



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: CPS 5060/1
File Number: 2011/006783-1
Duration of Permit: From 31 August 2012 to 31 August 2014

PERMIT HOLDER

City of Armadale

LAND ON WHICH CLEARING IS TO BE DONE

Skeet Road Reserve (Harrisdale 6112) (PIN:11881551)

AUTHORISED ACTIVITY

The Permit Holder shall not clear more than 1.68 hectares of native vegetation within the area hatched yellow on attached Plan 5060/1.

CONDITIONS

1. Weed control

- (a) 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*:
- (i) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
 - (ii) ensure that no *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared; and
 - (iii) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.
- (b) At least once in each 12 month period for the term of this Permit, the Permit Holder must remove or kill any *weeds* growing within areas cleared under this Permit.

2. Dieback control

- (a) When undertaking any clearing or other activity authorised under this Permit, the Permit Holder must take the following steps to minimise the risk of introduction and spread of dieback:
- (i) establish a hygiene boundary and clean on entry points around the area to be cleared;
 - (ii) erect clean on entry point signs at each designated clean on entry point prior to the commencement of clearing and construction activities;
 - (iii) ensure that vehicles, plant and equipment enter the areas to be cleared only through a clean on entry point; and
 - (iv) ensure vehicles, plant and equipment are clean of soil and vegetation prior to crossing any clean on entry point.

3. Vegetation management

- (a) Prior to commencing clearing, the Permit Holder shall construct a fence on the eastern boundary of the area hatched yellow on attached Plan 5060/1. The fence and any gates in the fence must be constructed to prevent vehicles from entering the adjacent property.
- (b) Within one month of installing the fence the Permit Holder shall notify the CEO in writing that the fence has been completed.

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 a species listed in Appendix 3 of the "Environmental Weed Strategy" published by the Department of Conservation and Land Management (1999), and plants declared under section 37 of the *Agriculture and Related Resources Protection Act 1976*.



M Warnock
A/MANAGER
NATIVE VEGETATION CONSERVATION BRANCH

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

9 August 2012

Plan 5060/1



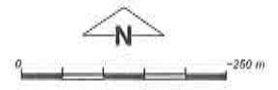
LEGEND

- Road Centrelines
- Cadastre for labelling**
- Freehold
- Crown Reserve
- State Forest / Timber Reserve
- Marine Park
- Crown Lease
- (cont)

- Lease / Reserve
 - Lease on State Forest / Timber Reserve
 - Public Roads
 - Unallocated Crown Land
 - Water
- Perth Metropolitan Central
15cm Orthomosaic - Landgate
2011**

Clearing Instruments

- Areas Applied to Clear
- Areas Subject to Conditions
- Areas Approved to Clear



Scale 1:8879
(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 9/8/12
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.



1. Application details

1.1. Permit application details

Permit application No.: 5060/1
Permit type: Area Permit

1.2. Proponent details

Proponent's name: City of Armadale

1.3. Property details

Property: ROAD RESERVE (HARRISDALE 6112)
Local Government Area: City of Armadale
Colloquial name: Skeet Road reserve

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 9 August 2012

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 1001 is described as 'Medium very sparse woodland; jarrah, with low woodland; banksia & casuarina' (Shepherd et al 2001).	The application proposes to clear 1.681 ha of native vegetation for the purpose of constructing an arterial drain.	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	The description and condition of the vegetation was determined by a Flora and Vegetation Assessment completed by ENV (2011) and a site inspection undertaken by the Department of Environment and Conservation (2012)
Hedde vegetation complex southern river is described as 'SOUTHERN RIVER COMPLEX : Open woodland of Corymbia calophylla (Marri) - Eucalyptus marginata (Jarrah) - Banksia species with fringing woodland of Eucalyptus rudis (Flooded Gum) - Melaleuca raphiophylla (Swamp Paperbark) along creek beds (Hedde 1998).	Two remnant vegetation units have been identified within the application area. Melaleuca preissiana low open Kunzea glabrescens tall shrubland over Regelia ciliate, Jackson sternbergiana and Astartea scoparia shrubland over Austrostipa nitida and Ehrharta calycina very open grassland over Dasypogon bromeliifolius very open herbland (ENV 2011).	To Completely Degraded: No longer intact; completely/almost completely without native species (Keighery 1994).	
	The second vegetation unit consists of Banksia menziesii, Eucalyptus todtiana and Banksia attenuata low open woodland with scattered Nuytsia floribunda and Allocasuarina fraseriana over Kunzea glabrescens tall open shrubland over Acacia pulchella var. glaberrima, Gompholobium tomentosum and Lechenaultia expansa shrubland over Ehrharta calycina very open Dasypogon bromeliifolius very open herbland (ENV 2011).		

