Department of Environment and Conservation

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 2113/1

Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Urban Resources**

1.3. Property details

Property: LOT 101 ON DIAGRAM 84277 (House No. 1184 OLD BUNBURY WEST COOLUP 6214)
LOT 101 ON DIAGRAM 84277 (House No. 1184 OLD BUNBURY WEST COOLUP 6214)

Local Government Area: Shire Of Murray

Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
13.6		Mechanical Removal	Extractive Industry

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
Heddle Southern River Complex: Open woodland of Corymbia calophylla, Eucalyptus marginata and Banksia spp. with fringing woodland of E. rudis and Melaleuca rhaphiophylla along creek beds (Heddle et al. 1980). Beard Vegetation Association 1000: Mosaic; Medium forest; jarrah-marri / low woodland; banksia / low forest; tea tree (Shepherd 2006).	The proposal is to clear 13.6 hectares of native vegetation for the purpose of sand extraction. Vegetation in the northern and western portion of the applied area (approximately 8.6ha) is described by RPS (2007) as Allocasuarina fraseriana and Eucalyptus marginata open woodland with scattered Banksia menziesii over scattered Acacia pulchella over weed species, and as being in completely degraded condition (RPS 2007).	Completely Degraded: No longer intact; completely/almost completely without native species (Keighery 1994)	Vegetation clearing description based on a site inspection undertaken 14 November 2007 (TRIM Ref. DOC39677) and a flora and vegetation survey conducted over the whole of Lot 101 Old Bunbury Road by RPS on 25 June 2007. An additional rare flora search (Weston 2007) was conducted for RPS on 18 October 2007.
	Vegetation in the eastern portion of the applied area (approximately 3.3ha) is described by RPS (2007) as scattered A. fraseriana with E. marginata subsp. marginata open forest and Banksia attenuata low woodland over the occasional A. pulchella over weed species. Vegetation in this section is mostly in degraded condition.	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)	
	Vegetation in the south-eastern portion of the applied area (approximately 0.4ha) is	Excellent: Vegetation structure intact; disturbance affecting individual species,	

	described as RPS (2007) as Corymbia calophylla and E. marginata woodland over B. menziesii and B. attenuata low woodland over Macrozamia riedlei, Xanthorrhoea preissii and A. pulchella shrubland over Hibbertia hypericoides and weeds. Vegetation in this portion is considered to be in excellent condition.	weeds non-aggressive (Keighery 1994)
	Vegetation in the south-western portion of the applied area (approximately 1.3ha) is described as RPS (2007) as Corymbia calophylla and E. marginata woodland over B. menziesii and B. attenuata low woodland over Kunzea glabrescens, Macrozamia riedlei, Xanthorrhoea preissii and A. pulchella shrubland over Hibbertia hypericoides and weeds. Vegetation in this portion is considered to be in very good condition.	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)

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

During a flora survey RPS (2007) identified 58 flora species (including 13 weed species) to be present within the whole of Lot 101 Old Bunbury Road, which includes the area under application. The vegetation under application comprises Eucalyptus marginata/Corymbia calophylla woodland ranging in condition from completely degraded to excellent.

Although a portion of the vegetation under application is in excellent condition, it is limited to 0.4 hectares and is not likely to include rare flora. Given this, and the close proximity to a nature reserve, it is not considered likely that the vegetation under application comprises a high level of biodiversity.

Methodology

DEC site visit 14/11/07
RPS (2007)

(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

Within a 10km radius there are five recorded occurrences of the following significant fauna species:
- Peregrine Falcon (Falco peregrinus),
- Water rat (Hydromys chrysogaster),
- Western Ringtail Possum (Pseudocheirus occidentalis),
- Masked Owl (Tyto novaehollandiae novae-hollandiae),
- Chuditch (Dasyurus geoffroii),
- Baudin's Black Cockatoo (Calyptorhynchus baudinii).

The vegetation under application comprises Eucalyptus marginata/Corymbia calophylla woodland and is located on a sandy rise. It is therefore not considered likely to comprise suitable habitat for the Water Rat, although this species is likely to be present surrounding the nearby wetlands.

The vegetation under application comprises an open forest of Jarrah/Marri and Banksia woodland, and has the potential to be utilised by Black Cockatoos, which are dependent on Jarrah forests and Banksia woodland for feeding and nesting habitat.

In addition, a portion of the vegetation under application is considered to be in very good to excellent condition with an intact understorey that has the potential to be utilised by ground dwelling fauna such as the Quenda and the Chuditch.

The vegetation under application includes mature Eucalyptus trees with hollows that have the potential to be

utilised as habitat by Black Cockatoos and mammals such as the Western Ringtail Possum.

