



GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 5526/2
Permit Holder:	Shire of Esperance
Duration of Permit:	7 June 2013 to 7 June 2028

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 extracting base material for road construction and maintenance.

2. Land on which clearing is to be done

Lot 361 on Deposited Plan 212178 - Reserve 31801, Beaumont
Muntz Road reserve (PIN 11645175), Howick

3. Area of Clearing

The Permit Holder must not clear more than 6.02 hectares of native vegetation within the area hatched yellow on attached Plan 5526/2.

4. Period in which clearing is authorised

- (a) The Permit Holder shall not clear any native vegetation after 7 June 2023.
- (b) The Permit Holder shall not clear native vegetation unless actively mining within 3 months of the authorised clearing being undertaken.

5. 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.

6. Type of clearing authorised

This Permit authorises the Permit Holder to clear native vegetation for the activities described in condition 1 of this Permit to the extent that the Permit Holder has the power to carry out works involving clearing for those activities under the *Local Government Act 1995* or any other written law.

7. 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

8. 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.

9. Dieback and weed control

When undertaking any clearing or other activity authorised under this Permit, the Permit Holder must take the following steps to minimise the risk of the introduction and spread of *weeds* and *dieback*:

- (a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- (b) shall only move soils in *dry conditions*;
- (c) ensure that no *dieback* or *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared; and
- (d) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

10. Flora management

(a) Prior to undertaking any clearing authorised under this Permit, the Permit Holder shall engage a *botanist* to inspect that area for the presence of the following priority flora:

- (i) *Melaleuca viminea* subsp. *appressa*
- (ii) *Spyridium mucronatum* subsp. *multiflorum*
- (iii) *Acacia nitidula*
- (iv) *Isopogon alpicornis*
- (v) *Stachystemon vinosus*
- (vi) *Grevillea baxteri*

(b) Where *priority flora* are identified in relation to condition 10(a) of this Permit, the Permit Holder shall ensure that:

- (i) no clearing of identified *priority flora* occurs, unless approved by the CEO; and
- (ii) no clearing occurs within 20 metres of identified *priority flora*, unless approved by the CEO.

11. Retain vegetative material and topsoil, revegetation and rehabilitation

The Permit Holder shall:

- (a) retain the vegetative material and topsoil removed by clearing authorised under this Permit and stockpile the vegetative material and topsoil in an area that has already been cleared.
- (b) within 12 months following completion of extractive activities, *revegetate* and *rehabilitate* the combined areas hatched yellow on attached Plan 5526/2 by:
 - (i) re-shaping the surface of the land so that it is consistent with the surrounding 5 metres of uncleared land; and
 - (ii) laying the vegetative material and topsoil retained under condition 11(a) on the cleared area
- (c) within 24 months of laying the vegetative material and topsoil on the cleared area in accordance with condition 11(b) 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 11(c)(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.

- (d) Where additional planting or direct seeding of native vegetation is undertaken in accordance with condition 11(c)(ii) of this permit, the Permit Holder shall repeat condition 11(c)(i) and 11(c)(ii) within 24 months of undertaking the additional planting or direct seeding of native vegetation.
- (e) Where a determination by an *environmental specialist* that the composition, structure and density within areas *revegetated* and *rehabilitated* will result in a similar species composition, structure and density to that of pre-clearing vegetation types in that area, as determined in condition 11(c)(i) and 11(c)(ii) of this permit, that determination shall be submitted for the CEO's consideration. If the CEO does not agree with the determination made under condition 11(c)(ii), the CEO may require the Permit Holder to undertake additional *planting* and *direct seeding* in accordance with the requirements under condition 11(c)(ii).

PART III - RECORD KEEPING AND REPORTING

12. 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 10 of this Permit:
 - (i) the location of each *priority flora* recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees; and
 - (ii) the species name of each *priority flora* identified.
- (c) In relation to the *revegetation* and *rehabilitation* of areas pursuant to condition 11 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 or decimal degrees;
 - (ii) a description of the *revegetation* and *rehabilitation* activities undertaken;
 - (iii) the size of the area *revegetated* and *rehabilitated* (in hectares);
 - (iv) the species composition, structure and density of *revegetation* and *rehabilitation*, and
 - (v) a copy of the environmental specialist's report.

13. 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 12 of this Permit; and
 - (ii) concerning activities done by the Permit Holder under this Permit between 1 January to 31 December of the preceding calendar year.
- (c) If no clearing authorised under this Permit was undertaken between 1 January to 31 December of the preceding calendar year, a written report confirming that no clearing under this permit has been carried out, must be provided to the CEO on or before 30 June of each year.
- (d) Prior to 7 March 2023, the Permit Holder must provide to the CEO a written report of records required under condition 12 of this Permit where these records have not already been provided under condition 13(a) of this Permit.

