



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 3970/1
Permit Holder:	Columbia Superannuation (WA) Pty Ltd
Duration of Permit:	4 December 2010 – 4 December 2017

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 of 13 hectares of native vegetation within the area cross-hatched yellow on Plan 3970/1a for the purpose of sustainable forest management; and
- Clearing of 5 hectares of native vegetation within the area cross-hatched yellow on Plan 3970/1b for the purpose of parkland clearing; and
- Clearing of 1 hectare of native vegetation within the area cross-hatched yellow on Plan 3970/1c for the purpose of parkland clearing.

2. Land on which clearing is to be done

Lot 8512 on Plan 229282, Glenoran

3. Area of Clearing

The Permit Holder must not clear more than 19 hectares of native vegetation within the areas cross-hatched yellow on attached Plan 3970/1a, Plan 3970/1b and Plan 3970/1c.

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

To the extent authorised under condition 3 of this Permit, the Permit Holder may undertake the following activities within the areas cross-hatched yellow on Plan 3970/1a, Plan 3970/1b and Plan 3970/1c:

- The Permit Holder may undertake the following activities:
 - clearing and burning of *understorey*;
 - clearing for the establishment of a *log landing* no larger than 0.1 hectares in size;
 - thinning* of Marri (*Corymbia calophylla*), Karri (*Eucalyptus diversicolor*) and Blackbutt (*Eucalyptus patens*) trees; and
 - culling* and burning of unsaleable trees.
- The Permit Holder shall not clear any native vegetation after 28 November 2014.

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

(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* and *dieback*:

- (i) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- (ii) shall only move soils in *dry conditions*;
- (iii) ensure that no *dieback* or *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared; and
- (iv) 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. Vegetation management

In relation to the clearing authorised under Condition 1(a) of this Permit and being within the area cross-hatched yellow on attached Plan 3970/1a:

- (a) Prior to undertaking any clearing authorised under this Permit, an *environmental specialist* must determine the species composition, structure and density of the *understorey* of areas proposed to be *thinned*.
- (b) The Permit Holder must retain a minimum of 2 *habitat trees* within the area of clearing authorised under this Permit in each hectare authorised under this Permit.
- (c) A minimum retention rate of 18m²/ha *basal area* is required within the area of clearing authorised under this Permit.
- (d) Prior to undertaking any clearing authorised under this Permit, the Permit Holder must exclude all *stock* from the areas subject to *thinning* activities.
- (e) Within one month of 28 November 2014 the Permit Holder must *rehabilitate* any *log landings* established within native vegetation by scarifying the soil surface to reduce compaction and facilitate natural regeneration.
- (f) Within two years of 28 November 2014 the Permit Holder must:
 - (i) engage an *environmental specialist* to determine the species composition, structure and density of the *understorey* of areas subject to *thinning*; and
 - (ii) where, in the opinion of an *environmental specialist*, there is evidence that *understorey* will not recover and develop towards its pre-clearing composition, structure and density determined under condition 9(f)(i), the Permit Holder must undertake *remedial action* at an *optimal time* within the next 12 months to ensure re-establishment of *understorey* prior to expiry of this Permit.

10. Vegetation management

In relation to the clearing authorised under Condition 1(b) and 1(c) of this Permit and being within the area cross-hatched yellow on attached Plan 3970/1b and attached Plan 3970/1c:

- (a) The Permit Holder must retain a minimum of 2 *habitat* trees per hectare;
- (b) A minimum retention rate of 18m²/ha *basal area* is required within the area of clearing authorised under this Permit within the area cross-hatched yellow on attached Plan 3970/1b; and
- (c) A minimum retention rate of 15m²/ha *basal area* is required within the area of clearing authorised under this Permit within the area cross-hatched yellow on attached Plan 3970/1c.

