



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 8079/1
Permit Holder:	Shire of Katanning
Duration of Permit:	20 December 2018 – 20 December 2023

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 creating a strategic firebreak.

2. Land on which clearing is to be done

James Street Road Reserve (PIN:11439317).

3. Area of clearing

The Permit Holder must not clear more than 0.91169 hectares of native vegetation within the area hatched yellow on attached Plan 8079/1.

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.

PART II – MANAGEMENT CONDITIONS

5. Avoid, minimise and reduce the impacts and extent of 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:

- avoid the clearing of native vegetation;
- minimise the amount of native vegetation to be cleared; and
- reduce the impact of clearing on any environmental value.

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 known *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 area to be cleared.

PART III - RECORD KEEPING AND REPORTING

7. Records to be kept

The Permit Holder must maintain the following records for activities done pursuant to this Permit, in relation to the clearing of native vegetation authorised under this permit:

- (a) 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 or decimal degrees;
- (b) the date that the area was cleared;
- (c) the size of the area cleared (in hectares);
- (d) actions taken to avoid, minimise and reduce the impacts and the extent of clearing in accordance with condition 5 of this Permit; and
- (e) actions taken to minimise the introduction and spread of *weeds* and *dieback* in accordance with condition 6 of this Permit.

8. Reporting

The Permit Holder must provide to the *CEO* the records required under Condition 7 of this Permit, when requested by the *CEO*.

DEFINITIONS

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

CEO means the Chief Executive Officer of the Department responsible for the administration of the clearing provisions under the *Environmental Protection Act 1986*;

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 Regional Weed Rankings Summary, regardless of ranking; or
- (c) not indigenous to the area concerned.



Mathew Gannaway
MANAGER
NATIVE VEGETATION REGULATION

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

20 November 2018

Plan 8079/1



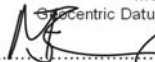
Legend

-  cadastre
-  Areas approved to clear base layers
-  Road Centrelines
- Image



0 100 200 m



MGA 94
Geocentric Datum of Australia 1994
 Date: 20/11/2018
Mathew Gannaway

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



GOVERNMENT OF
WESTERN AUSTRALIA



1. Application details

Permit application details

Permit application No.: 8079/1
Permit type: Purpose Permit

Applicant details

Applicant's name: Shire of Katanning
Application received date: 4 January 2018

Property details

Property: James Street Road Reserve (PIN: 11439317)
Local Government Authority: Shire of Katanning
Localities: Katanning

Application

Clearing Area (ha)	No. Trees	Method of Clearing	Purpose category:
0.91169		Mechanical Removal	Hazard reduction or fire control

Decision on application

Decision on Permit Application: Grant
Decision Date: 20 November 2018

Reasons for Decision: The clearing permit application has been assessed against the clearing principles, planning instruments and other matters in accordance with section 51O of the *Environmental Protection Act 1986* (EP Act). It has been concluded that the proposed clearing may be at variance to principle (d), and is not likely to be at variance to any of the remaining clearing principles.

The Delegated Officer determined that the proposed clearing may increase the spread of weeds and dieback into adjacent vegetation that may comprise of the Eucalypt woodlands of the Western Australian Wheatbelt threatened ecological community. To minimise this impact, a condition has been placed on the permit requiring the implementation of weed and dieback management measures.

In determining to grant a clearing permit subject to conditions, the Delegated Officer found that the proposed clearing is unlikely to lead to an unacceptable risk to the environment.

2. Site Information

Clearing Description This application is for the clearing of up to 0.91169 hectares of native vegetation within the James Street Road Reserve (PIN: 11439317) for the purposes of creating a strategic firebreak. The current application area has been reduced from the original application area of 1.1426 hectares.

Vegetation Description The application area is situated within mapped vegetation complex 1,085: Medium woodland; Wandoo (*Eucalyptus wandoo*) and Blue Mallet (*Eucalyptus gardneri*) (Shepherd et al 2001).