DEFINITIONS

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

botanist means a person who holds a tertiary qualification in environmental science or equivalent, and has a minimum of 2 years work experience in identification and surveys of flora native to the bioregion being inspected or surveyed, or who is approved by the CEO as a suitable botanist for the bioregion;

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;

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;

local provenance means native vegetation seeds and propagating material from natural sources within 30 kilometres of the area cleared;

mulch means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation;

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

priority flora means those plant taxa described as priority flora classes 1, 2, 3, 4 or 5 in the *Department of Parks and Wildlife's Threatened and Priority Flora List for Western Australia* (as amended);

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;

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; and

weed/s means any plant -

- (a) that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*; or
- (b) published in a Department of Parks and Wildlife Regional Weed Rankings Summary, regardless of ranking; or
- (c) not indigenous to the area concerned.



M Warnock
SENIOR MANAGER
CLEARING REGULATION

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

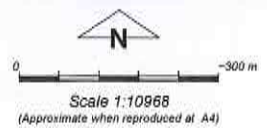
12 February 2015

Plan 5526/2



LEGEND

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



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 12/2/15
 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.



Government of Western Australia
 Department of Environment Regulation
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Clearing Permit Decision Report

Government of Western Australia
Department of Environment Regulation

1. Application details

1.1. Permit application details

Permit application No.: 5526/2
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Shire of Esperance

1.3. Property details

Property: LOT 361 ON PLAN 212178 (BEAUMONT 6450)
ROAD RESERVE (HOWICK 6450)
Local Government Area: Shire of Esperance
Colloquial name: Muntz Road reserve

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 12 February 2015

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description	Clearing Description	Vegetation Condition	Comment
Mapped Beard Vegetation Association 1047 is described as shrublands with Eucalyptus incrassata Mallee-heath (Shepherd et al, 2001).	The amended application is for the proposed clearing of 6.02 hectares of native vegetation within Lot 361 on Deposited Plan 212178, Beaumont and Muntz Road reserve, Howick for the purpose of gravel extraction.	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994) To Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	The condition of the vegetation was determined via a vegetation report provided by the Shire of Esperance (2013). The vegetation within the application area has been described as small Eucalyptus including E. pleurocarpa, Hakea spp, Dryandra, Allocasuarina various Myrtaceae shrubs (Shire of Esperance 2013).

3. Assessment of application against clearing principles

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

Comments **Proposal may be at variance to this Principle**

The permit has been amended to remove numerous areas proposed to be cleared within Henkes Road reserve, Bebenorin Road reserve and Muntz Road reserve, Howick. The proposed clearing now consists of one application area totalling 6.02 hectares within Lot 361 on Plan 212178, Beaumont and Muntz Road reserve, Howick for the purpose of gravel extraction.

There are three species of conservation significant fauna recorded within 20 kilometres of the area under application being white-bellied sea-eagle (*Haliaeetus leucogaster*), common sandpiper (*Actitis hypoleucos*) and southern death adder (*Acanthopis antarcticus*) (DEC 2007-). The vegetation proposed to be cleared has been impacted by prior gravel extraction activities and is part of a larger remnant that contains similar vegetation in better condition that will provide suitable habitat for local fauna species. No loss of significant fauna habitat is expected.

Numerous priority flora species have been recorded within the local area (10 kilometre radius). Six of these species have a preference for sandy soils, gravels or loams. Given that the area under application is largely comprised of sandy duplex soils and deep gravelly duplex soils (Shire of Esperance, 2013), these priority species have the potential to occur within the application area. An appropriately timed targeted flora survey is required to determine whether the species occur within the proposed gravel pit.

The local area (10 kilometre radius) has been extensively cleared for agriculture and has approximately 15 per cent native vegetation remaining.

The disturbance caused by the proposed clearing will increase the risk of weeds and dieback being introduced into surrounding areas of vegetation. Weed and dieback management practices will assist in mitigating this risk.

Revegetation and rehabilitation will be required post extraction to assist in mitigating the long term impacts of the proposed clearing.

Given that six priority flora species have the potential to occur within the application area, and the application area contains vegetation in a very good (Keighery, 1994) condition, the proposed clearing may be at variance to this principle.

Methodology

References:

- DEC (2007-)
- Keighery (1994)
- Shire of Esperance (2013)

GIS Databases:

- SAC Bio Datasets (Accessed December 2014)

(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

There are three species of conservation significant fauna recorded within 20 kilometres of the area under application, being the white-bellied sea-eagle (*Haliaeetus leucogaster*), common sandpiper (*Actitis hypoleucos*) and southern death adder (*Acanthophis antarcticus*) (DEC 2007-).

The white bellied sea eagle and common sandpiper are waterbirds listed under Schedule 3 of the Wildlife Conservation Act 1950 (WC Act) (migratory birds protected under an international agreement). The application area is separated from hydrological features and therefore is unlikely to impact upon significant habitat for these species.

