unallocated Crown Land |
| Areas Subject to Conditions | Marine Park                                   | Water                  |
| Cadastre for labelling      | Crown Lease                                   |                        |
| Freehold (cont)             | Lease / Reserve                               |                        |
|                             | Lease on State Forest / Timber Reserve (cont) |                        |



Scale 1:6444  
(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 8/12/10  
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.



Department of Environment and Conservation

Our environment, our future  
WA Crown Copyright 2002

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





## 1. Application details

### 1.1. Permit application details

Permit application No.: 3825/1  
 Permit type: Purpose Permit

### 1.2. Proponent details

Proponent's name: Shire of Dowerin

### 1.3. Property details

Property: CROWN RESERVE 687 ( HINDMARSH 6462)  
 Local Government Area:  
 Colloquial name: Cunderdin - Minnivale Road reserve

### 1.4. Application

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

### 1.5. Decision on application

Decision on Permit Application: Granted  
 Decision Date: 8 December 2010

## 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 Association: 1049: Medium woodland; wandoo, York gum, salmon gum, morrel & gimlet (Shepherd et al. 2009).	The proposed clearing consists of 0.3 ha of native vegetation within Namelcatchem Class A Nature Reserve for the purpose of road formation of 10.5 metres on each side of Cunderdin Minnivale Road, enhancing safety for all users (DEC, 2010a).	Degraded: Structure severely regeneration to good condition requires intensive management (Keighery 1994)	Description and condition of the vegetation under application was determined from a site inspection (DEC, 2010b).
Hedde Vegetation Complex: Not available (Hedde et al. 1980)	The vegetation ranges from being in a 'degraded' (Keighery, 1994) condition in the roadside verge to 'excellent' (Keighery, 1994) condition within the undisturbed portion of the area under application (DEC, 2010b). The vegetation is open woodland comprising York Gum (Eucalyptus loxophleba) and Jam (Acacia acuminata) with distinct ground and middle storey layers (DEC, 2010b).		
As Above.	As Above.	Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery 1994)	As above.

## 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 at variance to this Principle

The proposed clearing consists of 0.3 ha of native vegetation in a larger 257 ha area of native vegetation secure within Namelcatchem Class A Nature Reserve for the purpose of road formation of 10.5 metres on each side of Cunderdin Minnivale Road, enhancing safety for all users (DEC, 2010a).

The vegetation ranges from being in a 'degraded' (Keighery, 1994) condition in the roadside verge to 'excellent' (Keighery, 1994) condition within the undisturbed portion of the area under application (DEC, 2010b).

Three species of Priority 2 and four Priority 3 flora are located within a 10 km radius of the area under application and all fall within the same vegetation and soil complex as the application area. The nearest priority flora, *Calytrix parvivalis* (P2), is located within Namelcatchem Nature Reserve. DEC (2010a) also suggests that *Persoonia pungens* (PS), *Daviesia smithiorium* (P2) and *Daviesia purpurascens* (P4) may occur within the area under application. In addition, one rare flora species, *Conostylis wonganensis* (DRF), has been recorded within



the application area. A flora survey of the application area was undertaken in October 2010 and did not observe any priority or rare flora species (Boase and Boase 2010).

During Site Inspection (2010b) vegetation within the area under application was observed to be Open Woodland comprising York Gum (*Eucalyptus loxophleba*) and Jam (*Acacia acuminata*) over a distinct ground cover and middle storey with variations in the levels of vegetation and leaf litter coverage influencing the presence of trapdoor spider nests, *Idiosoma nigrum* (Shield-backed Trapdoor Spider - listed as vulnerable) and *Gaius villosus* (DEC, 2010b). Six individual *I. nigrum* were observed within the application area, however a full targeted survey was not undertaken (DEC, 2010b). A fauna survey under taken in November 2010 (Ecologia 2010) recorded four individual *I. nigrum* occurring within the proposed clearing area. Given the sedentary lifestyle of the trapdoor spider, these species will be impacted on by the proposed road formation.

Given the diversity of the vegetation within the area under application the area is also likely to provide habitat for other native fauna, including the Western Spiny-tailed Skink (DEC, 2010a). However, a fauna survey undertaken in November 2010 did not identify any evidence of this species occurring within the application area (Ecologia 2010).