The application area was surveyed as part of a broader survey of the Katanning Area undertaken by Terratree (2014). This survey comprised a Level 1 flora survey, targeted surveys for flora species of conservation significance and a Level 1 fauna survey of five 'structure plan' areas, comprising O'Callaghan Park (Reserve 21820), Piesse Park, the WAMMCO Katanning Plant, an Industrial Expansion Area and Development Investigation Area (DIA) 4. The above surveys were undertaken in accordance with *Guidance Statement No. 51 - Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia* (EPA 2004a) and *Guidance Statement No. 56 - Terrestrial fauna surveys for Environmental Impact Assessment in Western Australia* (EPA 2004b) (Terratree 2014). The application area is situated on the western – north western fringe of O'Callaghan Park. O'Callaghan Park was the only survey area found to contain native vegetation, with the other four structure plan areas found to comprise paddocks, pasture or areas revegetated with a combination of non-native flora species and native flora species not of local provenance (Terratree 2014). A total of five relevés were surveyed in O'Callaghan Park (Terratree 2014). Additional opportunistic collections of flora taxa were made throughout the survey area whenever species not recorded inside the relevés were identified (Terratree 2014). The following vegetation communities were identified in the O'Callaghan Park survey area (Terratree 2014):

- *Eucalyptus wandoo* subsp. *wandoo*, Rock Sheoak (*Allocasuarina huegliana*) low open forest

- over *Acacia lasiocarpa* var. *sedifolia*, *Dampiera lindleyi*, *Cryptandra arbutiflora* var. *arbutiflora* low sparse shrubland;
- Rock Sheoak (*Allocasuarina huegliana*) low open forest over Common Fringe-myrtle (*Calytrix tetragona*) shrubland over Ursinia (**Ursinia anthemoides*), Guildford Grass (**Romulea rosea*) open hermland;
- Rock Sheoak (*Allocasuarina huegliana*) low open forest over York Road Poison (*Gastrolobium calycinum*), *Baeckea crispiflora* low shrubland over mixed hermland;
- Rock Sheoak (*Allocasuarina huegliana*), *Eucalyptus* sp. low open forest over mixed species closed hermland; and
- Cleared land with or without non-native vegetation and isolated native trees.

An inspection of the application area undertaken by Officers from the Department of Water and Environment Regulation (DWER) on 27 June 2018 identified the following vegetation communities within the application area:

- Mixed Eucalyptus woodland (predominately York Gum (*Eucalyptus loxophleba*) and Red Morrel (*Eucalyptus longicornis*)) over a degraded understorey dominated by introduced species, including **Trifolium* sp. and Pimpernel (**Lysimachia arvensis*); and
- Mixed Eucalyptus woodland (predominately York Gum (*Eucalyptus loxophleba*) and Red Morrel (*Eucalyptus longicornis*)) over a mixed *Acacia* shrubland (predominately Jam (*Acacia acuminata*) and Manna Wattle (*Acacia microbotrya*)) over a degraded understorey dominated by introduced species, including **Trifolium* sp. and Pimpernel (**Lysimachia arvensis*).

The following assessment has been completed on the basis of the vegetation communities identified in the application area during the inspection undertaken by the DWER Officers.

Vegetation Condition

The flora survey undertaken by Terratree (2014) found that much of O’Callaghan Park’s native vegetation has been invaded by weeds and subject to edge effects. In some areas the soil appears to have been ripped (Terratree 2014). Feral herbivores were evident in this area (Terratree 2014). A heavily disturbed portion exists in the north of the survey area (Terratree 2014). Vegetation condition in O’Callaghan Park was found to range between (Terratree 2014):

Excellent: Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species (Keighery 1994);

Good: Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it (Keighery 1994).

