Department of Environment and Conservation

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 1450/1

Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Perth Field Rifle Club**

1.3. Property details

Property: SWAN LOCATION 5607 (Lot No. 5607 COOPER MELALEUCA 6065)

Local Government Area: City Of Wanneroo

Colloquial name: State Forest No. 65

1.4. Application

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

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: 949 - Low woodland; banksia (Shepherd 2006). Heddle Vegetation Complex: Bassendean Complex North - Vegetation ranges from a low open forest and low open woodland of Banksia species E. todtiana to low woodland of Melaleuca species and sedgelands which occupy the moister sites (Heddle et al. 1980).	There are two areas of vegetation under application for the proposed extension of the rifle club. Area 1 (~1.0 ha) is located east of the club house at the southern end of the existing Perth Rifle range and Area 2 (~0.5ha) is located immediately north of the existing rifle range shooting area. Both of these areas are located within State Forest No. 65, within an area leased to the Perth Field Rifle Club. The two areas of vegetation under application are also located within Bush Forever Site 380 (Rosella Road Bushland). The first area of vegetation under application east of the clubhouse (~1.06ha) comprised of Banksia menziesii and Banksia attenuata open woodland with an understorey of low lying shrubs such as Xanthorrhoea preissii, Petrophile linearis and Beaufortia elegans, and herb species including Patersonia occidentalis and Anigozanthos humilis. This area of vegetation had been impacted by a recent fire (within the previous 12 months) and strong regeneration was evident across the site. Given the	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	The condition and vegetation description was assessed during a site inspection undertaken 13/11/2006 (TRIM Ref. DOC23212).

amount of regeneration and level of biological diversity, this area was assessed as being in a very good condition.

The second area at the northern end of the current firing area (~0.51ha) comprised of open Banksia woodland with an understorey comprising of Xanthorrhoea preisii, Beaufortia elegans, Dampiera linearis, Lechenaultia floribunda, Tripterococcus brunonis and Stylidium carnosum. This area of vegetation had also been impacted by a fire some 18 months prior to the site inspection. The second area displayed a higher level of biological diversity than the first area, most likely due to the longer recovery time in this area since the most recent fire. Given the amount of regeneration and level of biological diversity, this area was also assessed as being in very good condition.

Bromus diandrus was the only species of weed identified during the site inspection. This weed species was present at both sites.

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 may be at variance to this Principle

The vegetation under application comprises of two areas of ~1.06ha and ~0.51ha within an area zoned for recreation within State Forest 65 (>10,000ha) and also is within Bush Forever Site 380 (Rosella Road Bushland, Bullsbrook, 8001ha) (Government of Western Australia 2000).

Both areas of vegetation under application comprise open Banksia woodland with an understorey of low shrubs and herbs. Both areas have been impacted by fire, with the first area (~1.06ha) impacted by fire within the previous 12 month period and the second area to the north (0.51 ha) impacted within the previous 18 month period. As such, the vegetation under application has a lower level of biological diversity than vegetation surrounding the area within the remaining State Forest. The second area of vegetation comprised a higher number of species, which may be attributable the longer recovery period since the most recent fire (Site Inspection 2006).

As a result of the recent fire disturbance, the full complement of species located within the areas under application may not have been visible during the site inspection (2006). In addition, fauna species previously utilising the vegetation are unlikely to be found within the areas under application, given the current lack of suitable habitat and vegetation cover.

Overall the areas of vegetation under application showed good regeneration following the fire with minimal weed invasion present (Site Inspection 2006). Given that the areas of vegetation are located within areas protected for conservation, the vegetation is considered to have a high conservation value and may be at variance to this Principle.

Methodology

References:
- Government of Western Australia (2000)
- Site Inspection (2006)

GIS Databases:
- Bushforever - MFP 07/01
- CALM Managed Lands and Waters - CALM 01/08/04

- Swan Coastal Plain North 20cm Orthomosaic - DLI06

(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

The vegetation under application comprises of two areas of ~1.06ha and ~0.51ha within an area zoned for recreation within State Forest 65 (>10,000 ha) and also within Bush Forever Site 380 (Rosella Road Bushland, Bullsbrook, 8001 ha) (Government of Western Australia 2000).

Both areas of vegetation under application comprise of Banksia open woodland with an understorey of low shrubs and herbs. Both areas have been impacted by fire within the last 18 months, and show good regeneration across the site (Site Inspection 2006).

Whilst there are no fauna species of significance recorded within a 5 km radius of the area under application (local area), the areas of vegetation are located within a Bush Forever Site and the vegetation is considered to have a high conservation value. In addition, the areas of vegetation under application are likely to support local indigenous fauna communities in a mature post-disturbance state.