PART III - 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 vegetation management pursuant to condition 9 of this Permit:
 - (i) prior to clearing native vegetation authorised under this Permit, the species composition, structure and density of *understorey*;
 - (ii) the species and number per hectare of *habitat trees* retained;
 - (iii) the location of *habitat trees* retained, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings;
 - (iv) monitoring undertaken to ensure that the specified minimum *basal area* is retained;
 - (v) number of *log landings* established;
 - (vi) the location of *log landings*, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings;
 - (vii) photographs of the *understorey* taken at one year, two years and three years after completing clearing authorised under this Permit; and
 - (viii) a detailed description of the nature and extent of any *remedial actions* undertaken.
- (b) In relation to vegetation management pursuant to condition 10 of this Permit:
 - (i) prior to clearing native vegetation authorised under this Permit, the species composition, structure and density of *understorey*;
 - (ii) the species and number per hectare of *habitat trees* retained;
 - (iii) the location of *habitat trees* retained, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings; and
 - (iv) monitoring undertaken to ensure that the specified minimum *basal area* is retained.

12. 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 11 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 28 August 2017, 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) (reporting condition) of this Permit.

DEFINITIONS

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

basal area is the method of expression of tree cover density in an area where the total area of tree trunk, measured at average adult human breast height, is expressed as square metres per hectares of land area;

culled/ing means the selective removal and/or killing of unsaleable trees for *thinning*, using methods including notching, felling or machine pushing;

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

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;

dry conditions means when soils (not dust) do not freely adhere to rubber tyres, tracks, vehicle chassis or wheel arches;

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;

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;

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

log landing/s means an area established for the purpose of stockpiling commercially harvested trees, to enable loading for collection;

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;

optimal time means the period from April to June 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;

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;

remedial action/s means for the purpose of this Permit, any activity that is required to ensure successful re-establishment of *understorey* to its pre-clearing composition, structure and density, and may include a combination of soil treatments and *revegetation*;

revegetate/ed/ion means the re-establishment of a cover of *local provenance* native vegetation in an area using methods such as natural *regeneration*, *direct seeding* and/or *planting*, so that the species composition, structure and density is similar to pre-clearing vegetation types in that area;

stock means the horses, cattle, sheep, pigs and other non-indigenous grazing animals kept or bred on a property;

thinned/ing describes a silvicultural activity to promote the growth of selected trees by removing competing trees;

understorey means, for the purpose of this Permit, all native vegetation that does not include trees to be *culled* or subject to harvest;

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*.



Matthew Warnock
A/MANAGER
NATIVE VEGETATION CONSERVATION BRANCH

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

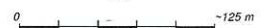
4 November 2010

Plan 3970/1a



LEGEND

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| <input checked="" type="checkbox"/> Clearing Instruments | |
| <input type="checkbox"/> Areas Approved to Clear | |



Scale 1:4668

(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.

