



1. Application details

1.1. Permit application details

Permit application No.: 1722/1

Permit type: Area Permit

1.2. Proponent details

Proponent's name: A N & H M Wakefield

1.3. Property details

Property: LOT 21 ON DIAGRAM 68468 (House No. 171 MORRISSEY BULLSBROOK 6084)

Local Government Area: City of Swan

Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
20.006		Grazing	Grazing & Pasture

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:</p> <p>1020: Mosaic: Medium forest; jarrah marri / Medium woodland; marri-wandoo (Hopkins et al. 2001, Shepherd et al. 2001).</p> <p>Hedde Vegetation Complex:</p> <p>Reagan Complex: Vegetation ranges from low open woodland of Banksia species E. tottiana to closed heath depending on the depth of soil (Hedde et al. 1980).</p>	<p>The proposed clearing consists of 20 ha of native vegetation to be 'parkland cleared' for the purpose of grazing with all trees retained. Lot 21 Morrissey Road, Bullsbrook is zoned 'landscape' under the City of Swan Town Planning Scheme No.9</p> <p>The property under application is flag shaped with a large strip of land constituting the driveway forming the bottom western portion. The properties total size is 20 ha, of which 10 ha in the central and eastern side is part of a designated Bush Forever site (No. 291, Jenkins Road South Bushland, Bullsbrook).</p> <p>The native vegetation is composed of an upper storey of Marri (<i>Corymbia calophylla</i>), Jarrah (<i>Eucalyptus marginata</i>) and Blackbutt (<i>Eucalyptus tottiana</i>) with occasional <i>Banksia attenuata</i>. Middle storey consists of immature tree species and <i>Xanthorrhoea acanthostachya</i> with occasional <i>Acacia saligna</i> and <i>Dryandra sessilis</i>. The lower storey and ground cover include <i>Dryandra nobilis</i>, <i>Patersonia occidentalis</i>, <i>Stirlingia latifolia</i>, <i>Mesomelaena</i></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 (2007). As vegetation condition varies from 'very good' - 'excellent' with the majority of vegetation in 'excellent' condition, an average condition rating of the vegetation under application is deemed to be 'excellent'.</p>

pseudostygia,
 Mesomelaena
 tetragonophylla,
 Desmodium fascicularis,
 Petrophile lineare,
 Anigozanthos manglesii,
 Dasypogon bromeliifolius,
 Lepidosperma squamata,
 Hakea ruscifolia, Kennedia
 prostrata and Conostylis
 spp (Site Inspection 2007).

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

Ten of the 20 ha applied to be cleared is located within Bush Forever 291 (321 ha) which is one of a maze of Bush Forever sites in the local area. Bush forever sites have been selected for their representation for a range of ecological communities, high diversity of flora and/or fauna in close association and for their representation of rare or threatened communities or species, or species of restricted distribution (Government of Western Australia 2000).

The vegetation on Lot 21 is overall in excellent condition, with vegetation structure intact and floristic diversity high, particularly within the low groundcover vegetation (Site Inspection 2007). Vegetation consists of an upper storey of Marri (*Corymbia calophylla*), Jarrah (*Eucalyptus marginata*) and Blackbutt (*Eucalyptus tottriana*) with occasional *Banksia attenuata*. Middle storey consists of immature tree species and *Xanthorrhoea* *acanthostachya* with occasional *Acacia saligna* and *Dryandra sessilis*.

The lower storey and ground cover vegetation was relatively diverse including species such as *Dryandra nobilis*, *Patersonia occidentalis*, *Stirlingia latifolia*, *Mesomelaena pseudostygia*, *Mesomelaena tetragonophylla*, *Desmodium fascicularis*, *Petrophile lineare*, *Anigozanthos manglesii*, *Dasypogon bromeliifolius*, *Lepidosperma squamata*, *Hakea ruscifolia*, *Kennedia prostrata* and *Conostylis* spp.

Disturbance, in the form of weeds, was rare within the defined Bush Forever Site, however some weed infestation was apparent within vegetation buffering the Bush Forever Site.

Given the above, the area under application is considered to be an area of high biological diversity and thus clearing is considered at variance to this Principle.