Notwithstanding, the areas under application are immediately adjacent to a cleared area that is subject to frequent disturbance (live firing range). Given this, the size of the areas under application (~1.06ha and 0.51ha), and their location within a largely vegetated State Forest and conservation reserve (~10,000 ha), it is unlikely that fauna preferentially use these areas. Therefore the proposed clearing is considered not likely to be at variance to this Principle.

Methodology

References:
- Government of Western Australia (2000)
- Site Inspection (2006)

GIS Databases:
- Bushforever - MFP 07/01
- CALM Managed Lands and Waters - CALM 01/08/04
- SAC Bio dataset 13/07/2007
- Swan Coastal Plain North 20cm Orthomosaic - DLI06

(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 eight mapped occurrences of two Declared Rare Flora (DRF) species and two mapped occurrences of a Priority Flora species (Calectasia sp. Pinjar) within a 10km radius of the vegetation under application. The closest mapped occurrence of DRF is Eucalyptus argutifolia located ~6.9kms from the vegetation under application. The closest mapped occurrence of Caladenia huegelii (Rare) is ~9kms SSE from the vegetation under application.

Eucalyptus argutifolia (DRF) is known to occur within different Beard and Heddle vegetation communities and soil types to the vegetation under application. Therefore it is not considered likely to occur within the areas of vegetation under application.

Caladenia huegelii (DRF) has been recorded within the same soil type and vegetation associations as the vegetation under application approximately 9km SSE of the area under application. However, advice from the DEC District Manager and Conservation Officer indicated that this species is not likely to be present in the area under application and a flora survey is not considered necessary (DEC 2007).

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

Methodology

Reference:
- DEC (2007)

GIS Databases:
- DEC SAC Bio Datasets 25/05/2007
- Heddle Vegetation Complexes - DEP 21/06/95
- Pre-European Vegetation
- Soils, Statewide - DA 11/99

(d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.

Comments

Proposal is not likely to be at variance to this Principle

There are four mapped occurrences of one Threatened Ecological Community (TEC) within a 10km radius of the vegetation under application. The TEC is Floristic Community Type 26a described as 'Melaleuca huegelii-Melaleuca systena shrublands on limestone ridges' (Gibson et al. 1994). The closest occurrence is located ~

7.4kms from the vegetation under application.

Floristic Community Type 26a is known to occur on limestone ridges within the Spearwood Dune system (Gibson et al. 1994). Given the geology of the vegetation under application (leached sands) and landform (within the Bassendean Dune system), the vegetation under application is not considered likely to comprise the whole, or part of, a Floristic Community Type 26a. Therefore, the proposed clearing is not likely to be at variance to this Principle.

Methodology Reference:
- Gibson et al. (1994)

GIS Databases:
- Bushforever - MFP 07/01
- CALM Managed Lands and Waters - CALM 01/08/04
- DEC SAC Bio Datasets 25/05/2007
- Soils, Statewide - DA 11/99

(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 comprises of Beard Vegetation Association 949 (Hopkins et al. 2001) and Heddle Vegetation Complex: Bassendean North (Heddle et al. 1980) of which approximately 57.0% (124,461ha) and 72.0% (53,384ha) Pre-European vegetation extent remain respectively (Shepherd 2006, Heddle et al. 1980).

The vegetation under application comprises of Banksia menziesii-Banksia attenuata open woodland (Site Inspection 2006) and is considered to be representative of both Beard Vegetation Association 949 and Heddle Vegetation Complex Bassendean North

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

In addition, the applied area is considered to be within a constrained area. The EPA (2006) recognises the Perth Metropolitan Region as a 'constrained area', providing for the reduction of vegetation complexes to a minimum of 10% of the Pre-European extent.

Both vegetation communities associated with the area of vegetation under application are above the State Government's 30% biodiversity target and the EPA's minimum of 10% in the constrained area. Given this and the relatively small area proposed to be cleared (~1.57ha), the vegetation under application is not considered to be a significant remnant in an extensively cleared area.

	Pre-European (ha)	Current extent (ha)	Remaining (%)	% In reserves/CALM managed land
Swan Coastal Plain*	1,501,457	571,759	38.1	
City of Swan**	103,944	54,792	52.7	
Beard Vegetation Association: 949*	218,204	124,461	57.0	49.3
Heddle Complex: Bassendean North	74,147	53,384	72.0	27.5

* (Shepherd 2006)
** (Del Marco et al. 2004)

Methodology References:
- Commonwealth of Australia (2001)
- Del Marco et al. (2004)
- EPA (2006)
- Hopkins et al. (2001)
- Shepherd (2006)
- Site Inspection (2006)

GIS Databases:
- Bushforever - MFP 07/01
- CALM Managed Lands and Waters - CALM 01/08/04
- Heddle Vegetation Complexes - DEP 21/06/95

- Interim Biogeographic Regionalisation of Australia - EA 18/10/00
- 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

There are no wetlands or other watercourses mapped within the two areas of vegetation under application.

