



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: 5641/1

File Number: 2013/000312-1

Duration of Permit: From 7 September 2013 to 7 September 2015

PERMIT HOLDER

Rottnest Island Authority

LAND ON WHICH CLEARING IS TO BE DONE

Lot 10976 on Deposited Plan 216860, Reserve 16713 (Rottnest Island)

AUTHORISED ACTIVITY

The Permit Holder shall not clear more than 1.76 hectares of native vegetation within the combined areas cross hatched yellow on attached Plan 5641/1a and Plan 5641/1b and Plan 5641/1c and Plan 5641/1d and Plan 5641/1e and Plan 5641/1f and Plan 5641/1g

CONDITIONS

1. 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*:

- (a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- (b) ensure that no *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared; and
- (c) 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:

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 the former Department of Environment and Conservation Regional Weed Assessments, regardless of ranking; or
- (c) not indigenous to the area concerned.

M Warnock

MANAGER

NATIVE VEGETATION CONSERVATION BRANCH

*Officer delegated under Section 20
of the Environmental Protection Act 1986
8 August 2013*

Plan 5641/1a



LEGEND

Clearing Instruments

- Areas Approved to Clear
- Cadastre
- Rottneest Island Aug 2011 Mosaic



Scale 1:4578

(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 8/2/13

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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* Project Data is denoted by asterisk. This data has not been quality assured. Please contact map author for details.

Plan 5641/1b



LEGEND

Clearing Instruments

- Areas Approved to Clear
- Cadastre
- Rottneest Island Aug 2011 Mosaic



Scale 1:7476

(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 8/8/13

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.



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Plan 5641/1c



LEGEND

- Clearing Instruments**
- Areas Approved to Clear
 - Cadastro
- Rottnest Island Aug 2011 Mosaic**



Scale 1:7476
(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 8/8/13
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.