M. Warnock Date 4/11/10

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

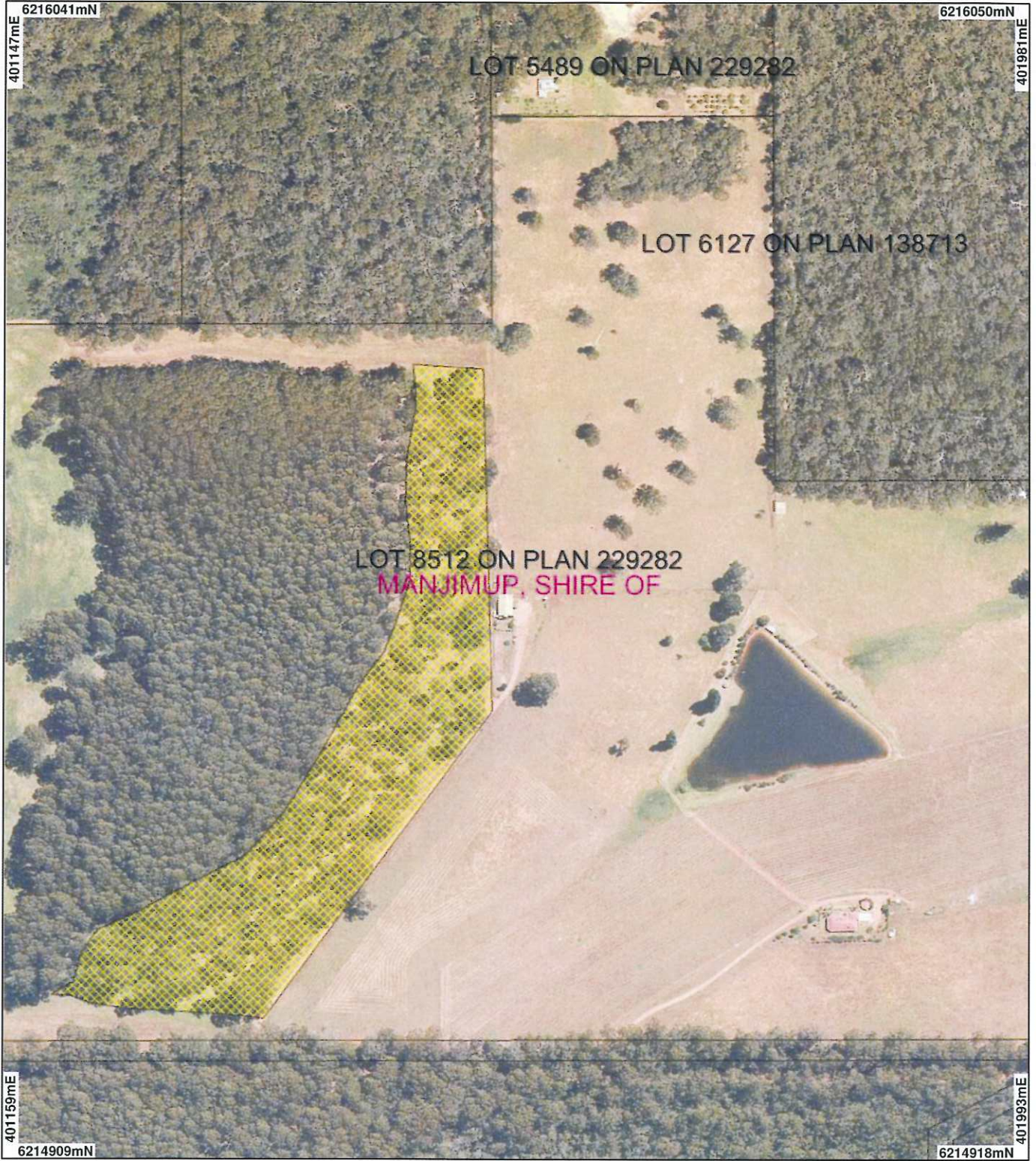
Information derived from this map should be confirmed with the data custodian acknowledged by the agency acronym in the legend.



Department of Environment and Conservation

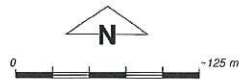
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Plan 3970/1b



LEGEND

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| <input checked="" type="checkbox"/> Clearing Instruments | |
| <input type="checkbox"/> Areas Approved to Clear | |



Scale 1:4964
(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.

