



CLEARING PERMIT
Granted under section 51E of the Environmental Protection Act 1986

Purpose permit number:	CPS 2773/1
Permit holder:	Electricity Generation Corporation T/A Verve Energy
Duration of permit:	1 July 2009 to 1 July 2014

The Permit Holder is authorised to clear native vegetation for the above stated purposes, subject to the conditions of this Permit.

PART I – CLEARING AUTHORISED

1. Purpose for which clearing may be done

Clearing for the purpose of access, cable connection and firebreaks for a wind farm.

2. Land on which clearing is to be done

LOT 11 on PLAN 3568 (House No. 413 Robinson Road, ROBINSON 6330)
LOT 20 on PLAN 3568 (House No. 46 Sand Pit Road, ROBINSON 6330)
LOT 7736 on PLAN 92133 (CROWN RESERVE 13773, ROBINSON 6330)
IMPERAL ROAD (ROAD RESERVE, MCKAIL, 6330)
GLADVILLE ROAD (ROAD RESERVE, MCKAIL, 6330)
LANCASTER ROAD (ROAD RESERVE, MAKAIL, 6330)
TIMEWELL ROAD (ROAD RESERVE, MCKAIL, 6330)
BEAUDON ROAD (ROAD RESERVE, MCKAIL, 6330)
SOUTH COAST HWY (ROAD RESERVE, MCKAIL, 6330)
CHARLES STREET (ROAD RESERVE, GLEDHOW, 6330)
LOWANNA DRIVE (ROAD RESERVE, GLEDHOW, 6330)
GEORGE STREET (ROAD RESERVE, GLEDHOW, 6330)
OLD ELLEKER ROAD (ROAD RESERVE, ROBINSON, 6330)
GLEDHOW WEST ROAD (ROAD RESERVE, ROBINSON, 6330)
ROBINSON ROAD RESERVE (ROAD RESERVE, ROBINSON, 6330)
TWEEDLE ROAD RESERVE (ROAD RESERVE, ROBINSON, 6330)

3. Area of Clearing

The Permit Holder must not clear more than 7.4 hectare of native vegetation within the area shaded yellow on attached plans 2773/1a, 2773/1b, 2773/1c, 2773/1d, 2773/1e, 2773/1f, 2773/1g, 2773/1h, 2773/1i, 2773/1j and 2773/1k.

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 project activities to the extent that the Permit Holder has the power to clear native vegetation for those project activities under the Energy Operators (Powers) Act 1979 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 site shall be inspected by a *flora specialist* for the presence of the following *priority flora taxa*:
 - (i) *Thomasia quercifolia* (priority 2),
 - (ii) *Spyridium spadiceum* (priority 2), and
 - (iii) *Melaleuca ringens* (priority 3)
- (b) Where priority flora taxa are identified in relation to condition 8(a) of this Permit, the Permit Holder shall ensure that:
 - (i) all records of priority flora taxa are submitted to the CEO; and
 - (ii) no clearing occurs with 10 metres of identified *priority flora taxa*, unless approved by the CEO.

PART III - RECORD KEEPING AND REPORTING

9. 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 species of each *priority flora taxa* identified.
 - (ii) the location of each *priority flora taxa* recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings; and

10. Reporting

- (a) The Permit Holder must provide to the CEO, on or before 30 June of each year, a written report of records required under condition 9 and activities done by the Permit Holder under this Permit between 1 January and 31 December of the preceding year.
- (b) Prior to 1 April 2014, the Permit Holder must provide to the CEO a written report of records required under condition 9 where these records have not already been provided under condition 10(a).

Definitions

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

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

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

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

Keith Claymore
A/ ASSISTANT DIRECTOR
NATURE CONSERVATION DIVISION

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

29 January 2009

Plan 2773/1a

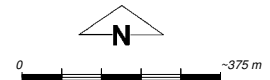


LEGEND

Clearing Instruments

- Areas Approved to Clear
- Road Centrelines
- Cadastral

Albany Mount Barker 1.4m Orthomosaic - Landgate 2002



Scale 1:14278
 (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.

