GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS
Area Permit Number: 4489/1
File Number: 2011/006253-1-1
Duration of Permit: From 16 February 2012 – 16 February 2014

PERMIT HOLDER
Tiana 52 Pty Ltd

LAND ON WHICH CLEARING IS TO BE DONE
Lot 508 on Deposited Plan 32253 (ORANGE GROVE, 6109)

AUTHORISED ACTIVITY
The Permit Holder shall not clear more than 1.1 hectares of native vegetation and 15 native trees within the area hatched yellow on attached Plan 4489/1.

CONDITIONS

1. Flora management

(a) Prior to undertaking any clearing authorised under this Permit, the Permit Holder shall engage a *botanist* to inspect that area for the presence of rare flora listed in the *Wildlife Conservation (Rare Flora) Notice*.

(b) Where rare flora are identified in relation to condition 1(a) of this Permit, the Permit Holder shall ensure that:
  (i) no clearing occurs within 50 metres of identified rare flora, unless approved by the CEO; and
  (ii) no clearing of identified rare flora occurs unless approved under section 23F(2) of the *Wildlife Conservation Act 1950*.

2. Records to be kept

In relation to flora management pursuant to condition 1 of this Permit:
(a) the location of each rare flora species recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
(b) the species name of each rare flora species identified; and
(c) a copy of the botanist's flora survey report.

3. Reporting

(a) The Permit Holder must provide to the CEO on or before 30 June of each year, a written report:
  (i) of records required under condition 2 of this Permit; and
  (ii) concerning activities done by the Permit Holder under this Permit between 1 January and 31 December of the preceding year.

(b) Prior to 9 November 2013, the Permit Holder must provide to the CEO a written report of records required under condition 2 of this Permit where these records have not already been provided under condition 3(a) of this Permit.

DEFINITIONS
The following meanings are given to terms used in this Permit:

botanist means a person with specific training and/or experience in the ecology and taxonomy of Western Australian flora;

Wildlife Conservation (Rare Flora) Notice means those plant taxa gazetted as rare flora pursuant to section 23F(2) of the *Wildlife Conservation Act 1950* (as amended).

Kelly Faulkner
MANAGER
NATIVE VEGETATION CONSERVATION BRANCH

Officer delegated under Section 20
of the Environmental Protection Act 1986

16 February 2012

Plan 4489/1

LEGEND

- Road Centrelines
- Cadastre
  Clearing Instruments
- Areas Approved to Clear
- Local Government Authorities

N

0 50 m

Scale 1:2000
(Approximate when reproduced at A4)

Geocentric Datum Australia 1994

Note: the data in this map have not been projected. This may result in geometric distortion or measurement inaccuracies.

..... Date 16/2/04

K. Faulkner

Officer with delegated authority under Section 20 of the Environmental Protection Act 1986

Information derived from this map should be confirmed with the data custodian acknowledged by the agency acronym in the legend.

Department of
Environment and Conservation

Our environment, our future

Department of Environment and Conservation

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 4489/1

Permit type: Area Permit

1.2. Proponent details

Proponent's name: Tiana 52 Pty Ltd

1.3. Property details

Property: LOT 508 ON PLAN 32253 (House No. 225 KELVIN ORANGE GROVE 6109)

Local Government Area: City of Gosnells

Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
1.1	15	Mechanical Removal	Industrial