M. Warnock Date 4/11/10

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

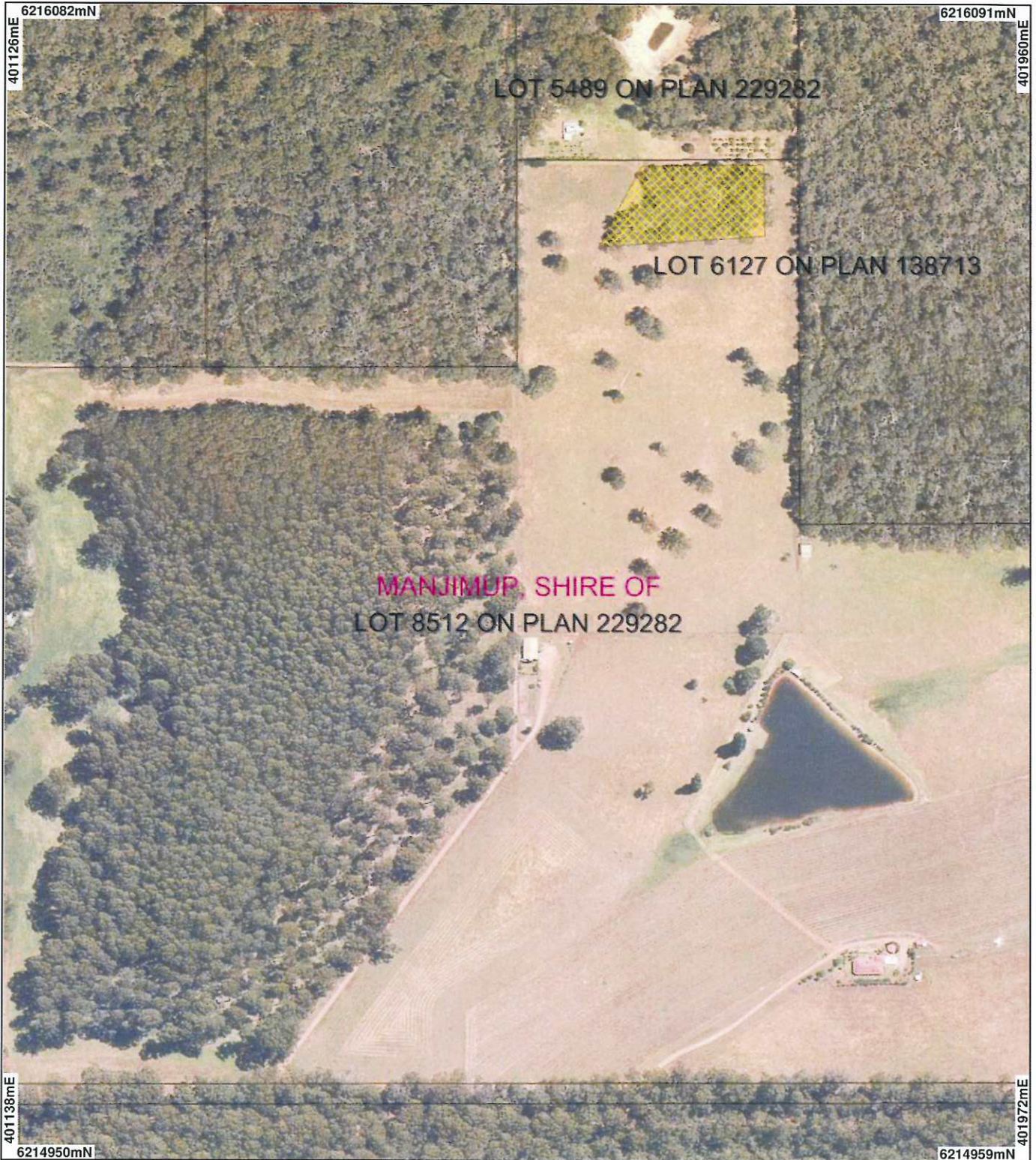
Information derived from this map should be confirmed with the data custodian acknowledged by the agency acronym in the legend.



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Plan 3970/1c



LEGEND

- Cadastre
- Road Centrelines
- Clearing Instruments
- Areas Approved to Clear
- Local Government Authorities
- Donnelly 50cm Orthomosaic - Landgate 2007**



Scale 1:4964
 (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.

M. Warnock Date *4/11/10*

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

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



1. Application details

1.1. Permit application details

Permit application No.: 3970/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Mr Carl Cardaci Columbia Superannuation (WA) Pty Ltd

1.3. Property details

Property: LOT 8512 ON PLAN 229282 (GLENORAN 6258)
Local Government Area: Shire of Manjimup
Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
13		Mechanical Removal	Timber Harvesting
5		Mechanical Removal	Timber Harvesting
1		Mechanical Removal	Timber Harvesting

