



1. Application details

1.1. Permit application details

Permit application No.: 2365/1
Permit type: Area Permit

1.2. Proponent details

Proponent's name: MR Simon Christopher Troon

1.3. Property details

Property: LOT 3589 ON PLAN 205129 (House No. 637 COONABIDGEE COONABIDGEE 6503)
LOT 3589 ON PLAN 205129 (House No. 637 COONABIDGEE COONABIDGEE 6503)
Local Government Area: Shire Of Gingin
Colloquial name:

1.4. Application

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

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: 389: Succulent steppe with open low woodland, mulga over saltbush; 1014: Mosaic: Low woodland - Banksia / Shrublands - teatree thicket (Shepherd et al. 2001).	The proposed clearing consists of 6 ha for fencing and plantation. The area under application is made up of three segments in a south west - north east alignment. From south west to north east these segments cover 1.8 ha, 2.8 ha and 1.2 ha with Coonabidgee Road running between the 2.8 ha and 1.2 ha areas. A third of the 1.8 ha area and all of the 2.8 ha area are located within an environmentally sensitive area being riparian and buffer vegetation for a Conservation Category and Environmental Protection Policy Wetland.	Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Kelghery 1994)	Description and condition of the vegetation under application was determined from the Site Inspection (2008). Vegetation ranges in condition from 'excellent' to 'good' with an average condition rating of 'excellent'.
Hedde Vegetation Complex: Bassendean Complex - North: Low open forests and low woodlands and sedgeland (Hedde et al. 1980).	Vegetation within the three areas under application ranges in condition from 'excellent' to 'good'. Areas considered to be in 'good' condition occur along the eastern side of the 1.2 ha area and the eastern and northern sides of the 2.8 ha area. Areas considered to be in 'very good' condition occur along the northern boundary of the 1.2 ha area and the eastern boundary of the 1.8 ha area. Vegetation along the southern boundary of all three areas under application has been surface cleared to place a		

fence line. This vegetation has the potential to regenerate and be in 'very good' to 'excellent' condition. The remainder of vegetation in the three areas is in 'excellent' condition.

Vegetation within the majority of the 1.2 ha and 2.8 ha areas can be described as Open Heath with dense cover of sedges and rushes. The western boundary of the 2.8 ha area can be described as Closed Forest of *Eucalyptus rudis* with *Melaleuca raphiophylla* and *M. preissiana*. Vegetation within the majority of the 1.8 ha area can be described as Open Banksia Woodland with vegetation occupying the eastern side of this area being described as *Melaleuca viminea* / *M. preissiana* Low Closed Forest with rushes.

In addition to the dominant species in the 1.2 and 2.8 ha areas species present include: *Eucalyptus tottiana* and *Corymbia calophylla*, *Regelia* sp., *Jacksonia furcellata*, *Xanthorrhoea preisii*, *Patersonia occidentalis*, *Dasypogon bromeliifolius*, *Acacia pulchella*, *Haemodorum* sp., *Tricoryne terrella*, *Carpobrotus virescens*, *Podotheca angustifolia* and sedges and rushes including *Lyginia imberbis*.

Vegetation present in the 1.8 ha area includes: *Corymbia calophylla*, *Eucalyptus tottiana*, *Nuytsia floribunda*, *Banksia attenuata*, *B. menziesii*, *B. illicifolia*, *Melaleuca viminea*, *M. preissiana*, *Eremaea pauciflora*, *Scholtzia involucre*, *Dasypogon bromeliifolius*, *Patersonia occidentalis*, *Adenanthos cygnorum*, *Verticordia nitens*, *Melaleuca teretifolia* and sedges and rushes including *Lyginia imberbis*.

Approximately 5.1 hectares of the area under application has been identified as being in 'excellent' condition.

As above

Approximately 0.4 hectares of the area under application has been identified as being in 'very good' condition.

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

As above

As above

Approximately 0.5 hectares

Good: Structure

As above

of the area under application has been identified as being in 'good' condition.