3. Assessment of application against clearing principles

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

Comments

Proposal is at variance to this Principle

The applicant proposed to clear 1.681 ha of native vegetation for the purpose of constructing an arterial drain within Skeet Road reserve, Harrisdale.

A flora survey of the application area undertaken in November 2011 identified a total of 85 taxa, including 28 introduced species, from 71 genera and 34 families were recorded within the application area (ENV 2011).

Two priority flora species, Jacksonia gracillima (P3) and Verticordia lindleyi subsp. lindleyi (P4) have been recorded within the area under application. Jacksonia gracillima is known from two disjunct locations, being the southern metropolitan area and Busselton. Herbarium records indicated there is likely to be around 10 extant populations however they have been described from locally common to occasional (DEC 2012b). Two

populations of *J. gracillima* consisting of 20 and 10 plants each were recently recorded during a survey for Heron Park phase Two immediately adjacent to the area under application (DEC 2012b). The 115 plants of *J. gracillima* within the 1.68 ha application area is the largest number of plants recorded for the species however it is likely to only partially present the full extent of the population at this location (DEC 2012b). It is also possible that a high number of plants are found within the area under application due to being in close proximity to disturbance along tracks (DEC 2012b).

One plant of *Verticordia lindleyi* subsp. *lindleyi* was recorded within the area under application (ENV 2011). This species is known from numerous locations in the metropolitan area and extends to Dandaragan in the north. It is also present within conservation estate in the Moora District. It occurs in low-lying swampy flats (DEC, 2012b). Given there is suitable habitat in the adjacent Bush Forever site and Herbarium records indicated further populations in bushland surrounding the area under application, it is expected that the species will still be present in the immediate area.

It is considered unlikely that the proposed clearing of a small linear area will impact the conservation status of either of these priority flora species (DEC 2012b).

The flora and vegetation survey undertaken within the application area identified a vegetation community 'Low Woodland of *Banksia Attenuata*', (ENV 2011). Adjacent to the proposed clearing, the Priority Ecological Community (PEC) 'Low Lying *Banksia attenuata* woodland or shrublands' has been inferred within the adjacent Bush Forever site. A site visit of the application area found that the southern and central portion of the application area was in a good to very good (Keighery 1994) condition and it is considered that this portion of the area under application may represent this PEC. This PEC is known to occur within the Harrisdale area and has been inferred as occurring within a number of Bush Forever sites within the local area (ENV 2010). Given the relatively small area proposed to be cleared and the presence of this PEC in a number of Bush Forever sites within the local area, the clearing as proposed is not expected to have a significant impact on the conservation status of this PEC.

Eight species of fauna listed as rare or likely to become extinct under the Wildlife Conservation Act 1950 have been recorded within a 10 km radius (DEC, 2007-). Suitable foraging habitat has been identified for *Calyptorhynchus banksii* subsp. *naso* (Forest Red-tailed Black-Cockatoo), *Calyptorhynchus baudinii* (Baudin's Cockatoo), *Calyptorhynchus latirostris* (Carnaby's Cockatoo), however, given the application area is located adjacent to Bushforever site 352 which consists of similar or better vegetation no significant impact on the Black Cockatoo species is expected.

Neopasiphae simplicior (bee) has been recorded within the adjacent Bush Forever site, however suitable habitat for this specie has not been identified within the application area and therefore it is considered unlikely this specie will occur within the application area.

The application area contains priority flora and a PEC therefore is considered to comprise a high level of biodiversity.

Given the above the clearing as proposed is at variance to this principle.