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 4 November 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: 1144: Tall forest; karri & marri (Corymbia calophylla)	The vegetation under application is described as regrowth karri/marri and blackbutt forest since clearfelling for agriculture in the 1930s (Bradshaw, 2010). All areas have been open to grazing (Bradshaw, 2010).	Area 1 - Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery, 1994)	Vegetation condition determined from aerial imagery and photographs included in the Native Forest Management Plan (Bradshaw, 2010).
1: Tall forest; karri (Eucalyptus diversicolor) (Shepherd, 2009)	The objectives of this proposal are to conduct sustainable forest management on 19 hectares of native forest in order to maintain forest areas in a healthy and aesthetically attractive condition, to produce a periodic yield of wood products and to maintain wildlife habitat and water quality (Bradshaw, 2010).	Areas 2 and 3 – Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)	
Mattiske Vegetation Complex: Yanmah (YN1): Mixture of tall open forest of Eucalyptus diversicolor and tall open forest of Corymbia calophylla-Eucalyptus patens-Eucalyptus marginata subsp. marginata over Agonis flexuosa and Agonis juniperina on valleys in perhumid and humid zones.	The application area has been divided into three areas. There are distinct plans for each area, however the selection of trees and harvesting method will be the same for all areas. Vegetation is proposed to be thinned from below to a density that will maximise value growth without a significant compromise to volume growth, retaining trees in the dominant to co-dominant class that have good future sawlog potential. Where they exist, older 'veteran' trees will be retained as habitat trees and damage to soil and retained trees will be minimised during harvesting (Bradshaw, 2010).		
Crowea (CRb): Tall open forest of Corymbia calophylla-Eucalyptus diversicolor on upper slopes with Allocasuarina decussata-Banksia grandis on upper slopes in hyperhumid and perhumid zones.			
Lefroy (LF): Tall open forest of Eucalyptus diversicolor-Corymbia calophylla on slopes and low woodland of Agonis juniperina-Callistachys lanceolata on lower slopes in hyperhumid and perhumid zones. (Mattiske and Havel, 1998)	Area 1 consists of 13ha of karri forest with blackbutt regrowth with a native understorey (Bradshaw, 2010) and covers the western two thirds of the largest tract of vegetation on the property. Codominant height in this area is approximately 45m and basal area is 40-45m ² /ha (Bradshaw, 2010). There are no large habitat trees and the understorey has been moderately impacted by grazing and is generally less than 1m tall, with some larger shrubs of 2m (Bradshaw, 2010). In areas where basal area exceeds 18m ² /ha of basal area this basal area density will be retained, with all trees retained in		

areas where basal area is equal to or less than 18m²/ha (Bradshaw, 2010). In addition to removing subdominant trees, larger trees of poorer quality may also be removed. This area is proposed to be fenced to exclude stock (Bradshaw, 2010).

Area 2 occupies the eastern third of the main application area and consists of 5ha of karri regrowth forest with pasture understorey (Bradshaw, 2010). This area is planned to be parkland thinned to a density of 18m²/ha with 2 habitat trees per hectare being retained, if they exist. Grazing is proposed to be continued in this area.

Area 3 is a small tract of native vegetation at the northern end of the property and consists of 1ha of marri/blackbutt forest with a pasture understorey (Bradshaw, 2010). This area will be thinned to a density of 15m²/ha, with two habitat trees per hectare retained if they exist and grazing to be continued.

Vegetation in Area 1 is considered to be in good (Keighery, 1994) condition and Areas 2 and 3 are degraded (Keighery, 1994).

3. Assessment of application against clearing principles

(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

Comments

Proposal is not likely to be at variance to this Principle

The proposal is to conduct sustainable forest management on 13 hectares (ha) of good (Keighery, 1994) condition native vegetation and parkland thin 6ha of degraded (Keighery, 1994) condition native vegetation within Lot 8512 on Plan 229282, Glenoran. The proposed clearing will include the selective thinning of Karri (*Eucalyptus diversicolor*), Marri (*Corymbia calophylla*) and Blackbutt (*Eucalyptus patens*) trees and potentially the burning of the understorey vegetation in thinned areas (Bradshaw, 2010).

