



## CLEARING PERMIT

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

### PERMIT DETAILS

Area Permit Number: 5817/1

File Number: DEC14876

Duration of Permit: From 22 March 2014 to 22 March 2021

### PERMIT HOLDER

Stargaze Asset Pty Ltd

### LAND ON WHICH CLEARING IS TO BE DONE

Lot 5 on Plan 7892 (Bullsbrook)

### AUTHORISED ACTIVITY

The Permit Holder shall not clear more than 3.6 hectares of native vegetation within the area cross hatched yellow on attached Plan 5817/1.

### CONDITIONS

#### 1. Period in which clearing is authorised

The Permit Holder shall not clear any native vegetation after 22 March 2016

#### 2. 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 six months following completion of the extractive activities, *revegetate* and *rehabilitate* the area(s) that are no longer required for the purpose for which they were cleared under this Permit by:
  - (i) reshaping the surface of the land so that it is consistent with the surrounding 5 metres of uncleared land; and
  - (ii) ripping the ground on the contour to remove soil compaction; and
  - (iii) laying the vegetative material and topsoil retained under condition 2(a) on the cleared area(s); and
  - (iv) 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
  - (v) ensuring only *local provenance* seeds and propagating material are used to *revegetate* and *rehabilitate* the area.
- (c) within 24 months of undertaking *revegetation* and *rehabilitation* in accordance with condition 2(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 2(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 2(c)(ii) of this permit, the Permit Holder shall repeat condition 2(c)(i) and 2(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 2(c)(i) and (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 2(c)(ii), the CEO may require the Permit Holder to undertake additional *planting* and *direct seeding* in accordance with the requirements under condition 2(c)(ii).

### 3. Records must be kept

The Permit Holder must maintain the following records in relation to the *revegetation* and *rehabilitation* of areas pursuant to condition 2:

- (a) 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;
- (b) a description of the *revegetation* and *rehabilitation* activities undertaken; and
- (c) the size of the area *revegetated* and *rehabilitated* (in hectares).

### 4. 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 3 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.
- (b) 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.
- (c) Prior to 22 December 2020, the Permit Holder must provide to the CEO a written report of records required under condition 3 of this Permit where these records have not already been provided under condition 4(a) of this Permit.

## DEFINITIONS

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

***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 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, or who is approved by the CEO as a suitable environmental specialist.

***local provenance*** means native vegetation seeds and propagating material from natural sources within 10 kilometres and the same Interim Biogeographic Regionalisation for Australia (IBRA) subregion of the area cleared.

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

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

*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.



M Warnock  
MANAGER  
NATIVE VEGETATION CONSERVATION BRANCH

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

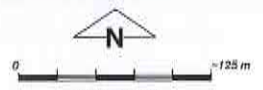
20 February 2014

# Plan 5817/1



## LEGEND

- Road Centrelines
- Clearing Instruments
- Areas Approved to Clear
- Cadastre
- Perth Metropolitan Area
- Central 15cm Orthomosaic - Landgate 2012
- Local Government Authorities



Scale 1:4740  
(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 20/2/14

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

## 1. Application details

### 1.1. Permit application details

Permit application No.: 5817/1  
Permit type: Area Permit

### 1.2. Proponent details

Proponent's name: Stargaze Asset Pty Ltd

### 1.3. Property details

Property: LOT 5 ON PLAN 7892 (House No. 91 WALYUNGA BULLSBROOK 6084)  
Local Government Area: City of Swan  
Colloquial name:

