



1. Application details

1.1. Permit application details

Permit application No.: 2498/1
 Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: City of Swan

1.3. Property details

Property: DOLA_LAND_DESCRIPTION
 Local Government Area: LGA
 Colloquial name: COLLOQUIAL_NAME

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
0.264		Mechanical Removal	Road construction or maintenance

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
<p>Beard Vegetation Association: 3 - Medium forest, jarrah-marri; 1020 - Mosaic: Medium forest; jarrah-marri / Medium woodland, marri-wandoo (Shepherd et al. 2001).</p> <p>Heddlle Vegetation Complex: Mogumber Complex - South, Open woodland of Eucalyptus calophylla with some admixture of E. marginata and a second storey of E. tottiana - Banksia attenuata - B. menziesii - B. ilicifolia (Heddlle et al. 1980).</p>	<p>The proposed clearing consists of 0.264 ha of road verge vegetation along Jenkins Road, Bullsbrook for road widening. The area is environmentally sensitive (ESA) due to the southern extent of the proposal being in Bush Forever site 291 and the eastern road verge under application bordering Bush Forever site 291.</p> <p>Vegetation within the area under application can be described as Jarrah/Marri Open Forest over Banksia grandis, B. menziesii and B. sessilis with a species rich understorey of native grasses, herbs, rushes and shrubs.</p> <p>Native species present within the area under application include Eucalyptus marginata, Corymbia calophylla, Banksia menziesii, Banksia grandis, Banksia sessilis, Nuytsia floribunda, Acacia lasiocarpa, Calothamnus quadrifidus, Xanthorrhoea preissii, Hibbertia hypericoides, Daviesia nudiflora, Hakea ruscifolia, Banksia nivea, Stirlingia latifolia, Bossiaea eriocarpa, Scaevola canescens, Lomandra preissii, Hypocalymma sp., Anigozanthos sp., Leucopogon sp.,</p>	<p>Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery 1994)</p>	<p>Description and condition of the vegetation under application was determined from the Site Inspection (2008). Vegetation ranges in condition from 'degraded' to 'excellent' with an average condition rating of 'very good'.</p>

Conospermum sp., Mesomelaena sp. and Dasypogon sp. Weed species present within the area under application include Wild Gladiolus (*Gladiolus caryophyllaceus*) and Perennial Veldt Grass (*Ehrharta calycina*) at low density and restricted to vegetation in 'good' condition and to a lesser extent 'very good' condition.

The area under application ranges in condition from 'degraded' to 'excellent'.

Approximately 0.075 ha of the area under application is in 'excellent' condition. These areas are located at the southern extent of the area under application and extend north along the western road verge.

As above

Approximately 0.16 ha of the area under application is in 'very good' condition. These areas are located at the northern extent of the area under application and extend south along the eastern and western road verges to within 230m of the southern bend in Jenkins Road.

Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)

As above

As above

Approximately 0.017 ha of the area under application is in 'good' condition. This area is located along the eastern road verge approximately 200m from the northern extent of the area under application.

Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)

As above

As above

Approximately 0.012 ha of the area under application is in 'degraded' condition. This area is located within the area under application at the southern bend along the eastern road verge.

Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)

As above

3. Assessment of application against clearing principles

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

Comments

Proposal is at variance to this Principle

During Site Inspection (2008) the area under application was observed to support Jarrah/Marri Open Forest over *Banksia grandis*, *B. menziesii* and *B. sessilis* with a species rich understorey of native grasses, herbs, rushes and shrubs. The area is considered to support high floristic diversity with vegetation ranging in condition from 'excellent' to 'degraded' with the majority (approximately 0.235 ha) in 'excellent' or 'very good' condition. Weeds such as Wild Gladiolus (*Gladiolus caryophyllaceus*) and Perennial Veldt Grass (*Ehrharta calycina*) are located within the area under application but are at low density and mainly restricted to areas in 'good' condition.

The area under application is well connected to large tracts of surrounding undisturbed bushland. The Government of Western Australia (2000) has mapped the area under application as forming part of a contiguous or largely contiguous corridor of bushland / wetland areas. This corridor forms part of a network of conservation areas of regional significance within the Perth metropolitan area.

Bush Forever (2008) state that the area under application supports bushland with high conservation values and is of regional significance.

Despite the size of the area under application (being 0.264 ha), the thin linear nature of the proposed clearing

and that habitat such as hollows were not observed within the area under application, the area is considered to support high quality habitat for indigenous fauna as it forms part of a regionally significant vegetation corridor.

Given the area under application supports high floristic diversity and forms part of an ecologically significant corridor, it is considered that the vegetation under application comprises a high level of biological diversity and therefore is considered to be at variance to this principle.