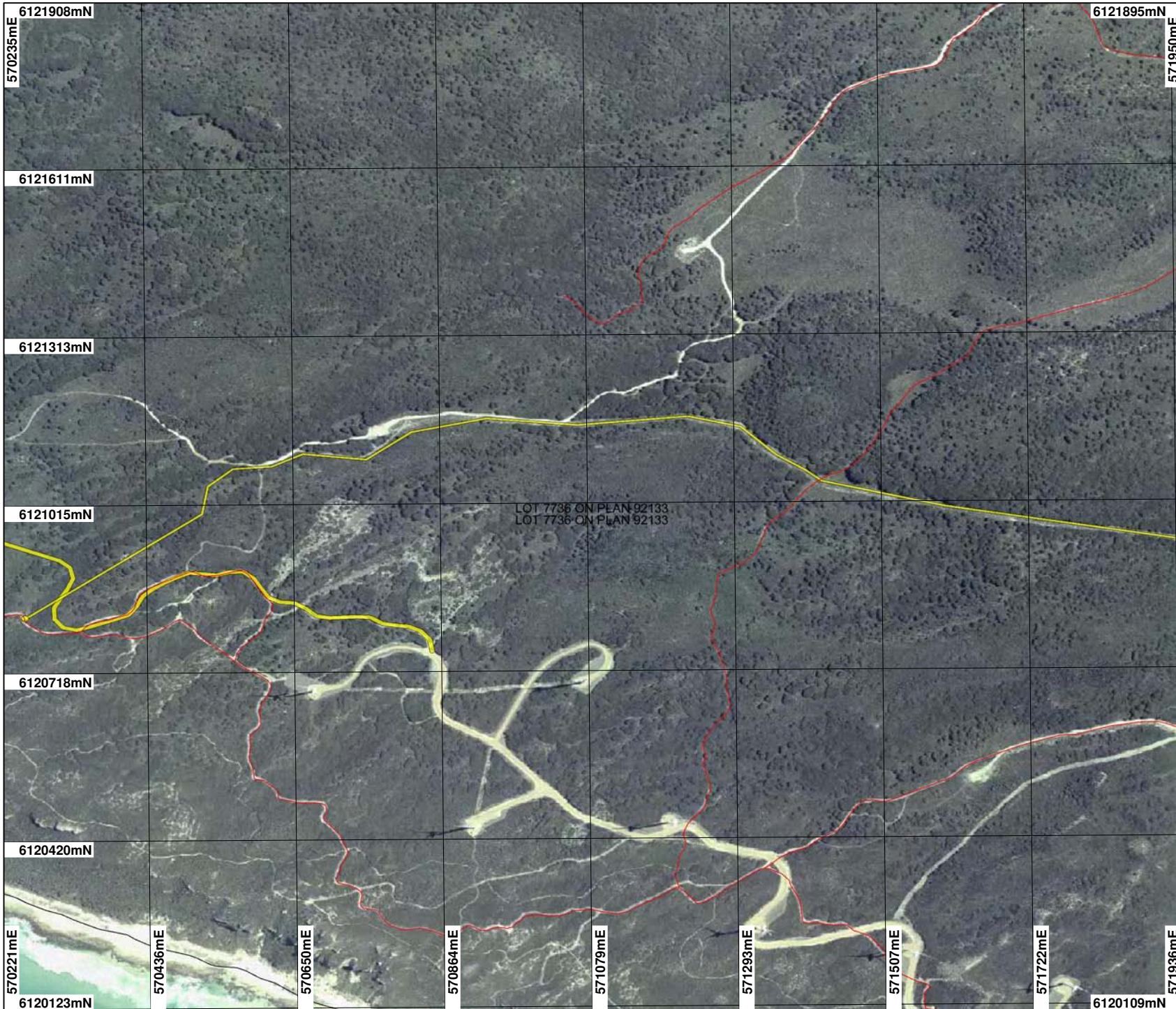
..... Date

K Claymore

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

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

Plan 2773/1b



LEGEND

Clearing Instruments

- Areas Approved to Clear
 - Road Centrelines
 - Cadastre
- Albany Mount Barker 1.4m Orthomosaic - Landgate 2002