1.5. Decision on application

Decision on Permit Application: GRANT

Decision Date: 16 February 2012

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: 968 - Medium woodland; jarrah, marri & wandoo 3 - Medium forest; jarrah-marri (Shepherd, 2009) Heddle Vegetation Complex: Forrestfield Complex - Vegetation ranges from open forest of Corymbia calophylla (Marri) - Eucalyptus wandoo (Wandoo) - Eucalyptus marginata (Jarrah) to open forest of Eucalyptus marginata (Jarrah) - Corymbia calophylla (Marri) - Allocasuarina fraseriana (Sheoak) - Banksia species. Fringing woodland of Eucalyptus rudis (Flooded Gum) in the gullies that dissect this landform. (Heddle et al., 1980) Mattiske Vegetation Complex: Forrestfield (Fo) - Mosaic of open forest of Corymbia calophylla-Eucalyptus wandoo-Eucalyptus marginata subsp. elegantella and open forest of Eucalyptus marginata (Mattiske and Havel, 1998)	The application is to clear up to 1.1 hectares of native vegetation and 15 native trees from Lot 508 on Deposited Plan 32253 (225 Kelvin Road), Orange Grove, for the purpose of developing light industry, specifically the construction and sale of transportable buildings. The majority of the 2.02 hectare property is cleared and supports open weed areas, and scattered exotic and native trees over an understorey of weed species. There is a dwelling with a garden at the front of the property. These areas are in degraded to completely degraded (Keighery, 1994) condition. Approximately 0.2 hectares of the vegetation under application, in the southern half of the property, is described as Banksia woodland in good to very good (Keighery, 1994) condition (DEC, 2011) with relatively high species diversity and low weed presence. The remnant is surrounded by cleared, highly disturbed and weed infested areas with few native species. Native species noted in this area during a recent site visit include Banksia attenuata, B. menziesii, B. illicifolia, Adenanthos cygnorum, Eucalyptus marginata, E. todtiana, Nuytsia floribunda, Xanthorrhoea preissii, Stirlingia latifolia, Drosera spp, Conostylis sp, Lyginia imberbis, Dasypogon sp, orchid sp and Jacksonia sp (DEC, 2011).	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994) To Completely Degraded: No longer intact; completely/almost completely without native species (Keighery, 1994)	The vegetation description and condition was determined through aerial imagery and site inspection conducted 2 August 2011 (DEC, 2011).

3. Assessment of application against clearing principles

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

Comments

Proposal is not likely to be at variance to this Principle

The proposed development of light industry on Lot 508 on Deposited Plan 32253 (225 Kelvin Road, Orange Grove) will involve the clearing and redevelopment of the whole 2.02 hectare property.

The property is largely cleared, with the majority of the property supporting areas of open weeds and scattered exotic and native trees over weed species (DEC, 2011). There is a dwelling with a garden at the front of the property. These areas are in degraded to completely degraded (Keighery, 1994) condition (DEC, 2011) and are not considered to have high biological diversity values.

Approximately 0.2 hectares of the vegetation in the southern half of the property is described as Banksia woodland in good to very good (Keighery, 1994) condition with relatively high species diversity and low weed presence (DEC, 2011). This remnant is isolated from other areas of native vegetation on neighbouring properties and is surrounded by highly disturbed, weed infested areas.

While the 0.2 hectare remnant has been utilised by Carnaby's black cockatoo for feeding (DEC, 2011), contains suitable habitat for declared rare flora species and has the possibility of being representative of a Priority 3 ecological community 21c (Low lying Banksia attenuata woodlands or shrublands), due to the level of disturbance and relative isolation of the remnant it is considered to have a low level of sustainability and reduced conservation value. The nearby Bush Forever sites 51 (White Road Bushland) and 53 (Clifford Street Bushland) area more likely to achieve sustained maintenance and conservation of these environmental values.

Considering the above, the proposed clearing is not likely to be at variance to this principle.

Methodology

References:
DEC, 2011
Keighery, 1994
GIS Databases:
- Bush Forever 2000, Site Boundaries - Ministry for Planning 11/98
- Cadastre - Landgate 03/11
- SAC Biodatasets - 08/11
- Swan Coastal Plain Central 20cm Orthomosaic - Landgate 2009

(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

Fifteen fauna species of conservation significance have been recorded within the local area (5 kilometre radius) including five threatened fauna, being the woylie, Baudin's black cockatoo, Carnaby's black cockatoo, chuditch and a native bee (Leioproctus douglasiellus).

The majority of the vegetation under application is in degraded to completely degraded (Keighery, 1994) condition (DEC, 2011) and is not considered to comprise significant habitat values for native fauna.

The 0.2 hectare remnant of Banksia woodland under application contains some species that are the preferred feeding habitat for Carnaby's black cockatoo (Calyptorhynchus latirostris) (Endangered, Environment Protection and Biodiversity Conservation Act 1999; Endangered, Wildlife Conservation Act 1950) and a recent site inspection recorded the presence of cockatoo feeding residue on Banksia cones (DEC, 2011). Additionally, the remnant may provide suitable habitat for a range of ground dwelling fauna, and during a recent site inspection kangaroo scats and fauna diggings were observed throughout the property (DEC, 2011). However, due to the small size, level of disturbance and relative isolation of the remnant, it is considered to have a low level of sustainability and reduced conservation value. Considering this and the proximity to extensive remnants in similar or better condition and in secure land tenure, including Bush Forever sites 51 (White Road Bushland) and 53 (Clifford Street Bushland), 130 metres west and 850 metres east, respectively, the remnant vegetation under application is not considered to be significant habitat for these species.

