



## CLEARING PERMIT

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

<b>Purpose Permit number:</b>	7295/1
<b>Permit Holder:</b>	Shire of Esperance
<b>Duration of Permit:</b>	18 November 2017 - 18 November 2022

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 limestone extraction.

**2. Land on which clearing is to be done**

Lot 509 on Deposited Plan 91683, Howick  
Un-named road reserve (PIN 11648538), Howick

**3. Area of Clearing**

The Permit Holder must not clear more than 1.9 hectares of native vegetation within the area cross-hatched yellow on attached Plan 7295/1.

**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 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.

### PART II – MANAGEMENT CONDITIONS

**6. 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*:

- clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- ensure that no *dieback* or *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared; and
- restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

## DEFINITIONS

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

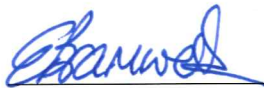
*dieback* means the effect of *Phytophthora* species on *native vegetation*;

*fill* means material used to increase the ground level, or fill a hollow;

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

*weed/s* means 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 Biodiversity, Conservation and Attractions species-led ecological impact and invasiveness ranking summary, regardless of ranking; or
- (c) not indigenous to the area concerned.



Emma Bramwell  
A/ MANAGER  
CLEARING REGULATION

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

20 October 2017

# Plan 7295/1



## Legend

-  Roads
-  Imagery
-  Clearing Instruments Activities
-  Local Government Authority



1:6,720

(Approximate when reproduced at A4)

GDA 94 (Lat/Long)

Geocentric Datum of Australia 1994

*E. Bramwell* Date *20/10/17*  
**ESBRANWELL**

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



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## 1. Application details

### 1.1. Permit application details

Permit application No.: 7295/1  
Permit type: Purpose Permit

### 1.2. Applicant details

Applicant's name: Shire of Esperance

### 1.3. Property details

Property: ROAD RESERVE - 11648538, HOWICK  
LOT 509 ON DEPOSITED PLAN 91683, ESPERANCE, SHIRE OF  
Local Government Authority: SHIRE OF ESPERANCE  
DWER Region: Goldfields  
DBCA District: ESPERANCE  
Localities: HOWICK

### 1.4. Application

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

### 1.5. Decision on application

Decision on Permit Application: Grant  
Decision Date: 20 October 2017  
Reasons for Decision: This clearing permit application was received on 24 October 2016, and has been assessed against the clearing principles, planning instruments and other matters in accordance with section 51O of the *Environmental Protection Act 1986*. It has been concluded that the proposed clearing is at variance to clearing principle (d) and is not likely to be at variance to the remaining clearing principles.

The Delegated Officer noted that the native vegetation within the application area is representative of a threatened ecological community (TEC). The Delegated Officer took into account that the extent of the TEC is estimated to be approximately 11,874 hectares, and that the application area is surrounded by native vegetation of similar type and condition as that proposed to be cleared and does not provide a linkage between remnants of native vegetation. The Delegated Officer determined that the proposed clearing is unlikely to result in any significant impacts. To mitigate potential impacts to adjacent native vegetation, the clearing permit includes a condition requiring the permit holder to implement weed and dieback management practices.

## 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 42 is described as shrublands; mallee and <i>Acacia</i> scrub on south coastal dunes (Shepherd et al., 2001).	The applicant proposes to clear 1.9 hectares of native vegetation within Lot 509 on Deposited Plan 91683 and an unnamed road reserve (PIN 11648538), Howick, for the purpose of limestone extraction for the maintenance of Daniels Road (Shire of Esperance, 2016).	Very Good; Vegetation structure altered; obvious signs of disturbance (Keighery, 1994).	The condition and description of the application area was determined from a Level 1 flora and vegetation survey conducted by the Shire of Esperance (Shire of Esperance, 2016).

## 3. Assessment of application against clearing principles

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

Comments **Proposed clearing is not likely to be at variance to this Principle**  
The application is to clear 1.9 hectares of native vegetation within Lot 509 on Deposited Plan 91683 and an unnamed road reserve (PIN 11648538), Howick, for the purpose of limestone extraction for the maintenance of Daniels Road (Shire of Esperance, 2016).

A Level 1 flora and vegetation survey was conducted by the applicant on 16 November 2016 (Shire of Esperance, 2016). The assessment determined that the vegetation within the application area comprises of mallee scrub heath that is in very good (Keighery, 1994) condition.

