



1. Application details

1.1. Permit application details

Permit application No.: 2462/1

Permit type: Area Permit

1.2. Proponent details

Proponent's name: Stockland Development Pty Ltd

1.3. Property details

Property: LOT 65 ON PLAN 8649 (House No. 479 KINGSWAY LANDSDALE 6065)
 LOT 64 ON PLAN 8649 (House No. 487 KINGSWAY LANDSDALE 6065)
 LOT 75 ON PLAN 8649 (House No. 29 QUEENSWAY LANDSDALE 6065)
 LOT 62 ON PLAN 8649 (House No. 445 ALEXANDER LANDSDALE 6065)
 LOT 65 ON PLAN 8649 (House No. 479 KINGSWAY LANDSDALE 6065)
 LOT 64 ON PLAN 8649 (House No. 487 KINGSWAY LANDSDALE 6065)
 LOT 75 ON PLAN 8649 (House No. 29 QUEENSWAY LANDSDALE 6065)
 LOT 62 ON PLAN 8649 (House No. 445 ALEXANDER LANDSDALE 6065)

Local Government Area: City Of Wanneroo

Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
16		Mechanical Removal	Building or Structure

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
Hedde Vegetation Complex: Bassendean complex central and south complex: Woodland of <i>E. marginata</i> - <i>E. calophylla</i> with well defined second storey of <i>Allocasuarina fraseriana</i> and <i>B. grandis</i> on the deeper soils and a closed scrub on the moister sites. The understorey species reflect similarities with the adjacent vegetation complexes. (Hedde et al 1980)	The proposal is to remove grass trees (<i>xanthorrhoea</i> spp.) and <i>Macrozamia fraseri</i> within an area of 16ha for translocation into public open space areas. The central and south-eastern strip of vegetation under application consists of vegetation in very good condition. The vegetation under application comprises <i>Banksia attenuata</i> woodland over <i>Banksia ilicifolia</i> , <i>Corymbia calophylla</i> , <i>Eucalyptus Marginata</i> and <i>Adenanthos cygnorum</i> over a diverse, dense shrub layer with species including but are not limited to: <i>Macrozamia fraseri</i> , <i>Xanthorrhoea preissii</i> , <i>Xanthorrhoea gracilis</i> <i>Allocasuarina humilis</i> , <i>Jacksonia floribunda</i> , <i>Jacksonia</i> spp., <i>Calytrix</i> sp <i>Daviesia</i> sp, <i>Hibbertia</i> spp., <i>Stirlingia latifolia</i> , <i>Patersonia occidentalis</i> , <i>Conostylis</i> sp., <i>Lyginia barbata</i> , <i>Calectasia narragara</i> , <i>Desmocladius</i> spp. <i>Alexgeorgea nitens</i> .	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	Vegetation description based on a site inspection by DEC officers on 23 June 2008.
Beard Vegetation Association: 1001: Grasslands, curly spinifex, low tree savanna; bloodwood (<i>Eucalyptus dichromophloia</i>) & woollybutt over curly spinifex on islands. (Shepherd, 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

The vegetation under application consists of 16ha of vegetation in very good condition and comprises *Banksia attenuata* woodland over diverse dense shrubland. This vegetation under application may comprise the threatened ecological community (TEC) *Banksia attenuata* woodland over species rich dense shrubland (floristic community type 20a), which is found in the local area (DEC 2008a).

The vegetation may also provide habitat for fauna and act as a buffer to Bush-forever site 125 which is located opposite to the area under application on the eastern side of Alexander Drive.

Given that vegetation is in very good condition, and that there is potential for this vegetation to provide habitat for rare flora, fauna and may comprise a TEC it is considered that the vegetation comprises a high level of biodiversity.

The vegetation may also provide habitat for fauna and act as a buffer to Bush-forever site 125 which is located opposite to the area under application on the eastern side of Alexander Drive.

