



1. Application details

1.1. Permit application details

Permit application No.: 1846/1
 Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: City of Canning

1.3. Property details

Property: NICHOLSON ROAD RESERVE (CANNING VALE 6155)
 Local Government Area: City Of Canning
 Colloquial name:

1.4. Application

| | | | |
|--------------------|-----------|--------------------|----------------------------------|
| Clearing Area (ha) | No. Trees | Method of Clearing | For the purpose of: |
| 2.1 | | Mechanical Removal | Road construction or maintenance |

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

| Vegetation Description | Clearing Description | Vegetation Condition | Comment |
|--|---|--|---|
| Heddl Complex: Vegetation | The proposal is to clear 2.1 hectares for the purpose of widening Nicholson Road. | Good: | Vegetation clearing description based on a site visit conducted by DEC officers on 6 July 2007, and an environmental assessment conducted by Ecoscape on 24 November 2006. The vegetation ranges in condition from completely degraded next to the road and in the northern section, to very good, with an average condition of good. |
| Southern River Complex - open woodland of <i>E. calophylla</i> - <i>E. marginata</i> - <i>Banksia species</i> with fringing woodland of <i>E. rudis</i> - <i>M. raphiophylla</i> along creek beds. | Ecoscape Pty Ltd (2006) identified the following three vegetation communities to be within the area under application: - Tall Grassland of <i>*Eragrostis curvula</i> , <i>*Ehrharta calycina</i> with very open herbs of <i>Corynotheca micrantha</i> , <i>*Ursinia anthemoides</i> , <i>*Bromus diandrus</i> , <i>*Hypochaeris glabra</i> . This vegetation was considered to be in completely degraded condition. | Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994) | |
| Beard Association 1001: Medium mosaic very sparse woodland; jarrah, with low woodland; banksia & casuarina | - Low open woodland A of <i>Melaleuca preissiana</i> over open scrub of <i>Regalia inops</i> , <i>Adenanthos cygnorum</i> , <i>Acacia pulchella</i> , <i>Jacksonia furcellata</i> with low heath D of <i>Melaleuca sariata</i> , <i>Biggertia ?pachyrrhiza</i> , <i>Gompholobius tomentosum</i> , <i>Hybanthus calycinus</i> , <i>Pultenaea neurocalyx</i> over very open herbs of <i>Patersonia occidentalis</i> and <i>Dasyopogon bromellifolius</i> . This vegetation was considered to be in fair to good condition (Kaesehagen 1995). (Good to Very Good on the Keighery scale.) | | |
| (Shepherd 2006) | - Low woodland A of <i>Melaleuca preissiana</i> , <i>Eucalyptus rudis</i> over low scrub A of <i>Melaleuca lateritia</i> , <i>Melaleuca teretifolia</i> , <i>Asterlea fascicularis</i> with low scrub B of <i>Verticordia densiflora var densiflora</i> , <i>Pericalymma floribunda</i> , <i>Hypocalymma angustifolium</i> over open low sedge of <i>Lepidosperma spp.</i> with a dense weed layer. This vegetation was considered to be in poor condition (Kaesehagen 1995). (Degraded on the Keighery scale.) | | |

3. Assessment of application against clearing principles

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

Comments **Proposal may be at variance to this Principle**

During a flora survey Ecoscape (2006) identified 128 floral taxa over the 4.3 hectare study area within the road reserve under application, however this included 45 weed species. The vegetation under application ranges in condition from completely degraded to very good, with an average condition of good.

During the flora survey Ecoscape (2006) did not identify any rare flora, however the survey was conducted during November, which is a suboptimal time for locating rare orchid species that occur in the local area, and which flower in September/October. Suitable habitat is present within the area under application for these species.

Given that the vegetation under application may include rare flora species, it is therefore considered that it may comprise a high level of biodiversity. An appropriately timed flora survey is required to determine if the vegetation under application includes rare flora, and therefore a high level of biodiversity.

Methodology DEC site visit 6/7/07
Ecoscape (2006)

(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**

There are 17 records of indigenous fauna within the local area (5km radius), including the Western Brush Wallaby which has been recorded in the adjacent bushland, the Quenda, the Lined Skink (*Lerista lineata*), the Numbat (*Myrmecobius fasciatus*) and the Native Bees (*Leioproctus contrarius* and *Neopasiphe simplicior*). In addition, Ecoscape (2006) noted several bird species and mammal tracks on the firebreaks while on site.