The proponent has made a formal submission stating that the proposed grazing involves 'parkland clearing' of the applied area which he believes will retain the majority of the floristic diversity on the Lot (TRIM Ref. 29092). However as 'parkland clearing' involves grazing the understorey where the majority of the floristic diversity occurs, degradation of the vegetation is likely, with accompanying negative impacts on the biological diversity of the subject area.

Methodology

Reference:

- Site Inspection (2007) (TRIM Ref: DOC18471)
- Government of Western Australia (2000)
- Submission (2007) (TRIM Ref. DOC 29092)

GIS Database:

- Swan Coastal Plain North 40cm Orthomosaic - DLI 05
- BushForever - MFP 07/01

(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 that is proposed to be cleared would provide habitat for local populations of a range of endemic fauna species, including but not limited to specially protected species. Although disturbed in parts, the site photographs show areas of proteaceae which would provide feeding habitat for fauna species including Carnaby's Cockatoos. Mature trees appear to be limited to regenerated *Corymbia calophylla* and *Eucalyptus marginata* that display scarring consistent with the anecdotal evidence that the area was burnt approximately 5 years ago. Whilst these trees are likely to offer habitat to a range of avian fauna they are not sufficiently mature to offer nesting habitat to Carnaby's Cockatoos.

Supplementary information from the proponent included observations of Echidnas and Kangaroos on the property. Whilst not specially protected, these species are afforded protection under Section 14(1) of the Wildlife Conservation Act 1950 as amended. Given that Principle (b) is not restricted in its application to specially protected fauna, the potential habitat that may be offered to these and other protected species by the vegetation that is proposed to be cleared, must be considered. Similarly, it is noted that the proponent has

sighted birds on the property. With the exception of a limited number of exotic birds that may inhabit the area, the remainder is likely to be endemic avian fauna and thus protected under Section 14(1) of the Wildlife Conservation Act 1950 as amended. Whilst the proposed removal of under storey vegetation by grazing may not result in immediate (avian) fauna mortalities, it will reduce the amount of available feeding habitat for local populations.

Whilst the vegetation that is proposed to be cleared will provide fauna habitat, it is unlikely to be considered significant in a local context.

- Methodology**
- EPA (2004a)
 - Site Inspection Report (2007) (TRIM Ref: DOC18471)
 - DEC Fauna habitat notes.xls February 2007
 - Submission (2007) (TRIM Ref. DOC 29092)

GIS Databases:

- BushForever - MFP 07/01
- SAC Bio datasets 19/03/2007
- Swan Coastal Plain North 40cm Orthomosaic - DLI 05

(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

Within a 10 km radius of the area under application there are six DRF taxa and Priority 1, 2, 3 and 4 taxa (Atkins 2006). The closest DRF which is Critically Endangered is *Verticordia plumosa* var. *pleiobotrya* located 58 m west of the north west corner of the area under application.

Given the vegetation under application is in excellent condition and that some of the above mentioned species occur within the same vegetation complexes and same soils as the area under application, there is a likelihood of significant flora being present in the subject area. Clearing therefore may be at variance to this Principle. A flora survey conducted at an appropriate time of year, in accordance with Guidance Statement No. 51 published by the Environmental Protection Authority (2004), would be required to determine the presence/absence of any flora of conservation significance within the subject area.

The proponent has made a formal submission advising that two flora surveys have been conducted on the property, one by Department of Planning and Infrastructure and the other being the site inspection conducted in accordance with processing this application (TRIM Ref. DOC29092). However these site visits did not include comprehensive flora surveys in accordance with Guidance No. 51 (EPA 2004b) and is not considered to adequately assess the presence of any significant flora species. Therefore the proposed clearing may be at variance to this principle.

- Methodology**
- References:
- EPA (2004b)
 - Site Inspection Report (2007) (TRIM Ref: DOC18471)
 - Atkins (2006)
 - Western Australian Herbarium (1998-)
 - Submission (2007) (TRIM Ref. DOC29092)

GIS Databases:

- SAC Bio datasets 19/03/2007

(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 10 km radius of the area under application there are occurrences of six Threatened Ecological Communities (TECs),

All TECs within a 10 km radius of the area under application have a different species composition and occur on different soils and landform types to the area under application (Gibson et al. 1994; Site Inspection 2007), thus the area under application is not likely to represent an occurrence of any of these TECs.