- Methodology** **References:**
- Site Inspection (2008)
 - Government of Western Australia (2000)
 - Bush Forever (2008)
- GIS Databases:**
- Swan Coastal Plain North 40cm Orthomosaic - DLI 05
 - Bushforever

(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

Seven indigenous fauna species of conservation significance have been recorded within a 10 km radius of the area under application. These include Schedule 1 species:

- Chuditch (*Dasyurus geoffroii*) (Vulnerable)
- Black-flanked Rock Wallaby (*Petrogale lateralis* subsp. *lateralis*) (Vulnerable)
- Brush-tailed Phascogale (*Phascogale tapoatafa* sp.) (Vulnerable)
- Native bee (*Leioproctus douglasiellus*) (Endangered)

and Priority species:

- Native spider (*Arbanitis inornatus*) (P1)
- Native bee (*Leioproctus contrarius*) (P3)
- South West Carpet Python (*Morelia spilota* subsp. *imbricata*) (P4)

During Site Inspection (2008) the area under application was observed to support Jarrah/Marri Open Forest over *Banksia grandis*, *B. menziesii* and *B. sessilis* with a species rich understorey of native grasses, herbs, rushes and shrubs. Vegetation ranges in condition from 'excellent' to 'degraded' with the majority (approximately 0.235 ha) in 'excellent' or 'very good' condition.

The area under application was observed to support habitat for the Chuditch with the area supporting intact woodland vegetation and being surrounded by large tracts of relatively undisturbed native vegetation which likely supports hollows and den sites (Site Inspection 2008; DEC 2006a). Suitable habitat was observed for the South West Carpet Python with the area under application supporting dense understorey vegetation (Site Inspection 2008; DEC 2006b). Suitable habitat was observed for the native spider *Arbanitis inornatus* with the area under application supporting the same soil and vegetation type as present within a known occurrence of this species. Suitable habitat was also observed for the native bee *Leioproctus contrarius* with the area under application supporting favoured food plants for this species.

Although the area may provide suitable habitat for these species, given the size of the area under application, being 0.264 ha, the area is unlikely to be significant habitat.

The area under application was observed to support dense ground cover vegetation likely making the area unsuitable for the Brush-tailed Phascogale (Site Inspection 2008; DEC 2006c). The lack of granite outcrops, sandstone cliffs, scree slopes and coastal limestone cliffs within or near to the area under application likely renders the area unsuitable for Black-flanked Rock Wallaby (Site Inspection 2008; DEC 2006d). The absence of specific native plants required by the native bee *Leioproctus douglasiellus* makes the area unlikely to support this species.

Given that the area under application is unlikely to support significant habitat for indigenous fauna clearing is not considered likely to be at variance to this principle.

- Methodology** **References:**
- Site Inspection (2008)
 - DEC (2006a)
 - DEC (2006b)
 - DEC (2006c)
 - DEC (2006d)
 - DEC fauna habitat notes. February 2007
- GIS Databases:**
- SAC Bio datasets 05/06/2008
 - Swan Coastal Plain North 40cm Orthomosaic - DLI 0

(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.

Comments Proposal may be at variance to this Principle

Eight species of rare flora, one species of priority 1 flora, six species of priority 2 flora, fifteen species of priority 3 flora and nine species of priority 4 flora are located within a 10 km radius of the area under application with the nearest species of rare flora, *Acacia anomala*, being located approximately 330m south and the nearest priority flora, *Adenanthos cygnorum* subsp. *chamaephyton*, being located approximately 560m north of the area under application.

During Site Inspection (2008) the area under application was observed to support Jarrah/Marri Open Forest over *Banksia grandis*, *B. menziesii* and *B. sessilis* with a species rich understorey of native grasses, herbs, rushes and shrubs. Vegetation observed within the area under application ranges in condition from 'degraded' to 'excellent' with the majority (approximately 0.235 ha) in 'excellent' or 'very good' condition. Soils within the area under application were observed to range from grey sands with small amounts of laterite at the northern end of the area under application to pale yellow sands with small amounts of laterite at the southern end of the area under application.

Given the vegetation associations, vegetation composition, topography and soils within the area under application, the area may support suitable habitat for two species of rare flora, these being *Grevillea althoferorum* and *Acacia anomala*, and three species of priority flora, these being *Adenanthos cygnorum* subsp. *chamaephyton*, *Baeckea* sp. *Chittering* and *Verticordia serrata* var. *linearis* (Site Inspection 2008; Western Australian Herbarium 1998; Brown et al. 1998).