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

3. Assessment of application against clearing principles

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

Comments

Proposal is at variance to this Principle

Portions of the area under application are located within mapped Conservation Category Wetlands (CCW) and Multiple Use Wetlands, and therefore includes both upland and wetland environments. The area under application is one of only four large surface water expressions of the ground watertable within a 10 km radius that retain a surrounding buffer of native vegetation that is relatively undisturbed. Wetlands typically support a higher level of biological diversity than the surrounding landscape whilst also supporting taxa not found in surrounding landscapes.

During the DEC Site Inspection (2007) the area under application was observed to support four distinct vegetation associations with a high level of floristic diversity and with vegetation in 'good' or better condition, the majority being in 'excellent' condition. The area under application has the potential to include one species of Declared Rare Flora (DRF) and eight species of Priority flora, and may provide significant habitat for fauna in the local area.

Given the range of habitat provided within the area under application, that the majority of vegetation under application is in excellent condition, and the potential for DRF and Priority flora, it is considered that the vegetation under application comprises a high level of biodiversity.

Methodology

References:

- Site Inspection (2008)
- GIS Databases:
- Hydrography, linear (hierarchy)
- Hydrography, linear_1
- Geomorphic Wetlands (Classification), Swan Coastal Plain
- EPP, Wetlands 2004 (DRAFT)
- Ledge Point Gingin 50cm Orthomosaic - Landgate03

(b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.

Comments

Proposal may be at variance to this Principle

Four indigenous fauna species of conservation significance are found within a 10 km radius of the area under application. These include Schedule 1 species:

- Chuditch (*Dasyurus geoffroyi*) (Vulnerable)

and Priority species:

- Hooded Plover (*Charadrius rubricollis*) (P4)
- Western Brush Wallaby (*Macropus irma*) (P4)
- Quenda (*Isodon obesulus* subsp. *fusciventer*) (P5)

During Site Inspection (2008) the area under application was observed to support four distinct vegetation associations including Open Heath with dense cover of sedges and rushes, Open Banksia Woodland, Closed Forest of *Eucalyptus rudis* with *Melaleuca raphiophylla* and *M. preissiana*, and *Melaleuca viminea* / *M. preissiana* Low Closed Forest with rushes. The majority of the vegetation under application is deemed to be in 'excellent' condition.

The area under application is located approximately 1 km east of Yeal Nature Reserve and is joined to the application site by intact native vegetation. To the west of Yeal Nature Reserve are large tracts of undisturbed native vegetation within the Gngangara-Moore River State Forest.

Given vegetation within the area under application supports open woodland and seasonally wet flats with low grasses and open scrub, is part of a palusplain wetland (seasonally waterlogged flat) and is in close proximity to larger tracts of intact native vegetation, the area under application may present suitable habitat for the Western Brush Wallaby (DEC 2008) and given that riparian vegetation is also under application the site may support suitable habitat for Quenda.

Given that Yeal Nature Reserve has only one large wetland protected within its boundary, that this wetland is close to the area under application and that Quenda prefer dense wetland and riparian vegetation the area

under application may provide locally (within 10 km radius) significant habitat for this species.

Given the area under application forms part of a large well connected system of wetlands with the majority of local wetlands being small and dispersed or cleared, that the area supports open seasonally wet flats with low grasses and is part of a palusplain wetland the area under application may support locally (within 10 km radius) significant habitat for the Western Brush Wallaby (DEC 2008).

Given that the area under application is connected to Yeal Nature Reserve and larger tracts of native vegetation, the area borders one of only three well connected wetlands and supports vegetation ranging from closed riparian forest to open Banksia woodland and open heath, that high levels of biodiversity are associated with such areas, the area under application may support significant resources and habitat for Chuditch (DEC 2008).

Given the high biodiversity typically supported by wetlands and that three wetlands with surface water expression and connected by native vegetation occur in close proximity to one another (all within 2.5 km radius) with only one protected within Yeal Nature Reserve, the area under application is likely to provide significant habitat for species of indigenous fauna not of conservation significance.

Given the area under application may provide significant habitat for Chuditch, Western Brush Wallaby, Quenda and other native fauna clearing may be at variance to this principle.