Given that vegetation is in very good condition, and that there is potential for this vegetation to provide habitat for rare flora, fauna and may comprise a TEC it is considered that the vegetation comprises a high level of biodiversity.

An appropriately timed flora survey in accordance with EPA Guidance Statement 51 is required to determine the species composition and significance of the vegetation under application.

Methodology DEC (2008a)

(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

Within the local area (~5km radius) there are 29 recorded occurrences of four fauna species of conservation significance.

The vegetation under application is in very good condition and includes an understorey that would provide suitable habitat for ground-dwelling fauna such as the Quenda (DEC 2008d).

The Black-Cockatoo, which has been recorded within the local area, is known to feed on a large variety of plants including Proteaceous species (e.g. *Banksia*, *Dryandra* and *Grevillea*), marri nuts (*Corymbia calophylla*), jarrah (*Eucalyptus marginata*) and tuart (*Eucalyptus gomphocephala*) (Shah, 2006).

In addition, the vegetation under application is adjacent to the east of a small patch of remnant vegetation which contains a wetland and is opposite (separated by Alexander Drive) Bush Forever site 125. Therefore the vegetation under application may impact on the movement of fauna within the immediate area.

The Graceful Sunmoth (*Synemon gratiosa*- endangered) has been recorded approximately 1.6km from the area under application. The Graceful Sunmoth requires *Lomandra* spp. as host plants (DEC 2008c). A vegetation survey undertaken by ATA Environmental in 2002 did not identify any *Lomandra* spp; therefore, it is not considered likely that the vegetation under application would provide habitat for the Graceful Sunmoth.

Given that the vegetation under application may be utilised by a number of fauna species, including species of conservation significance, it is considered likely that the vegetation comprises part of significant habitat for fauna, and therefore the proposal may be at variance to this Principle.

Methodology

DEC (2008c)
DEC (2008d)
Shah (2006)
GIS databases
SAC biodatasets accessed 12/06/2008

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

Comments Proposal is not likely to be at variance to this Principle

Within the local area (~5km radius) there is one known record of the rare flora species *Caladenia huegelii* occurring approximately 2.4km north of the area under application.

Caladenia huegelii is a tuberous, perennial herb, 0.25-0.6 m high with green, cream and red flowers which appear during Sep-Oct in grey or brown sand, clay loam (WA Herbarium, 1998). The vegetation complex and soil mapping for the area under application is consistent with the habitat requirements for *Caladenia huegelii*.

During the flora surveys conducted in September 2002 by ATA Environmental and in September 2008 by Ecoscape (2008) no rare flora were identified within the area under application.

Therefore, it is not considered likely that the vegetation under application includes or is necessary for the continued existence of rare flora.

Methodology DEC (2006)
Ecoscape (2008)
West Australian Herbarium (1998)
GIS databases
SAC biodatasets accessed 12/06/2008

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

Comments Proposal may be at variance to this Principle

Within the local area (~5km radius) there are 35 known occurrences of floristic community type 20a - *Banksia attenuata* woodland over species rich dense shrublands, which is a Threatened Ecological Community (TEC). The nearest known occurrence of this TEC is located approximately 100m to the east of the vegetation under application. There is also a mapped occurrence of the TEC 560m south of the vegetation under application.

The vegetation surveys undertaken in 2002 of the Precinct 64 East Lansdale study area mapped 12 vegetation types within the area under application. Three of the vegetation types mapped within the study area occurred both within the area under application and the Crown Reserve at the south of the study area which has been identified as a possible TEC *Banksia attenuata* woodlands over species rich dense shrublands (FCT 20a).

The vegetation surveys undertaken by ATA environmental (2002) and Ecoscape (2008) considers that the vegetation under application was not a Threatened Ecological Community, however it is unclear what methodology was employed to undertake the floristic community analysis and the survey undertaken did not fulfil the requirement outlined in previous DEC correspondence.

Given the assigned vegetation types, the inferred TEC in the local area and the very good condition, it is considered that the vegetation under application may comprise, or be necessary for the maintenance of, a TEC.