Baudin's black cockatoo (Calyptorhynchus baudinii) (Vulnerable, Environment Protection and Biodiversity Conservation Act 1999; Endangered, Wildlife Conservation Act 1950) mostly forages in Marri trees, where it searches among the foliage and feeds on gumnuts and blossoms. Recent site visit did not record the presence of Marri trees and, if present, are likely to be in low numbers. The vegetation under application is not considered to constitute significant habitat for this species.

Leioproctus douglasiellus (native bee) (Endangered, Wildlife Conservation Act 1950) appears to be dependent on the flowers of Goodenia filiformis (Thread-leaved Goodenia). The vegetation under application is not likely to contain significant habitat for this species.

Considering the above, the proposed clearing is not likely to be at variance to this principle.

Methodology

References:
DEC, 2011
Keighery, 1994
GIS Databases:
- Bush Forever 2000, Site Boundaries - Ministry for Planning 11/98
- SAC Biodatasets - 08/11
- Swan Coastal Plain Central 20cm Orthomosaic - Landgate 2009

(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 the local area (5 kilometre radius) there are numerous records of eleven species of declared rare flora (DRF).

The closest known record of DRF is Conospermum undulatum, approximately 130 metres west of the application area on the same mapped vegetation and soil type. The 0.2 hectare Banksia woodland remnant under application is in good to very good (Keighery, 1994) condition (DEC, 2011) and contains suitable habitat for this species. There are over twenty known occurrences of this taxon in the local area, with two populations within 500 metres of the property, including one large population within a nearby Bush Forever site. Any population found within the application area is unlikely to be significant to the conservation of the species.

The next closest known DRF is a record of Banksia mimica from Brentwood Road, approximately 2 kilometres north of the application area. The 0.2 hectare remnant vegetation on the property represents potential habitat for this species. If a population of B. mimica was to occur on the property it would be significant locally, as only two small populations exist in the area, none of which are on secure tenure. Additionally, it is possible that the populations of B. mimica in the area may be a distinct subspecies.

Six other species of declared rare flora have also been recorded on the same mapped vegetation and soil types as the vegetation under application, within the local area. Considering the condition and description of the vegetation on the property (DEC, 2011) and the preferred habitats of the rare flora species, the vegetation under application is considered unlikely to provide suitable habitat for these taxa.

While the potential may exist for the 0.2 hectare remnant to contain rare flora, due to the level of disturbance and relative isolation of the area it is considered to have a low level of sustainability and reduced conservation value and the maintenance of potential conservation values are more likely in the nearby Bush Forever sites 51 (White Road Bushland) and 53 (Clifford Street Bushland).

Considering the above, the proposed clearing may be at variance to this principle. An appropriately timed flora survey is required to determine the presence of declared rare flora within the application area.

Methodology

References:
DEC, 2011
Keighery, 1994
GIS Databases:
- Bush Forever 2000, Site Boundaries - Ministry for Planning 11/98
- Pre-European vegetation - DA 01/01
- SAC Biodatasets - 01/08/11
- Soils, Statewide - DA 11/99

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

Comments

Proposal is not likely to be at variance to this Principle

There are known occurrences of nine threatened ecological communities (TEC) within a 5 kilometre radius (local area) of the area under application.

Seven of the nine TECs have been recorded on the same vegetation and soil type as the vegetation under application, being floristic community types (FCT):

- FCT3a - Eucalyptus calophylla - Kingia australis woodlands on heavy soils, Swan, 3 kilometres west of the application area (Critically endangered)
- FCT3b - Corymbia calophylla - Eucalyptus marginata woodlands on sandy clay soils, 325 metres west of the application area (Vulnerable);
- FCT07 - Herb rich saline shrublands in clay pans, 2.8 kilometres west (Vulnerable);
- FCT08 - Herb rich shrublands in clay pans, 240 metres west (Vulnerable);
- FCT10a - Shrublands on dry clay flats, 2.5 kilometres north-northwest (Endangered);
- FCT20a - Banksia attenuata woodlands over species rich dense shrublands, 850 metres northeast

(Endangered); and
- FCT20b - Eastern Banksia attenuata and/or Eucalyptus marginata woodlands, 130 metres west (Endangered).

