



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: 7437/1
File Number: 2010/005711-1
Duration of Permit: 8 April 2017 to 8 April 2019

PERMIT HOLDER

Dianne Kay Kuzich
Robin Milivoj Kuzich

LAND ON WHICH CLEARING IS TO BE DONE

Lot 4 on Diagram 63931, Ringbark
Lot 9523 on Deposited Plan 229088, Ringbark

AUTHORISED ACTIVITY

The Permit Holder shall not clear more than 9.7 hectares of native vegetation within the areas cross hatched yellow on attached Plan 7437/1.

CONDITIONS

Nil.

A handwritten signature in black ink, appearing to read "James Widenbar", written over a horizontal line.

James Widenbar
MANAGER
CLEARING REGULATION




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

10 March 2017

Plan 7437/1



Legend

-  Roads
-  LGA
-  Cadastre
- Virtual Mosaic (LGATE-V001)
-  Areas approved to clear



1:8,585

MGA 94
Geocentric Datum of Australia 1994

J WidenbarDate..... *10/3/17*
J Widenbar

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





1. Application details

1.1. Permit application details

Permit application No.: 7437/1
Permit type: Area Permit

1.2. Applicant details

Applicant's name: Robin and Dianne Kay Kuzich

1.3. Property details

Property: LOT 9523 ON PLAN 229088 (House No. 586 GRAPHITE RINGBARK 6258)
LOT 4 ON DIAGRAM 63931 (RINGBARK 6258)

Local Government Authority: MANJIMUP, SHIRE OF
DER Region: Warren
DPaW District: Donnelly
Localities: Ringbark

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
9.7		Mechanical Removal	Horticulture and dam construction

1.5. Decision on application

Decision on Permit Application: Grant

Decision Date:

10 March 2017

Reasons for Decision:

The clearing permit application was received on 9 January 2017, 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 (f), maybe at variance to clearing principles (g) and (i) and is not likely to be at variance to the remaining clearing principles.

A minor watercourse is mapped within the application area. Given the vegetation condition, it is considered that the proposed clearing is unlikely to have any significant environmental impacts on the values of this watercourse.

The proposed clearing may also cause appreciable land degradation in the form of soil erosion however the Delegated Officer considers the potential impacts are likely to be short term and minimal given the vegetation condition and proposed end land uses.

In determining to grant a clearing permit the Delegated Officer considered that permits and licences required under the *Rights in Water Irrigation Act 1914* (RIWI Act) are a relevant matter. The Department of Water advised it is currently considering these applications and indicated that they are prepared to issue a permit for the construction of a dam.

The Delegated Office noted that in relation to potential impacts from current land use practices, the Department of Water advised that the applicant should adopt best management practices in order to protect water quality against degradation.

The Delegated Officer also considered decisions related to previous clearing permit applications, CPS 3872/1 granted for 3.3 hectares and CPS 6082/1 granted for 9.7 hectares. This application covers the area granted under CPS 3872/1 and is for the same area, and for the same purpose, as CPS 6082/1.

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
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Broad scale vegetation mapping classifies the application area as:

Mapped Beard vegetation association:

- 1144: Tall forest; karri and marri (*Corymbia calophylla*)
- 3: Medium forest; jarrah-marri (Shepherd et al, 2001).

Mattiske vegetation complex:

- Yanmah complex YN1 - Mixture of tall open forest of *Eucalyptus diversicolor* and tall open forest of *Corymbia calophylla-Eucalyptus patens-Eucalyptus marginata subsp. marginata* over *Agonis flexuosa* and *Agonis juniperina* on valleys in perhumid and humid zones.
- Bevan 1 BE1: Tall open forest of *Corymbia calophylla-Eucalyptus marginata subsp. marginata* on uplands in perhumid and humid zones (Mattiske and Havel, 1998).

The application is to clear 9.7 hectares of native vegetation within Lot 4 on Diagram 63931 and Lot 9523 on Plan 229088 for the purpose of constructing an avocado farm and dam.

Completely Degraded: No longer intact; completely/almost completely without native species (Keighery, 1994)

To

Very good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994)

The condition of the vegetation was assessed through a site inspection conducted by Department of Environment Regulation (DER) officers in 2014 under clearing permit CPS 6082/1 (DER, 2014).

The site inspection, of the same area, for the same purpose, determined that the majority of the vegetation under application is in a degraded (Keighery, 1994) condition. An area of native vegetation in good to very good (Keighery, 1994) condition was identified in the western section of the application area (DER, 2014).

