GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS
Area Permit Number: 3779/1
File Number: 2010/003828-1
Duration of Permit: From 8 August 2010 to 8 August 2012

PERMIT HOLDER
City of Cockburn

LAND ON WHICH CLEARING IS TO BE DONE
Lot 235 on Deposited Plan 226117, HENDERSON 6166
Lot 2 on Diagram 17998, HENDERSON 6166

AUTHORISED ACTIVITY
The Permit Holder shall not clear more than 1.4 hectares of native vegetation within the area cross-hatched yellow on attached Plan 3779/1.

CONDITIONS
1. Fauna management

(a) Prior to undertaking any clearing authorised under this Permit, the area(s) shall be inspected by a *fauna specialist* who shall identify tree(s) that contain hollows suitable to be utilised as *habitat tree(s)* by fauna listed in the *Wildlife Conservation (Specially Protected Fauna)* Notice 2010.

(b) Prior to clearing, any *habitat tree(s)* identified by condition 1(a) shall be inspected by a *fauna specialist* for the presence of fauna listed in the *Wildlife Conservation (Specially Protected Fauna) Notice 2010.*

(c) Within one week prior to undertaking any clearing authorised under this Permit, the Permit Holder shall engage a *fauna clearing person* to remove and relocate fauna identified under condition 1(b).

2. Records must be kept
The Permit Holder must maintain records in relation to fauna management pursuant to condition 1 of this Permit:

(i) the location of each habitat tree identified recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings;
(ii) the species name of fauna reasonably likely to utilise, or that have been observed utilising, the habitat/habitat tree(s); and
(iii) the location and date where relocated fauna was released, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings.

3. Reporting

(a) The Permit Holder must provide to the CEO, on or before 30 June of each year, a written report of records required under condition 2 of this Permit and activities done by the Permit Holder under this Permit between 1 January and 31 December of the preceding year.

(b) Prior to 8 May 2010, the permit holder must provide to the CEO a written report of records required under condition 2 of this Permit where these records have not already been provided under condition 3(a) of this Permit.

Definitions

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

fauna clearing person means a person who has obtained a licence from the Department, issued pursuant to the *Wildlife Conservation Regulations 1970* authorising them to take fauna;

fauna specialist means a person with training and specific work experience in fauna identification or faunal assemblage surveys of Western Australian fauna;