The vegetation under application forms part of a large (~450ha) vegetated remnant that is located on the Swan Coastal Plain on the eastern side of the Peel Harvey Estuary, which has been extensively cleared for agriculture. This remnant includes Nine Mile Lake Nature Reserve and several wetlands, including Conservation Category Wetlands, providing both wetland and upland habitats.

Although the majority of the vegetation under application is completely degraded, the mature trees on site may contain habitat hollows with the potential to be utilised by significant fauna. In addition, a 1.7 hectare portion is in very good to excellent condition and has the potential to provide habitat for a range of fauna species, and the vegetation under application is located within a large remnant that forms an ecological link to a nearby nature reserve. It is therefore considered that the vegetation under application may comprise a whole or part of significant habitat for indigenous fauna.

It is recommended that fauna management and revegetation conditions be imposed to mitigate the impact of clearing on local indigenous fauna.

Methodology DEC site visit 14/11/07
Department of the Environment and Water Resources (2007)
GIS Database: SAC Bio datasets accessed 7/11/07

(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**
Within the local area (5km radius) there are six known populations of the rare flora, being Drakaea elastica, Drakaea micrantha, Synaphea sp. Fairbridge Farm and Caladenia huegelii. The closest population of rare flora is that of D. elastica located approximately 670m from the applied area.

D. elastica and D. micrantha are found in white or grey sand in low-lying situations adjoining winter-wet swamps; and Synaphea sp. Fairbridge Farm is generally found in sand with lateritic pebbles near winter-wet flats, in low woodland with weedy grasses (Western Australia Herbarium 1998). It is therefore not considered likely that the vegetation under application, which is located on a sandy rise, would include suitable habitat for these species.

C. huegelii is generally found in grey or brown sand, clay loam (Western Australian Herbarium 1998) on low sandy rises in woodlands of Banksia attenuata and Eucalyptus marginata (DEC undated). The nearest population of this species is located 1.5km to the north within Nine Mile Lake Nature Reserve. The vegetation under application includes woodland of E. marginata and Corymbia calophylla in excellent condition, with an understorey that includes Banksia species, and is located on deep bleach grey Bassendean sands over sandy clay (State of Western Australia 2005).

During the flora survey in June 2007, and a subsequent targeted rare flora search in October (RPS 2007) no DRF or Priority flora species were observed within the area under application.

Given the distance to the nearest known population of rare flora, and that no rare flora were observed during the appropriately timed targeted search, it is not considered likely that the vegetation under application includes, or is necessary for the continued existence of rare flora.

Methodology DEC site visit 14/11/07
RPS (2007)
Western Australian Herbarium (1998-)
GIS Database: SAC Bio datasets accessed 7/11/07

(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**
Within the local area (5km radius) there are three known occurrences of Threatened Ecological Communities (TEC) located approximately 3.5km to the west of the applied area. These TEC have been identified as Floristic Community Types (FCT) 3b: Corymbia calophylla - Eucalyptus marginata woodlands on sandy clay soils of the southern Swan Coastal Plain; and FCT 10a - Shrublands on dry clay flats.

Soils within the applied area comprise deep bleached grey Bassendean sands (State of Western Australia 2005) and are therefore not considered likely to support the FCT 3b. In addition, although floristic sampling was not undertaken during the flora survey, RPS (2007) inferred the FCT as 21a: Central Banksia attenuata - Eucalyptus marginata woodlands, which is not listed as a TEC. Given this, and the distance to the nearest known TEC, it is therefore not considered likely that the vegetation under application comprises, or is necessary for the maintenance of a TEC.

Methodology DEC site visit 14/11/07
RPS (2007)
State of Western Australia (2005)
GIS Database: SAC Bio datasets accessed 7/11/07

(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 may be at variance to this Principle

The vegetation under application has been identified as 'Southern River Complex' as defined by Heddle et al. (1980), which has 19.8% of pre-European vegetation remaining (EPA 2006). The vegetation under application has also been identified as Beard association 1000, of which there is 25.7% of pre-European extent remaining (Shepherd 2006).

The State Government is committed to the National Objectives Targets for Biodiversity Conservation which includes a target that prevents clearance of ecological communities with an extent below 30% of that present pre-1750 (Commonwealth of Australia 2001).

The remaining ecological communities for both the identified vegetation complexes are well below the minimum 30% vegetation present pre-1750 target within the National Objectives for Biodiversity Conservation.