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Plan 5641/1d



LEGEND

Clearing Instruments

- Areas Approved to Clear
- Cadastre
- Rottneet Island Aug 2011 Mosaic



0 200 m

Scale 1:7476

(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 8/8/13
M Warnock

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

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Plan 5641/1e



LEGEND

Clearing Instruments

- Areas Approved to Clear
 - Cadastre
- Rottneest Island Aug 2011
Mosaic



Scale 1:7406

(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 8/8/13

M Warnock

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

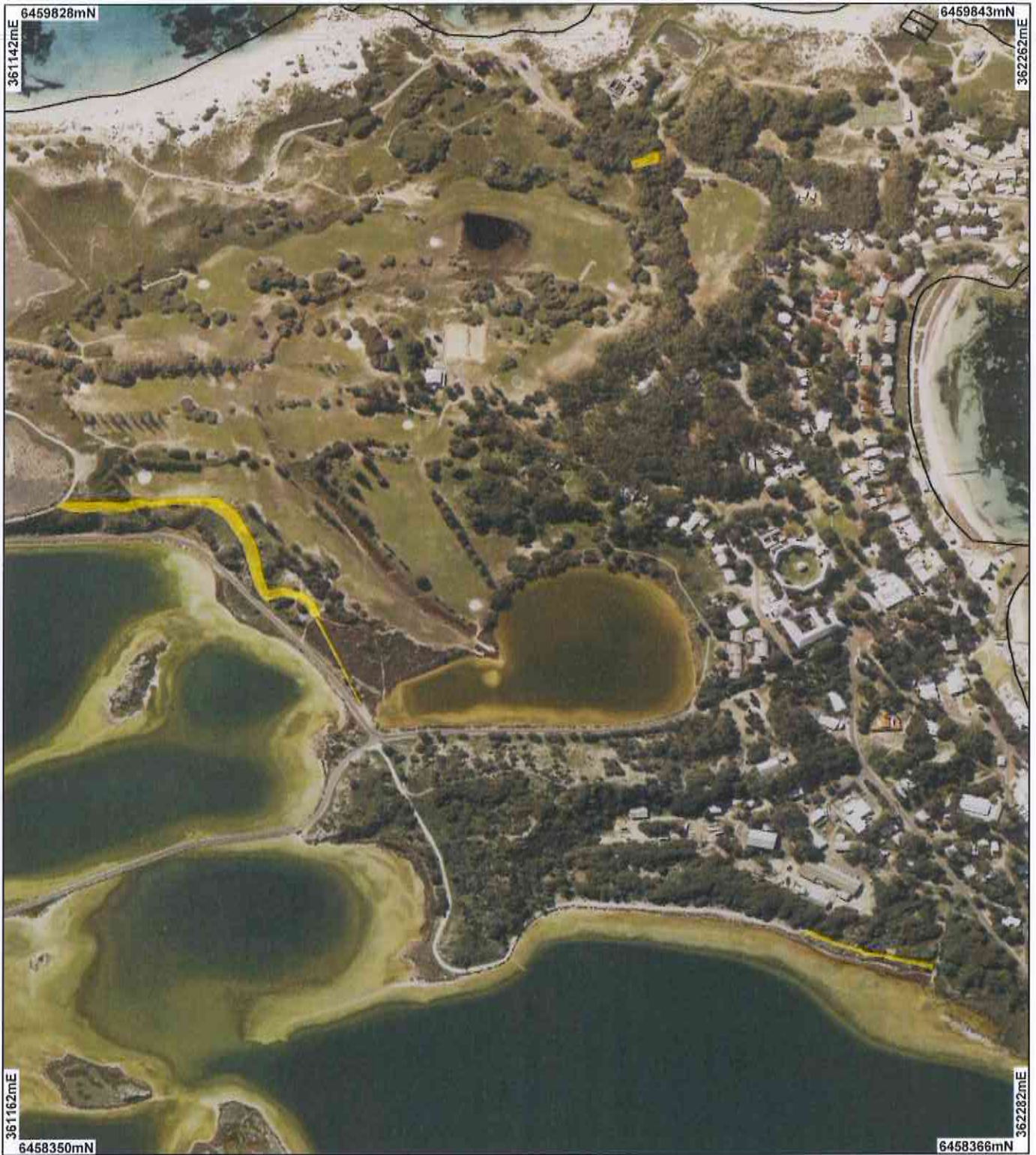
Information derived from this map should be confirmed with the data custodian acknowledged by the agency acronym in the legend.



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Plan 5641/1f



LEGEND

Clearing Instruments

- Areas Approved to Clear
 - Cadastre
- Rottneest Island Aug 2011 Mosaic



0 ————— 150 m

Scale 1:6554

(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 8/8/13
M Warnock

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

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Plan 5641/1g



LEGEND

Clearing Instruments

- Areas Approved to Clear
- Cadastre
- Rottnest Island Aug 2011 Mosaic



Scale 1:5748
(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 *8/9/13*

M Warnock

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Government of Western Australia
Department of Environment Regulation

1. Application details

1.1. Permit application details

Permit application No.: 5641/1
Permit type: Area Permit

1.2. Proponent details

Proponent's name: Rottnest Island Authority

1.3. Property details

Property: LOT 10976 ON PLAN 216860 (House No. 1 VINCENT ROTTNEST ISLAND 6161)
Local Government Area: City of Cockburn
Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
1.76		Mechanical Removal	Recreation

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 8 August 2013

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description	Clearing Description	Vegetation Condition	Comment
Mapped Beard vegetation association 15: Low forest; cypress pine (Shepherd et al, 2001).	The application is to clear 1.76 hectares of native vegetation within Lot 10976 on Deposited Plan 216860, Rottnest Island, for the purpose of constructing a walking trail.	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)	The clearing will be undertaken over an 8.8 kilometre linear length with the maximum clearing width being two metres. The average clearing width is expected to be 1.2 meters wide.
Mapped Beard vegetation association 125: Bare areas; salt lakes (Shepherd et al, 2001).		To	The vegetation under application is considered to be in a degraded to very good (Keighery, 1994) condition.
Mapped Beard vegetation association 1007: Mosaic: Shrublands; Acacia lasiocarpa & Melaleuca acerosa heath / Shrublands; Acacia rostellifera & Acacia cyclops thicket (Shepherd et al, 2001).		Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	The condition of the vegetation under application was obtained via aerial imagery (Rottnest Island Aug 2011 - Mosaic)
Hedde vegetation complex Quindalup complex: Coastal dune complex consisting mainly of two alliances ? the strand and fore-dune alliance and the mobile and stable dune alliance. Local variations include the low closed forest of <i>M. lanceolata</i> - <i>Callitris preissii</i> and the closed scrub of <i>Acacia rostellifera</i> (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.