The southern death adder is listed as a priority 3 species under the WC Act. This species lives in wet and dry eucalypt forests, woodlands and coastal heaths within leaf litter (Queensland Museum 2014). The vegetation under application may provide suitable habitat for this species.

Carnaby's cockatoo (*Calyptorhynchus latirostris*) is also known to occur within the Shire of Esperance (SEWPaC 2012). This species is listed as endangered under the Environment Protection and Biodiversity Conservation Act 1999 and listed as rare or likely to become extinct under the WC Act. The vegetation under application is unlikely to provide significant breeding habitat for Carnaby's cockatoo given the lack of large hollow bearing trees on site. However, the vegetation on site includes *Hakea* sp, *Dryandra* sp and *Allocasuarina* sp., which may provide foraging habitat for Carnaby's cockatoo, given that this species is known to forage on the seeds, nuts and flowers of a large variety of plants including proteaceous species (*banksia*, *hakea*, *grevillea*), as well as *allocasuarina* and *eucalyptus* species (Valentine and Stock, 2008).

The vegetation under application has been impacted by past gravel extraction activities and is part of a large remnant (approximately 6000 hectares) which contains similar vegetation in a better condition that will provide habitat for the Carnaby's cockatoo and southern death adder. Therefore no loss of significant habitat for these species is expected.

The vegetation under application is part of a large remnant (approximately 6000 hectares) which includes Muntz Nature Reserve. This large remnant provides an ecological linkage between remnant native vegetation within the local area (10 kilometre radius). Given the application area is part of a larger remnant, the vegetation located adjacent to the application will provide a linkage for fauna movement across the landscape, therefore the clearing as proposed is not likely to have a significant impact on this linkage. The clearing as proposed may indirectly impact adjacent vegetation through the spread of weeds and dieback. Weed and dieback management practices will help mitigate this risk.

Given the above, the clearing as proposed is not likely to be at variance to this principle.

Methodology References:
- DEC (2007-)
- Queensland Museum (2014)
- SEWPaC (2012)
- Valentine and Stock, 2008

GIS Databases:
-SAC Bio Datasets (Accessed December 2014)

(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**
The closest rare flora to the application area has been mapped 13 kilometres south of the proposed clearing. This species is found on sandy soils in moist areas along creeks, rivers, pools or margins of saline depressions (Western Australian Herbarium 1998-).

Suitable habitat for this species is not located within the area under application.

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

Methodology References:
-Western Australian Herbarium (1998 -)

GIS Databases:
-SAC Bio Datasets (Accessed December 2014)

(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**
One threatened ecological community (TEC), Proteaceae Dominated Kwongan Shrubland, is known to occur within local area (10 kilometre radius). This community is dominated by flowering shrub species from the Proteaceae family (e.g Banksias, Grevilleas and Hakeas) (Department of the Environment 2014). This TEC has a broad distribution throughout the south coast region with large areas located within conservation estate (Department of the Environment 2014).

The mapped Beard vegetation association within the areas under application may be representative of this TEC. The Department of the Environment (2014) has identified the areas under application as either 'indicative of the TEC's current distribution' or 'indicative of the TEC's mapped pre-European distribution'.

Given the above, this TEC may be present within the area under application. However, the area under application has been impacted by former gravel extractions works and is part of a larger remnant that contains vegetation in a better condition. Therefore the vegetation proposed to be cleared is not likely to be necessary for the maintenance of this TEC.

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

Methodology References:
- Department of the Environment (2014)

GIS Database:
- SAC Bio Datasets (Accessed December 2014)

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

Comments **Proposal may be at variance to this Principle**
The application area is located within an extensively cleared and fragmented landscape, with the local area (10 kilometre radius) retaining approximately 15 per cent native vegetation.

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 Beard Vegetation Association mapped within the application area (1047) retains greater than 30 per cent native vegetation within the Mallee Bioregion. The Shire retains approximately 71 per cent native vegetation (Government of Western Australia, 2013).

Despite the Shire and Bioregion being well vegetated, the local area has been extensively cleared, and therefore the vegetation under application may be considered to be located within an extensively cleared area.

The application area contains some vegetation in a very good (Keighery 1994) condition and may contain priority flora, therefore the vegetation proposed to be cleared may be considered a significant remnant.

Revegetation and rehabilitation will be required post extraction to assist in mitigating the long term impacts of the proposed clearing.