Bush Forever has identified Floristic Community Types (FCT) within Bush Forever site 291, as representative of Supergroup 1: S8, and Supergroup 3: S9, S10, and S18 (Government of Western Australia 2000). While none of these identified FCTs are currently recognised as TECs, research into their status is current and their representation on site may become important in the future (Biodiversity Coordination Section 2007).

- Methodology**
- Reference:
- Site Inspection Report (2007) (TRIM Ref: DOC15875)

- Biodiversity Coordination Section (2007) (TRIM Ref. DOC18739)
- Gibson et al. (1994)
- Government of Western Australia (2000)

GIS Databases:

- SAC Bio datasets 19/03/07

(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 is 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 (Department of National Resources and Environment 2002; EPA 2000).

Vegetation within the area under application is identified as a component of both Beard Vegetation Association 1020 and Heddle Vegetation Complex Reagan Complex. These vegetation communities are identified as having 30.5% and 38.0% respectively remaining of their pre-European extent (Shepherd 2006; EPA 2006).

	Pre-European reserves/DEC-	Current area (ha)	Remaining % extent (ha)	Conservation	% in status*** managed land
Swan Coastal Plain	1,529,235	657,450	38.1*	Depleted	-
City of Swan	103,944	54,792	52.7*	Least Concern	-
Beard vegetation association 1020	5,610	1711	30.5**	Vulnerable	5.6
Heddle vegetation complex Reagan Complex	9,097	3,455	38.0***	Depleted	1.9

* (Shepherd et al. 2001)

** (Shepherd 2006)

*** (EPA, 2006)

**** (Department of Natural Resources and Environment 2002)

Given that Ten of the 20 ha applied to be cleared is located within Bush Forever 291 (321 ha) which is one of a maze of Bush Forever sites located locally, with cleared, agricultural land extending west and smaller, cleared rural properties extending east beyond the Bush Forever sites, and that the vegetation provides an important component of the north-south corridor of intact vegetation for fauna habitat and movement, the vegetation under application is considered to be significant as a remnant of native vegetation.

It is also noted that both Beard and Heddle vegetation types have less than 5,000 ha remaining, with Beard Vegetation Association 1020 having only 1711 hectares recorded as remaining. Further, it is also noted that there is only 5.6% of Beard's Vegetation Association 1020 and even less (1.9%) of Heddle's Reagan Complex in secure tenure.

Methodology References:

- Del Marco et al. (2004)
- Department of Natural Resources and Environment (2002)
- EPA (2000)
- EPA (2006)
- Shepherd et al. (2001)
- Shepherd (2006)
- Heddle et al. (1980)

GIS databases:

- BushForever - MFP 07/01
- Heddle Vegetation Complexes - DEP 21/06/95
- Pre-European Vegetation - DA 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 at variance to this Principle

The nearest wetland to the area under application is a Conservation Category Wetland (CCW) located 936 m to the west. This CCW forms part of a larger wetland system the majority of which is classified as Multiple Use Wetland (MUW). This extensive MUW extends for greater than 20 km down the western side of the area under application and at its widest point is 7.6 km across.

During Site Inspection (2007) no wetlands or wetland dependent vegetation were observed within the area under application.

Methodology **References:**

- Site Inspection Report (2007) (TRIM Ref: DOC15875)

GIS Databases:

- Geomorphic wetlands (Mgt Categories) - Swan Coastal Plain - DOE 15/09/04
- 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 lies within soil units Sp2 and Wd9. Soils of unit Sp2 are associated with a gently sloping bench or terrace known as the Ridge Hill Shelf with chief soils being hard acidic yellow soils containing ironstone gravels. Soils of unit Wd9 are associated with broad valleys and undulating interfluvial areas with some discontinuous breakaways and occasional mesas, lateritic materials mantle the area. Chief soils are sandy acidic yellow mottled soils, containing much ironstone gravel in the A horizons, both forming a complex pattern with each other and with lateritic sandy gravels. Associated are leached sands underlain by lateritic gravels and mottled clays that occur at a progressively greater depth down slope (Northcote et al. 1960-68).

Soils were observed to be yellow sands, which is consistent with Northcote et al. (1960-68) with the exception that ironstone gravels were not observed to be present near the soil surface or A horizon (Site Inspection 2007).