3. Assessment of application against clearing principles

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

Comments

Proposal is not likely to be at variance to this Principle

The application is for the proposed clearing of 9.7 hectares of native vegetation within Lot 4 on Diagram 63931 and Lot 9523 on Deposited Plan 229088, Ringbark, for the purpose of constructing an avocado farm and dam. This application covers the same area previously approved under the expired clearing permit CPS 6082/1, granted on 4 September 2014.

The 2014 site inspection, relating to clearing permit application CPS 6082/1, described the condition of the majority of the native vegetation within the application area as degraded (DER, 2014; Keighery, 1994), with an area of native vegetation in good to very good (Keighery, 1994) condition in the western section of the application area. The site inspection report identified;

- the eastern portion of the proposed clearing is dominated by regrowth of Jarrah and Marri trees that were approximately 40 to 50 years old;
- the mid-storey and understorey is in a completely degraded to degraded (Keighery, 1994) condition, consisting predominantly of weeds and introduced grasses (DER, 2014); and
- the western portion is intact, dense vegetation ranging from a good to very good condition (Keighery, 1994), dominated by *Eucalyptus rudis* and *Eucalyptus diversicolor* (DER, 2014).

The local area (10 kilometre radius) retains 11, 488 hectares of native vegetation (35.58 per cent remnant native vegetation remaining in the local area). The application area reflects 0.08 per cent of the remnant native vegetation in the local area. Of the native vegetation remaining within the local area approximately 66 per cent (7, 598 hectares) is in secure tenure as part of Department of Parks and Wildlife estate.

Nine fauna species listed as rare or likely to become extinct under the *Wildlife Conservation Act 1950* (Department of Parks and Wildlife, 2007-). As assessed under principle (b) the native vegetation within application may be suitable as foraging habitat for black cockatoos however is not dominated by the preferred food source.

Five priority flora species and two rare flora species have been recorded within 10 kilometres of the application area. The native vegetation is not consistent with the habitat requirements for the priority flora species and as assessed under principle (c), if the rare flora species occurs within the application area it is unlikely that the proposed clearing will have a significant impact on the rare flora species.

There are no threatened or priority ecological communities mapped within the local area and the native vegetation observed within the application area is not consistent with any known threatened or priority ecological communities.

Given the extent of native vegetation remaining in the local area which occurs within secure tenure managed for conservation, noting the vegetation condition and that the application area does not comprise significant flora or fauna habitat, it is unlikely that the application area comprises a high level of biological diversity.

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

Methodology **References:**
Department of Environment Regulation (2014)
Department of Parks and Wildlife (2007-)
Keighery (1994)

GIS Databases:
SAC Bio Datasets (Accessed February 2017)
NLWRA, Vegetation Remaining
Department of Parks and Wildlife Estate

(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 nine records of fauna listed as rare or likely to become extinct under the *Wildlife Conservation Act 1950* within 10 kilometres of the proposed clearing, including Forest red-tailed Black-Cockatoo (*Calyptorhynchus banksii subsp. naso*), Baudin's Cockatoo (*Calyptorhynchus baudinii*), Carnaby's Cockatoo (*Calyptorhynchus latirostris*), Chuditch (*Dasyurus geoffroii*), Southern Brush-tailed Phascogale (*Phascogale tapoatafa subsp. tapoatafa*), Woylie (*Bettongia pencillata subsp. ogilbyi*), Numbat (*Myrmecobius fasciatus*), Quokka (*Setonix brachyurus*) and Western Ringtail Possum (*Pseudocheirus occidentalis*, WRP) (Department of Parks and Wildlife, 2007-).

Of these the application area is likely to provide suitable habitat for the Forest red-tailed Black Cockatoo, Baudin's Cockatoo, Carnaby's Cockatoo and the WRP.

Carnaby's Cockatoo is listed as endangered and Baudin's Cockatoo and Forest red-tailed Black Cockatoo are listed as vulnerable under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Black cockatoos breed in large hollow-bearing trees, generally within woodlands or forests or in isolated trees (Commonwealth of Australia, 2012). These species nest in hollows in live or dead trees of karri, marri, wandoo, tuart, salmon gum, jarrah, flooded gum, York gum, powder bark, bullich and blackbutt (Commonwealth of Australia, 2012). The 2014 site inspection determined that there are no habitat trees suitable for these species within the application area, given the majority of the jarrah and marri trees present are too narrow and young to contain hollows (DER, 2014).