According to available databases, a total of six priority (P) flora taxa and one rare flora taxa have been recorded within the local area (10 kilometre radius). One new population comprising of approximately 100 plants of the P3 species *Verticordia verticordina* was recorded within the application area during the applicant's Level 1 flora and vegetation survey (Shire of Esperance, 2016). The assessment found that habitat for this species extended further north and east of the application area (Shire of Esperance, 2016). P3 species are generally known from collections from several different localities not under imminent threat (Department of Parks and Wildlife, 2014). Given this, it is not likely that the proposed clearing will impact on the conservation status of priority flora species.

One rare flora species has been recorded 4.3 kilometres east of the application area. Noting the habitat requirements for this species (see Principle (c) for further information), it is not likely that suitable habitat would occur within the application area. Therefore, the proposed clearing is unlikely to have an impact on the conservation status of these species. There were no rare flora species identified during the applicant's Level 1 flora and vegetation survey (Shire of Esperance, 2016).

The application area is not likely to provide suitable habitat for any conservation significant fauna that has been recorded within the local area.

The applicant's Level 1 flora and vegetation survey confirmed that the vegetation within the application area is representative of the 'Proteaceae dominated kwongan shrublands of the southeast coastal floristic province of Western Australia' threatened ecological community (TEC) listed as endangered under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and listed as a P3 ecological community by the (now) Department of Biodiversity, Conservation and Attractions (DBCA) (Shire of Esperance, 2016). It is considered that the proposed clearing of 1.9 hectares of this TEC is unlikely to impact on the conservation status of the TEC given the size of the application area in comparison to the occurrence and noting that the application area does not provide a linkage between remnants of native vegetation.

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

#### Methodology

##### References:

Department of Parks and Wildlife (2014)  
Keighery (1994)  
Shire of Esperance (2016)

##### GIS Databases:

NLWRA, Current Extent of Native Vegetation  
SAC Bio Datasets (Accessed January 2017)

### **(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

##### **Proposed clearing is not likely to be at variance to this Principle**

The vegetation within the application area is mapped as Beard vegetation association 42, described as shrublands; mallee and *Acacia* scrub on south coastal dunes (Shepherd et al., 2001).

According to available databases, six records of conservation significant fauna species within the local area (10 kilometre radius) (DBCA, 2007-). Two of these are marine species and therefore will not occur within the application area; the remaining four species include the Recherche black-footed rock-wallaby (*Petrogale lateralis* subsp. *hacketti*) and western ground parrot (*Pezoporus flaviventris*) listed as rare or likely to become extinct under the *Wildlife Conservation Act 1950*, short-tailed shearwater (*Puffinus tenuirostris*) protected under international agreement, and the blue-billed duck (*Oxyura australis*) listed as P4 by DBCA.

The vegetation within the application area is not likely to provide suitable habitat for the four conservation significant fauna species listed above given the preferred habitat types for these species. Recherche black-footed rock-wallaby has a preference for rocky habitat with caves and crevices, the western ground parrot is only known to occur in the Fitzgerald River National Park and Cape Arid National Park-Nuytsland Nature Reserve, the short-tailed shearwater is known to occur within conservation areas on small islands off the south coast and the blue-billed duck favours deep permanent waterbodies (Department of the Environment and Energy, 2017a; Department of the Environment and Energy 2017b; Department of the Environment and Energy, 2017c; Department of Sustainability and Environment, 2003).

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

#### Methodology

##### References:

DBCA (2007-)  
Department of the Environment and Energy (2017a)  
Department of the Environment and Energy (2017b)  
Department of the Environment and Energy (2017c)  
Department of Sustainability and Environment (2003)

##### GIS Databases:

SAC Bio Datasets (Accessed January 2017)

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

**Comments Proposed clearing is not likely to be at variance to this Principle**

According to available databases, one rare flora species occurs within the local area (10 kilometre radius).

The closest record of this species is located approximately 4.3 kilometres east of the application area. This species is a shrub, one to two metres high with a preference for sandy soils along creek banks (Western Australian Herbarium, 1998-). According to available databases, the records for this species have been found along watercourses within wetland vegetation. The application area has been mapped within Beard vegetation association 42 which is described as shrublands; mallee and *Acacia* scrub on south coastal dunes. A non-perennial watercourse has been mapped 80 metres west of the application area. It is not likely that suitable habitat for this species would occur within the application area given the application area does not contain wetland vegetation and noting the distance to the non-perennial watercourse.