The area under application lies within a Class 3 Acid Sulphate Soil (ASS) Risk area. This Class is defined as having no known risk of ASS.

The far southern point of the area under application, forming part of the driveway, is mapped as being at risk of developing salinity in the future. However DAFWA (2007) advises that there is currently no evidence of salinity occurring on or offsite and the risk of salinity causing land degradation is low. DAFWA (2007) further advise that the risk of wind and water erosion is low.

Methodology **References:**

- Northcote et al. (1960-68)
- Site Inspection Report (2007) (TRIM Ref: DOC15875)
- DAFWA (2007) (TRIM Ref: DOC20666)

GIS Databases:

- Soils, Statewide - DA 11/99
- Acid Sulphate Soil risk map, Swan Coastal Plain, DEC

(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**

Approximately fifty percent of the area under application (10 ha) is identified as Bush Forever Site 291, Jenkins Road South Bushland Bullsbrook. (Government of Western Australia 2000).

This vegetation has been classified as a Bush Forever site as it meets the criteria for the representation of ecological communities, diversity of flora and/or fauna, and representation of rare species and/or communities or species with restricted distributions. Site selection was undertaken on the basis that more appropriate sites, better meeting the criteria, were not available elsewhere (Government of Western Australia 2000).

While it is recognised that not all vegetation within the subject property is classified as Bush Forever, the adjacent vegetation is considered to be in 'very good' condition, and is considered likely to provide buffering from edge effects such as weed invasion (Site inspection 2007).

Given that the proposed clearing would result in the direct loss of regionally significant vegetation, identified as being primarily in excellent condition, the clearing as proposed is at variance to this Principle.

The proponent has made a formal submission stating that classification as Bush Forever does not place a ban on development in such sites and that development simply has to meet a balance between environmental, social and economic outcomes. The property owners of Lot 21 previously requested an amendment to the boundary of the Bush Forever site on this Lot. In 2005 a site inspection was conducted by Department of Planning and Infrastructure (2007) to assess this Lot for the amendment, the outcome of this assessment was to refuse the request and leave the boundary as is. The reasons for this decision include the bushland on Lot 21

being in 'very good' to 'excellent' condition, vegetation forms part of an ecological linkage and is listed as significant for its representation of ecological communities (Department of Planning and Infrastructure 2007).

- Methodology** **References:**
- Government of Western Australia (2000)
 - Submission (2007) (TRIM Ref. DOC 29092)
 - Department of Planning and Infrastructure (2007) (TRIM Ref. DOC31222)

- GIS Databases:**
- CALM Managed Lands and Waters - CALM 01/07/05
 - BushForever - MFP 07/01
 - Clearing Regulations - Environmentally Sensitive Areas - DOE 30/5/05

(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 area under application forms part of the Swan Avon - Lower Swan Catchment and drains into the Ellen Brook River via a non-perennial creek. The applied area is not located within a Public Drinking Water Source Area.

The Swan Canning Cleanup Program recognises the Ellen Brook catchment as a major contributor to nutrient loading in the Swan-Canning system which is located downstream (Swan River Trust 2004). Any additional clearing in the catchment will lead to further degradation of the catchment and further impacts downstream.

Although the area under application is located upslope of a water course (Ellen Brook River and associated drainage network) and extensive wetland system (composed of Conservation Category and Multiple Use wetlands) DAFWA (2007) advises that clearing will not contribute to increased salinity or eutrophication of groundwater.

DAFWA (2007) also advise that there is a low eutrophication risk associated with the proposed clearing of vegetation on Lot 21.

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

- Methodology** **Reference:**
- Swan River Trust (2004)
 - DAFWA (2007) (TRIM Ref: DOC20666)
- GIS Databases:**
- Hydrography, linear - DOE 01/02/04
 - Hydrography, linear (hierarchy) - DOW
 - Hydrographic Catchments, Sub-catchments - DOE 01/07/03
 - Public Drinking Water Source Areas (PDWSAs) - DOW
 - Evaporation Isopleths - BOM 09/98
 - Isohyets - BOM 09/98
 - 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 at variance to this Principle

DAFWA (2007) advises that clearing is unlikely to cause flooding or waterlogging within the area under application.