The vegetation remaining in the local area (10km radius) was calculated to be 22% of pre-European extent, however approximately half of this remaining vegetation is contained within DEC managed reserves associated with the Peel Harvey Estuary. This figure reflects that the area under application is located on the Swan Coastal Plain eastern side of the Peel Harvey Estuary, which has been historically extensively cleared for agriculture. All remnant vegetation in this area that is in good or better condition has been considered significant as part of the Swan Bio-plan: Eastern Estuary Environmental Assessment Project.

In addition, the area under application is located within the Swan Coastal Plain portion of the Shire of Murray, within which there is approximately 15% of pre-European extent remaining.

Although the majority of the vegetation under application is in degraded to completely degraded condition, 1.7 hectares of the vegetation under application is in very good to excellent condition. Given that the vegetation under application is located on the coastal plain east of the estuary, which has been extensively cleared and is part of the underrepresented Heddle and Beard vegetation types it is therefore considered that the vegetation in very good to excellent condition may be significant as a remnant.

Conditions requiring fencing and revegetation of the adjacent wetland, and revegetation post extraction are recommended to be imposed on a permit to mitigate the impacts of clearing.

	Pre-European (ha)		Current (ha)	Remaining %	% in reserves
Bioregion:					
Swan Coastal Plain**	1,501,456	571,758	38.1	15.9	
Local Government:					
- Shire of Murray*	181,526	98,552	54.3		
- Shire of Murray (Swan Coastal Plain)		75,400	12,000	~15.0	
Local Area (~10km radius)****	29,400	6500	~22.0	~7.0	
Vegetation communities:					
- Heddle Southern River Complex***		57,979	11,5.1	19.8	1.5
- Beard Association 1000**		99,841	25,683	25.7	7.3

* (Shepherd et al. 2001)
** (Shepherd 2006)
***(EPA 2006)
**** (Approximate figures)

Methodology Commonwealth of Australia (2001)
DEC site visit 14/11/07
EPA (2006)
Heddle et al. (1980)
Shepherd (2006)
GIS Databases:
Heddle Vegetation Complexes - DEP 21/06/95
NLWRA, Current Extent of Native Vegetation - DA 30/01/01

(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 area under application is located 50m to the east of a Resource Enhancement Wetland (REW) that has also been identified under the Environmental Protection (Swan Coastal Plain Lakes) Policy 1992. REWs are priority wetlands with the objective for management, restoration and protection towards improving their conservation value (Water and Rivers Commission 2001). There are also two Conservation Category Wetlands (CCW) located approximately 135m west and 140m south of the applied area.

During the site visit no wetland dependent vegetation was observed and the vegetation under application is located on a sandy rise.

DEC Wetlands Program (2008) advise that 50m is the minimum buffer recommended by the Department of Environment and Conservation (DEC).

Given that the vegetation under application is located outside the recommended minimum 50m buffer to the REW and EPP Lake, it is not considered likely that the vegetation under application is growing in, or in association with a wetland.

Methodology
DEC (2008)
DEC site visit 14/11/07
Water and Rivers Commission (2001)

(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 soils on site are part of the Bassendean Dune System and comprise B1 Phase soils, which are deep bleached grey sands sometimes with a pale yellow B horizon that have a very high risk of wind erosion and a moderate to low risk of acid sulphate soils (State of Western Australia 2005). RPS (2007) has identified the soils within the applied area to be Bassendean sand over Guildford Formation which is sand over sandy clay.

The area under application has a nil risk of salinity, however there is a moderate to low risk of acid sulphate soils. RPS (2007) advise that based on the soil characteristics assessed during the site drilling program, the soils proposed for excavation are not anticipated to be acid sulphate soils. It is therefore not considered likely that the proposed clearing would result in salinity or acid sulphate soils.

Given the very high risk of wind erosion associated with the soil type found on site, without appropriate ground cover, windbreaks or adequate dust suppression on exposed surfaces it is considered that the proposed clearing may result in soil wind erosion.

In addition, given that the proposed land use of area under application is a sand mine; the above mentioned issues may be addressed and managed through an extractive industries licence. Wind erosion is not considered likely to occur if the land clearing and sand extraction is completed in a progressive fashion over a period of time, and subsequent rehabilitation is completed. A condition requiring that the clearing to be staged with the mining activity is considered to reduce potential land degradation impacts.

Methodology
DEC site visit 14/11/07
RPS (2007)
State of Western Australia (2005)
GIS Databases:
Acid Sulphate Soil Risk Map, Swan Coastal Plain - DEC
Salinity Risk LM 25m - DOLA 00

(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**

Nine Mile Lake Nature Reserve is located 300m to the north of the applied area and Kooljerrenup Nature Reserve is located 3.5km to the west. There are also two Conservation Category Wetlands (CCW) located approximately 120m to the west and 140m to the south of the applied area.