Methodology DEC (2008a)
GIS database
SAC biodatasets accessed 12/06/2008

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

Comments Proposal is not likely to be at variance to this Principle

The vegetation within the areas under application are identified as a component of Beard vegetation type 1001, and Hedde Bassendean Complex Central and South, of which there is 25.3% and 27.0% of Pre-European extent remaining respectively (Shepherd, 2007; EPA, 2006).

The State Government is committed to the National Objectives and Targets for Biodiversity Conservation which includes a target that prevents the clearance of ecological communities with an extent below 30% of that present Pre-European settlement (Commonwealth of Australia, 2001). However, the EPA (2006) recognises the Perth Metropolitan Region as a 'constrained area', providing for the reduction of vegetation complexes to a minimum of 10% of the Pre-European extent.

Both vegetation communities associated with the area of vegetation under application are above the minimum 10% target set by the EPA within the Metropolitan Region. Given this, the relatively high representation of remnant vegetation within the local area (~30.0%) and within the City of Wanneroo (49.7%), the vegetation under application is not considered to be a significant remnant within an extensively cleared area. Therefore, the clearing as proposed is not likely to be at variance to this Principle.

	Pre-European (ha)	Current extent (ha)	Remaining (%)	In secure tenure (%)
IBRA Bioregion*				
Swan Coastal Plain^	1,501,208	583,140	38.8	
City of Wanneroo*	67,697	33,637	49.7	
Local area (5km radius)	7,850	~2,400	~30.0	
Beard vegetation type*				
1001	57,410	14,545	25.3	5.1
Hedde vegetation complex**				
Bassendean-Central & South	87,477	23,624	27.0	0.7

* (Shepherd, 2007)

** (EPA, 2006)

^ Area within Intensive Land Use Zone

Methodology Commonwealth of Australia (2001)
EPA (2006)
Hedde et al. (1980)
Shepherd (2007)
GIS Databases:
Hedde Vegetation Complexes
NLWRA, Current Extent of Native Vegetation
Pre-European Vegetation
SAC Bio Datasets 13/03/2009

(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

The closest major watercourse to the area under application is Bennett Brook approximately 3.6km east of the applied area. There are numerous wetlands within the local area (~5km radius) including, two conservation category wetlands (CCW) located 60m west of the vegetation under application and 250m east of the applied area; and a resource enhancement wetland (REW) located 160m north of the area under application.

The critical zone of influence for wetlands is considered to be within 50m (Hill et al, 1996). Therefore, it is considered that the vegetation under application occurs outside the zone of critical influence. During a DEC site inspection no wetland dependant vegetation was observed in the area under application (DEC 2008b).

Given that the vegetation under application does not contain vegetation in or associated with a wetland or watercourse and is outside the zone of critical influence, the proposal is not considered likely to be at variance to this Principle.

Methodology Hill et al (1996)
DEC (2008b)
Water and Rivers Commission (2001)
GIS Databases:
Geomorphic Wetlands (Classification), Swan Coastal Plain
Hydrography, linear (hierarchy)

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

Comments Proposal may be at variance to this Principle

The soils within the area under application are part of the Bassendean Dune System and comprise leached sands (Northcote et al. 1960-68), which are considered to have a high risk of wind erosion.

Although the proposal is to remove *Xanthorrhoea* spp and *Macrozamia fraseri* for translocation into public open spaces it is considered that there is likely to be significant damage to surrounding vegetation. Therefore the clearing as proposed includes any vegetation within the applied 16 ha. Therefore, it is considered that the removal of vegetation from this site will further expose the soils and may result in wind erosion.

There is a low salinity risk within the applied area except for the eastern portion of the applied area which has a high salinity risk. However the area under application occurs within the Bassendean Dune system which contains sandy soils with high infiltration rates therefore it is not considered likely that the proposed clearing would result in increased salinity.

Given that the proposed clearing may result in wind erosion, it is considered that the proposal may be at variance to this Principle.