As such, the clearing as proposed may be at variance to this principle. To mitigate the potential impact to the rare and priority flora, a flora management condition is recommended to be placed on the permit.

Methodology References:

- Brown et al. (1998)
 - Western Australian Herbarium (1998)
 - Site Inspection (2008)
- GIS Databases:
- SAC Bio datasets 05/06/2008

(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 a 10km radius of the area under application are occurrences of seven threatened ecological communities (TECs) these include:

- SCP 3c: *Eucalyptus calophylla* - *Xanthorrhoea preisii* woodlands and shrublands, Swan Coastal Plain
- eastern side of the Swan Coastal Plain SCP 20b: *Banksia attenuata* and/or *Eucalyptus marginata* woodlands of the Coastal Plain
- SCP 15: Forests and woodlands of deep seasonal wetlands of the Swan Coastal Plain
- SCP 8: Herb rich shrublands in clay pans
- SCP 7: Herb rich saline shrublands in clay pans
- Muechea Limestone: Shrublands and woodlands on Muechea Limestone, and
- Mound Springs SCP: Communities of Tumulus Springs (Organic Mound Springs, SCP)

No Priority Ecological Communities occur within a 10 km radius of the area under application.

During Site Inspection (2008) the areas under application were observed to support Jarrah/Marri Open Forest over *Banksia grandis*, *B. menziesii* and *B. sessilis* with a species rich understorey of native grasses, herbs, rushes and shrubs on soils ranging from grey sands with small amounts of laterite to pale yellow sands with small amounts of laterite.

Given the soils, vegetation type, species composition, and the landform type (not being a clay pan, wetland or having limestone outcropping) the area under application is not considered to represent an occurrence of any of the above listed TECs (Gibson et al. 1994; Site Inspection 2008) and clearing is not considered likely to be at variance to this principle.

Methodology References:

- Site Inspection (2008)
 - Gibson et al. (1994)
- GIS Databases:
- SAC Bio datasets 05/06/2008

(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 State government is committed to the National Objective Targets for Biodiversity Conservation, which includes targets that prevent the clearing of ecological communities with an extent below 30% of that present pre-1750 (Commonwealth of Australia 2001).

Both Heddle vegetation complex, Mogumber Complex - South, and Beard vegetation associations 3 and 1020 have greater than 30% of their pre-European extent remaining. With Heddle vegetation complex having 39.9% pre-European extent remaining and Beard vegetation associations 3 and 1020 having 70% and 30.5% pre-European vegetation extent remaining respectively (Shepherd 2006; EPA 2006).

The area under application is also recognised as being 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 pre-European extent. The vegetation associations present within the area under application (Heddle and Beard) all have greater than 10% pre-European extent remaining.

Given the vegetation associations represented within the area under application and the extent of these associations remaining, clearing as proposed is not considered likely to be at variance to this principle.

	Pre-European area (ha)	Current extent (ha)	Remaining %	% in reserves/DEC-managed land
Swan Coastal Plain **	1,501,456	571,758	38.1	10.4
City of Swan *	103,944	54,792	52.7	-
Heddle vegetation complex ***				
Mogumber Complex - South	13,720	5,477	39.9	1.1
Beard vegetation associations **				
3	2,661,514	1,863,982	70.0	58.3
1020	5,610	1,711	30.5	1.8

* (Shepherd 2001)

** (Shepherd 2006)

*** (EPA, 2006)

Methodology

References:

- Shepherd (2001)
 - (Shepherd (2006)
 - EPA (2006)
 - Commonwealth of Western Australia (2001)
- GIS Databases:**
- Pre-European Vegetation - DA 01/01
 - Heddle Vegetation Complexes - DEP 21/06/95
 - Interim Biogeographic Regionalisation of Australia - EA 18/10/00

(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 nearest wetland to the area under application is a Multiple-Use Wetland located approximately 1.6km south east of the area under application. Conservation Category and Multiple-Use Wetland is located approximately 2.6km west of the area under application and Resource Enhancement Wetlands are located approximately 2.3km south east and 2.7km north west of the area under application. A minor non-perennial water course is located approximately 650m east of the area under application.

During Site Inspection (2008) the area under application was observed to support Jarrah/Marri Open Forest over *Banksia grandis*, *B. menziesii* and *B. sessilis* with a species rich understorey of native grasses, herbs, rushes and shrubs.

Given that the vegetation present within the area under application is not representative of vegetation growing in or in association with a wetland or watercourse clearing is not considered likely to be at variance to this principle.