Given the distance to the above conservation reserves, it is not considered likely that the proposed clearing would have a direct impact on their environmental values.

The vegetation under application forms part of a large (~450ha) vegetated remnant that includes Nine Mile Lake

Nature Reserve, and is located on the eastern side of the Peel Harvey Estuary, which has been extensively cleared for agriculture. This remnant provides an ecological linkage to facilitate the movement of fauna between Nine Mile Lake Nature Reserve to the north and the surrounding remnant vegetation.

Although the vegetation under application forms part of an ecological linkage between Nine Mile Lake Nature Reserve and surrounding vegetation, given the location of the applied area on the edge of the remnant, it is not considered likely that the proposed clearing of 13.6 hectares would restrict fauna movement to the reserve. The proposal is therefore not considered likely to be at variance to this Principle.

Methodology

DEC site visit 14/11/07
GIS Databases:
CALM Managed Lands and Waters - CALM 1/07/05
Geomorphic Wetlands (Management Categories), Swan Coastal Plain
Swan Coastal Plain South 20cm Orthomosaic - DLI06

(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 is not within a Public Drinking Water Source Area and there is a nil risk of salinity. There is a moderate to low risk of acid sulphate soils. RPS (2007) advise that based on the soil characteristics assessed during the site drilling program, the soils proposed for excavation are not anticipated to be acid sulphate soils. It is therefore not considered likely that the proposed clearing would cause deterioration in the quality of groundwater through salinity or acid sulphate soils.

Watercourses in the area include a Resource Enhancement Wetland and EPP Lake located 50m to the west, a Conservation Category Wetland located 135m to the west and the Coolup South Main Drain located 1.1km to the south. The sandy soils within the applied area are considered to have high infiltration rates (State of Western Australia 2005).

The soils on site have a high risk of phosphorus export and the proposed clearing will remove deep-rooted perennials that are important for the uptake of nutrients throughout the year. This may increase the loss of nutrients from the applied area through runoff and/or drainage into the nearby wetlands, which may contribute to eutrophication of these water bodies.

Given the high risk of phosphorus export associated with the identified soil types, it is considered that the proposed clearing of 13.6 hectares of deep-rooted perennials may cause a deterioration in the quality of surface water in the nearby wetlands.

The retention of deep rooted perennials within the Peel Harvey Catchment, and minimising activities likely to lead to nutrient loss within the catchment, must be considered at this level to ensure consistency with conservation objectives currently being finalised under the proposed 'EPA Water Quality Improvement Plan' for the Peel Harvey Coastal Catchment.

Methodology

DEC site visit 14/11/07
State of Western Australia (2005)
GIS Databases:
Acid Sulphate Soil Risk Map, Swan Coastal Plain - DEC
Hydrography, linear (hierarchy) - DOE 13/4/05
Geomorphic Wetlands (Management Categories), Swan Coastal Plain
Public Drinking Water Source Areas (PDWSAs) - DOW
Salinity Risk LM 25m - DOLA 00

(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 area under application is located approximately 35m east of a Resource Enhancement Wetland and EPP Lake, at an elevation of 12-25m. The nearest watercourse is Coolup South Main Drain located approximately 1.1km to the south. The deep bleached grey sands found within the applied area have a low risk of waterlogging (State of Western Australia 2005).

Given the low risk of water logging of the sandy soils found within the area under application, and the location of the site on a sandy rise, is not considered likely that the proposed clearing would cause or exacerbate the incidence of flooding.

Methodology

DEC site visit 14/11/07
State of Western Australia (2005)
GIS Databases:
Hydrography, linear (hierarchy)

Geomorphic Wetlands (Management Categories), Swan Coastal Plain
Topographic Contours, Statewide - DOLA 12/09/02

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

Comments

Lot 101 Old Bunbury Road is part of a Native Title Claim however, since it is privately owned the Native Title has been extinguished under the Native Title Act. Therefore the clearing is considered to be a secondary approval and not a future act under the Native Title Act 1993.

The land is zoned 'rural' under the Peel Region Scheme and Shire of Murray Town Planning Scheme No. 4 and is currently used for stock agistment (RPS 2007).

A submission (2007) was received advising of no objection to the proposed sand extraction on the condition that the adjacent wetland be fenced and protected.

The Shire of Murray has issued Planning Approval for the sand extraction activity (TRIM Ref. DOC56336).