Methodology Northcote et al. (1960-68)
GIS Databases:
Salinity Risk LM 25m - DOLA 00
Soils, Statewide

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

Comments Proposal may be at variance to this Principle

There are 12 Bush Forever sites within the local area (~5km radius). Bush Forever site 125 is on the eastern side of Alexander Drive opposite the area under application. There is also a crown reserve (10ha) vested for public recreation (contains an inferred threatened ecological community) located 560m south of the vegetation under application.

The vegetation under application is considered to be in very good condition may provide a buffer to Bush Forever site 125 and may impact on the movement of fauna within the immediate area. Therefore the vegetation under application may impact on the environmental values of adjacent and nearby conservation areas.

Methodology GIS Databases:
Bushforever
CALM Managed Lands and Waters
Swan Coastal Plain North 20cm orthomosaic DLI06 image

(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 vegetation under application occurs within the Gnangara Underground Water Pollution Control Area a Priority 2 Public Drinking Water Source Area (PDWSA). The closest major watercourse to the area under application is Bennett Brook approximately 3.6km east of the applied area. There are numerous wetlands within the local area (~5km radius) including, two conservation category wetlands (CCW) located 60m west of the vegetation under application and 250m east of the applied area; and a resource enhancement wetland (REW) located 160m north of the area under application.

The vegetation under application occurs on the Bassendean Dune System which contains sandy soils with high infiltration rates and therefore a low risk of water erosion leading to sedimentation resulting in decreased surface water quality.

There is a low salinity risk within the applied area except for the eastern portion of the applied area which has a high salinity risk. It is not considered likely that the proposed clearing would result in salinity causing deterioration in groundwater quality.

Methodology GIS Databases:
Geomorphic Wetlands (Classification), Swan Coastal Plain
Hydrography, linear (hierarchy)
Public Drinking Water Source Areas (PDWSAs)
Salinity Risk LM 25m - DOLA 00
Soils, 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

The soils within the area under application comprise leached Bassendean sands (Northcote et al. 1960-68), which are generally considered to have high infiltration rates and therefore a low risk of water logging.

The closest major watercourse to the area under application is Bennett Brook approximately 3.6km east of the applied area. There are numerous wetlands within the local area (~5km radius) including, two conservation category wetlands (CCW) located 60m west of the vegetation under application and 250m east of the applied area; and a resource enhancement wetland (REW) located 160m north of the area under application.

Given the high infiltration rates of the soil found within the area under application and the distance to the closest watercourse or wetland the proposal is not considered likely to cause, or exacerbate, the incidence or intensity of flooding.

Methodology Northcote et al. (1960-68)
GIS Databases:
Geomorphic Wetlands (Classification), Swan Coastal Plain
Hydrography, linear (hierarchy)
Soils, Statewide

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

Comments

Stockland Development (2009) sent an email with additional information in response to correspondence, which the Department sent on 31 July and 18 September 2008. This correspondence included:

- a cover letter with a request for the area under application to be amended from 35.37ha to 16ha, to exclude the cleared properties lots 59, 68 and 670,
- an Environmental Assessment Report by Ecoscape; and
- a Local Structure Plan

Ecoscape (2009) sent an email with addition information on the methodology used during the 2008 survey.

The assessment of the clearing principles has been undertaken against the amended area and considering the Reports provided by Ecoscape.

Although the proposal is to remove *Xanthorrhoea* spp and *Macrozamia fraseri* for translocation into public open spaces it is considered that there is likely to be significant damage to surrounding vegetation. Therefore the clearing as proposed includes any vegetation within the applied 16ha.

The City of Wanneroo has advised that they are working with Stockland Development Pty Ltd to create a Local Structure Plan (LSP) for Landsdale. DPI (2009) advised that a Local Structure Plan for the area under application had not been finalised and was still with the City of Wanneroo.