The application falls within a local area (10km radius) that has been highly cleared (approximately 10% remaining, with 6% of that within nature reserves), and contains Beard Vegetation Association 1049, which has 6.84% remaining within the Avon Wheatbelt bioregion (Shepherd, 2009), the only bioregion in which it occurs. There is only 5.71% within secure tenure and 0.3ha of the application area is within DEC Managed Land.

As the area under application is within Namelcatchem Nature Reserve, which comprises of 257ha of remnant native vegetation in a heavily cleared landscape, supports high floristic diversity and habitat for Shield-backed Trapdoor spiders, the area is considered to be an area of high biological diversity and as such is considered to be at variance to this principle. A revegetation condition would lessen these impacts. The Shire of Dowerin has proposed to revegetate 0.9ha within four locations within Namelcatchem Nature Reserve.

**Methodology**    References:

- Boase and Boase (2010)

-Ecologia (2010)

- DEC (2010a)

- DEC (2010b)

-Ecologia (2010)

- Keighery (1994)

GIS Databases:

- Dowerin 50cm Orthomosaic - DLI04

- CALM Managed Lands and Waters

- Sac biodataset 23072010

**(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 at variance to this Principle**

Four indigenous fauna species of conservation significance have been recorded within a 10 km radius of the area under application. These are Schedule 1 species:

- Minnivale Trapdoor Spider (*Teyl* spp.) (critically endangered)

- Shield-backed Trapdoor Spider (*Idiosoma nigrum*) (vulnerable)

- Tree-stem Trapdoor Spider (*Aganippe castellum*) (endangered)

- Western Spiny-tailed Skink (*Egernia stockesii* subsp. *badia*) (vulnerable)

Of these records of the Shield-backed Trapdoor spider and Western Spiny-tailed Skink are within Namelcatchem Nature Reserve.

The vegetation ranges from being in a 'degraded' (Keighery, 1994) condition in the roadside verge to 'excellent' (Keighery, 1994) condition within the undisturbed portion of the area under application (DEC, 2010b).

During Site Inspection (2010b) vegetation within the area under application was observed to be Open Woodland comprising York Gum (*Eucalyptus loxophleba*) and Jam (*Acacia acuminata*) over a distinct ground cover and middle storey with variations in the levels of vegetation and leaf litter coverage influencing the presence of trapdoor spider nests, *Idiosoma nigrum* (Shield-backed Trapdoor Spider - listed as vulnerable) and *Gaius villosus* (DEC, 2010b). Six individual *I. nigrum* were observed within the application area by a DEC site inspection (DEC, 2010b). A fauna survey under taken in November 2010 (Ecologia 2010) recorded four individual *I. nigrum* occurring adjacent to the proposed clearing area. Given the sedentary lifestyle of the trapdoor spider, these species will be impacted on by the proposed road formation.

Given the diversity of the vegetation within the area under application the area is also likely to provide habitat for other native fauna, including the Western Spiny-tailed Skink (DEC, 2010a). However, a fauna survey undertaken in November 2010 did not identify and evidence of this species occurring within the application area (Ecologia 2010).



The area under application forms part of a larger remnant covering approximately 257 ha and occurs within a highly cleared area with only 10% of pre-European vegetation extent remaining. In addition, the Shire of Dowerin has only 7.43% vegetation remaining and the Wheatbelt bioregion has only 18.24% vegetation remaining (Shepherd 2009). Given this the area under application would form part of significant habitat for conservation significant and local fauna species.

Given that the area under application is part of significant habitat for Shield-backed Trapdoor Spider and forms a part of significant habitat for other native fauna in a landscape that has been heavily cleared clearing of the area under application is considered to be at variance to this principle. A revegetation condition would lessen these impacts. The Shire of Dowerin has proposed to revegetate 0.9ha within four locations within Namelcatchem Nature Reserve.

**Methodology**   References:  
- DEC (2010a)  
- DEC (2010b)  
- Ecologia (2010)  
- Keighery (1994)  
- Shepherd (2009)  
GIS Databases:  
- SAC Bio datasets 23072010

**(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**

A rare flora species has been recorded within the local area (10km radius) of the area under application, namely *Conostylis wonganensis*, located within Cunderdin Minnivale Road reserve and within Namelcatchem Nature Reserve. The record falls within the same vegetation and soil complex as the application area.