The preferred foraging habitat for the three black cockatoo's includes jarrah and marri woodlands and forest heathland and woodland dominated by proteaceous plant species such as *Banksia sp.*, *Hakea sp.* and *Grevillea sp.* (Commonwealth of Australia, 2012). The native vegetation within application may be suitable as foraging habitat for black cockatoo's however is not dominated by the preferred food source (marri and *Banksia sp.*) (DER, 2014) and is not considered to be significant foraging habitat.

The WRP is usually associated with stands of myrtaceous trees growing near swamps, water courses or floodplains (Parks and Wildlife, 2014). The western portion of vegetation proposed for clearing may provide suitable habitat for WRP given it consists of plant species suitable for this species. However, given the proposed clearing only contains a small area of suitable vegetation, it is unlikely to provide significant habitat for this species.

Of the native vegetation remaining within the local area approximately 66 per cent (7, 598 hectares) is in secure tenure as part of Department of Parks and Wildlife estate. Given the extent of native vegetation within the local area within secure tenure managed for conservation and noting the application areas predominately degraded (Keighery, 1994) condition, it is unlikely to provide significant habitat for fauna indigenous to Western Australia.

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

Methodology **References:**
Commonwealth of Australia (2012)
Department of Environment Regulation (2014)
Department of Parks and Wildlife (2014)
Keighery (1994)

GIS Databases:

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

(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

Two records of rare flora are located within 10 kilometres of the application area. Both species are known to inhabit margins of winter wet flats, swamps, lakes and creeklines and are known to occur within *Eucalyptus marginata* (Jarrah)–*Eucalyptus calophylla* (Marri) forest and sometimes under *Melaleuca sp.* (Paperbarks) (Brown et al., 1998). Occurrences of this species are threatened by weed invasion and grazing (TSSC, 2008). There are over 30 records of each rare flora species.

The 2014 site inspection observed that the structure of the vegetation within the application area was significantly altered due to weed encroachment, historical clearing and past land use (DER, 2014). Given the number of known records, vegetation condition, historical disturbance of the site resulting in a lack of understorey species present and considering the structure of the vegetation has not recovered in the past 40 years (approximate age of mature vegetation), if the rare flora species occurs within the application area it is unlikely that the proposed clearing will have a significant impact on the rare flora species.

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

- Methodology** References:
 Brown et al. (1998)
 Department of Environment Regulation (2014)
 TSSC (2008)
- GIS Databases:
 SAC Bio Datasets (Accessed February 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 Proposal is not likely to be at variance to this Principle

There are no threatened ecological communities (TEC) mapped within the local area.

A site inspection of the application area did not identify any vegetation that is likely to be consistent with a known TEC.

Given the distance between the application area and the nearest TEC (greater than 10 kilometres) and considering that the vegetation within the application is not consistent with a known TEC, it is unlikely that the vegetation within the application area comprises the whole or part of, or is necessary for the maintenance of a threatened ecological community.

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

- Methodology** GIS Databases:
 - SAC Biodatasets (Accessed February 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 Proposal 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).

The application area is located within the Jarrah Forest and Warren Interim Biogeographic Regionalisation for Australia (IBRA) bioregion and represented by Beard vegetation associations 1144 and 3 and Mattiske Vegetation Complex's, Yanmah and Bevan 1. The Jarrah Forest and Warren bioregions and Beard and Mattiske vegetation associations all retain greater than the minimum 30 per cent threshold (Government of Western Australia, 2015 and Department of Parks and Wildlife, 2015).

The local area retains 11, 488 hectares of native vegetation (35.58 per cent remnant native vegetation remaining in the local area). The application area reflects 0.08 per cent of the remnant native vegetation in the local area. Of the native vegetation remaining within the local area approximately 66 per cent (7, 598 hectares) is in secure tenure as part of Department of Parks and Wildlife estate.

Given the vegetation within the application area is not significant for flora, fauna or as an under represented community and considering the extent of native vegetation in the local area the application area is unlikely to be significant as a remnant of native vegetation in an area that has been extensively cleared.

Therefore, this proposal is not likely to be at variance to this Principle.