The following vegetation condition rankings were assigned to the vegetation within the application area based on the observations of the DWER Officers during the aforementioned field inspection. Vegetation condition within the application area is identified as:

Degraded: Basic vegetation structure severely impacted by disturbance. Scope for regeneration, but not to a state approaching good condition without intensive management (Keighery 1994);

To

Completely Degraded: The structure of the vegetation is no longer intact and the area is completely or almost completely without native species (Keighery 1994).

Soil type

The application area is mapped as occurring within the following land systems, as mapped by the Department of Primary Industry and Regional Development (2017):

- Carrolup 4 Subsystem: Grey sandy duplex soils and some sandy gravels located on footslopes and lower slopes within the Carrolup system; and
- Coblinine 2 Subsystem: Broad valley floors and alluvial plains with significant areas of saline wet soils (30-40%) as well as alkaline grey shallow sandy duplex soils and grey deep sandy duplex soils.

Comments

The local area referred to in the below assessment is defined as the area within a 10 kilometre radius of the application area.



Figure 1: The application area (shown in blue), in the context of the local lot boundaries (shown in yellow).



Figure 2



Figure 3



Figure 4



Figure 5



Figure 6



Figure 7



Figure 8



Figure 9



Figure 10



Figure 11



Figure 12



Figure 13



Figure 14



Figure 15



Figure 16

Figures 2 – 16: Representative photos of the vegetation observed in the application area.

3. Minimisation and mitigation measures

In correspondence dated 22 October 2018, the applicant agreed to reduce the application area from up to 1.1426 hectares of clearing to up to 0.9116 hectares of clearing. A review of the application area using aerial photography found that approximately 0.33 hectares of the revised application area is represented by James Street, the existing track connecting James Street to Shirley Street and disturbance associated with these existing tracks. The above tracks are visible in the photographs featured in Section 2 of this report. Given this existing disturbance, the aforementioned modification of the application area has reduced the extent of vegetation clearing associated with this application to approximately 0.58 hectares.

4. Assessment of application against the clearing principles

As discussed previously, the application area has been partially cleared to facilitate the construction of James Street and the track connecting James Street to Shirley Street. The application area is bounded by rural agricultural properties on its western, southern and northern sides and O'Callaghan Park to its east.

No threatened flora species were identified during the survey of O'Callaghan Park undertaken by Terratree (2014). Two priority flora species were recorded in the O'Callaghan Park survey area; *Synaphea drummondii* (Priority 3) and *Verticordia brevifolia* subsp. *brevifolia* (Priority 3) (Terratree 2014). Terratree recorded 86 occurrences of *Synaphea drummondii* and one occurrence of *Verticordia brevifolia* subsp. *brevifolia* in the O'Callaghan Park survey area (Terratree 2014). The closest occurrence of *Synaphea drummondii* recorded during this survey to the application area was situated approximately 60 metres east of the application area (Terratree 2014). The recorded occurrence of *Verticordia brevifolia* subsp. *brevifolia* was situated approximately 620 metres east of the application area (Terratree 2014). Due to the separation distances between the recorded occurrences of the above flora species and the application area, no impacts to any occurrences of these flora species are likely to occur from the proposed clearing activities.

A review of available databases determined that eight flora species of conservation significance (including *Verticordia brevifolia* subsp. *brevifolia*) have been recorded in the local area, comprising one Priority 2, three Priority 3 and three Priority 4 flora species and one threatened flora species (Western Australian Herbarium 1998-). No recorded occurrences of these flora species occur within the application area (Western Australian Herbarium 1998-). No occurrences of conservation significant flora species were noted during the inspection of the application area undertaken by DWER Officers, or the post inspection review of photographs taken during the course of this inspection. Given the degraded condition of the vegetation within the application area, it is unlikely that the application area comprises suitable habitat for any flora species of conservation significance.