The vegetation under application is described as regrowth karri/marri and blackbutt forest since clearfelling for agriculture in the 1930s (Bradshaw, 2010). All areas have been open to grazing (Bradshaw, 2010), with the native understorey heavily impacted in Area 1 and replaced by pasture grass in Areas 2 and 3.

The local area (10km radius) is well vegetated with approximately 85% native vegetation coverage. Approximately 95% of this vegetation is on DEC managed land, with the South East Nannup, Barlee Brook, Donnelly and North Donnelly State Forests and nature reserves in the local area (10km radius).

Soil disturbance and removal of native vegetation increases the risk of weeds and pathogens, such as dieback (*Phytophthora cinnamomi*), being introduced or spread. The management of dieback is of particular importance as the proposed clearing is within a high (1100mm) rainfall area and neighbours state forest. The management plan for this proposal states that clearing should be conducted in dry soil conditions and, if observed, exotic weeds will be controlled (Bradshaw, 2010). Weed and dieback management conditions will minimise the risk of introduction or spread of pathogens and invasive species into the neighbouring DEC managed lands.

The floristic diversity of the application area is likely to be significantly reduced due to ongoing grazing pressures. Given that surrounding areas contain vegetation in better condition than that of the applied area, the vegetation under application is not likely to be representative of an area high in biodiversity on a local or regional scale.

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

Methodology

References:

Bradshaw, 2010
Keighery, 1994

GIS Databases:

- DEC Managed Lands & Waters - DEC 28/10/09
- Donnelly 50cm Orthomosaic - Landgate 2007
- Evapotranspiration, Area Actual - BOM 30/09/01
- Groundwater Salinity, statewide - DoW 13/07/06
- Hydrogeographic Catchments, Catchments - DoW 01/06/07
- Hydrogeology, statewide - DoW 13/07/06
- Hydrography, linear - DoW 13/7/06
- Rainfall, Mean Annual - BOM 30/09/01

- Pre-European vegetation - DA 01/01
- SAC Biodatasets - 21/09/10
- Soils, Statewide - 30/11/99

(b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.

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

The vegetation under application is described as regrowth karri/marri and blackbutt forest since clearfelling for agriculture in the 1930s (Bradshaw, 2010). All areas have been open to grazing (Bradshaw, 2010), with the native understorey heavily impacted in Area 1 and replaced by pasture grass in Areas 2 and 3.

There are numerous records of the Forest Red-tailed black cockatoo (*Calyptorhynchus banksii naso*) (Vulnerable, Wildlife Conservation Act 1950; Vulnerable, Environment Protection and Biodiversity Conservation Act 1999) in the local area (10km radius) and the vegetation under application may provide suitable habitat for this and other threatened black cockatoo species. Fauna management conditions will mitigate the impact of the proposed clearing on indigenous fauna. Native Forest Management Plan includes, where they exist, the retention of 2 habitat trees per hectare (Bradshaw, 2010).

There is likely to be Quokka (*Setonix brachyurus*) (Vulnerable, Wildlife Conservation Act 1950; Vulnerable, Environment Protection and Biodiversity Conservation Act 1999) in the nearby state forest, however the proposed thinning operation is not expected to impact on these populations.

The vegetation under application is in disturbed condition ranging from good to degraded (Keighery, 1994) with significantly reduced understorey and is in close proximity to higher quality vegetation in the surrounding state forests. Considering this, the application area is not likely to be significant as habitat for indigenous fauna.

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

Methodology References:
Bradshaw, 2010
Keighery, 1994

GIS Databases:
- Donnelly 50cm Orthomosaic - Landgate 2007
- Pre-European vegetation - DA 01/01
- SAC Biodatasets - 21/09/10
- Soils, Statewide - 30/11/99

(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 three known record of the declared rare flora species *Caladenia harringtoniaea* in the local area, with the closest being 9.2km southwest of the application area. The application area does not exhibit the characteristics of this taxon's preferred habitat, which is sandy loam soils on winter-wet flats and granite outcrops (Western Australian Herbarium, 1998-) and is not likely to support a population of this DRF.