Scale 1:8435
(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

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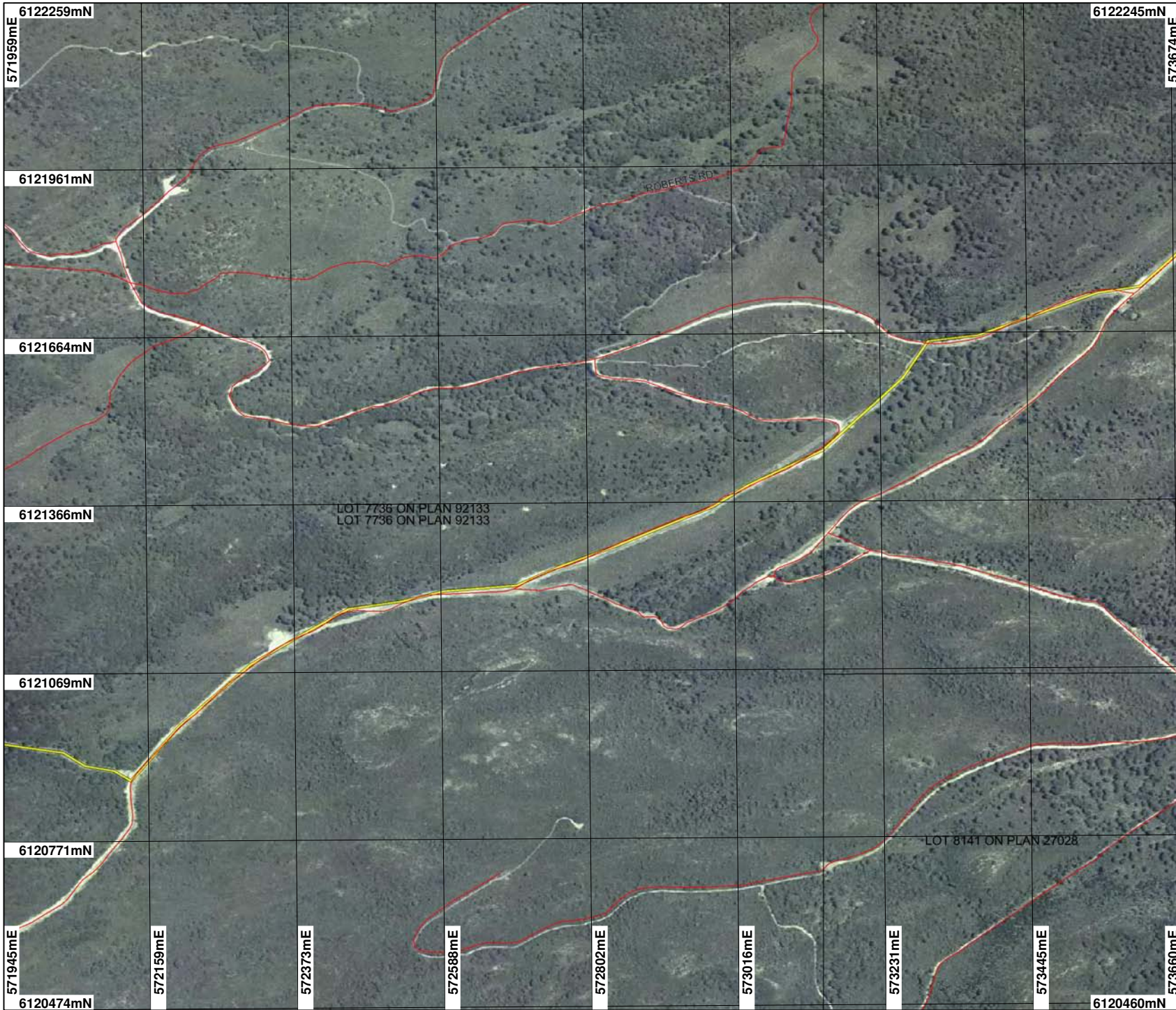
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Department of Environment and Conservation