### 1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
3.6		Mechanical Removal	Extractive Industry

### 1.5. Decision on application

Decision on Permit Application: Grant  
Decision Date: 20 February 2014

## 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 3: Medium forest jarrah-marri (Shepherd et al, 2001)	Clearing 3.6 hectares of native vegetation on Lot 5 being Plan 7892, Bullsbrook, for the purpose of sand extraction.	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)	The vegetation under application consists of small to medium Marri, Jarrah and Wandoo trees with no midstorey present and the ground cover consisting of grasses/weeds (DER, 2013).
Beard Vegetation Association 4: Medium woodland: marri and wandoo (Shepherd et al, 2001).		To	The area under application appears to have been previously disturbed, possibly subject to past activities such as grazing and clearing. The vegetation under application is in a degraded to completely degraded (Keighery, 1994) condition (DER, 2013).
Mattiske Vegetation Complex, Guildford (Gu): Mosaic open forest of predominately Eucalyptus marginata subsp. marginata with Corymbia calophylla and E. wandoo over Banksia sessilis and Xanthorrhoea preisii (Mattiske and Havel, 1998).		Completely Degraded: No longer intact; completely/almost completely without native species (Keighery 1994)	The condition and structure of the vegetation under application was obtained through a site inspection undertaken by the Department of Environment Regulation (DER) on 9 September 2013 (DER, 2013).
Hedde Vegetation Complex, Guildford: A mixture of open forest to tall open forest of C. calophylla - E. wandoo - E. marginata and woodland of E. wandoo (with rare occurrences of E. lane-poolei). Minor components include E. rudis - M. raphiophylla (Hedde et al, 1980).			

### 3. Assessment of application against clearing principles

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

<b>Comments</b>	<p><b>Proposal is not likely to be at variance to this Principle</b></p> <p>The application is to clear 3.6 hectares of native vegetation for the purpose of sand extraction. The application area is located approximately 6.7 kilometres from the Bullsbrook town site.</p> <p>The vegetation under application is very open, consisting of small to medium Marri, Jarrah and Wandoo trees with no midstorey present and a ground cover consisting of grasses/weeds (DER, 2013). The area under application appears to have been previously disturbed, possibly subject to past activities such as grazing and clearing. The vegetation under application is in a degraded to completely degraded (Keighery, 1994) condition (DER, 2013).</p> <p>Several records of priority flora have been mapped within 10 kilometres of the area under application. Of the recorded species, none have been recorded within the same soil and vegetation types that occur within the area under application. The area under application is not a representation of a priority ecological community (PEC) nor is the proposed clearing likely to impact upon PEC's in the local area.</p> <p>Several fauna of conservation significance have been recorded within the local area (10 kilometre radius). The vegetation under application is in a degraded to completely degraded (Keighery, 1994) condition (DER, 2013), and there are no large mature habitat trees within the application area, it is unlikely that the vegetation under application provides significant habitat for fauna indigenous to Western Australia.</p> <p>Given that the vegetation under application is in a degraded to completely degraded (Keighery, 1994) condition (DEC, 2013), it is not likely to comprise of a high level of biological diversity.</p> <p>The application is not likely to be at variance to this principle.</p>
<b>Methodology</b>	<ul style="list-style-type: none"><li>- DER (2013)</li><li>- Keighery (1994)</li></ul> <p>GIS Databases</p> <ul style="list-style-type: none"><li>- SAC Bio Datasets (Accessed October, 2013)</li></ul>

#### (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.

<b>Comments</b>	<p><b>Proposal is not likely to be at variance to this Principle</b></p> <p>Within 10 kilometres of the area under application several fauna species of conservation significance have been recorded. These species include <i>Calyptorhynchus baudinii</i> (Baudin's cockatoo), <i>Calyptorhynchus latirostris</i> (Carnaby's cockatoo), <i>Dasyurus geoffroii</i> (Western Quoll), <i>Macrotis lagotis</i> (Bilby) and <i>Petrogale lateralis</i> subsp. <i>lateralis</i> (Black-flanked Rock-wallaby) (DEC, 2007-).</p> <p>A site inspection undertaken by DER identified the vegetation under application to be very open consisting of Marri, Jarrah and Wandoo trees over ground cover of weeds (DER, 2013). The application area has no midstorey and given the ground cover consists of weed/grasses, it is unlikely to offer significant habitat for ground dwelling fauna that occur in the area.</p> <p>Of the identified trees within the applied area, none were observed as having hollows that could potentially be suitable for breeding purposes for both cockatoo species. Given the size of the trees (small to medium) within the applied area, it is unlikely the trees would be used for roosting purpose or provide a viable food source for black cockatoo species (DER, 2013).</p> <p>Considering the above, the proposed clearing is not likely to be at variance to this principle</p>
<b>Methodology</b>	<p>References</p> <ul style="list-style-type: none"><li>DEC (2007-)</li><li>DER (2013)</li></ul>