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

Pre-European	Current Extent (ha)	Remaining Extent (ha)	Extent in DPaW Managed Lands (%)	Managed Lands (%)
IBRA Bioregion Mallee	7,395,894	4,185,989	57	30
Shire Esperance	4,459,670	3,211,034	72	30
Beard Vegetation Association in Bioregion 1047	2,196	1,565	71	54

Government of Western Australia (2013)

Methodology

References:

- Government of Western Australia (2013)
- Commonwealth of Australia (2001)
- Keighery (1994)

GIS Databases:

- NLWRA, Current Extent of Vegetation

(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

Numerous areas subject to inundation have been recorded within the local area (10 kilometre radius). The closest being recorded approximately 2.3 kilometres north of the area under application.

The closest watercourse has been recorded approximately 10 kilometres west of the area under application.

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

Methodology

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 may be at variance to this Principle

The soil within the application area has been mapped by Northcote et al (1960-68) as sandy neutral yellow mottled soils containing variable amounts of ironstone gravel in the surface sand, with leached sands sometimes containing ironstone gravel and underlain by clay substrate at depths of three to five feet.

A vegetation report provided by the Shire of Esperance (2013) describes the soils as grey, deep sandy (gravelly) duplex soils and pale deep sands with minor shallow gravel and grey non-cracking clays.

Given the sandy nature of the soils on site the clearing as proposed may cause wind erosion. A requirement to not clear unless actively mining within three months of clearing and to revegetate post extraction will help to minimise the long term effect of wind erosion.

Given the high permeability of sandy/gravelly soils water erosion causing land degradation is unlikely.

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

Methodology

References:

- Northcote et al (1960-1968)

-Shire of Esperance (2013)

GIS Database:

-Soils, statewide

(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

Numerous conservation areas have been recorded within the local area (10 kilometre radius), the closest being Muntz Nature Reserve which is located approximately 600 metres from the area under application.

Given the distance to the closest nature reserve the clearing as proposed is not likely to have an impact on the environmental values of this reserve. The vegetation under application is part of a larger remnant (approximately 6000 hectares) and therefore the proposed clearing would not sever any ecological linkages between conservation areas.

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

Methodology GIS Databases:
-DPaW Tenure

(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.

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

Numerous areas subject to inundation have been recorded within the local area (10 kilometre radius). The closest recorded approximately 2.3 kilometres north of the area under application. The closest watercourse has been recorded approximately 10 kilometres west of the area under application.

Given the distance to the closest watercourse or wetland the clearing as proposed is not likely to cause deterioration in the quality of surface water.

Groundwater salinity ranges from 14000 - 35000 milligrams per litre total dissolved solids which is considered to be highly saline. The vegetation proposed to be cleared is part of a larger remnant (approximately 6000 hectares) and therefore the clearing of 6.02 hectares of native vegetation is not likely to have a significant impact on the quality of ground water.

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

Methodology GIS Databases:
-Hydrography, linear
-Salinity, Statewide

(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 area under application is part of a larger remnant (approximately 6000 hectares). The clearing of 6.02 hectares of native vegetation is not expected to cause or exacerbate the incidence or intensity of flooding.

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

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

Comments

The permit has been amended to remove numerous areas proposed to be cleared within Henkes Road reserve, Bebenorin Road reserve and Muntz Road reserve, Howick, to allow for only one application area within Lot 361 on Plan 212178, Beaumont and Muntz Road reserve proposing to clear 6.02 hectares for the purpose of gravel extraction.

No Aboriginal Sites of Significance have been recorded within the area under application.

There will be a requirement for the City of Esperance to revegetate the proposed gravel pit post extraction.

4. References

Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.
Government of Western Australia (2013) 2012 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of October 2012. WA Department of Environment and Conservation, Perth.

- 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.
- Queensland Museum (2014) Common Death Adder - *Acanthopis antarcticus* - <http://www.qm.qld.gov.au/Find+out+about/Animals+of+Queensland/Reptiles/Snakes/Common+and+dangerous+species/Common+Death+Adder>. Accessed December 2014
- SEWPaC (2012) EPBC Act referral guidelines for three threatened black cockatoo species: Carnaby's cockatoo (endangered) *Calyptorhynchus latirostris*, Baudin's cockatoo (vulnerable) *Calyptorhynchus baudinii*, Forest red-tailed black cockatoo (vulnerable) *Calyptorhynchus banksii naso*. Department of Sustainability, Environment, Water, Populations and Communities. Australia
- 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.
- Shire of Esperance (2013) *Vegetation Report undertaken 19/02/2013*. Additional information for CPS 5526/1. DEC Ref A607501
- Valentine, L.E. and Stock, W. (2008) *Food Resources of Carnaby's Black Cockatoo (Calyptorhynchus latirostris) in the Gnarup Sustainability Strategy Study Area*. Edith Cowan University and Department of Environment and Conservation. December 2008.
- Western Australian Herbarium (1998-) *FloraBase - The Western Australian Flora*. Department of Environment and Conservation. <http://florabase.dec.wa.gov.au/> (Accessed August 2014).