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Extent in Parks and Wildlife Managed Lands (%)
IBRA Bioregion*				
Jarrah Forest	4,506,660	2,422,782	53.76	69.01
Warren	833,985	660,310	79.18	84.51
Shire*				
Shire of Manjimup	697,368	586,852	84.15	93.78
Beard Vegetation Association in Bioregion*				
3 in Jarrah Forrest	2,390,591	1,611,061	67.39	80.56
3 in Warren	250,262	195,368	78.07	86.96
1144 in Jarrah Forest	646	238	36.92	81.89
1144 in Warren	159,668	128,191	80.29	2.16
Mattiske Vegetation Association**				
BE1	76,781	63,015	82.07	77.18
YN1	23,494	19,248	81.93	77.19

Methodology References:
 Commonwealth of Australia (2001)
 Department of Parks and Wildlife (2015)**
 Department of Environment Regulation (2014)
 Government of Western Australia (2015)*
 Keighery (1994)

GIS Databases:
 NLWRA, Current Extent of Native Vegetation
 Pre-European Vegetation
 Mattiske Vegetation Complexes

(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 at variance to this Principle**
 One minor perennial watercourse and an earth dam are mapped within the application area. A 2014 site inspection of the application area identified vegetation growing in and in association with a watercourse (DER, 2014). Given the predominately degraded (Keighery, 1994) condition of the vegetation within the application area that has previously been cleared, it is considered that the proposed clearing is unlikely to have any significant environmental impacts on the values of this watercourse.

Given the above, the proposal is at variance to this Principle.

Methodology References:
 Department of Environment Regulation (2014)
 Keighery (1994)

GIS Databases:
 Hydrology, 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 application area is mapped as soil type Tc6: Dissected lateritic plateau of hilly relief at moderate elevation. Chief soils of the dissected hilly areas are hard acidic yellow mottled soils with some hard acidic red mottled soils and brown earths all containing ironstone gravels (Northcote et al. 1960 - 1968).

One minor perennial watercourse and an earth dam are mapped within the application area. The 2014 site inspection identified vegetation growing in and in association with a watercourse (DER, 2014). Clearing of native vegetation on a sloped relief, growing in a perennial watercourse may cause appreciable land degradation in the form of soil erosion, associated turbidity and sedimentation.

The landscape surrounding the application area is modified and includes an existing earth dam (which connects to the application area in places). However, it is likely that any land degradation is likely to be short term and minimal. Best management practices should be employed during the construction phase of the dam in order to minimise erosion and sediment movement.

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

Methodology References:
Northcote et al. 1960 - 1968
Department of Environment Regulation (2014)

GIS Databases:
Soils, statewide
Hydrology, statewide
Rainfall, annual
Evapotranspiration, annual
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 likely to be at variance to this Principle

There are 19 mapped conservation areas within 10 kilometres of the application area. The closest conservation reserve is the Faunadale C Class Nature Reserve which falls approximately one kilometre east of the application area.

There are a number of ecogocial linkages of native vegetation within the local area and the proposed clearing will not sever or substantially reduce any ecological linkages to nearby conservation areas. Given the distance between the application area and conservation areas the proposed clearing is unlikely to have any direct impact on these conservation areas.

Noting the above it is unlikely that the proposed clearing will directly or indirectly impact the values of nearby conservation areas and therefore, the proposed clearing is not likely to be at variance to this Principle.

Methodology GIS Databases:
Department of Parks and Wildlife, tenure
Regional Parks
System 6 reserves

(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 may be at variance to this Principle

The area under application falls within the Donnelly River Surface Water Area proclaimed under the *Rights in Water and Irrigation Act 1914* and within a 'Priority not assigned' Public Drinking Water Source Area.

The Department of Water (DoW) previously advised (for CPS 6082/1) that the proposed clearing and land use may result in soil erosion and associated turbidity. The current land use practices on the property may result in the leaching of fertilisers and chemical spray drift into water bodies which may impact upon water quality. Land use management practices including the revegetation of native species along the proposed dam to create a protection buffer will reduce the risk of contaminants impacting upon water quality (DoW, 2014).

The clearing of native vegetation in close proximity to a watercourse will remove natural stabilisation of the soil by vegetation root structures. The clearing proposed may increase runoff of water and soluble minerals into the nearby watercourse. Therefore the clearing of the vegetation is may cause deterioration in the quality of surface water associated with this watercourse.

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

Methodology References:
Department of Water (2014)

GIS Databases:
Hydrology, linear

(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

One minor perennial watercourse and an earth dam are mapped within the application area. A 2014 site inspection of the application area identified vegetation growing in and in association with a watercourse (DER, 2014).