The majority of the vegetation under application is in good condition, with some understorey present, and it is considered that it may be utilised by fauna including the aforementioned species.

Although the vegetation under application may be utilised by fauna it is not considered likely that it comprises significant habitat for fauna given the thin, linear shape of the applied area and its location adjacent to Nicholson Road. In addition, the applied area is directly adjacent to Jandakot Regional Park and a Bush Forever site, which would be the significant habitat for fauna in the local area.

Methodology DEC site visit 6/7/07
Ecoscape (2006)
GIS Database:
SAC Bio datasets accessed 24/07/07

(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**

There are approximately 80 known populations of Declared Rare Flora and Priority Flora within the local area (5km radius) of the applied area, with the closest being *Tripterococcus paniculatus* (P1) located directly adjacent to applied area, and *Caladenia huegellii* (R) located approximately 630m to the east.

Ecoscape (2006) identified that of the DRF and Priority flora located within a 10km radius of the applied area, *Caladenia huegellii* (R) and *Drakaea micrantha* (R) have the potential to be present within the applied area given that suitable habitat for these species is present on site.

Caladenia huegellii flowers in September/October and is generally found on low sandy rises in low *Banksia/Eucalypt* woodlands. *Drakaea micrantha* also flowers in September/October and is generally found in open sandy patches in Jarrah/Banksia woodland, often associated with thickets of *Kunzea glabrescens* (DEC undated). In addition, *Tripterococcus paniculatus* (P1) is generally found in grey, black or peaty sand on winter-wet flats (Western Australian Herbarium 2007).

Diuris purdiei is also found in the local area and is generally found on sand to sandy clay in areas subject to winter inundation, however this species only flowers following summer fire so it would not be possible to find during a survey if the area has not been burnt in the previous year (DEC 2007).

The vegetation under application comprises woodland of *Melaleuca preissiana* on grey sands, with a portion being located within a wetland (Ecoscape 2006). The presence of these winter-wet areas is considered to provide suitable habitat for the aforementioned species.

DEC Species and Communities branch (2007) advised that a number of orchid species may be present within the applied area, with the *Kunzea* thicket on site providing suitable habitat for the DRF *Drakaea elastica*, and

the *Banksia* woodland providing suitable habitat for *C. huegellii*. DEC also advised that the Priority flora *Tripterococcus paniculatus* (P1), *Byblis gigantea* (P2) and *Anthotium junciforme* (P4) have been recorded in the adjacent Bush Forever site.

Ecoscape (2006) conducted a flora survey and no DRF or Priority species were identified, however the survey time of November was not optimal for detecting orchid species such as *C. huegellii*, *D. elastica* and *D. micrantha* that flower in September/October and it is possible that these species are present within the applied area, but were not observed.

Given that the area under application contains suitable habitat for the rare flora species found in the local area, and given that the flora survey was conducted at a suboptimal time for detecting these species, and given the proximity of the above mentioned Priority flora species, it is considered that the vegetation under application may include rare flora. A condition has been imposed on the permit requiring an appropriately timed flora survey prior to clearing to determine the presence of rare flora within the applied area.

Methodology DEC (2007)
DEC (undated)
Ecoscape (2006)
Western Australian Herbarium (1997)
GIS Databases:
SAC Bio datasets accessed 24/7/07

(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 seven known occurrences of Threatened Ecological Communities (TEC) within the local area (5km radius) with the nearest, located approximately 3.1km to the southeast of the area under application, being identified as SCP 10a - Shrublands on dry clay flats.

Ecoscape (2006) inferred through species lists that the vegetation under application was most similar to Floristic Community Types 23a (Central *Banksia attenuata* - *Banksia menziesii* woodlands) and 5 (Mixed shrub damplands), which are not listed as TECs.

Given that the vegetation under application has been inferred during a flora survey as Floristic Community Types that are not TECs, and given the distance to the nearest TEC, it is not considered likely that it comprises, or is necessary for the maintenance of a TEC.