The vegetation under application contained within Lots 62, 64, 65 and 75, Landsdale is in very good condition A submission was received from the Strategic Biodiversity Planning (SBP) (DPI, 2008). SBP does not endorse the clearing of vegetation under application contained within lots 62, 64, 65 and 75. SBP advises that until an appropriate Local Structure Plan has been endorsed and assessed by the Environmental Protection Agency they do not support the clearing of the vegetation under application.

The vegetation under application occurs within the Gnangara Underground Water Pollution Control Area a Priority 2 Public Drinking Water Source Area (PDWSA), Priority 2 classification areas are managed to ensure that there is no increased risk of water source contamination/ pollution. These areas include established low-risk land development (eg. low intensity rural activity). Some development is allowed within Priority 2 areas for land uses that are defined as either Compatible with conditions or Acceptable. Should the area under application receive subdivision approval the land use would be incompatible with management of Priority 2 PDWSA. However, it should be noted that Town Planning Scheme provisions for specific zones and reserves will take precedent over the recommended lot sizes defined by the Department of Water.

Methodology City of Wanneroo (2008)
DEC (2008a)
DEC (2008b)
DPI (2008)
Stockland Development (2009)
GIS Databases:
Cadastre
Metropolitan Regional Scheme
Public Drinking Water Source Areas (PDWSAs)

4. Assessor's comments

Comment

The assessable criteria have been addressed and the proposed clearing is at variance to Principle (a) and may be at variance to Principles (b), (d), (g) and (h).

5. References

ATA Environmental (2002) Vegetation and Flora assessment mapping. TRIM Ref DOC55225

City of Wanneroo (2008) Submission in response to a Direct Interest Letter TRIM ref. DOC53878

Commonwealth of Australia (2001) National Targets and Objectives for Biodiversity Conservation 2001-2005, AGPS, Canberra.

DEC (2006) Species and Communities Branch advice on *Caladenia huegelii*, Department of Environment and Conservation, DEC TRIM ref DOC58219

DEC (2008a) Species and Communities Branch advice for land clearing application. Advice to Assessing Officer, Native Vegetation Assessment Branch, Department of Environment and Conservation (DEC), received 02/07/2008 . DEC TRIM ref. DOC56689

DEC (2008b) Site Inspection Report for Clearing Permit Application CPS 2462/1, Lots 670, 59, 62, 64, 65 and 75 Alexander Drive, Landsdale. Site inspection undertaken 23/06/2008. Department of Environment and Conservation, Western Australia (TRIM Ref. DOC48771).

DEC (2008c). Graceful Sunmoth habitat preferences Department of Environment and Conservation. (TRIM Ref: DOC 57572)

DEC. (2008d). NatureBase - Fauna Species Profile: Quenda Accessed at <http://www.naturebase.net/content/view/840/1288/>. Accessed 12/06/2008. Department of Environment and Conservation, Western Australia

Department for Planning and Infrastructure (DPI) (2008) Strategic Biodiversity Planning - Direct Interest Response Letter, DEC TRIM ref. DOC56291

EPA (2006) Guidance for the Assessment of Environmental Factors - Level of Assessment for Proposals Affecting Natural Areas Within the System 6 Region and Swan Coastal Plain Portion of the System 1 Region. Guidance Statement No 10. Environmental Protection Authority, Western Australia.

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.

Hill, A.L., Semenuik, C. A, Semenuik, V. Del Marco, A. (1996) Wetlands of the Swan Coastal Plain. Volume 2b, Wetland mapping, classification and evaluation. Wetland Atlas. WRC and DEP. Perth WA.

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.

Shah, B. (2006) Conservation of Carnaby's Black-Cockatoo on the Swan Coastal Plain, Western Australia. December 2006. Carnaby's Black-Cockatoo Recovery Project. Birds Australia, Western Australia.

Shepherd, D.P. (2007). 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.

Stockland Development (2009) Additional information provided in response to secondary assessment requirement (Email). TRIM Ref DOC79074

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.dec.wa.gov.au/> (Accessed 12/06/2008).

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)