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

<b>Comments</b>	<p><b>Proposal is not likely to be at variance to this Principle</b></p> <p>Within 10 kilometres of the area under application numerous rare flora species have been recorded. Of the known species none have been identified as occurring within same soil type and vegetation association/complex mapped within the applied area.</p> <p>Considering the above and that the vegetation under application is in a degraded to completely degraded (Keighery, 1994) condition (DER, 2013), it is unlikely the area under application contains rare flora or provides suitable habitat for rare flora species.</p> <p>The application is not likely to be at variance to this principle.</p>
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**Methodology**    References  
 - DER (2013)  
 - Keighery (1994)

GIS Databases  
 - SAC Bio Datasets (Accessed October 2013)

**(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**

Within a 10 kilometre radius of the area under application a total of six threatened ecological communities (TEC) have been recorded. The recorded TEC's comprise of Eucalyptus - Kingia australis woodlands, Eucalyptus calophylla - Xanthorrhoea preissii woodlands and shrublands, forests and woodlands of deep seasonal wetlands, herb rich shrublands in clay pans and shrublands and woodlands on muchea limestone.

The area under application is not a representation of the above mentioned TEC's nor is the proposed clearing likely to impact upon the identified TEC's.

The application is not at variance to this principle.

**Methodology**    GIS Databases  
 - SAC Bio Datasets (Accessed October 2013)

**(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**

The area proposed for clearing has been identified as Beard Vegetation Associations 3 and 4, which have 18.5 and 20.1 percent respectively of pre-European vegetation remaining in the Swan Coastal Plain Bioregion (Government of Western Australia, 2013). The vegetation under application is also represented by Matiske Vegetation Complex Guildford, and Heddle Vegetation Complex, Guildford, which have 5.3 and 6.9 percent respectively of their pre-European vegetation remaining (Matiske and Havel, 1998 and Heddle et al, 1980).

The National Objectives and Targets for Biodiversity Conservation include a target that prevents the clearance of ecological communities with an extent below 30 percent of that present pre-European settlement (Commonwealth of Australia, 2001). All of the mapped vegetation associations/complexes associated with the area under application are below the 30 percent threshold. However, the Environmental Protection Authority (EPA) recognises the Perth Metropolitan Region as a constrained area, which provides for the reduction of vegetation complexes to a minimum of 10 per cent of the pre-European extent (EPA, 2006). The mapped Heddle and Matiske's Guildford complex are below the EPA's threshold level of 10 percent.

A site inspection undertaken by DER identified the vegetation under application to be very open consisting of Marri, Jarrah and Wandoo trees with no midstorey species and a ground cover of weeds (DER, 2013). The condition (DER, 2013) of the vegetation was degraded to completely degraded (Keighery, 1994). Given the condition of the vegetation and that the applied area comprises of no native ground cover species, it is unlikely the Heddle and Matiske's Guildford complex are represented within the clearing area.

The application area is located in the Swan Coastal Plain Bioregion in the City of Swan. There is approximately 35 percent of pre-European native vegetation remaining within 10 kilometres of the area under application, this includes large remnants within conservation areas (13 Bush Forever sites, six nature reserves and one national park). The vegetation proposed to be cleared is in a degraded to completely degraded condition (Keighery 1994) condition and is not likely to comprise a high level of biological diversity and therefore is not likely to be a significant remnant.

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

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Extent in DEC Managed Lands (%)
IBRA Bioregion				
Swan Coastal Plain	1,501,221	587,708	39	35
Shire*				
City of Swan	104,252	45,543	43.5	28.5
Beard Vegetation Association in Bioregion				
3	17,364	3,216	18.5	11
4	15,897	3,197	20.1	13.2
Heddle Vegetation Complex				
Guildford Complex	92,462	4,863	5.3	0.3