- Methodology** **References:**
- DAFWA (2007) (TRIM Ref: DOC20666)
- GIS Databases:**
- Geomorphic wetlands (Mgt Categories) - Swan Coastal Plain - DOE 15/09/04
 - Topographic Contours, Statewide - DOLA 12/09/02

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

Comments

Bush Forever (2007) states that the area under application is zoned 'landscape' under the City of Swan's District Structure Planning Scheme No. 9. There are a number of sections within this planning scheme in which this proposal contradicts. These include:
Section 8.2.6 - The purpose and intent of a 'landscape zone' is to ensure that development is compatible with

and will enhance the landscape and environmental qualities of the locality. Specifically, Section 8.2.6.2 states:

- a) Development must be compatible with the land capability and suitability including the visual and environmental qualities which Council considers to be worthy of conservation;
- b) Remnant vegetation should be retained and linked, where possible, by corridors of vegetation of a sustainable width;
- c) Water quality and water courses within existing and proposed water catchment areas shall be protected;
- d) Land use and management practices should be compatible with the protection of landscape quality;
- e) There should be strategic re-vegetation of cleared or degraded areas in order to blend development into the landscape.

Section 8.3.5.2 in the Rural Residential and Landscape Zones, remnant vegetation shall not be removed, or modified in any way, except with the approval of the Council and where, in its opinion, the removal is necessary in the following circumstances:

- a) For the purpose of building envelopes and accessways;
- b) Trees are considered to be a hazard;
- c) For the fighting purposes or construction of strategic fire breaks; and
- d) Control of weed infestation

Section 8.3.6.2 where the council is of the opinion that the keeping of livestock may be detrimental to the amenity of an area, or is causing environmental degradation of the land including but not limited to soil erosion, dust pollution or damage to trees and other vegetation, the council may:

- Determine that the development requires a development approval; or
- Revoke its development approval; or
- Require an owner to undertake a management programme to its satisfaction to mitigate its concerns.

Bush Forever (2007) has raised several other concerns these being that no justification has been given for the clearing of the whole Lot, and no management plan has been provided for the area. There have also been no offsets package proposed for the clearing of Bush Forever site 291 and this is not conducive to the EPA Position Statement Paper No. 9 which states that for critical assets (such as a Bush Forever site), the offsets principle is 'like for like of better'. Given the above, the Bush Forever officer would not support the clearing of land on Lot 21 Morrissey Road, Bullsbrook.

A Public Submission (2007) has been received commenting that they do not support the application to clear, for the following reasons:

1. The property is situated within the Ellen Brockman catchment, and thus there is a very high risk of increased nutrient export into the ground water and surface water entering the Ellen Brook River
2. The soil has a low capability for grazing and any establishment of pasture following clearing would require considerable fertiliser application
3. The removal of native vegetation in the Ellen Brook catchment exacerbates the already high nutrient load entering the Swan River
4. Twenty percent of the Ellen Brook catchment needs to be revegetated to reduce the nutrient load entering the Swan River.

DAFWA (2007) assessment includes comment on future land use in that Lot 21 Morrissey Road, Bullsbrook has a low capability for grazing, however the proposed clearing of 20 ha of land within the Lot is unlikely to cause appreciable land degradation.

City of Swan (2007a) have advised that:

- Lot 21 is zoned 'Landscape' under the City of Swan Town Planning Scheme No. 9 and that the purpose of the zone is to ensure that development is compatible with the landscape and environmental qualities of the locality. The City of Swan considers that clearing would be contrary to the purpose of the zone;
- Approximately 65% of the lot is contained in Bush Forever Site 291 (Jenkins Road South Bushland) and clearing would be contrary to the objectives of Bush Forever;
- The lot is located approximately 650 m upslope of Bullsbrook Nature Reserve (Bush Forever Site 292).

The proponent was given the opportunity to provide additional comment on the outcomes of the assessment report (TRIM Ref. DOC29092), and has provided the following points:

1. Grazing within the area under application is compatible with City of Swan Town Planning Scheme No.9;
2. Bush Forever is a planning tool to be used in the assessment process and does not denote a blanket ban on land development. The applicant considers grazing to be an appropriate balance between environmental, social and economic considerations within such a site. Also the delegation of the area as Bush Forever is speculative and based on aerial photography with no on site flora surveys to support the classification, the proponent argues that it is questionable that the site is a sensitive area;
3. The vegetation communities under application are well represented as there are significant tracts of native vegetation in the immediate and regional area and grazing will only affect the understorey vegetation;
4. It is speculative that the area under application constitutes significant habitat for fauna as no fauna survey has ever been conducted on the property and if present grazing of understorey vegetation will have limited regional impact on fauna conservation;
5. Two separate flora surveys have been conducted on the property, in 2005 and 2007, neither of which

confirmed the presence of Declared Rare Flora or priority flora;
6. The applicant is willing to fence and conserve parts of the property.