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

Methodology References:
Western Australian Herbarium, 1998-

GIS Databases:
- Donnelly 50cm Orthomosaic - Landgate 2007
- Pre-European vegetation - DA 01/01
- SAC Biodatasets - 21/09/10
- Soils, Statewide - 30/11/99

(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 at variance to this Principle

There are no known Threatened Ecological Communities within a 10km radius of the application area. The vegetation under application is in good to degraded (Keighery, 1994) condition and is not likely to represent any known TEC.

Therefore the proposed clearing is not at variance to this Principle.

Methodology GIS Databases:
- Donnelly 50cm Orthomosaic - Landgate 2007
- Pre-European vegetation - DA 01/01
- SAC Biodatasets - 21/09/10
- Soils, Statewide - 30/11/99

(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 not at variance to this Principle**

Both of the mapped vegetation associations within the application area are well represented in the Warren IBRA bioregion, the Shire of Manjimup and the conservation reserve system. Beard 1144 retains approximately 79% and 78% of its pre-European extents in the Warren IBRA region and Shire of Manjimup, respectively, with 90% of the remaining vegetation held in secure land tenure (Shepherd, 2009). The Warren IBRA region retains approximately 80% of the pre-European Beard 1 vegetation association, with 81% of this current extent in secure tenure (Shepherd, 2009).

The local area (10km radius) is well vegetated with approximately 85% native vegetation coverage. Approximately 95% of this vegetation is on DEC managed land, with the South East Nannup, Barlee Brook, Donnelly and North Donnelly State Forests and nature reserves in the local area (10km radius).

The vegetation under application is not considered to be significant as a remnant of native vegetation in a highly cleared landscape and the proposed clearing is not at variance with this Principle.

Methodology References:
Shepherd, 2009

GIS Databases:
- Donnelly 50cm Orthomosaic - Landgate 2007
- Pre-European vegetation - DA 01/01
- SAC Biodatasets - 21/09/10

(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**

There is a minor perennial watercourse present at the western edges of Area 1 and Area 3. Aerial imagery supports the presence of increased moisture in these areas, however, native riparian vegetation appears to have been replaced by pasture grass.

The vegetation under application is unlikely to support native riparian vegetation and as such the proposed clearing is not likely to be at variance with this Principle.

Methodology GIS Databases:
- ANCA, Wetlands - 26/03/99
- Donnelly 50cm Orthomosaic - Landgate 2007
- Hydrogeology, statewide - DoW 13/07/06
- Hydrography, linear - DoW 13/7/06
- RAMSAR, Wetlands - 15/10/09

(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 Native Forest Management Plan (Bradshaw, 2010) states that harvesting should occur during dry soil conditions to avoid soil compaction and puddling.

It is considered that soil erosion or other land degradation impacts are unlikely to increase due to the proposed selective thinning of 19ha and the proposed clearing is not likely to be at variance with this Principle.

Methodology References:
Bradshaw, 2010

GIS Databases:
- Acid Sulfate Soils Risk Map - DEC 06/09/06
- Evapotranspiration, Area Actual - BOM 30/09/01
- Groundwater Salinity, statewide - DoW 13/07/06
- Hydrogeology, statewide - DoW 13/07/06

- Rainfall, Mean Annual - BOM 30/09/01
- Soils, Statewide - 30/11/99
- 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 may be at variance to this Principle

Lot 8512 on Plan 229282 abuts DEC managed land on all sides, with a CALM executive body freehold block to the northeast and the South East Nannup State Forest surrounding the property in all other directions.

Soil disturbance and removal of native vegetation increases the risk of weeds and pathogens, such as dieback (*Phytophthora cinnamomi*), being introduced or spread. The management of dieback is of particular importance as the proposed clearing is within a high (1100mm) rainfall area and neighbours state forest.