Desktop assessments undertaken by Terratree (2014) to support their survey of the Katanning structure plan areas identified recorded occurrences of 32 fauna species of conservation significance within a 20 kilometre buffer from the surveyed areas. The Western Rosella (*Platyercus icterotis* subsp. *xanthogenys*) (Priority 4) was observed in O'Callaghan Park during the survey (Terratree 2014). Terratree advised that the O'Callaghan Park survey area possibly or likely provided habitat for the following fauna species of conservation significance. Please note that since the publication of this survey, some fauna species identified as conservation significant in this survey have had their conservation rankings revoked and are not included in the below list.

- Barking Owl (*Ninox connivens* subsp. *connivens*) (Priority 3);
- Carnaby's Cockatoo (*Calyptorhynchus latirostris*) (listed as Endangered under the *Wildlife Conservation Act 1950* (WC Act) and the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act));
- Great Egret (*Ardea alba*) (Listed as Marine under the EPBC Act);
- Peregrine Falcon (*Falco peregrinus*) (Listed as other specially protected fauna under the WC Act);
- Red-tailed Phascogale (*Phascogale calura*) (listed as conservation dependant fauna under the WC Act and Vulnerable under the EPBC Act); and
- Western Quoll (*Dasyurus geoffroii*) (listed as Vulnerable under both the WC Act and the EPBC Act).

A review of available databases has determined that 13 extant fauna species of conservation significance have been recorded in the local area (Department of Biodiversity, Conservation and Attractions 2007-), including the Carnaby's Cockatoo, Western Quoll, Red-tailed Phascogale and the Peregrine Falcon. When the composition and condition of the habitats present in the application area are considered alongside the preferred habitats of the above species and those identified during the database review, the application area is unlikely to comprise suitable habitat for the Great Egret (Department of the Environment and Energy 2018a), the Western Quoll (Department of Biodiversity, Conservation and Attractions 2018a), the Carnaby's Cockatoo (Department of Biodiversity, Conservation and Attractions 2018b) and the Red-tailed Phascogale (Department of the Environment and Energy 2018b). The application area may comprise suitable habitat for the Peregrine Falcon (Department of the Environment and Energy 2018c) and the Barking Owl (Birdlife Australia 2018). While the application area may comprise suitable habitat for fauna species of conservation significance, when consideration is given to the condition of the vegetation in the application area, the adjacent vegetated reserve and the extent of the proposed clearing, the application area is unlikely to comprise significant habitat for any fauna species of conservation significance.

A review of available databases has found that the application area is situated within a mapped occurrence of the 'Eucalypt woodlands of the Western Australian Wheatbelt' Priority 3 priority ecological community (PEC). This ecological community is also listed under the EPBC Act as a Critically Endangered threatened ecological community (TEC). The approved conservation advice for this TEC specifies a number of criteria for vegetation to be considered representative of this TEC (Threatened Species Scientific Committee 2015). These criteria include a woodland structure where the trees are typically spaced and the canopy is open, the canopy is dominated by eucalypt species (those with a tree or mallet growth form), the minimum crown cover of the tree canopy in a mature woodland is 10% and understories which are highly variable in structure and composition (Threatened Species Scientific Committee 2015). The distribution of this ecological community is recognised as being limited to the Avon Wheatbelt Interim Biogeographic Regionalisation of Australia (IBRA) Region (Merredin and Katanning subregions), Mallee IBRA Region (Western Mallee subregion) and the Jarrah Forest IBRA Region; limited to the outlying patches in the eastern regions of the Northern Jarrah Forests and Jarrah Forest subregions adjacent to the Avon Wheatbelt, which are off the Darling Range and receive less than 600 millimetres of annual rainfall (Threatened Species Scientific Committee 2015). These criteria also specify minimum patch sizes and condition ratings, which include a requirement that a patch should meet at least a 'Degraded' to 'Good' (Keighery 1994) condition rating, and minimum patch sizes of two hectares for vegetation in 'Good' (Keighery 1994) or better condition (Threatened Species Scientific Committee 2015). Patches in 'Good' (Keighery 1994) to 'Degraded' (Keighery 1994) condition must have a minimum patch size of five or more hectares (Threatened Species Scientific Committee 2015).