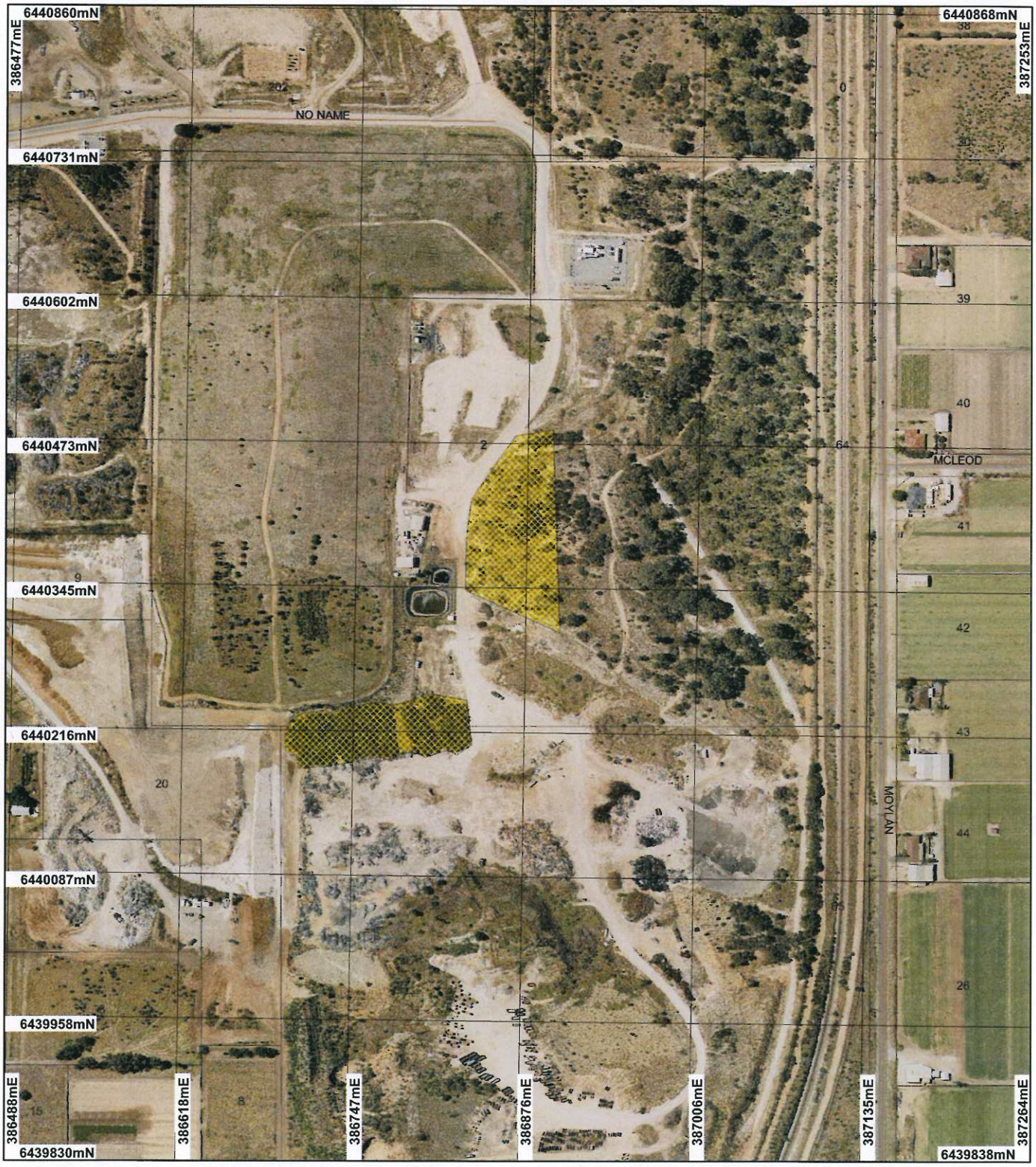
habitat tree(s) means trees that have a diameter, at average adult human chest height, of greater than 70cm, healthy but with dead limbs and broken crowns that are likely to contain hollows and roosts suitable for native fauna, or where these are not present then healthy but with the potential to contain hollows and roosts;

Kelly Faulkner
MANAGER
NATIVE VEGETATION CONSERVATION BRANCH

Officer delegated under Section 20
of the Environmental Protection Act 1986

8 July 2010

Plan 3779/1



LEGEND

- Cadastre for labelling
- Road Centrelines
  - FW
  - HY
  - LRO (cont)
  - LRS
  - MR
  - N
  - TR
- Clearing Instruments
  - Areas Approved to Clear

Swan Coastal Plain Central
20cm Orthomosaic - Landgate
2009

N

0 ~125 m

Scale 1:4554
(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.

K.Faulkner ..... Date 8/7/13

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 acknowleged by the agency acronym in the legend.

Department of Environment and Conservation

Our environment, our future

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

Department of
Environment and Conservation
Our environment, our future

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 3779/1

Permit type: Area Permit

1.2. Proponent details

Proponent's name: **City of Cockburn**

1.3. Property details

Property: LOT 2 ON DIAGRAM 17998 (HENDERSON 6166)
LOT 235 ON PLAN 226117 (Lot No. 235 DALISON HENDERSON 6166)

Local Government Area:

Colloquial name:

1.4. Application

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

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description	Clearing Description	Vegetation Condition	Comment
Beard Vegetation Association: 998: Medium woodland; tuart Heddle Complex - Central and South: Mosaic of woodland of Eucalyptus gomphocephala (Tuart) and open forest of Eucalyptus gomphocephala (Tuart) - Eucalyptus marginata (Jarrah) - Corymbia calophylla (Marri); closed heath on the Limestone outcrops. (Shepherd 2007, Heddle et al 1980)	The proposal is to clear 0.8ha of native vegetation and 0.6ha of planted native vegetation (revegetation) for construction of cell 7 of the Henderson Waste Recovery Centre. The vegetation under application consists of two areas with area 1 consisting of planted Acacia rostellifera, Agonis flexuosa and Melaleuca cuticularis over an understory of weeds which has been planted over an old leachate pond and is in a degraded condition. Area 2 consists of Eucalyptus gomphocephala open woodland over Acacia rostellifera shrubland over the weeds Pennisetum setaceum and Avena barbarta in a degraded condition (City of Cockburn 2010).	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)	The vegetation condition was determined from aerial photography and flora and fauna report undertaken by City of Cockburn in March 2010 (City of Cockburn 2010).

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 vegetation under application consists of two areas with area 1 consisting of planted Acacia rostellifera, Agonis flexuosa and Melaleuca cuticularis over an understory of weeds which has been planted over an old leachate pond and is in a degraded (Keighery 1994) condition. Area 2 consists of Eucalyptus gomphocephala open woodland over Acacia rostellifera shrubland over the weeds Pennisetum setaceum and Avena barbarta in a degraded (Keighery 1994) condition.

The area under application does not contain Priority or Threaten Ecological Communities or rare or priority flora species.

Given the degraded condition of the vegetation, the size of the proposed clearing (1.4ha) and that better condition vegetation occurs in surrounding conservation reserves, it is not considered likely for the proposed clearing to be at variance to this Principle.

Methodology References
- Keighery (1994)
GIS Databases
-SAC Bio datasets (4/6/2010)
-DEC tenure

(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 may be at variance to this Principle**
Six conservation significant fauna species occur within the local area (5km radius) of the vegetation under application. These include the Lined Skink (Lerista lineata), Quenda (Isoodon obesulus fusciventer), Masked Owl (Tyto novaehollandiae nova), Western False Pipistrelle (Falsistrellus mackenzier), Graceful Sunmoth (Synemon gratiosa) and the Black striped Snake (Neelaps calonotos).

The area under application consists of mature Tuart (E. gomphocephala) trees and Acacia rostellifera over weeds in a degraded (Keighery 1994) condition (City of Cockburn 2010). Tuart trees within the application area are described as mature (City of Cockburn 2010) and may contain hollows and therefore provide suitable habitat for fauna species recorded in the local area.

Therefore the proposed clearing may be at variance. A fauna management condition is to be place on this permit to mitigate this impact.

Methodology References
-City of Cockburn (2010)
GIS Databases
-SAC Bio datasets (4/6/2010)

(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 rare flora species occur within 5 km radius of the area under application. These species are Verticordia plumosa var. ananeotes and Diuris micrantha and have been recorded in the same soil and vegetation type as the area under application.

However, Verticordia plumosa var. ananeotes occur on seasonally inundated plains and Diuris micrantha is found within winter-wet swamps, in shallow water (Western Australian Herbarium 1998-) and the application area consists of open Tuart woodland with no wetland dependent vegetation (City of Cockburn 2010).

Therefore the proposed clearing is not considered to be at variance to this Principle.

Methodology References
-City of Cockburn (2010)
-Western Australian Herbarium (1998-)
GIS Databases
-SAC Bio datasets (4/6/2010)

(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**
The closest Threaten Ecological Community (TEC) is SCP 26a: Melaleuca huegelii - M. acerosa shrublands on limestone ridges occurring 4.7 km south of the application area.

The vegetation under application consists of open Tuart woodland over Acacia and weeds in a degraded (Keighery 1994) condition (City of Cockburn 2010). The soils within the area under application consists of siliceous sands with smaller areas of brown sands and leached sands in the wetter sites (Northcote et al. 1960-68).