The management plan for this proposal states that clearing should be conducted in dry soil conditions and, if observed, exotic weeds will be controlled (Bradshaw, 2010). Weed and dieback management conditions will minimise the risk of introduction or spread of pathogens and invasive species into the neighbouring DEC managed lands.

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

Methodology

- References:
Bradshaw, 2010
GIS Databases:
- DEC Managed Lands & Waters - DEC 28/10/09
- Pre-European vegetation - DA 01/01
- Soils, Statewide - 30/11/99

(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

There is a minor perennial watercourse present at the western edges of Area 1 and Area 3. Aerial imagery suggests the presence of increased moisture in these areas, however, native riparian vegetation appears to have been replaced by pasture grass.

The application area is within the Donnelly River Water Reserve and the Donnelly River Surface Water *Rights in Water and Irrigation Act 1914* area.

It is unlikely that the proposed selective thinning of 19ha of native vegetation would have appreciable impacts on water quality and the proposed clearing is not likely to be at variance with this Principle.

Methodology

- GIS Databases:
- Country Area Water Supply Act (Part IIA) Clearing Control Catchments - DoW 29/06/06
- Hydrogeographic Catchments, Catchments - DoW 01/06/07
- Hydrogeology, statewide - DoW 13/07/06
- Public Drinking Water Source Areas (PDWSAs) - DoW 07/02/06
- Rainfall, Mean Annual - BOM 30/09/01
- RIWI Act, Areas - DoW 05/04/02
- RIWI Act, Groundwater Areas - DoW 13/07/06
- RIWI Act, Irrigation Districts - DoW 13/07/06
- Soils, Statewide - 30/11/99
- 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

Given the nature of the proposed clearing (silviculture) it is unlikely to cause or exacerbate the incidence or intensity of flooding, as the clearing is selective thinning of over a relatively large (19ha) area and a sustained period of time, and regeneration will occur. Therefore, the clearing is not likely to be at variance to this Principle.

Methodology

- GIS Databases:
- Evapotranspiration, Area Actual - BOM 30/09/01
- Hydrogeology, statewide - DoW 13/07/06
- Pre-European vegetation - DA 01/01
- Rainfall, Mean Annual - BOM 30/09/01

- Soils, Statewide - 30/11/99
- Topographic Contours, Statewide - DOLA 12/09/02

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

Comments

The application area is within the Donnelly River Water Reserve public drinking water source area and the Donnelly River and Tributaries Surface Water area proclaimed under the *Rights in Water and Irrigation Act 1914*. The Department of Water has no objection to the proposed clearing (DoW, 2010).

The Shire of Manjimup (the Shire) requested that the applicant be advised to confer with the Shire with respect to the need to comply, as relevant, with all requirements relating to its Town Planning Scheme, local laws and legislation relating to the movement of heavy vehicles and the repair of road damage resultant from the use of those vehicles (Shire of Manjimup, 2010). The applicant will be notified of this requirement.

There are no known Aboriginal Sites of Significance within the application area.

Methodology

References:

DoW (2010)
Shire of Manjimup (2010)

GIS Databases:

- Aboriginal Sites of Significance - DIA 02/10
- Cadastre - Landgate 12/09
- Country Area Water Supply Act (Part IIA) Clearing Control Catchments - DoW 29/06/06
- Environmental Impact Assessments - EPA 08/03/05
- Native Title Claims - LA 2/5/07
- Public Drinking Water Source Areas (PDWSAs) - 07/02/06
- RIWI Act, Areas - DoW 05/04/02
- RIWI Act, Groundwater Areas - DoW 13/07/06
- RIWI Act, Irrigation Districts - DoW 13/07/06
- Town Planning Scheme Zones - MFP 31/08/98

4. References

- Bradshaw, J. (2010) Native Forest Management Plan (Columbia Superannuation (WA) Pty Ltd). DEC Ref: A332203
- 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.
- 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.
- Western Australian Herbarium (1998-). FloraBase - The Western Australian Flora. Department of Environment and Conservation. <http://florabase.dec.wa.gov.au/> Accessed on 21/09/10

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)