The validity of this record is dubious given the significant distance of this record from all other records of *C. wonganensis* and the lack of habitat suitability for this species within the application area and nature reserve (DEC, 2010a). A targeted flora survey was carried out within the application area during October 2010 and did not identify the presence of this species (Boase and Boase 2010). Therefore, it is not considered for the proposed clearing to impact on rare flora. Given the above, the application is not at variance to this Principle.

**Methodology**   References:  
- Boase and Boase (2010)  
- DEC (2010a)  
GIS Databases:  
- Sac biodatsets 23072010

**(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 (10km radius) of the application area. Given this it is not likely that the proposal is at variance to this principle.

**Methodology**   GIS Databases:  
- SAC Bio datasets 31/01/2008

**(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**

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 application falls within a local area (10km radius) that has been highly cleared (approximately 10% remaining, with 6% of that within nature reserves), and contains Beard Vegetation Association 1049, which has less than the recommended 30% minimum of Pre-European extent remaining (6.84% remaining) within the Avon Wheatbelt bioregion (Shepherd, 2009), the only bioregion in which it occurs. There is only 5.71% within secure tenure (Shepherd, 2009) and 0.3ha of the application area is within DEC Managed Land.

The vegetation under application ranges from being in a 'degraded' (Keighery, 1994) condition in the roadside verge to 'excellent' (Keighery, 1994) condition within the undisturbed portion of the area under application (DEC, 2010b).

Given the condition of the vegetation under application and the area under application occurs in an area where



vegetation has been extensively cleared, being the Shire of Dowerin, clearing is considered at variance to this principle. Revegetation would lessen these impacts. The Shire of Dowerin has proposed to revegetate 0.9ha within four locations within Namelcatchem Nature Reserve.

	Pre-European area (ha)	Current extent (ha)	Remaining %	% in reserves/DEC-managed land
Avon Wheatbelt Shire of Dowerin	9,517,109	1,736,214	18.24	6.95
Beard vegetation associations 1049	186,268	13,837	7.43	-
	833,384	56,987	6.84	5.71

(Shepherd 2009)

**Methodology**

**References:**

- Commonwealth of Western Australia (2001)
- DEC (2010b)
- Keighery (1994)
- Shepherd (2009)

**GIS Databases:**

- Pre-European Vegetation - DA 01/01
- Interim Biogeographic Regionalisation of Australia - EA 18/10/00
- CALM Managed Lands and Waters
- Dowerin 50cm Orthomosaic - DLI04
- EPA Position Paper No 2 Agriculture Region

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

No wetlands are located within the vicinity of the area under application. Two minor non-perennial watercourses are located adjacent to the southern portion of the area under application.

During Site Inspection (DEC, 2010b) the area under application was not observed to support wetland dependent vegetation and instead supported Open Woodland comprising York Gum and Jam trees with a distinct ground and middle storey layers.

Given the above, the proposal is considered not likely to be at variance to this principle.

**Methodology**

**References:**

- DEC (2010b)

**GIS Databases:**

- Hydrography, linear

**(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 topography within the region is of low relief with very shallow gradients. The purpose of the clearing is for road formation, on a road that already exists. The road side vegetation under application is not considered to be in area associated with high salinity risk (DEC, 2010a).

The proposal may cause some short term land degradation issues in terms of flooding and soil erosion during works. However these issues should be minimal as the existing roads already have road side infrastructure in place to prevent land degradation associated with roads, ie; table drains and culverts.

Given the small and linear nature of the application area and its proximity within the Namelcatchem Nature Reserve, the proposed clearing of native vegetation is not likely to cause appreciable land degradation.

**Methodology**

**References:**

- DEC (2010a)

**GIS Database:**

- Hydrogeology, statewide - DOW 13/07/06
- Soils, Statewide DA 11/99
- Topographic Contours, Statewide - DOLA 12/09/02



**(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.**

**Comments Proposal is at variance to this Principle**

The proposed clearing consists of 0.3 ha of native vegetation in a larger 257 ha area of native vegetation secure within Namelcatchem Class A Nature Reserve for the purpose of road formation of 10.5 metres on each side of Cunderdin Minnivale Road, enhancing safety for all users (DEC, 2010a).