In a submission, the Shire of Murray advised that it does not object to the proponent utilising the uncleared road reserve as an access route to the site. The Shire advises of the requirement relating to extractive industries for a 20m buffer to lot boundaries, and 40m to unmade road reserve. The Shire has concerns of potential hydrological impacts on the nearby Conservation Category Wetland and REW; that the site is potential habitat for a number of fauna species; and is part of a vegetation complex that is under-represented and is a priority for retention (TRIM Ref. DOC39933).

DEC Wetlands Program (2008) advise that 'the proposed extractive industry will significantly alter the landform of Lot 101 which may impact surface flows and drainage patterns' and 'wetlands adjacent to the application area may be hydrologically connected therefore impacts may occur at wetlands some distance from the site'. This includes the nearby Conservation Category Wetlands.

The Department of Water (DoW) (2008) has advised that a water licence for the proposal is being reviewed and will be issued subject to the applicant being able to demonstrate legal access to the property. The Department advised that the allocation of water for this proposal has been set aside until such time as the process can be finalised.

The area under application is located within the Environmental Protection (Peel Inlet-Harvey Estuary) Policy 1992, an approved policy that aims to limit nutrient loads entering the Peel Harvey Estuary due to changes in land use within the catchment (e.g. cattle grazing and horticulture). Although the proposed extractive industry may be considered a change in land use, the activity of the extractive industry is not considered likely to significantly increase the nutrient export from the site into the Peel Harvey Estuary.

Lot 101 Old Bunbury Road was considered by Main Roads as a potential sand resource for the Perth to Bunbury Highway, however due to advice from the DEC regarding the value of the vegetation the property was not utilised.

The proponent has committed to fencing and revegetating the wetland area and buffer, and revegetating the site post extraction.

Methodology

DEC (2008)
Department of Water (2008)
RPS (2007)
Submission (2007)
GIS Database: Native Title Claims - DLI

4. Assessor's comments

Comment

The assessable criteria have been addressed and the proposed clearing may be at variance to Principles (b), (e), (g) and (i).

5. References

Commonwealth of Australia (2001) National Targets and Objectives for Biodiversity Conservation 2001-2005, AGPS, Canberra.

DEC (2008) Wetland advice for land clearing application CPS 2113/1. Advice to Assessing Officer, Native Vegetation Assessment Branch, Department of Environment and Conservation (DEC), received 15/2/08. Wetlands Program, Department of Environment and Conservation, Western Australia. DOC46153.

Department of the Environment and Water Resources (2007). Pseudocheirus occidentalis in Species Profile and Threats Database, Department of the Environment and Water Resources, Canberra. Available from: http://www.environment.gov.au/sprat. Accessed 2007-11-08@15:54:26.

Department of Water (2008) Advice in relation to the water licence for Lot 101 Old Bunbury Rd, West Coolup. Received 1 July

2008 (TRIM Ref. DOC56631).
EPA (2006) Guidance for the Assessment of Environmental Factors -level of assessment of proposals affecting natural areas within the System 6 region and Swan Coastal Plain portion of the System 1 Region. Report by the EPA under the Environmental Protection Act 1986. No 10 WA.
Government of Western Australia (2000) Bush Forever Volumes 1 and 2. Western Australian Planning Commission, Perth WA.
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.
Roberts Day Town Planning and Design (2007) Sand excavation program - Lot 101 Old Bunbury Road, Kooljerrenup, Shire of Murray.
RPS (2007) Environmental Assessment - Proposed sand extraction Lot 101 Old Bunbury Road, Kooljerrenup.
RPS (2007a) Level 1 Flora and Vegetation Survey - Lot 101 Old Bunbury Road, Kooljerrenup.
Shepherd (2006) 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. Includes subsequent updates for 2006 from Vegetation Extent dataset ANZWA1050000124.
Shepherd, D.P., Beeston, G.R. and Hopkins, A.J.M. (2001) Native Vegetation in Western Australia, Extent, Type and Status. Resource Management Technical Report 249. Department of Agriculture, Western Australia.
Site Visit 14/11/07, Department of Environment and Conservation (DEC), Western Australia. TRIM ref DOC39677.
State of Western Australia (2005) Agmaps Land Manager CD Rom.
Submission (2007) Direct Interest Submission for clearing application CPS 2113/1 (TRIM Ref. DOC39248).
Western Australian Herbarium (1998-). FloraBase - The Western Australian Flora. Department of Environment and Conservation. http://florabase.calm.wa.gov.au/ Accessed on Wednesday 7 November 2007
Weston, A. (2008) Rare Flora Search, Lot 101 Old Bunbury Road, Kooljerrenup, Shire of Murray. Prepared for RPS Group. 6 December 2007 (TRIM Ref. DOC41222).

6. 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)