In response:

The City of Swan(2007b) have advised that :

- the City does not support clearing within the Bush Forever portion of the property;
- the City would seek to minimise the extent of clearing in the balance of the property, which is zoned 'Landscape', where vegetation is in 'Excellent' condition, and that;
- while one of the principal objectives of the 'Landscape zone' is the retention of remnant vegetation, a Development Application for keeping of livestock within this zone would be required, that is still consistent with the 'Landscape zone' objectives.

The remaining points have been addressed within the associated Principles.

Methodology

- City of Swan (2007a) (TRIM Ref. DOC17569)
- City of Swan (2007b) (TRIM Ref. DOC30651)
- Submission (2007) (TRIM Ref. DOC29092)
- Bush Forever (2007) (TRIM Ref. DOC18556)
- Public Submission (2007) (TRIM Ref. DOC19324)
- DAFWA (2007) (TRIM Ref. DOC20666)

4. Assessor's comments

Purpose	Method	Applied area (ha)/ trees	Comment
Grazing & Pasture	Grazing	20.006	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 at variance to Principles (a), (e) and (h), and may be at variance to Principle (c).

5. References

- Atkins, K. (2006). Declared Rare and Priority Flora List. Department of Conservation and Land Management, Western Australia.
- Biodiversity Coordination Section (2007). Biodiversity Coordination Section Advice, Department of Environment and Conservation (DEC). Perth, Western Australia. TRIM Ref. DOC18739.
- Bush Forever (2007). Advice RE: Application to clear native vegetation Lot 21 Morrissey Road, Bullsbrook. Department of Planning and Infrastructure. Perth, Western Australia. TRIM Ref. DOC18556.
- 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.
- Department of Agriculture and Food Western Australia. (2007). DAFWA Advice RE: Application for clearing permit CPS177/1, Swan Location 1352, being Lot 21 on Diagram 68468, Wakefield. South Perth, Western Australia. TRIM Ref. DOC20666
- Department of Environment and Conservation. (2003). FloraBase: Descriptions by the Western Australian Herbarium. Perth, Western Australia. <http://florabase.calm.wa.gov.au/>. Accessed Wednesday, 26 March 2007.
- 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.
- 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.
- EPA (2004a) Guidance for the Assessment of Environmental Factors - terrestrial fauna for Environmental Impact Assessment in Western Australia. Report by the EPA under the Environmental Protection Act 1986. No 56 WA.
- EPA (2004b) Guidance for the Assessment of Environmental Factors - terrestrial flora and vegetation surveys for Environmental Impact Assessment in Western Australia. Report by the EPA under the Environmental Protection Act 1986. No 51 WA.
- 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.
- Gibson, N., Keighery, B., Keighery, G., Burbidge, A. and Lyons, M. (1994). A Floristic Survey of the southern Swan Coastal Plain. Department of Conservation and Land Management. Perth, Western Australia. Unpublished report for the Australian Heritage Commission.
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- 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.
- Public Submission. (2007). Advice RE: Application to clear native vegetation - 171 Morrissey Road, Bullsbrook. TRIM Ref. DOC19324.
- 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.

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. (2007). Site Inspection Report, Department of Environment and Conservation (DEC). Perth, Western Australia. TRIM Ref. DOC18471.

Submission. (2007). Clearing Permit 1722/1, Lot 22 Morrissey Road, Bullsbrook: Response to 30 day letter. TRIM Ref. DOC 29092.

Western Australia Department of Agriculture. (2004). Soil-landscape mapping, Western Australia Department of Agriculture. Date accessed 06/03/07.

Western Australian Herbarium (1998-). FloraBase - The Western Australian Flora. Department of Environment and Conservation. <http://florabase.calm.wa.gov.au/> (Accessed 16 February 2007).

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)