Comments **Proposal is at variance to this Principle**
The application is to clear 1.76 hectares of native vegetation over a linear distance of 8.8 kilometres for the purpose of constructing a walking trail on Rottnest Island. The clearing will be up to a maximum width of two metres however the average clearing width will be 1.2 metres wide.

The vegetation under application is considered to be in a degraded to very good (Keighery, 1994) condition.

There are seven priority ecological communities (PEC) that occur on Rottnest Island, all of which are associated with the Microbial Lakes on Rottnest. All of the known PEC's are within close proximity to the clearing, however none of the clearing will directly impact upon mapped PEC's. Given the size and linear nature of the proposed clearing it is unlikely the application will impact on the PEC lakes or the microbial communities they support.

A section (approximately 0.02 hectares) of the application area is within threatened ecological community (TEC) SCP30a. The TEC comprises of *Callitris preissii* (or *Melaleuca lanceolata*), forests and woodlands. The TEC has been recorded twice on Rottnest Island covering a total area of approximately 27.5 hectares. The vegetation proposed to be cleared within the TEC is considered to be in a very good (Keighery, 1994) condition. Given the size of the clearing within the TEC it is considered not likely to impact on its conservation status.

The disturbance caused by the proposed clearing will increase the risk of weeds spreading into adjacent vegetation. Weed management practices will assist in mitigating this risk.

Given that a section of the applied area is within a TEC and the vegetation associated with the TEC is in a very good (Keighery, 1994) condition, the application is at variance to this principle.

Methodology Reference:
Keighery (1994)

GIS Databases:
- Pre-European vegetation
- SAC Biodatasets - accessed July 2013

(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**
Several fauna species of conservation significance are known to occur on Rottnest Island. Rottnest Island comprises of an area of approximately 1900 hectares in size with approximately 75 percent of it vegetated and another 15 percent comprising of lakes.

Considering the size and linear nature of the clearing along with the remaining vegetation on Rottnest Island, the proposed clearing is unlikely to impact on conservation significant fauna or their habitat.

The application is not likely to be at variance to this principle.

Methodology GIS Databases:
- NWLRA, Extent of Native Vegetation

(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**
There are no known rare flora species on Rottnest Island.

The application is not likely to be at variance to this principle.

Methodology GIS Database
- SAC Biodatasets - accessed July 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 at variance to this Principle**
There is one threatened ecological community (TEC) within 10 kilometres of the applied area. The TEC is referred to as Floristic Community Type SCP30a, comprising of *Callitris preissii* (or *Melaleuca lanceolata*), forests and woodlands. The TEC has been recorded twice on Rottnest Island covering a total area of approximately 27.5 hectares.

A small section of the clearing (approximately 0.02 hectares) of the area under application will impact on the identified TEC. Given the size and linear nature of the clearing within the TEC, it is considered the clearing is not likely to impact on its conservation status.

The application is at variance to this principle.

To minimise disturbance or damage to trees and shrubs that constitute the TEC it is recommended that all operators of the machinery/tools removing the vegetation should be notified that they are entering an environmental sensitive area. Existing tracks should be used where possible and excess soil should be removed.

Methodology GIS Database
- SAC Biodatasets - accessed July 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 vegetation under application is represented by three Beard Vegetation Association's (15, 25 and 1007) and Heddle Vegetation Complex, Quindalup Complex. Beard Vegetation association 125 retains less than the threshold level of 30 percent recommended in the National Objectives Targets for Biodiversity Conservation, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Western Australia 2001). The other vegetation associations/complex recorded are above the threshold level.

Beard Vegetation Association 125 is described as bare area, salt lakes (Shepherd et al, 2001). The proposed clearing within the mapped Beard Vegetation Association 125 is not a representation of the vegetation description, therefore the clearing is unlikely to further reduce the amount of vegetation remaining within this association.