The landscape surrounding the application area is modified and includes an existing earth dam (which connects to the application area in places). The application area slopes is mapped as having an annual recharge of between 200 to 300 mm per year.

Given there is an existing earth dam adjacent (and partially within) the application area, any excess overland flow would be contained in close proximity to the application area.

Therefore, this proposal is not likely to be at variance to this Principle.

Methodology

References:

Department of Environment Regulation (2014)

GIS Database:

Hydrology, statewide

Rainfall, annual

Evapotranspiration, annual

Topographic contours, statewide

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

Comments

The application is to clear 9.7 hectares of native vegetation for the purposes of dam construction and an avocado farm. Clearing permit (ref CPS 3872/1) was previously granted for 3.3 hectares of the area under application however it expired on 9 May 2013. Clearing permit (ref CPS 6082/1) was previously granted for the same area as the current application area however it expired on 4 September 2014. This application is for the same area, and for the same purpose, as CPS 6082/1.

Assessment of this proposal is based on that undertaken in 2014 for CPS 6082/1 however it takes into account new information relating to local flora (new records), updated vegetation extent statistics and advice from DoW regarding the applicants application for a licence and permit under the *Rights in Water Irrigation Act 1914*.

DoW advised that they are currently assessing the applicants permit and licence applications for this project and that they have indicated to the applicant that DoW is prepared to issue a permit for the construction of a dam (DoW, 2017).

DoW previously advised, for CPS 6082/1, that the applicant should adopt best management practices in order to protect water quality against degradation from current land use practices. DoW recommends that the applicant follows the buffer retention objectives outlined in the Department of Waters 'Water Quality Protection Note 6 - Vegetation Buffers to Sensitive Water Resources', which provides guidance on retaining, maintaining and re-establishing vegetated buffers between land use practices and water resources (DoW, 2006). Vegetated buffers are key strategic elements among a series of protection barrier options that reduce the risk of contaminant impact on water quality. Revegetation of native species should be carried out around the proposed dam in order to reduce the risk of chemical spray drift and sediment input into the dam (DoW, 2014).

The Shire of Manjimup advised that the land is zoned by Local Planning Scheme No.4 as 'Priority Agriculture' and planning approval is not required for clearing in this zone. The Shire of Manjimup also noted that if the expanded edge of the proposed dam and/or dam wall is to be less than 20 metres from any lot boundary, Shire planning approval for the dam works will be required (Shire of Manjimup, 2017).

No aboriginal sites of significance have been mapped over the application area.

The application was advertised for public comment in *The West Australian* on 6 February 2017. No submissions from the public have been received for the proposed clearing.

Methodology

References:

Department of Water (2006)

Department of Water (2014)

Department of Water (2017)

Shire of Manjimup (2017)

4. References

- Brown, A, Thomson-Dans, C & Marchant, N (Eds) 1998, Western Australia's Threatened Flora, Department of Conservation and Land Management, Western Australia, p. 132.
- Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.
- Commonwealth of Australia (2012) EPBC Act referral guidelines for three threatened black cockatoo species, Canberra.
- Department of Environment Regulation (2014) Site Inspection Report for CPS 6082/1. Department of Environment Regulation. Western Australia. (A768259).
- Department of Parks and Wildlife (2015) 2015 South West Forest and Swan Coastal Plain Vegetation Complex Statistics: a report prepared for the Department of Environment Regulation. Current as of March 2015. Department of Parks and Wildlife, Perth, Western Australia.
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- Department of Water (2006) Water Quality Protection Note - Vegetation buffers to sensitive water resources'. Western Australia. <http://www.water.wa.gov.au/PublicationStore/first/81872.pdf> (Accessed 9/03/2017).
- Department of Water (2014) Advice for Clearing Permit CPS 6082/1. Department of Water. Western Australia DER ref: A755303.
- Department of Water (2017) Advice from the Department of Water regarding clearing permit application CPS 7437/1 DER ref A1376613.
- Government of Western Australia (2015). 2015 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of June 2015. 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.
- 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.
- Shire of Manjimup (2017) Advice regarding clearing permit application CPS 7437/1 DER ref: A1371622).
- Threatened Species Scientific Committee (2008). Commonwealth Conservation Advice on Caladenia [redacted]. Department of the Environment, Water, Heritage and the Arts. Available from: <http://www.environment.gov.au/biodiversity/threatened/species/pubs/>. In effect under the EPBC Act from Mar-2008