Mattiske Vegetation Complex				
Guildford Complex	6,855.10	472.04	6.9	1.75

- Methodology**
- References
- Commonwealth of Australia (2001)
  - DER (2013)
  - EPA (2006)
  - Government of Western Australia (2013)
  - Heddle et al (1980)
  - Keighery (1994)
  - Mattiske and Havel (1998)
- GIS Databases:
- Heddle Vegetation Complexes
  - Interim Biogeographic Regionalisation of Australia
  - Mattiske Vegetation
  - Pre-European 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 at variance to this Principle**
- There are no wetlands or watercourses mapped within the area under application. The closest hydrological feature is a multiple use wetland mapped 280 metres to the north and west of the vegetation under application.
- A site inspection of the application area identified that the vegetation under application consists predominately of Marri, Jarrah and Wandoo trees with no midstorey and a ground cover of weeds/grasses (DEC, 2013). The vegetation under application is not growing in association with the nearby multiple use wetland or any other water course.
- The proposed clearing is not at variance to this principle.

- Methodology**
- References
- DER (2013)
- GIS Databases
- Geomorphic Wetlands (Mgt Catagories) Swan Coastal Plain
  - Hydrography, linear

**(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.**

- Comments**      **Proposal is not likely to be at variance to this Principle**
- The soils within the applied area comprise of hard acidic yellow soils containing ironstone gravels (Northcote et al, 1960-68). A site inspection over the applied area (DER, 2013) identified the soils to be of a sandy nature and not ironstone gravels as described by Northcote.
- Sandy soils are prone to wind erosion, however given the sparseness of the vegetation under application and that it is in degraded to completely degraded (Keighery, 1994) condition (DER, 2013), it is not likely that wind erosion causing appreciable land degradation will occur.
- Leached sands are highly permeable, and given the moderate average rainfall (800 millimetres) and topography on site it is not likely that the proposed clearing will result in water erosion.
- The proposed clearing is not likely to be at variance to this principle

- Methodology**
- References
- DER (2013)
  - Keighery (1994)
  - Northcote et al, 1960-68)
- GIS Databases
- Topographic Contours, 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 at variance to this Principle**

The closest conservation area to the application area is Bush Forever site 296 approximately 150 metres west of the area under application. Bush Forever site 296 comprises of an area of approximately 57 hectares. Walyunga National Park and Bush Forever site 412 are also within close proximity to the clearing area being approximately 550 metres and 1.1 kilometres respectively away from the clearing area.

Aerial imagery indicates the vegetation within the applied area and Bush Forever sites and Walyunga National Park are not linked. In addition the application area does not act as a stepping stone to facilitate the movement of fauna between the identified conservation areas.

The application is not a variance to this principle.

**Methodology** GIS Databases  
- Bushforever  
- DEC Tenure  
- Swan Coastal Plain North 20cm Orthomosaic - Landgate 2012

**(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 closest water course/body to the area under application is an unnamed multiple use wetland mapped approximately 280 metres away from the area under application. Ellen Brook is approximately 400 metres away from the proposed clearing area.

The clearing area, wetlands and Ellen Brook are separated by a road and any surface water runoff is likely to be contained within the existing road infrastructure such as table drains, batters and slopes within the road reserve. Therefore the infrastructure will prevent surface water runoff reaching the Ellen Brook and wetlands.

The Ellen Brook is fed by groundwater and is the most eutrophic waterway of the Swan Coastal Plain (Ellen Brockman Integrated Catchment Group Inc, 2013). The property slopes towards the Brook meaning groundwater flow under the application area is likely to feed into the Brook. Onsite vacuum drilling in May 2011 showed groundwater levels to be between 10 and 11 metres below ground level (DER, 2013a). Given the condition of the vegetation and that a substantial amount of the trees roots system are not likely to be in contact with the groundwater, is unlikely the proposed clearing will raise groundwater levels thus increasing flows which transport nutrients within the soil profile and potentially ending up in the Ellen Brook.

Groundwater salinity is mapped at 500 to 1000 total dissolved salts milligrams per litre (marginal) on site. Given this low salinity level, and the degraded to completely degraded (Keighery, 1994) condition of the vegetation under application (DER, 2013), it is not likely the proposed clearing will lead to a perceptible rise in the watertable and thus an increase in groundwater salinity levels.