The application is not within an extensively cleared landscape as Rottnest Island comprises of an area of approximately 1900 hectares in size, with approximately 75 percent of the Island vegetated.

The vegetation under application is not significant as a remnant within an extensively cleared landscape.

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Extent in DEC Managed Lands (%)
IBRA Bioregion				
Swan Coastal Plain	1 501 222	587 708	39	35
Shire*				
City of Cockburn	17 088	5 339	31	17
Beard Vegetation Association in Bioregion				
15	1 978	1 568	79	0
125	9 983	2 575	26	58
1007	30 110	21 415	71	12
Heddle Vegetation Complex				
Quindalup complex	49 028	30 129	61	6

Methodology References
Commonwealth of Australia (2001)
Government of western Australia (2011)
Heddle et al (1980)
Shepherd et al (2001)

GIS Databases:
- Interim Biogeographic Regionalisation of Australia
- NWLRA, 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 **Proposal is not likely to be at variance to this Principle**

The application is within close proximity to several lakes that exist on Rottnest Island and is also close to the surrounding coastline. Of the known water bodies on Rottnest Island, none of them intersect the clearing areas.

Considering this and the size and shape of the clearing, the application is not likely to impact on water bodies

or the vegetation that is associated to them.

The application is not likely to be at variance to this principle.

Methodology GIS Database:
- Hydrography, linear
- Lakes

(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 soil mapped within the applied area is described as broad sand plain with occasional sand dune formations: chief soils are red earthy sands with only minor occurrences of loose red sands on the dunes (Northcote et al, 1960 - 1968).

Given the linear nature of the proposed clearing and that there is approximately 75 percent of pre-European vegetation remaining on Rottneest Island the proposed clearing it is unlikely to cause appreciable land degradation.

The application is not likely to be at variance to this principle.

Methodology References
- Northcote et al (1960-68)

GIS Database:
- Pre-European vegetation

(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

Rottneest Island is a 'A' Class Reserve which is protected for it's high conservation and community value.

The proposed clearing of 1.76 hectares of native vegetation will not impact on the conservation value of this reserve.

The application is not likely to be at variance to this principle.

Methodology GIS Database:
- DEC Tenure

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

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

The proposed clearing over 1.76 hectares of native vegetation over a linear distance of 8.8 kilometres may cause some short term localised surface water sedimentation that may impact upon the numerous nearby microbial lakes if the clearing was undertaken in the wetter months. However, these effects are likely to be short term and minimal.

The groundwater salinity has been measured at 500-1000 total dissolved solids milligrams per litre which is considered to be brackish. Rottneest Island has approximately 75 percent of its pre-European vegetation remaining. Considering this and the linear nature of the proposed clearing it is unlikely groundwater salinity will increase from the proposed clearing.

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

Methodology GIS Databases:
- Hydrography, 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 at variance to this Principle

Given the linear nature of the proposed clearing and that there is approximately 75 percent of pre-European vegetation remaining on Rottneest Island the proposed clearing it is unlikely to cause or exacerbate the incidence or intensity of flooding.

The proposal is not at variance to this principle.

Methodology GIS Databases:
- Hydrography, linear
- Pre-European vegetation

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

Comments

The areas under application are within Aboriginal sites of significance.

The Rottnest Island Authority administers the management of the Island under the provisions of the Rottnest Island Authority Act 1987 and Rottnest Island Regulations.

Methodology GIS Databases:
- Environmental Sensitive Areas

4. References

- 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.
- 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.

5. Glossary

Term	Meaning
BCS	Biodiversity Coordination Section of DEC
CALM	Department of Conservation and Land Management (now BCS)
DAFWA	Department of Agriculture and Food
DEC	Department of Environment and Conservation
DEP	Department of Environmental Protection (now DEC)
DoE	Department of Environment
DoIR	Department of Industry and Resources
DRF	Declared Rare Flora
EPP	Environmental Protection Policy
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
TEC	Threatened Ecological Community
WRC	Water and Rivers Commission (now DEC)