The application area is within the buffer to the FCT20a, FCT08 and FCT3b TECs that occur within Bush Forever site 53 (Clifford Street Bushland), approximately 130 metres to the west.

Approximately 0.2 hectares of the vegetation under application is described as Banksia woodland in good to very good (Keighery, 1994) condition (DEC, 2011). Native species noted during a recent site visit include Banksia attenuata, B. menziesii, B. illicifolia, Adenanthos cygnorum, Eucalyptus marginata, E. todtiana, Nuytsia floribunda, Xanthorrhoea preissii, Stirlingia latifolia, Drosera spp, Conostylis sp, Lyginia imberbis, Dasypogon sp, orchid sp and Jacksonia sp.

The combination of the species present onsite reflects the wetter nature of the site and it is unlikely that any TEC is present within the application area.

Considering the above, it is unlikely vegetation on the property is representative of a threatened ecological community and the proposed clearing is not likely to be at variance to this principle.

Methodology

References:
DEC, 2011
Keighery, 1994
GIS Databases:
- Bush Forever 2000, Site Boundaries - Ministry for Planning 11/98
- Pre-European vegetation - DA 01/01
- SAC Biodatasets - 08/11
- Soils, Statewide - 11/99

(e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.

Comments

Proposal may be at variance to this Principle

The majority of the vegetation under application is in degraded to completely degraded (Keighery, 1994) condition (DEC, 2011) and is not considered to be representative of the mapped vegetation units.

Approximately 0.2 hectares of the application area is described as Banksia woodland in good to very good (Keighery, 1994) condition (DEC, 2011). The majority of this area is mapped as Beard Vegetation Association 3, with a small area at the western edge of the remnant mapped as Association 968. These vegetation associations retain approximately 18 per cent (3,189 hectares) and 7 per cent (9,850 hectares) of the pre-European extent within the Swan Coastal Plain IBRA Bioregion, respectively (Shepherd, 2009).

The 0.2 hectare remnant is also mapped by Mattiske and Havel (1998) as the Forrestfield Complex, of which approximately 16 per cent (607 hectares) remains in total, and Heddle et al (1980) as the Forrestfield Complex which retains approximately 11 per cent (2,205 hectares) of the pre-European extent (Shepherd, 2007). Given the low representation of the Mattiske and Havel (1998) Forrestfield Complex, the 0.2 hectares of Banksia woodland on the property is considered to be a remnant of significance of this vegetation complex. However, due to the small size, high level of disturbance and relative isolation of the vegetation, this remnant is considered to have a low level of sustainability and reduced conservation value.

The local area (5 kilometre radius) is approximately 25 per cent vegetated, with the Brixton Street Swamps (Directory of Important Wetlands in Australia, Environment Australia, 2001) and Bush Forever site 53 to the west and Bush Forever site 52, the Korung and Lesmurdie Falls National Parks, Water Corporation public drinking water source area, unallocated Crown land and remnant vegetation on private property to the east.

Considering the above, the vegetation under application may be a significant remnant in an extensively cleared area and the proposed clearing may be at variance to this principle.

	Pre-European (ha)	Current extent (ha)	Remaining (%)	% In reserves DEC Managed Land
IBRA Bioregion				
Swan Coastal Plain*	1,501,209	587,889	39%	33% (195,835ha)
City of Gosnells*	12,718	3,674	29%	15% (566ha)
Beard Vegetation Association within Bioregion*				
968 (western half)	136,188	9,850	7%	15% (1,458ha)

3 (eastern half)	17,364	3,189	18%	11% (355ha)
Mattiske Vegetation Complex**				
Forrestfield (Fo)	3,708	607	16%	6% (230ha)
Heddle Vegetation Complex**				
Forrestfield Complex	20,169	2,205	11%	1% (287ha)

* (Shepherd, 2009)
** (Shepherd, 2007)

The National Objectives and Targets for Biodiversity Conservation include a target that prevents the clearance of ecological communities with an extent below 30 per cent of that present pre-European settlement (Commonwealth of Australia, 2001). However, the Environmental Protection Authority (EPA) recognises the Perth Metropolitan Region as a constrained area, which provides for the reduction of vegetation complexes to a minimum of 10 per cent of the pre-European extent (EPA, 2006).