There were no rare flora species recorded within the application area during the applicant's Level 1 flora and vegetation survey (Shire of Esperance, 2016).

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

**Methodology**

**References:**

Shire of Esperance (2016)  
Western Australian Herbarium (1998-)

**GIS Databases:**

SAC Bio Datasets (Accessed January 2017)

**(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 Proposed clearing is at variance to this Principle**

According to available databases, the application area is mapped within one occurrence of the Commonwealth listed 'Proteaceae dominated kwongkan shrublands of the southeast coastal floristic province of Western Australia' TEC (Kwongkan Shrublands TEC). This TEC is listed as endangered under the EPBC Act.

The Kwongkan Shrublands TEC is predominantly located within the Esperance Sandplains and Mallee bioregions, and typically occurs on sandplains, occupying lower and upper slopes and ridges, as well as uplands, where rainfall ranges from 400 to 800 millimetres a year. This TEC largely occurs on duplex soils and deep to shallow soils on the sandplains, and comprises shrublands dominated by plants from the family Proteaceae, including plants from the genera *Adenanthos*, *Banksia*, *Grevillea*, *Hakea*, *Isopogon* and *Lambertia* (Threatened Species Scientific Committee, 2014).

The Commonwealth listing advice for the Kwongkan Shrublands TEC defines several key characteristics that may indicate a significant impact, including susceptibility to edge effects, the presence of good fauna habitat, threatened species and weeds or dieback, connectivity to other remnants, and whether the community has been heavily impacted in the local area (10 kilometre radius) (Threatened Species Scientific Committee, 2014).

The applicant's Level 1 flora and vegetation survey identified the vegetation within the application area to be representative of the Kwongkan Shrublands TEC (Shire of Esperance, 2016). A total of 1.9 hectares of vegetation in very good (Keighery, 1994) condition representative of this TEC will be impacted by the proposed clearing. The applicant's Level 1 flora and vegetation survey noted that there was evidence of dieback infestation within the application area (Shire of Esperance, 2016). The proposed clearing may impact upon adjoining vegetation representative of this TEC through the spread of weed and dieback. Impacts to this TEC may be minimised by the implementation of weed management practices.

Given the above, the proposed clearing is at variance to this Principle.

While the vegetation within the application area is representative of the Kwongkan Shrublands TEC, it is noted that the extent of the known occurrence of this TEC is estimated to be approximately 11,874 hectares, and that the application area is surrounded by native vegetation of similar type and condition as proposed to be cleared and does not provide a linkage between remnants of native vegetation. On this basis it is considered that the proposed clearing of 1.91 hectares of this TEC is unlikely to impact on the conservation status of this TEC given the size of the application area in comparison to the occurrence and noting that it.

**Methodology**

**References:**

Keighery (1994)  
Shire of Esperance (2016)  
Threatened Species Scientific Committee (2014)

**GIS Databases:**

SAC Bio Datasets (Accessed January 2017)

**(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**

**Proposed clearing is not likely to be at variance to this Principle**

The national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001).

As indicated in Table 1, the Esperance Plains bioregion, the Shire of Esperance and the mapped Beard vegetation retain greater than 30 per cent of their pre-European extents. The local area (10 kilometre radius) retains approximately 24.3 per cent native vegetation cover (7,836.6 hectares), and the proposed clearing will reduce this extent by 0.024 per cent.

The application area is surrounded by native vegetation of similar type and condition as that proposed to be cleared and does not provide a linkage between remnants of native vegetation.

Given the above, the application area is not likely to contain vegetation significant as a remnant in an area that has been extensively cleared, and the proposed clearing is not likely to be at variance to this Principle.

Table 1 – Vegetation extent statistics

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Current Extent in DBCA Managed Lands (%)
<b>IBRA Bioregion*</b>				
Esperance Plains	2,899,940	1,495,045	51.55	28.76
<b>Local Government Authority*</b>				
Shire of Esperance	4,459,670	3,211,004	72	30.2
<b>Beard Vegetation Association in Bioregion*</b>				
42	135,419	128,052	94.56	56.82

**Methodology**

References:

Commonwealth of Australia (2001)  
Government of Western Australia (2016)

GIS Databases:

NLWRA, Current Extent of Native 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**

**Proposed clearing is not likely to be at variance to this Principle**

According to available databases, there are no wetlands or watercourses mapped within the application area. The closest hydrological feature is a non-perennial watercourse located 80 metres west of the application area. Noting the distance to this hydrological feature, it is considered that the proposed clearing is unlikely to impact upon riparian vegetation growing in association to this watercourse.