Given that the application area does not contain limestone ridges and that no Melaleuca species were identified during flora survey (City of Cockburn 2010), it is not considered likely for the proposed clearing to be at variance to this Principle.

Methodology References
-City of Cockburn (2010)
-Northcote et al. (1960-68)
GIS Databases

-SAC Bio datasets (4/6/2010)

(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 described as Beard vegetation association 998 which there is 41.7% of pre-European extent remaining (Shepherd 2007). The vegetation is also described as Heddle vegetation complex Cottesloe Complex -Central and South which there is 41.1% of pre-European extent remaining (EPA, 2006).

The local area (5km radius) around the application area has approximately 35.7% of pre-European vegetation remaining with 33.6% remaining in the City of Cockburn. Therefore, the Beard vegetation associations of the vegetation under application retains more than the EPA supported threshold level (30%) recommended in the National Objectives Targets for Biodiversity Conservation below which species loss appears to accelerate exponentially at an ecosystem level (EPA, 2000).

Given the above and that the proposed clearing is of degraded (Keighery 1994) condition vegetation, it is not considered likely for the vegetation under application to be a significant remnant in an area that has been extensively cleared. The proposed clearing is not at variance to this Principle.

	Pre-European (ha)	Current extent (ha)	Remaining %
IBRA Bioregion			
Swan Coastal Plain*	9517117.0	1468711.0	15.4*
City of Cockburn*	17087.8	5753.2	33.6*
Local Area (~5km radius)	7758.0	2770.0	35.7
Beard type in Bioregion*			
998	50866.9	21225.7	41.7*
Heddle Vegetation Complex**			
Cottesloe Complex - Central and South	44995.0	18474.0	41.1**

* (Shepherd 2007)
** (EPA 2006)

Methodology

References
-EPA (2000)
-EPA (2006)
-Shepherd (2007)
-Keighery (1994)
GIS Databases
-Interim Biogeographic Regionalisation of Australia
-NLWA, Curent Extent of Native Vegetation
-Pre-European Vegetation
-Heddle Vegetation Complex
- SAC Bio Databases (4/6/2010)

(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 closet wetland to the area under application is Lake Mount Brown which is a conservation category wetland occurring ~ 500m west of the application area. There are no watercourses within 10 km radius of the proposed clearing.

No wetland or watercourse dependent vegetation has been identified within the application area (City of Cockburn 2010). Given this and the distance to the nearest wetland and watercourse, it is not considered for the vegetation under application to be growing in or in association with a watercourse or wetland.

Methodology

References
-City of Cockburn (2010)
GIS databases
-Hydrography, linear
-Geomorphic Wetlands (classification), Swan Coastal Plain

(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 area under application contains chief soils of siliceous sands with smaller areas of brown sands and leached sands in the wetter sites (Northcote et al 1960-68). These soils have a high risk of wind erosion.

However, given the small area proposed (1.4ha) to be cleared it is not considered likely for the proposed clearing to cause appreciable land degradation through wind erosion.

Methodology

References
-Northcote et al. (1960-68)
GIS Databases
- 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 is not likely to be at variance to this Principle

The closest conservation area to the area under application is Bush Forever site 346 which is also an unnamed conservation park. Thomas Lake Nature Reserve and Harry Waring Marsupial Reserve (also Bush Forever site 346) occurs ~ 1.9 km east of the application area.

The area under application is not connected through continuous vegetation to these conservation reserves and does not act as a stepping stone between these areas due to the degraded (Keighery 1994) condition and small size of the area proposed to be cleared.

Given this, it is not considered for the proposed clearing to be at variance to this Principle.

Methodology

References
-Keighery (1994)
GIS Databases
-Bushforever
-DEC Tenure
- Swan Coastal Plain Central 20cm Orthomosaic - Landgate 2009

(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 closet wetland to the area under application is Lake Mount Brown which is a conservation category wetland occurring ~ 500m west of the application area. There are no watercourses within 10 km radius of the proposed clearing.