Methodology

References:

- DEC (2012b)
- City of Amrmdale
- ENV (2010)
- ENV (2011)

GIS Database:

- SAC Biodata sets – accessed 1 June 2012. GIS Databases:

(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

Eight species of fauna listed as rare or likely to become extinct under the Wildlife Conservation Act 1950 have been recorded within a 10 km radius including *Calyptorhynchus banksii* subsp. *naso* (Forest Red-tailed Black-Cockatoo), *Calyptorhynchus baudinii* (Baudin's Cockatoo), *Calyptorhynchus latirostris* (Carnaby's Cockatoo), *Dasyurus geoffroii* (Chuditch), *Leioproctus douglasiellus* (bee), *Myrmecobius fasciatus* (Numbat), *Neopasiphae simplicior* (bee) and *Synemon gratiosa* (Graceful Sunmoth).

Neopasiphae simplicior (bee) has been recorded within the nearby Forrestdale Lake Nature Reserve. This population is of high importance as it is likely to represent the sole remaining population of this species on the Swan Coastal Plain (DEC 2012c). This bee has been collected from dampland flora: thread-leaved goodenia (*Goodenia filiformis*), slender lobelia (*Lobelia tenuior*), *Angianthus preissianus* and *Velleia* species (DEC 2012c). An appropriately timed flora survey was conducted within the application area and no flora species suitable for habitat for this bee were identified (ENV 2011). Given habitat for *Neopasiphae simplicior* has not been identified within the application it is considered unlikely the proposed clearing will have a significant

impact on this specie.

Suitable foraging habitat has been identified for *Calyptorhynchus banksii* subsp. *naso* (Forest Red-tailed Black-Cockatoo), *Calyptorhynchus baudinii* (Baudin's Cockatoo), *Calyptorhynchus latirostris* (Carnaby's Cockatoo), however given the application area is located adjacent to Bush forever site 352 which consists of similar or better vegetation no significant impact on Black Cockatoo species is expected.

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

Methodology References:
- DEC (2007-)
- DEC (2012c)
- DEC (2007-)

(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

Eight records of Declared Rare Flora (DRF) have been recorded within the local area (5km radius). The closest known record of DRF is *Caladenia huegelii*, located 1 km from the proposed clearing area on the same vegetation type and soil type. *Diuris purdiei* is recorded from the adjacent Bush Forever site 342 (DEC 2012d).

Caladenia huegelii is described as a tuberous, perennial, herb, 0.25-0.6 m high (Western Australian Herbarium 1998-). This species grows in deep sandy soil, in mixed woodland of jarrah (*Eucalyptus marginata*) and banksia. It flowers during September and October and occurs in scattered localities over a range of 315 km, commonly found in areas of lush undergrowth (Brown et al 1998).

Diuris purdiei is described as a tuberous, perennial, herb, 0.15-0.35 m high occurring on grey-black sand within moist winter-wet swamps (Western Australian Herbarium 1998-). This species flowers from late September to mid-October but only after a summer or early autumn fire (Brown et al 1998).

A flora survey was undertaken on 24 November 2011 within the application area and no DRF were identified (ENV 2011). However, this survey was done outside the optimum flowering time for the above two DRF.

A flora survey of the adjacent Bush forever site was undertaken during an appropriate time for these rare flora species and did not identify *Caladenia huegelii* or *Diuris purdiei* (ENV 2010).

Given the above, the clearing as proposed is not considered likely to impact DRF and is not likely to be at variance to this principle.

Methodology Reference:
-DEC (1998)
-ENV (2011)
-Western Australian Herbarium (1998-).

GIS Database:
-SAC Biodata sets – accessed 1 June 2012.
-Pre European Vegetation
-Soils, Statewide

(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

Several threatened ecological communities (TEC's) are known to exist within a 5km radius of the application area. The closest mapped TEC has been recorded approximately 800m away within the Bush Forever site adjacent to Skeet Road reserve. The recorded TEC is Swan Coastal Plain 10a, shrublands on dry clay flats and comprises an area of approximately 17 hectares.

A flora survey of the application area did not identify a TEC within the area under application (ENV 2011).

Therefore the application is not likely to be at variance to this principle.

Methodology References
-ENV (2011)
GIS Database:
-SAC Biodata sets – accessed 1 June 2012.