Methodology

References:

- Site Inspection (2008)
- GIS Databases:**
- Hydrography, linear (hierarchy)
 - Hydrography, linear_1
 - 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 may be at variance to this Principle

The southern area under application lies within soils associated with broad valleys and undulating interfluvial areas with some discontinuous breakaways and occasional mesas, chief soils are sandy acidic yellow mottled soils, containing much ironstone gravel in the surface layer. The northern area under application lies within soils associated with a dissected plateau having a gentle to moderately undulating relief, with broad swampy drainage-ways and basins and chief soils are ironstone gravels with sandy and earthy matrices (Northcote et al. 1960-68).

During Site Inspection (2008) the area under application was observed to support soils ranging from pale yellow sands with small amounts of laterite along the southern area under application to grey sands with small amounts of laterite along the northern area under application.

Given the soils observed on site during Site Inspection (2008) and the location of the area under application on the Swan Coastal Plain soils are deemed to be consistent with soils of the Bassendean dune system which generally have a high erosion potential (State of Western Australia 2005).

Given that the proposal involves clearing of a linear strip of vegetation, approximately 0.264 ha in area, and that soils on site are likely to have a high erosion potential, clearing may be at variance to this principle if appropriate management actions are not undertaken.

Methodology References:

- Site Inspection (2008)
 - Northcote et al. (1960-68)
 - State of Western Australia (2005)
- 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 at variance to this Principle

The southern portion of the area under application is located with Bush Forever site 291, being Jenkins Road South Bushland, Bullsbrook and the eastern boundary of the area under application borders this Bush Forever site. Approximately 0.044 ha of the area under application is located within Bush Forever site 291. Bullsbrook Nature Reserve is located approximately 2.4 km west of the area under application.

During Site Inspection (2008) the area under application was observed to support Jarrah/Marri Open Forest over *Banksia grandis*, *B. menziesii* and *B. sessilis* with a species rich understorey of native grasses, herbs, rushes and shrubs. Vegetation ranges in condition from 'excellent' to 'degraded' with the majority (approximately 0.235 ha) in 'excellent' or 'very good' condition. Areas within Bush Forever site 291 were observed to be in 'excellent' condition.

As the proposal involves clearing of vegetation within Bush Forever site 291, clearing will directly impact on the environmental values of this conservation area. In addition the proposed clearing has the potential to indirectly impact the environmental values of Bush Forever site 291 through the spread and/or introduction of exotic weed species by machinery, the introduction of dieback and through increased edge effects. There are serious consequences associated with the spread of exotic species and dieback into areas of native vegetation, including the potential decline or localised extinction of species.

The Government of Western Australia (2000) has mapped the area under application as forming part of a contiguous or largely contiguous corridor of bushland / wetland areas running in a north easterly direction from the Great Northern Highway. This corridor forms part of a network of conservation areas of regional significance within the Perth metropolitan area.

Bush Forever (2008) state that the area under application supports bushland with high conservation values and is of regional significance.

Given the size of the area under application, being 0.264 ha, clearing is unlikely to directly impact on the environmental values of Bullsbrook Nature Reserve.

Given the proposal involves clearing of vegetation within Bush Forever site 291, involves clearing of vegetation within a regionally significant linkage and risks the introduction and/or spread of weeds and dieback, clearing is considered likely to impact on the environmental values of an area of conservation significance and is considered to be at variance to this principle.

To mitigate the role disturbance plays in the spread of weeds and dieback a condition will be placed on this permit for weed and dieback control.

Methodology References:
- Site Inspection (2008)
- Government of Western Australia (2000)
- Bush Forever (2008)
GIS Databases:
- Bushforever
- CALM Managed Lands and Waters

(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 nearest wetland to the area under application is a Multiple-Use Wetland located approximately 1.6km south east of the area under application. Conservation Category and Multiple-Use Wetland is located approximately 2.6km west of the area under application and Resource Enhancement Wetlands are located approximately 2.3km south east and 2.7km north west of the area under application. A minor non-perennial water course is located approximately 650m east of the area under application.

During Site Inspection (2008) the area under application was observed to support deep rooted perennial vegetation with the majority (approximately 0.235 ha) of the area under application being in 'excellent' or 'very good' condition.

During Site Inspection (2008) soils on site were observed to range from grey sands with small amounts of laterite in the northern area under application to pale yellow sands with small amounts of laterite in the southern area under application. Given the soils present on site and the location of the area under application on the Swan Coastal Plain the area is consistent with sands of the Bassendean dune system which are generally characterised by soils with poor nutrient retention ability (State of Western Australia 2005).

Although the area supports deep rooted perennial vegetation with a high condition rating and is located on soils which are generally characterised as having a low nutrient retention ability, the area is 0.264 ha in size and clearing is considered unlikely to affect water quality or hydrology in local surface or underground waters.