There are several wetlands mapped within the local area (5km radius), the closest being a Conservation Category Wetland (CCW) located ~280m SE from the southern area of vegetation under application. The Water and Rivers Commission (2001) recommend that a buffer of 200m be retained around CCW to protect the values and functions of the wetland. The closest watercourse is a minor perennial watercourse, which is located ~1km from the northern area of vegetation under application at its closest point. In addition, both areas of vegetation resemble upland vegetation communities (Site Inspection 2006).

Given the distance to nearby watercourses and wetlands and the vegetation description, the vegetation under application is not considered to be growing in, or in association with this watercourse.

Methodology

References:
- Site Inspection (2006)
- Water and Rivers Commission (2001)

GIS Databases:
- EPP, Lakes - DEP 28/07/03
- Geomorphic wetlands (Mgmt categories) - Swan Coastal Plain - DOE 08/03/05
- Hydrography, linear - DOE 01/02/04
- Topographic Contours, Statewide - DOLA 12/09/02

(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 vegetation under application is located within the Bassendean Dune system and associated with a subdued dune-swale terrain with chief soils of leached sands (Northcote et al. 1960-68). The areas of vegetation under application are also associated with a Class 2 (moderate to low) Acid Sulphate Soil risk. This Class is defined as having a moderate to low risk of ASS or potential ASS occurring within three metres of the soil surface.

Soils within the Bassendean Dune system are known to be susceptible to wind erosion and have a low Phosphorus Retention Index (PRI). However, given the small size of the areas applied to be cleared (1.06ha and 0.51ha) and their location within the extensively vegetated State Forest No. 65 (~10,000 ha), the proposed clearing is not considered likely to cause appreciable land degradation. DAFWA (2006) concur that the proposed clearing is unlikely to cause appreciable land degradation.

Methodology

References:
- DAFWA (2006)
- Northcote et al. (1960-68)

GIS Databases:
- Acid Sulphate Soil risk map, SCP - DOE01/02/04
- Soils, Statewide - DA 11/99
- Swan Coastal Plain North 20cm Orthomosaic - DLI06

(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 at variance to this Principle

The vegetation under application comprises of two areas of ~1.06ha and ~0.51ha within an area used for recreation within State Forest 65 (>10000 ha). The two areas are also located within Bush Forever Site 380 (Rosella Road Bushland, Bullsbrook, 8001 ha) (Government of Western Australia 2000).

Both areas of vegetation under application comprise of Banksia woodland with an understorey of low shrubs and herbs and have been impacted by fire within the last 18 months, showing good regeneration across the site (Site Inspection 2006).

Advice from Bush Forever (2006) advises that as the subject land is State Forest and managed by DEC, the Bush Forever office would support DEC's recommendations. Further, the proponents operate under a current lease between the DEC and the City of Wanneroo (DEC 2007a).

Notwithstanding, the proposed clearing for the rifle range extension will directly impact on vegetation within the Bush Forever site, including loss of habitat and increased disturbance. In addition, the proposed clearing is

likely to lead to indirect impacts such as edge effects. Therefore, the proposed clearing is considered to be at variance to this Principle.

Methodology

References:
- Bush Forever (2006)
- DEC (2007a)
- Government of Western Australia (2000)
- Site Inspection (2006)

GIS Databases:
- Bushforever - MFP 07/01
- CALM Managed Lands and Waters - CALM 01/08/04

(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 vegetation under application is located within the area protected under the Environmental Protection (Gnangara Mound Crown Land) Policy 1992 (Western Australian Government 1992). The Policy states that the clearing, destruction or removal of native vegetation on or from the policy area can cause the levels and quality of groundwater on or under the policy area to be reduced or degraded.

The areas of vegetation under application are also within the Gnangara Underground Water Pollution Control Area (UWPCA), and are located within the Priority 1 Public Drinking Water Source Area (PDWSA).

Given the relatively small area proposed to be cleared (~1.06ha and ~0.51ha), extensive vegetation within the surrounding State Forest No. 65 (~10,000ha) and distance to nearby wetlands and watercourses, the proposed clearing is not considered likely to cause deterioration in the quality of surface or underground water.