(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 within the Swan Coastal Plain IBRA Bioregion and has been mapped as comprising of Beard vegetation association 1001 and Heddle vegetation complex, Southern River. The mapped Beard and Heddle vegetation complexes under application have approximately 25 per cent and 21 per cent respectively of their pre-European vegetation remaining.

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

The local area (10km radius) surrounding the application area is not extensively cleared, with approximately 35 per cent of its pre-European vegetation remaining. Approximately 85 per cent of this vegetation is within conservation areas (Bush Forever sites). Given the vegetation representation within the local area, the application area is not considered to represent a significant remnant.

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

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Extent in DEC Managed Lands (%)
IBRA Bioregion*				
Swan Coastal Plain	1,501,209	587,889	39.1	33.3
Shire*				
City of Armadale	55,916	43,030	76.95	75.69
Beard Vegetation Association in Bioregion*				
1001	57,410	14,152	24.65	5.66
Heddle Vegetation Complex **				
Southern River Complex	57,979	11,501	19.8	1.5

*Government of Western Australia (2011)
** Heddle (1998)

Methodology

References:
 - Commonwealth of Australia (2001)
 - Government of Western Australia (2011)
 - Heddle (1998)
 GIS Databases:
 - Perth Metropolitan Area Central 15cm Orthomosaic - Landgate 2011
 - Local Government Authorities - Landgate
 - 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 at variance to this Principle

The application area is mapped within a multiple use wetland and is adjacent to a conservation category wetland on the eastern side of Skeet Road reserve. The northern section of the application area is mapped within the Gibbs Road Swamp system. An unnamed Environmental Protection Policy (EPP) lake is located 635m north of the application area. The Conservation Category wetland west of Skeet Road reserve is part of the conservation significant Bush Forever site 342.

A flora survey of the application area identified wetland dependent vegetation within the area under application (ENV 2011).

Given the above the clearing as proposed is at variance to this principle.

Methodology

References:
 -ENV (2011)

GIS Database:
-Anca Wetlands
-Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain
-Hydrography linear

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

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

The soil under application is mapped as soil type Cb38, described as 'Sandy dunes with intervening sandy and clayey swamp flats: chief soils are leached sands, sometimes with a clay D horizon below 5 ft, on the dunes and sandy swamps' (Northcote et al, 1998).

The clearing of the vegetation under application, which includes riparian vegetation, may lead to soil erosion resulting in sedimentation of the known mapped wetlands. However, given the small and linear area under application, the risk is considered to be low and short term.

Therefore the clearing as proposed is not likely to cause appreciable land degradation and is not likely to be at variance to this principle.

Methodology References:
-Northcote (1960-68)
GIS database:
-Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain
-Soils, 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 may be at variance to this Principle

The east side of the application area is directly adjacent to Bush Forever Site 342 – Anstey/Keane Dampland and Adjacent Bushland, Forrestdale which contains a Conservation Category Wetland (CCW), the highest priority wetland. This area is also identified as an Environmental Protection (Swan Coastal Plain) Lakes Policy (EPP) wetland (Department of Planning 2012).

Bush Forever Area 342 is a significant conservation area with specific conservation features including providing habitat for priority and declared rare flora and providing significant habitat to two conservation significant bee species (DEC 2012c). Unauthorised vehicular access to Bush Forever Area 342 following clearing could be managed by the construction of an exclusion fence on the eastern perimeter of the clearing.

The disturbance resulting from the proposed clearing may increase the risk of weeds and dieback spreading into the site. Weed and dieback management practices and the installation of an exclusion fence would assist in mitigating this risk.

Given the above the clearing as proposed may be at variance to this principle.

Methodology Referencs:
-Department of Planning (2012)
GIS Databases:
-Bushforever

(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 application area is mapped within a multiple use wetland and is adjacent to a Conservation Category wetland on the eastern side of Skeet Road reserve. The northern section of the application area is also mapped within the Gibbs Road Swamp system. An unnamed EPP lake is located 635m north of the application area.

A flora survey of the application area identified wetland dependent vegetation within the area under application (ENV 2011)

Given the application area consists of a multiple use wetland and is adjacent to a conservation category wetland, the clearing as proposed may cause deterioration to surface water to the wetlands within close proximity of the application area. However given the relatively small area under application the risk is considered to be low and short term.