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Plan 2773/1c



LEGEND

Clearing Instruments

- Areas Approved to Clear
 - Road Centrelines
 - Cadastre
- Albany Mount Barker 1.4m Orthomosaic - Landgate 2002



Scale 1:8435
(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

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Plan 2773/1d



LEGEND

- Clearing Instruments**
- Areas Approved to Clear
 - Road Centrelines
 - Cadastre

Albany 1m Orthomosaic - Landgate 2001



Scale 1:5282

(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

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Plan 2773/1 e



LEGEND

Clearing Instruments

- Areas Approved to Clear
- Road Centrelines
- Cadastre



Scale 1:5283

(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

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Plan 2773/1f



LEGEND

Clearing Instruments

- Areas Approved to Clear
- Road Centrelines
- Cadastre



Scale 1:5283

(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

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Plan 2773/1g



LEGEND

Clearing Instruments

- Areas Approved to Clear
- Road Centrelines
- Cadastre



Scale 1:5283

(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.

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Plan 2773/1h



LEGEND

Clearing Instruments

- Areas Approved to Clear
- Road Centrelines
- Cadastre



Scale 1:5284

(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

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Plan 2773/1i



LEGEND

Clearing Instruments

- Areas Approved to Clear
- Road Centrelines
- Cadastre



Scale 1:5284

(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

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

Plan 2773/1j



LEGEND

- | | |
|-------------------------|--|
| Clearing Instruments | Albany Mount Barker 1.4m Orthomosaic - Landgate 2002 |
| Areas Approved to Clear | |
| Road Centrelines | |
| Cadastre | |



Scale 1:5284
 (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.