- Methodology** **References:**
- DEC fauna habitat notes. February 2007
 - Site Inspection (2008)
 - DEC (2008)
- GIS Databases:**
- SAC Bio datasets 22/02/2008
 - Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain
 - EPP, Wetlands 2004 (DRAFT)
 - CALM Managed Lands and Waters
 - Ledge Point Gingin 50cm Orthomosaic - Landgate03

(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

Two species of Declared Rare Flora (DRF), two species of priority 1 flora, three species of priority 2 flora, four species of priority 3 flora and six species of priority 4 flora are located within a 10 km radius of the areas under application with the nearest DRF, *Eleocharis keigheryi*, being located approximately 8.3 km south east and the nearest priority flora, *Verticordia lindleyi* subsp *lindleyi*, being located approximately 210 m west of the areas under application.

During Site Inspection (2008) the areas under application were observed to support four distinct vegetation associations including Open Heath with dense cover of sedges and rushes and Closed Forest of *Eucalyptus rudis* with *Melaleuca raphiophylla* and *M. preissiana* on black sands, Open Banksia Woodland on grey sandy soils and *Melaleuca viminea* / *M. preissiana* Low Closed Forest with rushes on brown sands. Vegetation in the area under application is in 'good' or better condition with the majority in 'excellent' condition.

Given the vegetation complexes, soil type and landscape features present on site (Site Inspection 2008) one species of DRF, being *Grevillea curviloba* subsp. *incurva*, and eight species of Priority flora may occur with in the area under application (Western Australian Herbarium 1998; Brown et al. 1998). Given this, it is considered that clearing may be at variance to this principle.

- Methodology** **References:**
- Site Inspection (2008)
 - Western Australian Herbarium (1998)
 - Brown et al. (1998)
- GIS Databases:**
- SAC Bio datasets 22/02/2008
 - Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain

(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

Two threatened Ecological Communities (TEC) are located within a 10 km radius of the area under application, these are:

- TEC SCP07 Herb rich saline shrublands in clay pans
- TEC SCP15 Forests and woodlands of deep seasonal wetlands of the Swan Coastal Plain

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

During the DEC Site Inspection (2008) the areas under application were observed to support four distinct vegetation associations including Open Heath with dense cover of sedges and rushes and Closed Forest of Eucalyptus rudis with Melaleuca raphiophylla and M. preissiana on black sands, Open Banksia Woodland on grey sandy soils and Melaleuca viminea / M. preissiana Low Closed Forest with rushes on brown sands. Vegetation in the area under application is in 'good' or better condition.

Given the soils, vegetation type and species composition, and the landform type (not being a clay pan or wetland but being close to one) the area under application is not considered to represent an occurrence of a TEC or PEC (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 22/02/2008

(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 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).

All vegetation associations (Hedde and Beard) have greater than the recommended minimum of 30% pre-European extent remaining (Shepherd 2001; EPA 2006) and the local area (10 km radius) has approximately 59% of native vegetation cover remaining.

Despite the amount of vegetation remaining the area under application borders a wetland which forms part of an extensive local (within a 10 km radius) wetland system the majority of which has been cleared for agriculture (approximately 80% cleared).

Considering the importance of wetlands to local biodiversity and the extent to which the local wetland system has been cleared, the area under application is considered significant as a vegetation remnant and clearing is considered 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
Shire of Gingin *	315,560	315,560	56.3	-
Hedde vegetation complex ***				
Bassendean Complex - North	74,147	53,384	72.0	27.5
Beard vegetation associations**				
389	642,358	642,358	100	3.6
1014	41,066	21,730	52.9	28.3
Local (10 km radius)	31,400	18,600	59	-

* (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
 - Hedde Vegetation Complexes - DEP 21/06/95
 - Interim Biogeographic Regionalisation of Australia - EA 18/10/00
 - Geomorphic Wetlands (Classification), Swan Coastal Plain
 - Ledge Point Gingin 50cm Orthomosaic - Landgate03
 - NLWRA, Current Extent of Native 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 at variance to this Principle

Approximately 1.7 hectares of the area under application are located within mapped Conservation Category Wetlands (CCW). A further 2.3 hectares of the applied area are located within Multiple Use Wetlands that are within the 50m buffer to the CCWs. Portions of the applied area are also located 35m from a wetland identified under the Environmental Protection (Swan Coastal Plain Lakes) Policy 1992.