The vegetation ranges from being in a 'degraded' (Keighery, 1994) condition in the roadside verge to 'excellent' (Keighery, 1994) condition within the undisturbed portion of the area under application (DEC, 2010b).

Given that the proposed clearing is within the Namelcatchem Class A Nature Reserve, the proposal is considered to be at variance to this principle. Revegetation and weed management would lessen this impact. The Shire of Dowerin has proposed to revegetate 0.9ha within four locations within Namelcatchem Nature Reserve.

**Methodology**

References:

- DEC (2010a)
- DEC (2010b)
- Keighery (1994)

GIS Databases:

- CALM Managed Lands and Waters
- Dowerin 50cm Orthomosaic - DLI04

**(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**

The proposed clearing sites fall within the Swan Avon Mortlock catchment area. The region is of low relief with an annual rainfall of 400mm. Groundwater salinity is mapped at 14000mg/L to 35000 mg/L TDS (Total Dissolved Solids).

The proposed clearing for road formation of an existing road may cause some short term water quality issues in terms of localised surface water sedimentation during works. However, these issues should be minimised as roadworks will include roadside infrastructure to prevent water quality issues associated with roads (ie table drains and culverts).

Due to the small and linear nature of the area proposed to be cleared, the clearing of native vegetation is not likely to cause deterioration in the quality of surface water or groundwater within the local area.

**Methodology**

GIS Database:

- Hydrographic Catchments - Catchments - DOE 23/03/05
- Topographic Contours, Statewide - DOLA 12/09/02
- Rainfall, Mean Annual - BOM 30/09/01

**(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 purpose of clearing is for road formation of an existing road. Clearing associated with road widening is within road reserves that already exist and as such, issues relating to flooding have been previously addressed by diverting water bodies through culverts or under bridges.

Given the above, the proposed clearing is not likely to cause, or exacerbate, the incidence or intensity of flooding.

**Methodology**

GIS Database:

- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain - DEC 11/04/07
- Hydrography, Linear - DOE 1/2/04
- Rivers, DOW

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

**Comments**

Two letters were sent on the 6 and 21 October 2010 to the Shire of Dowerin requesting for a flora survey, fauna survey and revegetation proposal. The Shire of Dowerin has responded on the 25 October and the 2 and 7 December 2010 and has undertaken the flora and fauna surveys and proposed an offset of revegetation of 0.9ha within Namelcatchem Nature Reserve.

No public submissions have been received.



The Executive Officer of the Roadside Conservation Committee (RCC) has advised that conservation of the remnants within the road reserves of the Shire of Dowerin is vital to retaining the last of the vegetative history of the region (RCC, 2010). It is also noted that the Namelcatchem Nature Reserve is currently impacted by edged effects and suffers from weed invasion; further clearing will exacerbate these issues and further threaten one of the few block remnants of vegetation within this highly cleared landscape (RCC, 2010).

The application is within an EPA Position Statement No. 2 area in which further clearing for agriculture is not generally supported (EPA, 2000). The application is for road formation and not agriculture.

**Methodology**    References:  
- EPA (2000)  
- RCC (2010)

#### 4. References

Boase and Boase (2010) Flora Survey in the Shire of Dowerin - Roadside Flora Survey of a section of the Cunderdin - Minnivale Road in Namelcatchem Reserve. DEC ref A338267

Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.

DEC (2010a). Regional advice for CPS3825/1 Cunderdin Minnivale Road Reserve. Department of Environment and Conservation. DEC Ref: A325704

DEC (2010b). Site Inspection undertaken 27 July 2010. DEC Ref: A322550

Ecologia (2010) Targeted *Idiosoma nigrum* and *Egernia stokesii badia* Survey. For Shire of Dowerin's clearing permit application CPS 3825/1, Namelcatchem Nature Reserve. DEC ref A352536

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.

Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.

RCC (2010). Roadside Conservation Committee. Application to clear native vegetation - Shire of Dowerin: Advice. DEC Ref. A325705

Shepherd, D.P. (2009) 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.

#### 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)