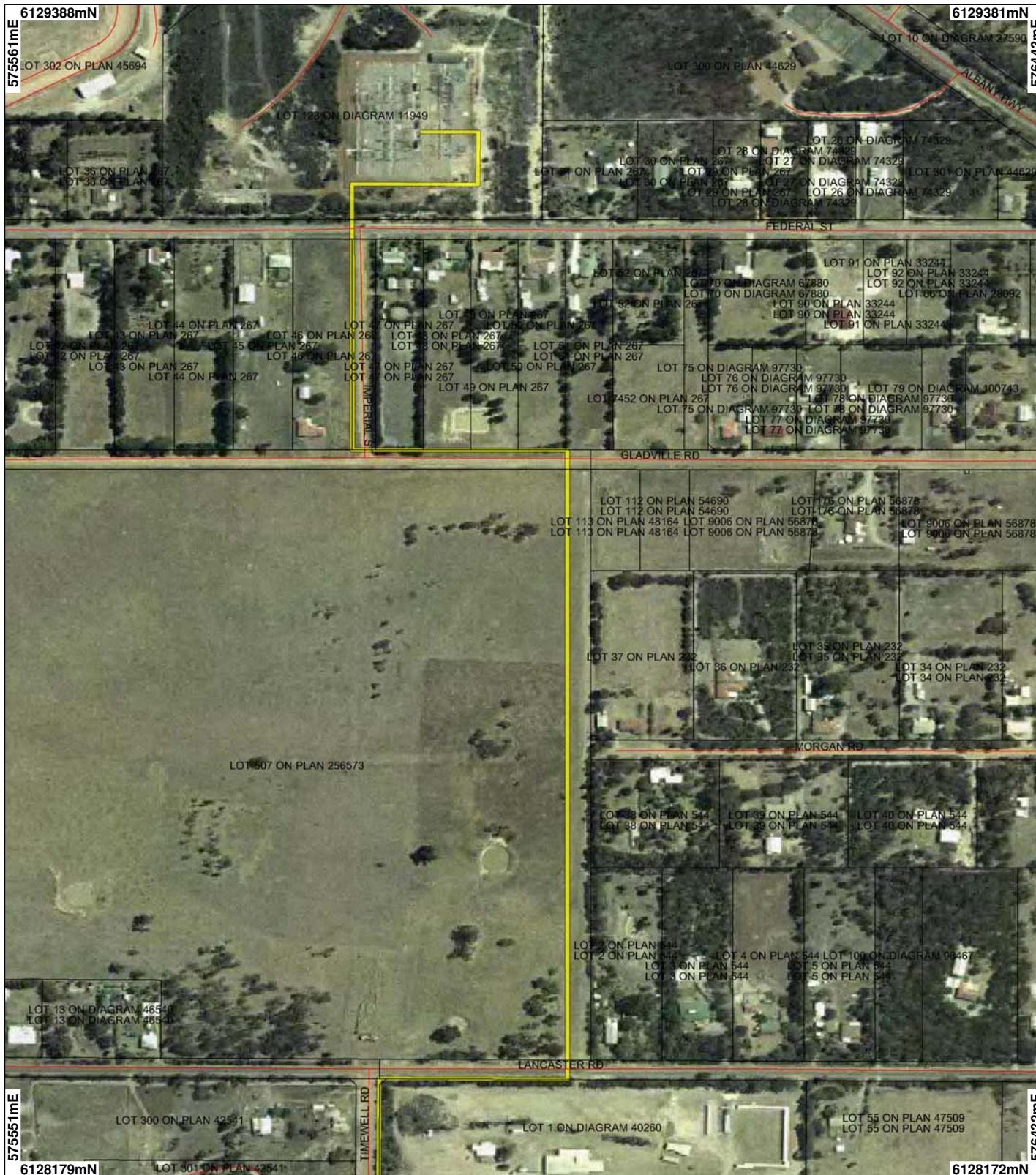
..... Date

K Claymore

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

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

Plan 2773/1k



LEGEND

Clearing Instruments

- Areas Approved to Clear
- Road Centrelines
- Cadastre

Albany Mount Barker 1.4m
Orthomosaic - Landgate
2002



0 ~150 m

Scale 1:5284

(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

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

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Department of
Environment and Conservation

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1. Application details

1.1. Permit application details

Permit application No.: 2773/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Electricity Generation Corp t/as Verve Energy

1.3. Property details

Property:
LOT 7736 ON PLAN 92133 (SANDPATCH 6330)
LOT 7736 ON PLAN 92133 (SANDPATCH 6330)
LOT 11 ON PLAN 3568 (House No. 413 ROBINSON ROBINSON 6330)
LOT 11 ON PLAN 3568 (House No. 413 ROBINSON ROBINSON 6330)
LOT 20 ON PLAN 3568 (House No. 46 SAND PIT ROBINSON 6330)
LOT 20 ON PLAN 3568 (House No. 46 SAND PIT ROBINSON 6330)

Local Government Area:
Colloquial name: City Of Albany

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
7.4		Mechanical Removal	Infrastructure Maintenance