The closest watercourse is a major tributary located approximately 1.3km east of the area under application.

During the DEC Site Inspection (2008) the area under application was observed to support four distinct vegetation associations all comprising deep rooted perennial vegetation with sedges and rushes. The vegetation includes the wetland dependant species *Eucalyptus rudis*, *Melaleuca raphiophylla*, *M. preissiana* and *M. viminea*. Vegetation in the area under application is in 'good' or better condition with the majority being in 'excellent' condition.

CCWs are wetlands with high ecological values and are the highest priority wetlands for protection (Water and Rivers Commission 2001). CCWs are recognised under objective one of the Wetlands Conservation Policy for Western Australia as valuable (Government of Western Australia 1997).

Previous estimates indicate that 70-80% of original wetlands on the Swan Coastal Plain have been cleared, drained or filled since European settlement (EPA 2006), and in 2004 approximately 17% of remaining wetlands were of high environmental value (EPA 2006). Therefore government agencies and the Environmental Protection Authority consider there should be no further loss and degradation of these wetlands.

The protection of significant wetlands requires an adequate buffer to protect wetlands from potential adverse impacts such as weed invasion and increased nutrients, and to maintain ecological processes and functions within the wetland. The recommended width of the buffer may vary depending on the proposed land use and the wetland values to be protected. Hill et al. (1996) identified the 50m boundary of a wetland to be the Zone of Critical Influence; and the 200m boundary of a wetland to be the Zone of Secondary Influence. DEC Wetlands Program (2008a) advise that 50m is the minimum buffer recommended by the Department of Environment and Conservation (DEC).

For proposals on transmissive soils, such as those present within the area under application, a buffer of 200m is recommended to protect wetlands from nutrient inputs, to maintain natural water levels and protect habitat for wetland dependent flora and fauna (Water and Rivers Commission 2001).

Given that the vegetation under application is located within both Conservation Category Wetlands and multiple use wetlands, and includes wetland dependent vegetation, it is considered that the vegetation under application is growing in, and in association with, a wetland. The proposed clearing is therefore at variance to this Principle.

Methodology References:

- DEC Site Inspection (2008)
 - DEC (2008a)
 - EPA (2006)
 - Government of Western Australia (1997)
 - Hill et al. (1996)
 - Water and Rivers Commission (2001)
 - State of Western Australia (2005)
- GIS Databases:
- Hydrography, linear (hierarchy)
 - Hydrography, linear_1
 - Geomorphic Wetlands (Classification), Swan Coastal Plain
 - EPP, Wetlands 2004 (DRAFT)

(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

Comments Proposal is at variance to this Principle

The vegetation under application lies within soils associated with subdued dune-swale terrain with chief soils being leached sands on the low dunes (Northcote et al. 1960-68).

During the DEC Site Inspection (2008) the area under application was observed to support three different soil types, these being black, brown and grey sandy soils on the Bassendean dune system. Soils of the Bassendean dune system generally have a high wind erosion risk (State of Western Australia 2005). Considering the size of the area under application (approximately 6ha) and the sandy nature of the soils it supports, the removal of vegetation is likely to result in wind erosion of soils.

Within the local area depth to groundwater is approximately 6m and the groundwater salinity is considered to be

marginal however portions of the 1.8 ha and 2.8 ha areas under application are mapped as at risk of developing salinity. During the DEC Site Inspection (2008) surface salt and chenopod herbs were observed in the north eastern corner of the 1.8 ha area under application.

Considering the risk of soil erosion and risk of exacerbating salinity related land degradation, clearing is considered to be at variance to this principle.