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

**Methodology**

GIS Databases:

Hydrography, linear  
Hydrography, hierarchy

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

**Comments**

**Proposed clearing is not likely to be at variance to this Principle**

The soils within the application area have been mapped by the former Department of Agriculture and Food Western Australia as two soil landscape units, being the Thomas River 1 Subsystem (Map Unit 245Th\_1) and Thomas River 2 Subsystem (Map Unit 245Th\_2). The majority of the application area (approximately 70 per cent) is mapped as Thomas River 1 Subsystem which is described as very gently undulating plains, dissected Pallinup formation and colluvium. Soils comprise of grey/brown shallow loamy duplex associated grey shallow sandy duplex soils and minor pale deep sands (Schoknecht et al., 2004). Thomas River 2 Subsystem is described as moderately inclined slopes of small river valleys, dissected Pallinup formation. Soils are grey shallow sandy duplex soils associated grey/brown shallow loamy duplex soils and minor pale deep sands.

Both soil types within the application area are susceptible to wind erosion. The proposed clearing may result in land degradation in the form of wind erosion. However, impacts from the proposed clearing are likely to be minimal given the application area is surrounded by native vegetation and the requirement to revegetate the cleared areas once extraction activities cease.

The application area is situated on land that slopes in a south westerly direction. Although the application area is situated on a slope, it is not likely the proposed clearing will result in water erosion given the porous nature of both soil types, low annual rainfall (600 millimetres per annum) and that there are no water features present within the application area.

Groundwater salinity within the application area has been mapped as saline to highly saline at between 7,000-14,000 milligrams per litre total dissolved solids.

Noting that the local area (10 kilometre radius) retains approximately 24.3 per cent native vegetation cover (7,836.6 hectares) and noting the size of the application area, it is not likely the proposed clearing will cause appreciable land degradation in the forms of wind or water erosion or salinity.

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

**Methodology** References:  
Schoknecht et al (2004)

GIS Databases:  
Soils, Statewide  
Groundwater salinity  
Topography

**(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 Proposed clearing is not likely to be at variance to this Principle**

The closest conservation area is 'Cape Le Grand National Park' (A class) vested within the Conservation Commission of Western Australia and located approximately eight kilometres west of the application area. Given the distance between this reserve and the application area, the proposed clearing is not likely to impact upon the environmental values of this reserve.

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

**Methodology** GIS Databases:  
Parks and Wildlife, 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 Proposed clearing is not likely to be at variance to this Principle**

The closest hydrological feature to the application area is a non-perennial watercourse that occurs 80 metres west of the application area. There are no watercourses mapped within the application area.

While the application area is located on sloping land towards the non-perennial watercourse, impacts are likely to be minimal given the vegetative buffer that occurs between the application area and this watercourse, and the permeable soils within the application area. Given this, the proposed clearing is not likely to impact on surface or groundwater quality.

Groundwater salinity within the application area has been mapped as saline to highly saline at between 7,000-14,000 milligrams per litre total dissolved solids. Given the extent of the proposed clearing, it is not likely the proposed clearing will lead to a perceptible rise in the water table or an increase in groundwater salinity levels.

Noting that the local area (10 kilometre radius) retains approximately 24.3 per cent native vegetation cover (7,836.6 hectares) and noting the size of the application area, it is not likely the proposed clearing will cause deterioration in the quality of surface or underground water.

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

**Methodology** 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 Proposed clearing is not likely to be at variance to this Principle**

The proposed clearing is not expected to contribute to flooding given the size of the application area and the permeable soils, and noting that no hydrological features are present within the application area.

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



**Methodology** GIS Databases:  
Hydrography, Linear  
Hydrography, Hierarchy

## Planning instruments and other relevant matters.

**Comments** The application is to clear 1.9 hectares of native vegetation within Lot 509 on Deposited Plan 91683 and an unnamed road reserve (PIN 11648538), Howick, for the purpose of limestone extraction for the maintenance of Daniels Road (Shire of Esperance, 2016).

Lot 509 (being Part Reserve 41097) is vested with the applicant by Management Order for the purpose of 'Parklands and Recreation', and is zoned as 'Parks, recreation and conservation' under the local Town Planning Scheme.