Methodology DEC site visit 6/7/07
Ecoscape (2006)
GIS Databases:
SAC Bio datasets accessed 23/07/07

(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 not likely to be at variance to this Principle**
Hedde et al. (1980) defines the vegetation under application as 'Southern River Complex', which has a pre-European representation of 19.8%, and is defined as being of 'vulnerable' status for biodiversity conservation (Department of Natural Resources and Environment 2002; EPA 2006).

The vegetation under application is also classified as Beard vegetation association 1001, which has 26.5% of the pre-European extent remaining and which is classified as vulnerable (Shepherd 2006).

The State Government is committed to the National Objectives Targets for Biodiversity Conservation which includes a target that prevents clearance of ecological communities with an extent below 30% of that present pre-1750 (Department of Natural Resources and Environment, 2002; EPA, 2000).

Although the Southern River Complex has less than the recommended 30% minimum of Pre-European extent remaining, the applied area is considered to be within a constrained area. The EPA (2003) recognises the Perth Metropolitan Region as a 'constrained area', providing for the reduction of vegetation complexes remaining to a minimum of 10% of the pre-European extent. It is therefore not considered likely that the vegetation under application is significant as a remnant in an area that has been extensively cleared.

| | Pre-European (ha) | Current (ha) | Remaining % | Conservation status*** | % in reserves |
|-----------------------------------|-------------------|--------------|-------------|------------------------|---------------|
| Swan Coastal Plain | 1,501,456 | 571,758 | 38.1** | | |
| Hedde vegetation complex | | | *** | | |
| Southern River Complex | 57,979 | 11,501 | 19.8 | Vulnerable | 1.5 |
| Beard vegetation association 1001 | 57,412 | 15,241 | 26.5** | Vulnerable | |

- * (Shepherd et al. 2001)
- ** (Shepherd 2006)
- ***(EPA, 2006)
- ***(Department of Natural Resources and Environment 2002)

Methodology DEC site visit 6/6/07
 Department of Natural Resources and Environment (2002)
 EPA (2006)
 Shepherd (2006)
 Heddle et al. (1980)
 GIS Databases:
 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 at variance to this Principle

A 210m length of the area under application is located within a Conservation Category Wetland (CCW). CCWs are wetlands with high ecological values and are the highest priority wetlands for protection (Water and Rivers Commission 2001); and are recognised under objective one of the Wetlands Conservation Policy for Western Australia as valuable (Government of Western Australia 1997).

The vegetation under application comprises a woodland of *Melaleuca preissiana*, which is a species generally found in sandy soils in swamps (Western Australian Herbarium 1998-) and therefore is considered to grow in association with wetlands.

Given that approximately 0.3 hectares of the vegetation under application is located within a CCW, and includes vegetation that is generally associated with a wetland, the proposed clearing is therefore considered to be at variance to this Principle.

A condition has been placed on the permit requiring offsets for the vegetation cleared from within the wetland.

Methodology DEC site visit 6/7/07
 Government of Western Australia (1997)
 Water and Rivers Commission (2001)
 Western Australian Herbarium (1998-)
 GIS Databases:
 Geomorphic Wetlands (Classification), Swan Coastal Plain - DEC
 Hydrography, linear (hierarchy) - DOW

(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 following three soil types are present within the area under application:

- Bassendean 212Bs_B1 - extremely low to very low relief dunes with deep bleached grey sands with pale yellow B horizon,
- Bassendean 212Bs_B2 - well to moderately well drained deep bleached grey sands with yellow B horizon,
- Bassendean 212Bs_B4 - poorly drained deep grey siliceous sands or bleached sands (Ecoscape 2006).

These soils generally have a high risk of wind erosion, acid sulphate soils and phosphorus export, with the B4 phase soils also having a high risk of water logging (State of Western Australia 2005), however given that the proposed clearing is limited to 2.1 hectares of vegetation over 1.2km of road reserve, it is not considered likely that it would result in appreciable land degradation.

Methodology Ecoscape (2006)
 State of Western Australia (2005)
 GIS Database:
 Acid Sulfate Soil Risk Map, Swan Coastal Plain - DEC
 Salinity Risk LM 25m - DOLA 00

(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 directly adjacent to Jandakot Regional Park, which is also a Bush Forever site.

Although it is not considered likely that the proposed clearing would have a direct impact on the environmental values of the adjacent conservation reserve, it may have an indirect impact through the spread or introduction of dieback or weed species by machinery or the importation of fill required for road construction. There are serious consequences associated with the spread of such diseases and exotic species into an area reserved for conservation, including the potential local extinction of species.