- Methodology** **References:**
- Northcote et al. (1960-68)
 - Site Inspection (2008)
 - State of Western Australia (2005)
- GIS Databases:**
- Salinity Risk LM 25m - DOLA 00
 - Groundwater Salinity, Statewide_1
 - Topographic Contours, Statewide
 - Groundwater Contours, Minimum

(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 may be at variance to this Principle

The area under application is located approximately 1 km east of Yeal Nature Reserve. Yeal Nature Reserve also forms part of the Gngangara Mound Environmental Protection Policy area.

The area under application is well connected to Yeal Nature Reserve by undisturbed native vegetation on Lot 3592 on Plan 205129 which lies between the Nature Reserve and Lot 3591 on Plan 205129 on which the area under application is located.

Given that the area under application is well connected to Yeal Nature Reserve it is considered that clearing will contribute to reducing the effective size of this reserve for native fauna and thus may impact on the conservation values of this reserve. It is thus considered that clearing may be at variance to this principle.

- Methodology** **References:**
- Site Inspection (2008)
- GIS Databases:**
- EPP, Areas
 - Cadastre for labelling
 - Ledge Point Gingin 50cm Orthomosaic - Landgate03

(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.

Comments Proposal may be at variance to this Principle

Approximately 1.7 hectares of the area under application are located within mapped Conservation Category Wetlands (CCW). A further 2.3 hectares of the applied area are located within Multiple Use Wetlands that are within the 50m buffer to the CCWs. The closest watercourse is a major tributary located approximately 1.3km east of the area under application, and there is a minor drain 180m to the east.

A portion of the applied area has a high risk of acid sulphate soils, however the proposed clearing is not likely to disturb acid sulphate soils so that management would be required.

Local depth to groundwater is approximately 6 m and the groundwater salinity is considered to be marginal however portions of the 1.8 ha and 2.8 ha areas under application are mapped as having a high risk of developing salinity and during Site Inspection (2008) surface salt and chenopod herbs were observed in the north eastern corner of the 1.8 ha area under application.

Soils on site are Bassendean sands, which generally have a high risk of phosphorus export (State of Western Australia 2005). Removal of the deep-rooted perennial vegetation under application has the potential to result in an increase in nutrients being discharged from the soil, causing a deterioration in surface water quality in the wetlands within and adjacent to the applied area.

Given that the proposed clearing may cause salinity and result increased nutrient enrichment loads in surface and underground waters, it is considered that the proposed clearing may cause a deterioration in surface water and groundwater quality.

- Methodology** **References:**
- Site Inspection (2008)
 - State of Western Australia (2005)
- GIS Databases:**

- Hydrography, linear (hierarchy)
- Hydrography, linear_1
- Geomorphic Wetlands (Classification), Swan Coastal Plain
- Salinity Risk LM 25m - DOLA 00
- Topographic Contours, Statewide

(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

Approximately 1.7 hectares of the area under application are located within mapped Conservation Category Wetlands (CCW). A further 2.3 hectares of the applied area are located within Multiple Use Wetlands that are within the 50m buffer to the CCWs. The closest watercourse is a major tributary located approximately 1.3km east of the area under application, and there is a minor drain 180m to the east.

Soils within the area under application are Bassendean sands, which generally have a low risk of waterlogging (State of Western Australia 2005).

Given the low risk of waterlogging associated with the soil type on site, it is not considered likely that the proposed clearing would cause or exacerbate the incidence of flooding.

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

A submission has been received from the Shire of Gingin stating that the south western half of the 2.8 ha area under application nearest the lake does not have Planning Approval for the proposed land use. The remaining areas do have Planning Approval due to planning consent for irrigated horticulture on the lot; this was issued on 12 April 1996 and the plantation has since commenced (Shire of Gingin 2008).

An Agreement to Reserve and Conservation Covenant under the Soil and Land Conservation Act has been placed on Lot 3589 Coonabidgee Road. Approximately half of the 2.8 ha area under application is zoned as 'area to be retained as native vegetation'. However the proposed southern fenceline is zoned 'area able to be cleared' (Department of Agriculture and Foods 1996).