Methodology

Reference:
- Western Australian Government (1992)

GIS Databases:
- CALM Managed Lands and Waters - CALM 01/08/04
- EPP, Areas - DEP 06/95
- Evaporation Isopleths - BOM 09/98
- Geomorphic wetlands (Mgmt categories) - Swan Coastal Plain - DOE 08/03/05
- Hydrography, linear - DOE 01/02/04
- Public Drinking Water Source Areas (PDWSAs) - DOE 07/02/06
- Rainfall, Mean Annual - BOM 30/09/01
- Swan Coastal Plain North 20cm Orthomosaic - DLI06

(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 vegetation under application is associated with a subdued dune-swale terrain with chief soils of leached sands (Northcote et al. 1960-68), and is located within a larger remnant of vegetation within State Forest 65 (>10000 ha).

Given the size of the areas proposed to be cleared (~1.06ha and ~0.51ha) location within an extensively vegetated area (State Forest No. 65 being >10000ha) and depth to groundwater (49-50m AHD) the proposed clearing is not considered likely to cause, or exacerbate, the incidence or intensity of flooding.

Methodology

Reference:
- Northcote et al. (1960-68)

GIS Databases:
- CALM Managed Lands and Waters - CALM 01/08/04
- Bushforever - MFP 07/01
- Groundwater Contours, Minimum - DOW
- Soils, Statewide - DA 11/99
- Swan Coastal Plain North 20cm Orthomosaic - DLI06

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

Comments

The vegetation under application is located within the area protected under the Environmental Protection (Gnangara Mound Crown Land) Policy 1992 (Western Australian Government 1992). The purpose of this policy includes the protection of native vegetation in the policy area. The Environmental Protection (Gnangara Mound Crown Land) Policy 1992 states that a 'person shall not clear, destroy or remove any vegetation on or from the policy area unless the person is authorised under the Act to do so and is acting in accordance with the

authorisation' (Western Australian Government 1992), therefore the proposal was referred to the Environmental Protection Authority (EPA) (TRIM Ref. DOC34044). The EPA (2007) subsequently set the level of assessment at 'Not Assessed - Managed under Part V of the EP Act (Clearing)', which under Clause 10(b) is considered authorisation for this Policy. This does not negate the requirement for a clearing permit.

As the activities of the proposal are within a DEC-managed reserve (State Forest 65), a current lease agreement exists between the Department and the City of Wanneroo, with the applicant organisation a sub-lessee under the lease agreement. CALM (2006) previously advised the applicant that the Department did not encourage further development on the Pinjar lease. However in this case the Perth Field Rifle Club had successfully demonstrated the need to expand facilities to accommodate increased numbers and maintain safety standards. Notwithstanding, Item 7.10 of the Lease Agreement (1490/97) between the DEC and the City of Wanneroo states that the "Tenant must immediately notify the Landlord if the Tenant becomes aware of anything which causes or could cause pollution (as defined in the EP Act 1986) on or affecting the leased area", with the Tenant being the applicant and the Landlord the DEC. This lease is valid until 31 May 2013 (DEC 2007a). Approval from the Department is still required under the lease agreement with the City of Wanneroo before the development can occur.

The areas under application are located within the Priority 1 Public Drinking Water Source Area (PDWSA). Under the Water Quality Protection Note: Land use Compatibility in Public Drinking Water Source Areas (Department of Environment 2004), recreation and rifle ranges are not considered to be compatible with the protection of groundwater quality. Advice from the Department of Water (2007) advises that the Department does not prefer that rifle ranges be established or expanded in P1 PDWS Areas as per the current Land Use Compatibility Table (LUCT). The concerns are about increased contamination risk from patrons use of onsite areas, risks for any stored fuels or chemicals held on site, potential for metals leaching from the banks that stop the bullets, and the attraction of the area to non-gun club people who may cause harm when the site is unsupervised.

The areas of vegetation under application are also within the Gnangara Underground Water Pollution Control Area (UWPCA) and are therefore also subject to the Gnangara Land Use and Water Management Strategy (GLUWMS) (Western Australian Planning Commission 2001). Under this Strategy, rifle ranges are considered to be 'conditional' in Priority 1 areas, and would be considered with conditions addressing the adoption of best management practice for waste management and disposal, carpark design, and retrieval and removal of spent projectiles. The strategy also recommends that all new development proposals must be compatible with Priority 1 objectives.