Given clearing is not considered likely to affect water quality in surface or underground waters, clearing is not considered likely to be at variance to this principle.

Methodology References:
- Site Inspection (2008)
- State of Western Australia (2005)
GIS Databases:
- Salinity Risk LM 25m - DOLA 00
- Hydrography, linear (hierarchy)
- Hydrography, linear_1
- Geomorphic Wetlands (Classification), Swan Coastal Plain

(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**

During Site Inspection (2008) soils on site were observed to range from grey sands with small amounts of laterite in the northern area under application to pale yellow sands with small amounts of laterite in the southern area under application. Given the soils present on site and the location of the area under application on the Swan Coastal Plain the area is consistent with sands of the Bassendean dune system which are generally characterised by soils which are sandy and free draining (State of Western Australia 2005).

Considering the size of the area under application, being 0.264 ha, and the area supporting sandy free draining soils, clearing is not considered likely to increase the incidence of flooding and is thus not likely to be at variance to this principle.

Methodology References:
- Site Inspection (2008)
- State of Western Australia (2005)
GIS Databases:
- Hydrography, linear (hierarchy)
- Hydrography, linear_1
- Geomorphic Wetlands (Classification), Swan Coastal Plain

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

Comments

The proposed clearing forms part of road widening for Jenkins road to improve safety on the section of road and to accommodate an increase in traffic resulting from a nearby rural subdivision in the Shire of Chittering. The northern section of Jenkins road has already been improved for this reason and the proposed clearing of 0.264 ha is a continuum of those works (City of Swan 2008).

Bush Forever (2008) state that the area under application supports regionally significant bushland for protection and that due consideration should be shown for the high conservation values of the site. Bush Forever recognises existing reserves for public infrastructure, including local gazetted roads, however attempts should be made to minimise and avoid the loss of native vegetation through careful design, and consideration should be given to the retention of vegetation within the road verges where possible. Where the proposed road cannot avoid the loss of vegetation within Bush Forever areas, offset strategies should be included as a condition of the Clearing Permit. As such Strategic Biodiversity Planning recommends the following to be implemented:

- Minimise the fragmentation of Bush Forever Site 291 to ensure suitable provision for wildlife linkages across Jenkins Road through the retention, revegetation/rehabilitation of vegetation within the road verge. The proposed loss of native vegetation, as a result of this clearing permit, be offset at a ratio of at least 2:1, delivering a 'net environmental gain' as per EPA Position Statement Number 9: Environmental Offsets;
- The construction, drainage, access and ongoing maintenance of Jenkins Road shall not result in the clearing and or disturbance of native vegetation within Bush Forever area 291. Ongoing maintenance should include weed control and rubbish control, and;
- Prior to the commencement of any works, temporary fencing is to be installed along the boundary of Jenkins Road reserve and Bush Forever area 291, to protect the native vegetation from further disturbance.

Although not currently known to be infected within *Phytophthora cinnamomi* given the linear nature of the area under application there is potential for *Phytophthora* to be introduced and/or spread along the length of the application site by the movement of machinery possibly leading to infection of the area under application and surrounding bushland.

No Aboriginal Heritage Sites of Significance are located within the area under application (Department of Indigenous Affairs 2008) and the area under application is not within a Native Title Claim Area.

The area under application is not located in or near a Public Drinking Water Source area and is mapped as having no known risk of Acid Sulfate Soils.

Methodology

References:

- Bush Forever (2008)
- Department of Indigenous Affairs (2008)
- City of Swan (2008)

GIS Databases:

- Acid Sulfate Soil Risk Map, Swan Coastal Plain
- Native Title Claims

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 is considered to be at variance to principles (a) and (h), may be at variance to principle (c) and (g) and is not or not likely to be at variance to the remaining principles.

5. References

- Brown A., Thomson-Dans C. and Marchant N., (1998). Western Australia's Threatened Flora, Department of Conservation and Land Management, Western Australia.
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- <http://www.naturebase.net/content/view/840/1288/>. Accessed 13/06/2008. Department of Environment and Conservation, Western Australia.
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- 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.
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- Site Inspection. (2008). Site Inspection Report, Department of Environment and Conservation (DEC). Perth, Western Australia. TRIM Ref. DOC55284.
- State of Western Australia. (2005). Agmaps Land Manager CD ROM.
- Western Australian Herbarium (1998-). FloraBase - The Western Australian Flora. Department of Environment and Conservation. <http://florabase.calm.wa.gov.au/> (Accessed 06 June 2008).

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)