Methodology

References:
Commonwealth of Australia, 2001
DEC, 2011
Environment Australia, 2001
EPA, 2006
Keighery, 1994
Shepherd, 2007
Shepherd, 2009
GIS Databases:
- Cadastre - Landgate 03/11
- DEC Managed Lands & Waters - DEC 10/09
- SAC Biodatasets - 08/11
- Swan Coastal Plain Central 20cm Orthomosaic - Landgate 2009

(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

Comments

Proposal is not likely to be at variance to this Principle

There are numerous wetlands within a 5 kilometre radius of the area under application; including a Conservation Category Wetland located approximately 150 metres west of the applied area within Bush Forever site 53.

In addition, a large palusplain extends to within 75 metres south of the application area and multiple use and resource enhancement dampland wetlands are located 60 metres southeast and 90 metres east of the applications area, respectively.

The Brixton Street Swamps is listed in the Directory of Important Wetlands in Australia (Environment Australia, 2001) and Register of National Estate (ID 19536) and is located approximately 1.5 kilometres northwest of the application area.

There is a minor perennial watercourse approximately 650 metres north of the application area, and the Bickley Brook is located approximately 700 metres south of the application area.

The combination of the species present onsite reflects the wetter nature of the site, however the proposed clearing is not likely to impact vegetation growing in association with nearby wetlands and watercourses and is not likely to be at variance to this principle.

Methodology

References:
Environment Australia, 2001
GIS Databases:
- ANCA, Wetlands - DEWHA 10/08
- Bush Forever 2000, Site Boundaries - Ministry for Planning 11/98
- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain - DEC 03/11
- Hydrography, linear - DoW 07/06
- Register of National Estate - Environment Australia 03/02

(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

Chief soils of the application area are mapped as deep rapidly drained brownish, siliceous or bleached sands underlain by mottled yellow clay (King and Wells, 1990). These soils have low risk of waterlogging and salinity (King and Wells, 1990).

The main land degradation risk associated with the removal of vegetation on the identified soil types is wind erosion and nutrient export (King and Wells, 1990). Given that the proposed land use is for light industry, nutrient levels are not likely to be artificially elevated, therefore minimising the risk of eutrophication. However, without appropriate ground cover, windbreaks or adequate dust suppression on exposed surfaces, the proposal is likely to cause land degradation through wind erosion.

Given the above, the proposed clearing may result in appreciable land degradation in the form of wind erosion. Adequate wind erosion management strategies could mitigate this risk.

Methodology

References:
King and Wells, 1990

(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.

Comments

Proposal is not likely to be at variance to this Principle

There are numerous areas reserved for conservation purposes within a 5 kilometre radius of the area under application, the closest being Bush Forever site 53 (Clifford Street Bushland), located approximately 130 metres west of the applied area and Bush Forever site (White Road Bushland), approximately 850 metres to the east.

Considering the relatively small area of intact vegetation on the property (0.2 hectares) and high level of disturbance impacting the remainder of the application area, the vegetation under application is considered unlikely to be significant as an ecological stepping stone between remnants in the area.

Given the lack of connectivity to these reserves, it is not considered likely that the proposed clearing would have a direct or indirect impact on the environmental values of any nearby conservation areas.

Methodology

GIS Databases:
- Bush Forever 2000, Site Boundaries - Ministry for Planning 11/98
- Swan Coastal Plain Central 20cm Orthomosaic - Landgate 2009

(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

There are numerous wetlands within a 5 kilometre radius of the area under application, including a Conservation Category Wetland located approximately 150 metres west of the applied area, within Bush Forever site 53 (Clifford Street Bushland).

In addition, a large palusplain extends to within 75 metres south of the application area and multiple use and resource enhancement dampland wetlands are located 60 metres southeast and 90 metres east of the applications area, respectively.

The Brixton Street Swamp is listed in the Directory of Important Wetlands in Australia (Environment Australia, 2001) and Register of National Estate (id 19536) and is located approximately 1.5 kilometres northwest of the application area.

There is a minor perennial watercourse approximately 650 metres north of the application area, and the Bickley Brook is located approximately 700 metres south of the application area.

The area under application has a nil to low risk of salinity.