The application was advertised in *The West Australian* newspaper on 21 November 2016 for a 21 day public submission period. There were no public submissions received.

The application area is within a Native Title Claimant area. The Esperance Nyungar People claimants and the Esperance Tjaljraak Native Title Aboriginal Corporation and the Goldfields Land and Sea Council Aboriginal Corporation representative body were notified of the application under to section 24KA s8 of the *Native Title Act 1993* (NT Act). The Esperance Tjaljraak Native Title Aboriginal Corporation expressed concern in relation to the impact of the proposed clearing on the native title rights and interests, and requested further information on the proposal (ETNTAC, 2016). The applicant should contact the Department of Planning, Lands and Heritage (DPLH) for advice on their obligations under the NT Act.

No registered Aboriginal Sites of Significance occur within the application area.

**Methodology** References:  
ETNTAC (2016)

GIS Databases:  
Aboriginal Sites of Significance  
Town Planning Scheme

## 4. Applicant's submission

In a letter dated 25 November 2016, DER advised the applicant that the purpose of the proposed clearing is inconsistent with the purposes stated in the Management Order and the local Town Planning Scheme for Lot 509, and that authorisation is required from the (now) DPLH.

On 3 February 2017, the Department of Water and Environmental Regulation (DWER) wrote to the applicant, outlining the outcomes of the assessment of the application, and inviting the applicant to provide evidence of DPLH authority to access and clear the native vegetation on Lot 509. On 4 October 2017, DWER advised the applicant that evidence of DPLH authority is required and that a decision would be made on the application within 30 days.

On 10 October 2017, the applicant provided a copy of correspondence from DPLH advising that the Management Order purpose has been changed to 'Parklands Recreation and Limestone Extraction'.

## 5. References

- Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.
- Department of Biodiversity, Conservation and Attractions (DBCA) (2007-) NatureMap: Mapping Western Australia's Biodiversity. Department of Environment and Conservation. URL: <http://naturemap.dec.wa.gov.au/>. Accessed 19/01/2017
- Department of Parks and Wildlife (2014) Conservation Codes for Western Australia Flora and Fauna. Department of Parks and Wildlife. Western Australia.
- Department of Parks and Wildlife (2016) Advice received in relation to clearing permit application CPS 7295/1, received 23 December 2016. Department of Parks and Wildlife, Western Australia (DER Ref: A1353225).
- Department of Sustainability and Environment (2003) Action Statement flora and Fauna Guarantee Act 1988 No. 174 Blue-billed Duck *Oxyura australis*, Victoria.
- Department of the Environment and Energy (2017a) '*Petrogale lateralis hacketti*' – Recherche Rock-wallaby in Species Profile and Threats Database, Department of the Environment and Energy, Canberra.
- Department of the Environment and Energy (2017b) '*Pezoporus flaviventris*' – Western Ground Parrot in Species Profile and Threats Database, Department of the Environment and Energy, Canberra.
- Department of the Environment and Energy (2017c) '*Ardenna tenuirostris*' – Short-tailed Shearwater in Species Profile and Threats Database, Department of the Environment and Energy, Canberra.
- Esperance Tjaljraak Native Title Aboriginal Corporation (2016) Native Title notification under Section 24KA *Native Title Act 1993* – Application under s51E of the *Environmental Protection Act 1986* by the Shire of Esperance – Lot 513 on Deposited Plan. Western Australia (DER Ref: A1343987).
- Government of Western Australia (2016). 2016 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of October 2016. WA Department of Parks and Wildlife, 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.
- Schoknecht, N., Tille, P. and Purdie, B. (2004) Soil-landscape mapping in South-Western Australia – Overview of Methodology and outputs' Resource Management Technical Report No. 280. Department of Agriculture.
- 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.
- Shire of Esperance (2016) Daniels Road Proposed Limestone Pit Level 1 Flora and Vegetation Survey. 11 November 2016. Shire of Esperance. Western Australia (DER Ref: A1327076).
- Threatened Species Scientific Committee (2014) Approved Conservation Advice for Proteaceae Dominated Kwongkan Shrublands of the southeast coastal floristic province of Western Australia. Department of the Environment, Canberra.
- Western Australian Herbarium (1998-) FloraBase - The Western Australian Flora. Department of Parks and Wildlife. <http://florabase.dpaw.wa.gov.au/> (Accessed 19/01/2017).