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description	Clearing Description	Vegetation Condition	Comment
Mapped Beard (1980) vegetation association 3 is described as medium forest; Eucalyptus marginata (Jarrah) - Corymbia calophylla (Marri).	The proposed clearing is for the purpose of access tracks, cable connections and fire breaks for the Grasmere Wind Farm turbines. This proposal will involve the removal of approximately 7.4 ha of native vegetation. Within Lot 7736 on Deposited Plan 92133 (Crown Reserve 13773) the applicants wish to clear for:	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)	The vegetation condition was determined through aerial mapping and are supported by a site visit (DEC, 2008), and a Flora and Vegetation Survey conducted by Ecologia in June 2008 and November 2008 (Ecologia, 2008).
Association 49 - Shrublands; mixed heath			
Association 423 - Shrublands; Acacia scrub-heath (unknown spp.)			
Association 978 - Low forest; jarrah, Eucalyptus staeri & Allocasuarina fraseriana	- A Wind Farm access road, turbine hardstands and batter - 3.5m wide - An underground cable route to substation - 3m wide - An underground cable route between turbines - 3m wide - An additional cleared area for roads, batter and hardstand - widening an existing track by 1m.		
	The vegetation under application ranges in condition from degraded to excellent (Keighery, 1994) with an overall condition of good (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 proposed clearing is for the purpose of access tracks, cable connections and fire breaks for the Grasmere Wind Farm turbines.

The vegetation under application is in excellent to degraded (Keighery, 1994) condition. The application area falls partially within road reserves and partially within Crown Reserve 13773.

Within the road reserves a clearing of 3 metres is required to run an underground cable. The majority of the road reserves are in a degraded to good (Keighery, 1994) condition (DEC, 2008). In most instances the vegetation proposed to be cleared is in a more degraded condition than vegetation within the opposite road reserve (DEC, 2008).

The vegetation under application within Crown Reserve 13773 is considered to be in a good to excellent (Keighery, 1994) condition and forms part of an east west ecological linkage which runs parallel to the coastline, and contains habitat for fauna indigenous to Western Australia in a local area that is approximately 35% vegetation. Most of the clearing within Crown Reserve 13773 is for the widening of access tracks that are already exist.

A flora and vegetation survey (Ecologia, 2008) identified 3 priority flora species within the applied area and no rare flora species. The EPA has recommended that the areas containing priority species be marked with pegs and marking tape to ensure these areas are not disturbed during construction (EPA, 2008). Flora management conditions will be placed on the permit to mitigate potential impacts of clearing on flora of conservation significance.

Given that the areas surrounding the applied area are in similar or better condition the area under application is not likely to comprise a significant level of biodiversity in relation to these nearby areas.

Therefore the clearing is not likely to be at variance to this principle.

Methodology

References:

DEC (2008)

EPA (2008)

Keighery (1994)

Ecologia (2008)

GIS Database:

Albany Mt Barker 1.4m Orthomosaic - Landgate 02

SAC Biodatasets - accessed 28 November 08

Pre European Vegetation - DA 01/01

NLWRA, Current Extent of Native Vegetation 20 Jan 2001

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

Comments

Proposal may be at variance to this Principle

The vegetation under application is mapped as Beard vegetation unit 49 (Shrublands of mixed heath) (Shepherd, 2006) within Crown Reserve 13773 which is represented statewide with approximately 46.4% of the pre-European vegetation extent remaining (Hopkins et al., 2001). The vegetation proposed to be cleared from Gledhow west road to Tweedle Road is mapped as Beard vegetation unit 423 (shrublands of acacia scrub-heath) and Imperial Road to Gledhow West Road is mapped as Beard vegetation unit 3 (Medium forest - Marri and Jarrah)

The local area (10km radius) has approximately 35% native vegetation cover and the area under application is part of an east west ecological linkage which runs parallel to the coastline.

The EPA (EPA, 2008) identified 3 fauna of conservation significance within the applied area, namely the Main Assassin's Spider, Baudin's Black Cockatoo and Carpet Python. As the proposed clearing is a thin linear area of 7.4 hectares over 17kms, larger mobile species are unlikely to be significantly affected by the proposed clearing. However, the Main Assassin's Spider may be affected by the proposed clearing given its limited homerange. The proponent has committed to avoid known habitat and achieve minimal population disturbance (EPA, 2008).

Given that the area under application is part of significant habitat for fauna indigenous to Western Australia, the clearing as proposed may be at variance to this principle. A fauna management condition will be placed on the permit to mitigate impacts on fauna.