As outlined in Section 2 of this report, the vegetation within the application area features a canopy dominated by Eucalyptus species, including York Gum and Red Morrel, and the application area is situated within the Katanning IBRA subregion. However, noting the condition of the vegetation, the application area does not meet the condition thresholds to be classified as this TEC. Notwithstanding, noting the presence of adjacent vegetation of similar type to that present within the application area,

the application area may be necessary for the maintenance of an adjacent occurrence of this TEC. Given the above, the application area is unlikely to comprise the whole or be a part of a TEC, however may be necessary for the maintenance of a TEC. The proposed clearing activities may be at variance to principle (d). Weed and dieback management practices will assist in managing impacts to adjacent vegetation as a result of the proposed clearing.

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 application area forms part of the Avon Wheatbelt IBRA region. This IBRA region retains only approximately 18.5 per cent of its pre-European clearing extent (Government of Western Australia 2017). Vegetation complex 1,085 currently retains only approximately 11.4 per cent of its pre-European clearing extent. A review of information obtained during the site inspection indicates that the vegetation within the application area is not representative of this vegetation complex. A review of available databases has determined that the local area retains approximately 14.4 per cent of its pre-European clearing extent. Whilst the application area is located within an extensively cleared landscape, given the degraded condition of the vegetation, the relatively small size of the application area adjacent to a larger remnant in better condition and the lack of conservation significant flora and fauna, the proposed clearing is not likely to be considered a significant remnant within an extensively cleared area is not likely to be at variance to principle (e).

A review of available databases and aerial photography of the application area has determined that no watercourses or wetlands exist within the application area. The absence of surface water features in the application area was confirmed during the inspection of the application area undertaken by DWER Officers. Therefore, no vegetation growing in association with watercourses or wetlands will be impacted by the proposed clearing.

Both the Carrolup 4 Subsystem and the Coblinine 2 Subsystem have a low to moderate risk of wind erosion, subsurface compaction and subsurface acidification (Department of Primary Industry and Regional Development 2017). The Carrolup 4 Subsystem has a moderate risk of water logging, a low – to moderate risk of water repellence and a low risk of water erosion, salinization, and flooding (Department of Primary Industry and Regional Development 2017). The Coblinine 2 Subsystem has a high risk of water logging and salinization, a moderate risk of water repellence and a low risk of water erosion and flooding (Department of Primary Industry and Regional Development 2017). A review of aerial photography of the application area and its surrounds has not identified any land degradation impacts from past clearing campaigns to support agricultural development. No land degradation impacts were visible within the application area during the inspection undertaken by DWER Officers. When the above is considered alongside the extent of the application area and the extensively cleared nature of the local area, no land degradation impacts are expected to result from the proposed clearing activities. No impacts to the quality of local surface water or ground water resources, or the incidence or intensity of flooding, are expected to result from the proposed clearing.

There are two managed conservation reserves situated within the local area, the nearest of which is an unnamed conservation reserve situated approximately 1.7 kilometres north east of the application area. The other is also an unnamed conservation reserve situated approximately 8.9 kilometres north east of the application area. When consideration is given to the separation distances between the application area and these conservation reserves and the knowledge that the application area is separated from these conservation reserves by the town of Katanning, no impacts to the ecological values of these conservation reserves or any ecological linkages promoting species diversity and recruitment within these conservation reserves are anticipated to result from the proposed clearing activities.

Given the above, the proposed clearing may be at variance to principle (d), and is not likely to be at variance to any of the remaining clearing principles.

Planning instruments and other relevant matters.

On 18 June 2018 the Katanning Land Conservation District Committee advised they had no objection to the proposed clearing activities being undertaken.