In addition, an increase in salinity is not considered an issue due to the small area proposed to be cleared.

Given the distance to the nearest wetland and watercourse, and the relatively small area (1.4ha) proposed to be cleared it is not considered for the proposed clearing to cause deterioration in surface or under ground water.

Methodology

GIS databases
-Hydrography, linear
-Geomorphic Wetlands (classification), Swan Coastal Plain
-Salinity Risk

(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 closet wetland to the area under application is Lake Mount Brown which is a conservation category wetland occurring ~ 500m west of the application area. There are no watercourses within 10 km radius of the proposed clearing.

Given the distance to the nearest wetland and watercourse, and the relatively small area (1.4ha) proposed to be cleared it is not considered to be at variance to this Principle.

Methodology

GIS databases
-Hydrography, linear
-Geomorphic Wetlands (classification), Swan Coastal Plain

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

Comments

The proposal is to clear 0.8ha of native vegetation and 0.6ha of planted native vegetation (revegetation) for construction of cell 7 of the Henderson Waste Recovery Park (HWRP).

The HWRP occurs within the Environmental Protection (Kwinana) (Atmospheric Waste) Policy area.

Cell 7 is located in the Latitude 32 redevelopment area and is zoned for Resource Recovery and Transport Industry Use (City of Cockburn 2010).

Western Australian Planning Commission (WAPC) has considered the proposed construction of cell 7 in relation to the Hope Valley - Wattleup Redevelopment Act and has granted unconditional approval for the construction of cell 7 on the 10 May 2010 (City of Cockburn 2010).

Works Approval (number 4619/2009/1) has been granted for cell 7 by Department of Environment and Conservation (DEC) on the 22 April 2010 (City of Cockburn 2010). The area proposed to be cleared includes the work approval designated area and additional areas outside of this area for the construction of Cell 7.

Area under application is classified as 'possibly contaminated – investigation required' on the 17 July 2009 due to its past use as an operational class I and III putrescibles and asbestos landfill. In addition, groundwater monitoring identified hydrocarbons, heavy metals and nutrients at levels exceeding guidelines. DEC does not consider the potential groundwater contamination to be an issue in relation to the clearing application (DEC 2010).

Methodology References
-City of Cockburn (2010)
-DEC (2010)

4. Assessor's comments

Comment

The application has been assessed against the clearing principles, planning instruments and other matters in accordance with s51O of the Environmental Protection Act 1986, and the proposed clearing may be at variance to the clearing Principle (b).

5. References

City of Cockburn (2010) Flora and Fauna Report and Additional Information for Henderson Waste Recovery Park Cell 7 Construction, City of Cockburn May 2010.

DEC (2010) Memo: CPS 3779/1 - Clearing Application for Lot 235 and 2, Henderson, City of Cockburn. Contaminated Sites Branch, Department of Environment and Conservation.

EPA (2000) Environmental protection of native vegetation in Western Australia. Clearing of native vegetation, with particular reference to the agricultural area. Position Statement No. 2. December 2000. Environmental Protection Authority, Western Australia.

EPA (2006) Guidance for the Assessment of Environmental Factors - Level of Assessment for Proposals Affecting Natural Areas Within the System 6 Region and Swan Coastal Plain Portion of the System 1 Region. Guidance Statement No 10. Environmental Protection Authority, Western Australia.

Heddle, 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. (2007) Adapted from: 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 04/06/2010).

6. Glossary

Term	Meaning
CALM	Department of Conservation and Land Management (now DEC)
DAFWA	Department of Agriculture and Food
DEC	Department of Environment and Conservation
DEP	Department of Environmental Protection (now DEC)
DoE	Department of Environment (now DEC)
DoW	Department of Water
DMP	Department of Mines and Petroleum (ex DoIR)
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)