Given the above the clearing as proposed may be at variance to this principle.

Methodology References:
-ENV 2011)

GIS Database:
-Anca Wetlands
-Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain
-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 likely to be at variance to this Principle**

The northern section of the application area is mapped within a multiple use wetland and adjacent to a conservation category wetland. The local area is considered to be subjected to seasonal water inundation.

A recent site inspection conducted by DEC (2012a) identified large pools of surface water within the northern section of Skeet Road reserve within the application area.

Given the relatively small and linear area of vegetation proposed to be cleared, the proposed clearing is unlikely to increase or exacerbate the incidence or intensity of flooding in the local area, therefore the application is not likely to be at variance to this principle.

Methodology Reference:
-DEC (2012a)

GIS Database:
-Hydrology, linear
-Geomorphic Wetlands (mgt categories), Swan Coastal Plains

Planning instrument, Native Title, RIWI Act Licence, EP Act Licence, Works Approval, Previous EPA decision or other matter.

Comments

The applicant proposed to clear 1.681 ha of native vegetation for the purpose of constructing an arterial drain within Skeet Road reserve, Harrisdale.

Skeet Road reserve is part of future subdivision works as per the Structure Plan approved by the Western Australian Planning Commission (City of Armadale 2012).

Skeet Road reserve is zoned as Urban under the Metropolitan Region Scheme (City of Armadale 2012).

City of Armadale (2012) advised the Town Planning Scheme Amendment No. 56 proposes to provide for a fence along the side of (or within) the Skeet Road reserve abutting the Bush Forever Site 342. The construction of the fence could take place within the timeframe of the proposed drainage construction.

The design of the drain has been negotiated in conjunction with the Department of Water (DOW) and DEC and the proposed pipe construction will ensure that draw down on groundwater does not impact on the wetlands (City of Armadale 2012).

Department of Planning (2012) has advised the proposed works are justified in terms of the wider social benefit and has no objection to the proposed clearing subject to the following conditions being applied:

- An offset package is prepared and approved by DEC prior to clearing being undertaken.
- Disturbance of native vegetation surrounding the proposed clearing is to be minimised
- No building materials, rubbish or other matter is to be deposited into Bush Forever Area 342

Methodology References:
- City of Armadale (2012)
- Department of Planning (2012)

4. References

- City of Armadale (2012) Additional Information for Clearing Permit Skeet Road Forrestdale (Keane Road to Reilly Road. (DEC Ref:A505135)
- DEC (2007 -) NatureMap: Mapping Western Australia's Biodiversity. Department of Environment and Conservation. URL: <http://naturemap.dec.wa.gov.au/>. Accessed 1 June 2012
- DEC (2012a) Site Inspection Report for Clearing Permit Application CPS 5060/1, Skeet Road reserve, Harrisdale. Site inspection undertaken 10 July 2012. Department of Environment and Conservation, Western Australia (DEC Ref: A529267).
- Brown A., Thomson-Dans C. and Marchant N.(1998). Western Australia's Threatened Flora, Department of Conservation and Land Management, Western Australia. DEC (2012b) Flora advice for clearing permit CPS 5060/1. Species and Communities

Branch. Department of Environment and Conservation. (DEC Ref: A528105)
 DEC (2012c) Wetland advice for clearing permit CPS 5060/1. Species and Communities Branch. Department of Environment and Conservation. (DEC Ref: A529143)
 DEC (2012d) Advice for clearing permit CPS 5060/1. Region Parks Branch. Department of Environment and Conservation. (DEC Ref: A529615)
 Department of Planning (2012) Advice for Clearing Permit CPS 5060/1. Western Australia. (DEC Ref:A517088)
 ENV (2010) Heron Park Phase Two Flora and Vegetation Assessment. Western Australia. (DEC Ref:A531488)
 ENV (2011) Flora and Vegetation Assessment of Skeet Road Reserve, HARRISDALE. Western Australia (DEC Ref: A505135)
 Government of Western Australia (2011); 2011 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). 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.
 Western Australian Herbarium (1998-) FloraBase - The Western Australian Flora. Department of Environment and Conservation. <http://florabase.dec.wa.gov.au/> (Accessed 6 August 2012).

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)