No Aboriginal sites of significance have been mapped within the application area.

The clearing permit application was advertised on the DWER website on 1 June 2018 with a 7 day submission period. No public submissions were received in relation to this application in this timeframe. A submission was received from a member of the public on 24 July 2018.

5. References

- Birdlife Australia (2018) Barking Owl; *Ninox connivens*. Available from: <http://birdlife.org.au/bird-profile/barking-owl>. Accessed September 2018.
- Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.
- Department of Biodiversity, Conservation and Attractions (2007-) NatureMap: Mapping Western Australia's Biodiversity. Department of Parks and Wildlife. URL: <http://naturemap.dpaw.wa.gov.au/>. Accessed August 2018.
- Department of Biodiversity, Conservation and Attractions (2018a) Fauna Profile: Chuditch; *Dasyurus geoffroii*. Available from: https://www.dpaw.wa.gov.au/images/documents/plants-animals/animals/animal_profiles/chuditch_fauna_profile.pdf. Accessed September 2018.
- Department of Biodiversity, Conservation and Attractions (2018b) Fauna Profile: Carnaby's Cockatoo; *Calyptorhynchus latirostris*. Available from: https://www.dpaw.wa.gov.au/images/documents/plants-animals/animals/animal_profiles/carnabys_cockatoo_fauna_profile.pdf. Accessed September 2018.

Department of the Environment and Energy (2018a) Species Profile and Threats Database; *Ardea modesta* — Eastern Great Egret. Available from: http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=82410. Accessed September 2018.

Department of the Environment and Energy (2018b) Species Profile and Threats Database; *Phascogale calura* — Red-tailed Phascogale. Available from: http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=316. Accessed September 2018.

Department of the Environment and Energy (2018c) The Peregrine Falcon (*Falco peregrinus*) Available from <http://www.environment.gov.au/resource/peregrine-falcon-falco-peregrinus>. Accessed September 2018.

Department of Primary Industry and Regional Development (2017). NRInfo Digital Mapping. Department of Primary industry and Regional Development. Government of Western Australia. URL: <https://maps.agric.wa.gov.au/nrm-info/>. Accessed August 2018.

Environmental Protection Authority (2004a) Guidance Statement for the Assessment of Environmental Factors - Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia. No. 51. Published by the Environmental Protection Authority.

Environmental Protection Authority (2004b) Guidance for the Assessment of Environmental Factors - Terrestrial Fauna Surveys for Environmental Impact Assessment in Western Australia. No. 56. Published by the Environmental Protection Authority.

Government of Western Australia (2017) 2017 Statewide Vegetation Statistics (formerly the CAR Reserve Analysis) – Full Report. Current as of December 2017 (based on most recent date of input datasets). Prepared by the Department of Biodiversity, Conservation and Attractions, Perth. Published February 2018.

Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.

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.

Terratree (2014) Level 1 Flora and Fauna survey and Targeted Priority Flora survey for Katanning Structure Plan Areas. Prepared for the Shire of Katanning. Published 6 November 2014.

Threatened Species Scientific Committee (2015) *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) Approved Conservation Advice (including listing advice) for the Eucalypt Woodlands of the Western Australian Wheatbelt. Conservation advice approved 26 November 2015. Available from: <http://www.environment.gov.au/biodiversity/threatened/communities/pubs/128-conservation-advice.pdf>.

Western Australian Herbarium (1998-) FloraBase - The Western Australian Flora. Department of Biodiversity, Conservation and Attractions. <http://florabase.dpaw.wa.gov.au/> (accessed August / September 2018).

GIS Databases:

- Aboriginal Sites of Significance
- Department of Biodiversity, Conservation and Attractions, Tenure
- Pre-European vegetation complexes
- Remnant vegetation
- SAC bio datasets
- Soils, Statewide
- TPFL Data August 2018
- WAHerb Data August 2018
- WA TEC PEC Boundaries