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

**Methodology** References  
- DER (2013)  
- DER (2013a)  
- Ellen Brockman Integrated Catchment Group Inc (2013)  
- Keighery (1994)  
  
GIS Databases:  
- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain  
- Hydrography, linear  
- Groundwater 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 at variance to this Principle**

There have been no watercourses or wetland mapped or observed as being within the applied area (DER, 2013). The soils within the application area are of a sandy nature which are well drained.

Considering the above, the proposed clearing will not cause or exacerbate the incidence or intensity of flooding and therefore is not at variance to this principle.

**Methodology** References  
- DER (2013)

#### GIS Databases

- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain
- Hydrography, linear

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

#### Comments

The applicant has given the civil contractors of the state funded infrastructure project 'the Perth Airport Link', Gateway WA, a commitment to exclusive use of the sand resource subject to a clearing permit being granted.

The area under application falls within the Swan Groundwater and Swan River System Surface Water Rights in Water and Irrigation Act 1914 area. The Department of Water (2013) has been advised of the proposal, assessed the application and provided no comments.

The applicant holds a current licence with DER to operate a class 1 inert landfill site and solid waste depot from Lot 5, Walyunga Road, Bullsbrook. A condition of the licence is a separation distance between the base of the landfill and the highest groundwater level shall not be less than two metres. Currently groundwater is being monitored for pH, electrical conductivity, ammonium nitrogen, cadmium, chloride, chromium (total), copper, lead, mercury, manganese, nickel, nitrate - nitrogen, total potassium, total nitrogen, phosphorous, zinc, total dissolved solids and total petroleum hydrocarbons every six months from four groundwater bores within the property (DER, 2013b).

The City of Swan has granted planning approval to the applicant subject to conditions for the extension of the excavation area within Lot 5 Walyunga Road, Bullsbrook. The extension of the excavation area includes the proposed clearing area.

The Western Australian Planning Commission has issued the applicant with approval to commence development for Stage 2 - Industry Extractive. The approval is subject to conditions with the decision being issued pursuant to the provisions of the Metropolitan Region Scheme.

#### Methodology

##### References

- DER (2013b)
- DoW (2013)

##### GIS Databases

- RIWI Act, Groundwater Areas
- RIWI Act, Surfacewater Areas
- Town Planning Scheme
- Metropolitan Regional Scheme

### 4. References

- Ellen Brockman Integrated Catchment Group Inc (2013) Submission received in relation to Clearing Permit Application CPS 5784/1 – Stargaze Asset Pty Ltd (DER Ref:A692710)
- DER (2013) Site Inspection Report for Clearing Permit Application CPS 5817/1, Lot 5 Walyunga Road, Bullsbrook. Site inspection undertaken 9 September, 2013. Department of Environment Regulation, Western Australia (DER Ref. A693808).
- DER (2013a) Works Approval Granted - Environmental Assessment Report over Lot 5, Walyunga Road, Bullsbrook (DER Ref:A692710)
- DER (2013b) Industry Regulation - Email received in relation to water monitoring over Lot 5, Walyunga Road, Bullsbrook (DER Ref:A692718)
- DoW (2013) Advice received in relation to Clearing Permit Application CPS 5817/1 (DER Ref:A690097)
- DEC (2007 - ) NatureMap: Mapping Western Australia's Biodiversity. Department of Environment and Conservation. URL: <http://naturemap.dec.wa.gov.au/>. Accessed October 2013
- EPA (2006) Guidance for the Assessment of Environmental Factors - Level of Assessment for Proposals Affecting Natural Areas Within the System 6 Region and Swan Coastal Plain Portion of the System 1 Region. Guidance Statement No 10. Environmental Protection Authority, Western Australia.
- 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.
- Hedde, E. M., Loneragan, O. W., and Havel, J. J. (1980) Vegetation Complexes of the Darling System, Western Australia. In Department of Conservation and Environment, Atlas of Natural Resources, Darling System, Western Australia.
- 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.
- 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., Beeston, G.R., and Hopkins, A.J.M. (2001), Native Vegetation in Western Australia. Technical Report 249. Department of Agriculture Western Australia, South Perth.