Given that the proposed clearing may indirectly impact on the environmental values of the adjacent Jandakot Regional Park and Bush Forever site, it is considered that it may be at variance to this Principle.

In order to minimise the risk of introducing weeds or dieback into the adjacent conservation reserve a condition has been imposed on the permit relating to weed and dieback prevention.

Methodology DEC site visit 6/7/07
GIS Databases:
Bushforever - MFP 07/01
CALM Regional Parks - CALM 12/04/02

(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

A portion of the area under application is located within the mapped boundary of a Conservation Category Wetland (CCW) and the nearest watercourse is a drain system located approximately 2.7km to the south.

The soils identified on site generally have a low risk of water erosion, but have a high risk of phosphorus export and acid sulphate soils. The area under application is mapped as having a moderate to low risk of acid sulphate soils and a low salinity risk except for the northern-most portion, which has a high salinity risk.

Given that proposed clearing is limited to 2.1 hectares of vegetation over 1.2km of road reserve, it is not considered likely that it would result in salinity or acid sulphate soils causing a deterioration in groundwater quality. In addition, given the low risk of water erosion associated with the soils, and the low relief on site, it is not considered likely that the proposed clearing would result in a deterioration in surface water quality.

Methodology State of Western Australia (2005)
GIS Database:
Acid Sulphate Soil Risk Map, Swan Coastal Plain - DEC
Geomorphic Wetlands (Classification), Swan Coastal Plain - DEC
Hydrography, linear (hierarchy) - DOW
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 likely to be at variance to this Principle

The area under application is located at an elevation of 28-30m. A portion of the applied area is located within the mapped boundary of a Conservation Category Wetland (CCW) and is associated with poorly-drained soils that have a high risk of water logging (State of Western Australia 2005).

Although a portion of the applied area contains soils with a high risk of water logging, the proposed clearing in this 200m section is limited to approximately 0.3 hectares of vegetation, and therefore it is not considered likely that the removal of vegetation from site would have an impact on peak flood height or duration.

Methodology State of Western Australia (2005)
GIS Databases:
Geomorphic Wetlands (Classification), Swan Coastal Plain - DEC
Topographic Contours, Metropolitan Area - DLI

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

Comments

The area under application is located within a Native Title Claim area; however it is contained within an existing road reserve that is vested in the City of Canning. Therefore the clearing as proposed should not fall under the future acts process under the Native Title Act 1993.

The Roadside Conservation Committee advise that the roadside vegetation under application has little value as there is so much other vegetation around it, however they are unsure of the condition of the roadside vegetation.

A submission was received objecting to the proposed clearing on the grounds that the road verge contains locally rare and biodiverse wetland vegetation, and that there is space on the other side of Nicholson Road which is already cleared. The proponent has advised that the road cannot be widened to the eastern side due to the presence of a trunk water main. A condition has been imposed on the permit requiring a flora survey, and offsets for the clearing that is or may be at variance to the clearing Principles.

Methodology GIS Database: Native Title Claims - DLI

4. Assessor's comments

| Purpose | Method Applied | Comment |
|-------------------------------|---------------------------|--|
| Road construction maintenance | Mechanical 2.1 Removal | The assessable criteria have been addressed, and the proposed clearing is at variance to Principle f, and may be at variance to Principles a, c and h. |

5. References

DEC (2007) Biodiversity advice for land clearing application CPS 1852/1. Advice to Assessing Officer, Native Vegetation Assessment Branch, Department of Environment and Conservation (DEC), received 18 June 2007. Species and Communities Branch, Department of Environment and Conservation, Western Australia - DEC TRIM ref. DOC26331.

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.

Ecoscope Pty Ltd (2006) Nicholson Road Environmental Assessment - City of Canning. DEC TRIM ref. DOC19748.

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.

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 (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.

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

Western Australian Herbarium (1998-). FloraBase - The Western Australian Flora. Department of Environment and Conservation. <http://florabase.calm.wa.gov.au/> Tuesday, 24 July 2007.

6. Glossary

| Term | Meaning |
|------|--|
| BCS | Biodiversity Coordination Section of DEC |
| CALM | Department of Conservation and Land Management (now BCS) |

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| 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) |