Methodology References:
 EPA (2008)
 Hopkins et al (2001)
 Shepherd (2006)

GIS Database:
 Pre European Vegetation - DA 01/01
 Albany Mt Barker 1.4m Orthomosaic Landgate 02
 NLWRA, Current Extent of Native Vegetation 20 Jan 2001
 SAC Biodatasets - accessed 28 November 08

(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**
 There are 4 records of rare flora species within the local area (10km radius) which occur on the same soil and vegetation as the area under application.

Of these, DEC Albany region identified *Calectasia cyanea* (rare) as possibly occurring within the applied area (DEC, 2008).

Flora and Vegetation Surveys (conducted in June 2008 and November 2008) of the site, by Ecologia (2008) identified 3 priority flora species within the area under application, namely *Thomasia quercifolia* (P2), *Spyridium spadiceum* (P2) and *Melaluca ringens* (P3). This survey did not identify any rare flora within the applied area.

Given that there are a number of rare floras within the local area which occur on the same soil and vegetation type as the area under application, and taking into account that only priority species were identified as being within the applied area (Ecologia, 2008), the clearing as proposed may be at variance to this principle.

Flora management conditions will be placed on the permit to mitigate possible impacts of clearing on rare flora populations.

Methodology References:
 DEC (2008)
 Ecologia (2008)

GIS Database:
 SAC Biodatasets - accessed 28 November 08
 Pre European Vegetation - DA 01/01
 Soils, Statewide DA 11/99

(d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.

Comments **Proposal is not likely to be at variance to this Principle**
 There are no recorded occurrences of Threatened Ecological Communities (TEC's) within the local area (10km radius).

Therefore it is not likely that the clearing as proposed is part of, or could be considered necessary for the maintenance of a TEC.

Methodology GIS Database:
 SAC Biodatasets - accessed 28 November 08

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

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

	Pre-European	Current area (ha)	Remaining % extent (ha)	% in reserves/DEC-managed land
IBRA Bioregion **				
- Warren	833,981	663,141	79.5	13.2
- Jarrah Forest	4,506,655	2,440,940	54.1	13.7
City of Albany*	427,257	152,274	35.6	21.4

Beard vegetation associations**

- 49	52,491	24,365	46.4	40.2
- 423	3,480	3,019	86.7	76.2
- 3	2,390,590	1,657,274	69.3	15.8
- 978	53,017	20,677	39	9.08

* (Shepherd et al. 2001; Hopkins et al., 2001)

** (Shepherd 2006)

The local area (10km radius) has approximately 35% native vegetation cover remaining. While the local area has been heavily cleared, the vegetation within Crown Reserve 13773 under application is part of a remnant band of vegetation along the coastline. Clearing within this remnant is predominately widening of existing access tracks.

Given the linear nature of the application with the clearing of 7.4ha over a 17km area and within Crown Reserve 13773 of which most has been previously disturbed, the clearing as proposed is not likely to be significant as remnant of vegetation in the local area.

Therefore the clearing as proposed is not likely to be at variance to this principle.

Methodology References:
Hopkins et al. (2001)
Shepherd (2006)
Shepherd et al. (2001)

GIS Database:
Albany Mt Barker 1.4m Orthomosaic - Landgate 02
Interim Biogeographic Regionalisation of Australia - EA 18/10/00
Local Government Authorities - DLI 8/07/04
Pre European Vegetation - DA 01/01
NLWRA, Current Extent of Native Vegetation 20 Jan 2001

(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

The applied area is approximately 400m north east of the Western Australian coastline. As the area under application is small, taking into account the nature of the clearing (spread over a large area) and the distance between the clearing and the coast, the clearing is unlikely to impact on the coastline.

There is a swamp located 65m east and mid way down Gledhow West Road. This road has no vehicular access through to the eastern section of the road (DEC, 2008). The vegetation within this area has been described as disturbed, weed infested woodlands (Ecologia, 2008).

Given the thin linear nature of application area near watercourses it is unlikely that the proposal is at variance to this principle.