A submission has been received from Gingin Land Conservation District Committee (GLCDC), stating no objection to clearing of vegetation north east of Coonabidgee Road and no objection to the installation of a fence line south west of Coonabidgee Road. However it is their recommendation that no more vegetation than is required for the installation of the fence line be cleared south west of Coonabidgee Road and that vegetation in this area requires continued conservation. The GLCDC also states that Phosphorous is an important limiting nutrient in Swan Coastal Plain aquatic ecosystems and that excess phosphate has been attributed to fertiliser loss through drainage however the proposed plantation will have a low phosphate requirement (Gingin Land Conservation District Committee 2008).

There are no Registered Sites of Aboriginal Significance recorded within the area under application (Department of Indigenous Affairs 2007). Lot 3591 on Plan 205129 is part of a Native Title Claim, however since it is privately owned the Native Title has been extinguished under the Native Title Act. Therefore the clearing is considered to be a secondary approval and not a future act under the Native Title Act 1993.

A 30 day refusal letter was issued on the 12 May 2008. The proponent was contacted on the 25 June 2008 after no response had been received. The proponent stated he did not wish to make a submission against the decision.

Methodology References:

- Department of Indigenous Affairs (2007)
- Gingin Land Conservation District Committee (2008)
- Shire of Gingin (2008)
- Department of Agriculture and Foods (1996)

GIS Databases:

- Acid Sulfate Soil Risk Map, Swan Coastal Plain

4. Assessor's comments

Comment

The application has been assessed against the clearing principles, planning instruments and other matters in accordance with s510 of the Environmental Protection Act 1989, and the proposed clearing is considered to be at variance to principles (a), (e), (f) and (g), may be at variance to principles (b), (c), (h) and (i), and is not likely to be at variance to the remaining principle.

5. References

- Brown A., Thomson-Dans C. and Marchant N., (1998). Western Australia's Threatened Flora, Department of Conservation and Land Management, Western Australia.
- Commonwealth of Australia (2001) National Targets and Objectives for Biodiversity Conservation 2001-2005, AGPS, Canberra.
- DEC (2008a) Wetland advice for land clearing application CPS 2113/1. Advice to Assessing Officer, Native Vegetation Assessment Branch, Department of Environment and Conservation (DEC), received 15/2/08. Wetlands Program, Department of Environment and Conservation, Western Australia. DOC46153.
- DEC. (2008). NatureBase - Fauna Species Profile: Western Brush Wallaby. <http://www.naturebase.net/content/view/840/1288/> (Accessed 25 March 2008).
- Department of Agriculture and Foods. (1996). Soils and Land Conservation Act - Agreement to Reserve, Lot 3589 Coonabidgee Road. TRIM Ref. DOC46461.
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- Gingin Land Conservation District Committee. (2008). Application to clear native vegetation - Lot 3589 Coonabidgee Road, Coonabidgee (advice). TRIM Ref. DOC49506.
- Government of Western Australia (1997) Wetlands Conservation Policy for Western Australia, Department of Conservation and Land Management and the Water and Rivers Commission, Perth WA.
- Hedde, E. M., Loneragan, O. W., and Havel, J. J. (1980) Vegetation Complexes of the Darling System, Western Australia. In Department of Conservation and Environment, Atlas of Natural Resources, Darling System, Western Australia.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Northcote, K. H. with Beckmann G G, Bettenay E., Churchward H. M., van Dijk D. C., Dimmock G. M., Hubble G. D., Isbell R. F., McArthur W. M., Murtha G. G., Nicolls K. D., Paton T. R., Thompson C. H., Webb A. A. and Wright M. J. (1960-68): 'Atlas of Australian Soils, Sheets 1 to 10, with explanatory data'. CSIRO and Melbourne University Press: Melbourne.
- Shepherd, D.P. (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.
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- Site Inspection. (2008). Site Inspection Report, Department of Environment and Conservation (DEC). Perth, Western Australia. TRIM Ref. DOC48208.
- State of Western Australia (2005) Agmaps Land Manager CD Rom.
- Water and Rivers Commission (2001). Position Statement: Wetlands, Water and Rivers Commission, Perth.
- Western Australian Herbarium (1998-). FloraBase - The Western Australian Flora. Department of Environment and Conservation. <http://florabase.calm.wa.gov.au/> (Accessed 25 March 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)