Considering the above, the small amount of intact native vegetation on the property and the level of disturbance impacting the property, the proposed clearing is unlikely to result in degradation of water quality and is not likely to be at variance to this principle.

Methodology

References:
Environment Australia, 2001
GIS Databases:
- ANCA, Wetlands - DEWHA 10/08

- Bush Forever 2000, Site Boundaries - Ministry for Planning 11/98
- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain - DEC 03/11
- Hydrography, linear - DoW 07/06
- Register of National Estate - Environment Australia 03/02

(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

Chief soils of the application area are mapped as deep rapidly drained brownish, siliceous or bleached sands underlain by mottled yellow clay (King and Wells, 1990). These soils have low risk of waterlogging and salinity (King and Wells, 1990).

The proposed clearing is unlikely to cause or exacerbate the incidence or intensity of flooding and is not likely to be at variance to this principle.

Methodology

References:
King and Wells, 1990

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

Comments

The applicant is the landowner of the property.

The property is zoned 'General Rural' under the City of Gosnells Town Planning Scheme No. 6 (TPS6). The City of Gosnells (2011a) granted development approval for the proposed Industry - Service (Fabrication of Transportable Dwellings) on 28 November 2011.

The City of Gosnells considers that the remnant vegetation appears to be of amenity and potentially habitat value (City of Gosnells, 2011b). The City proposes that prior to the commencement of site works, a vegetation survey be undertaken showing the location of species of vegetation for the purpose of identifying and protecting vegetation worthy of retention (City of Gosnells, 2011b). The applicant is advised of this recommendation.

The property is within the Perth Groundwater Area proclaimed under the Rights in Water and Irrigation Act 1914. The Department of Water advised it assessed the referral and had no comment (DoW, 2011).

There are no known Aboriginal sites of significance within the application area.

No public submissions have been received in relation to the proposed clearing.

Methodology

References:
City of Gosnells, 2011a
City of Gosnells, 2011b
DoW, 2011
GIS Databases:
- Aboriginal Sites of Significance - DIA 02/10
- RIWI Act, Groundwater Areas - DoW 03/08
- Town Planning Scheme Zones - MFP 08/98

4. References

City of Gosnells (2011a) Development Approval - Lot 508 Kelvin Road, Orange Grove. DEC Ref: A453676

City of Gosnells (2011b) Direct Interest Submission. Received 18/08/2011. DEC Ref: A422964; A423330

DEC (2011) Site Inspection Report for Clearing Permit Application CPS 4489/1, Lot 225 Kelvin Road, Orange Grove. Site inspection undertaken 2 August 2011. Department of Environment and Conservation, Western Australia (DEC Ref: A423933)

DoW (2011) Rights in Water and Irrigation Act 1914 Advice. Received 10/08/2011. Department of Water, Western Australia. DEC Ref: A420552

Environment Australia (2001) A Directory of Important Wetlands in Australia, 3rd edn, Environment Australia, Canberra.

Heddle, E. M., Loneragan, O. W., and Havel, J. J. (1980) Vegetation Complexes of the Darling System, Western Australia. In Department of Conservation and Environment, Atlas of Natural Resources, Darling System, Western Australia.

Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.

King, P.D. and Wells, M.R. (1990). Darling Range rural land capability study. Land Resources Series No. 3. Western Australian Department of Agriculture. Land Resources Series No. 5. Accessed 25/07/11. Available from DAFWA NRM Maps (SLIP) http://spatial.agric.wa.gov.au/slip/

Mattiske, E.M. and Havel, J.J. (1998) Vegetation Complexes of the South-west Forest Region of Western Australia. Maps and

report prepared as part of the Regional Forest Agreement, Western Australia for the Department of Conservation and Land Management and Environment Australia.

Shepherd, D.P. (2007) Adapted from: Heddle, E. M., Loneragan, O. W., and Havel, J. J. (1980) Vegetation Complexes of the Darling System, Western Australia. In Department of Conservation and Environment, Atlas of Natural Resources, Darling System, Western Australia and; Mattiske, E.M. and Havel, J.J. (1998) Vegetation Complexes of the South-west Forest Region of Western Australia. Maps and report prepared as part of the Regional Forest Agreement, Western Australia for the Department of Conservation and Land Management and Environment Australia.

Shepherd, D.P. (2009) 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.

5. 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)