Methodology DEC (2008)
Ecologia (2008)
GIS Database:
Hydrography linear - DOW 13/7/06

(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 that the area under application is small and spread over a large area the clearing as proposed is not likely to cause appreciable land degradation.

Therefore the clearing as proposed is not likely to be at variance with this principle.

Methodology GIS Database:
Soils, Statewide DA 11/99
Topographic contours statewide - DOLA and ARMY 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 not likely to be at variance to this Principle

The closest area of conservation significance is Lake Powell Nature Reserve (Department of Environment and Conservation (DEC) managed lands), approximately 2km north west of the applied area.

Given the distance between the applied area and the nature reserve, and taking into account the thin linear size of the applied area, the clearing as proposed is not likely to have an impact on the conservation values of this nature reserve.

Therefore the clearing as proposed is not likely to be at variance to this principle.

Methodology GIS Database:
CALM Managed Lands and Waters - CALM 01/06/05
Register of National Estate - Environment Australia, Australian and world heritage division 12 Mar 02

(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 area under application is approximately 400m from the Western Australia coastline and within a swamp on Gledhow West Road. The swamp area has been described as disturbed, weed infested woodlands (Ecologica, 2008).

Taking into account the nature and that the application is small and spread over a large area of the proposal, it is not likely that the clearing will cause deterioration in the quality of surface or ground water.

Therefore the clearing as proposed is not likely to be at variance to this principle.

Methodology GIS Database:
Hydrography, linear - DOW 13/7/06
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 linear nature and situation of the application on sandy soils it is not likely that the proposal will cause or exacerbate the incidence or intensity of flooding.

Therefore the clearing as proposed is not likely to be at variance to this principle.

Methodology GIS Database:
Hydrography, linear - DOW 13/7/06
Topographic Contours, Statewide - DOLA 12/09/02

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

Comments
The City of Albany has approved this proposal under condition they implement the principles in the Environmental Management Plan and the Revegetation Plan for Grasmere Wind farm (DEC TRIM Ref: DOC69419).

Methodology

4. Assessor's comments

Comment

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

5. References

DEC (2008) Site Inspection Report for Clearing Permit Application CPS 2773/1, Road Reserves within City of Albany, and Crown Reserve 13773. Site inspection undertaken 01/12/2008. Department of Environment and Conservation, Western Australia (TRIM Ref. DOC70276).
Ecologica (2008) Verve Energy, Grasmere Wind Farm Extension Area and Cable Route: Vegetation and Flora Survey, Version 2, June 2008, Trim Ref DOC57652

- EPA (2008). Public Advice CRN 331679. Environmental Protection Authority 20 August 2008 (DOC70487).
- Hopkins, A.J.M., Beeston, G.R. and Harvey J.M. (2001) A database on the vegetation of Western Australia. Stage 1. CALMScience after J. S. Beard, late 1960's to early 1980's Vegetation Survey of Western Australia, UWA Press.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Northcote, K. H. with Beckmann G G, Bettenay E., Churchward H. M., van Dijk D. C., Dimmock G. M., Hubble G. D., Isbell R. F., McArthur W. M., Murtha G. G., Nicolls K. D., Paton T. R., Thompson C. H., Webb A. A. and Wright M. J. (1960-68): 'Atlas of Australian Soils, Sheets 1 to 10, with explanatory data'. CSIRO and Melbourne University Press: Melbourne.
- Shepherd, D.P. (2007). Adapted from: Shepherd, D.P., Beeston, G.R., and Hopkins, A.J.M. (2001), Native Vegetation in Western Australia. Technical Report 249. Department of Agriculture Western Australia, South Perth. Includes subsequent updates for 2006 from Vegetation Extent dataset ANZWA1050000124.
- Shepherd, D.P., Beeston, G.R. and Hopkins, A.J.M. (2001) Native Vegetation in Western Australia, Extent, Type and Status. Resource Management Technical Report 249. Department of Agriculture, Western Australia.

6. Glossary

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