Formal advice from the Department of Water (2007a) stated that in accordance with the available water quality protection policies and the information presently available, the Department of Water does not support the proposal to expand the rifle range. The applicant subsequently responded to the issues raised, however the Department of Water (2008) advises that the proposed extension of the rifle club is still not supported within the Priority 1 Gnangara UWPCA as the proposed premises and clearing approval is not compatible with Statement of Planning Policy 2.2. As such, the proposal is viewed by the Department of Water as an 'increased risk to drinking water supply, until such time a detailed environmental assessment of the proposed facility demonstrates otherwise'.

Furthermore, under the GLUWMS and Planning Bulletin 25: Development Control under Metropolitan Region Scheme (Western Australian Planning Commission 1997) given the nature of the proposal and the application area within a zoned Parks and Recreation and Priority 1 area, approval is required by the Western Australian Planning Commission (WAPC) prior to development.

The Bush Forever Office (2006) advise that as the subject land is State Forest and managed by DEC, the Office would support DEC's recommendation.

The areas of vegetation under application are not associated with any Aboriginal Sites of Significance or Native Title Claims.

There is no other RIWI Act Licence or EP Act Licence that will affect the areas applied to be cleared.

Methodology

References:

- Bush Forever Office (2006)
- CALM (2006)
- DEC (2007a)
- Department of Water (2007)
- Department of Water (2007a)
- Department of Water (2008)
- Department of Environment (2004)
- EPA (2007)
- Western Australian Government (1992)
- Western Australian Planning Commission (1997)
- Western Australian Planning Commission (2001)

GIS Database:

- Aboriginal Sites of Significance

- EPP, Areas - DEP 06/95
- Public Drinking Water Source Areas (PDWSAs) - DOE 07/02/06

4. Assessor's comments

Comment

The clearing application has been assessed against the clearing principles, planning instruments and other matters in accordance with s51O of the Environmental Protection Act 1986. The clearing as proposed may be at variance to Principles (a) and (h), and is not likely to be at variance to the remaining Principles.

5. References

Bush Forever Office (2006) Advice from Bush Forever Office, Department for Planning and Infrastructure in relation to the proposed clearing (TRIM Ref. DOC12108).

CALM (2006) Letter to the applicant regarding the proposed clearing and development in State Forest No. 65. Department of Conservation and Land Management (TRIM Ref. DOC10081).

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

DAFWA (2006) Land degradation assessment report. Office of the Commissioner of Soil and Land Conservation, Department of Agriculture and Food Western Australia (DoE TRIM Ref. DOC7447).

DEC (2007) Advice from District Manager regarding requirement for a flora survey for Caladenia huegelii for CPS 1450/1, Department of Environment and Conservation, Western Australia (TRIM Ref. DOC29508).

DEC (2007a) Advice from Property Officer in relation to the lease between the Department of Environment and Conservation and the City of Wanneroo. Department of Environment and Conservation, Western Australia (TRIM Ref. DOC29531).

Del Marco, A., Miles, C., Taylor, R., Clarke, K. and Savage, K. (2004) Local Government Biodiversity Planning Guidelines for the Perth Metropolitan Region - Edition 1. Western Australian Local Government Association, West Perth.

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Department of Natural Resources and Environment (2002) Biodiversity Action Planning. Action planning for native biodiversity at multiple scales; catchment bioregional, landscape, local. Department of Natural Resources and Environment, Victoria.

Department of Water (2007) Advice from the Water Source Protection Branch in relation to the proposed clearing (TRIM Ref. DOC19742).

Department of Water (2007a) Advice from the Water Source Protection Branch in relation to the proposed clearing. Received 14/12/2007 (TRIM Ref. DOC42027).

Department of Water (2008) Review of previous advice from Water Source Protection Branch provided in relation to clearing permit application CPS 1450/1 (TRIM Ref. DOC52496).

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.

EPA (2007) Correspondence from the Environmental Protection Authority regarding the decision on the referred proposal. Environmental Protection Authority, Western Australia (TRIM Ref. DOC37299).

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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.

Hopkins, A.J.M., Beeston, G.R. and Harvey J.M. (2001) A database on the vegetation of Western Australia. Stage 1. CALMScience after J. S. Beard, late 1960's to early 1980's Vegetation Survey of Western Australia, UWA Press.

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. (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 Inspection (2006) (TRIM Ref. DOC23212).

Water and Rivers Commission (2001) Position Statement: Wetlands.

Western Australian Government (1992) Environmental Protection (Gnangara Mound Crown Land) Policy 1992. Western Australian Government Gazette, 24 December , 1992, pp 6287-93.

Western Australian Planning Commission (1997) Planning Bulletin 25. Development Control under Metropolitan Region Scheme. November 1997. Western Australian Planning Commission.

Western Australian Planning Commission (2001) Gnangara Land Use and Water Management Strategy, Western Australian Planning Commission.

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)