GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS
Area Permit Number: 5004/1
File Number: 2012/002710-1
Duration of Permit: From 8 February 2013 to 8 February 2015

PERMIT HOLDER
Lunard Pty Ltd

LAND ON WHICH CLEARING IS TO BE DONE
Lot 571 on Plan 3475 (Hope Valley, 6165)
Lot 572 on Plan 3475 (Hope Valley, 6165)

AUTHORISED ACTIVITY
The Permit Holder shall not clear more than two hectares of native vegetation within the area hatched yellow on attached Plan 5004/1.

CONDITIONS

1. Dieback and weed control

When undertaking any clearing or other activity authorised under this Permit, the Permit Holder must take the following steps to minimise the risk of the introduction and spread of *weeds* and *dieback*:

(a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
(b) shall only move soils in *dry conditions*;
(c) ensure that no *dieback* or *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared; and
(d) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

DEFINITIONS

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

dieback means the effect of *Phytophthora* species on native vegetation;

dry conditions means when soils (not dust) do not freely adhere to rubber tyres, tracks, vehicle chassis or wheel arches;

fill means material used to increase the ground level, or fill a hollow;

mulch means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation; and

weed/s means any plant -

(a) that is declared under section 37 of the *Agriculture and Related Resources Protection Act 1976*; or
(b) published in the Department of Environment and Conservation Regional Weed Assessments, regardless of ranking; or
(c) not indigenous to the area concerned.

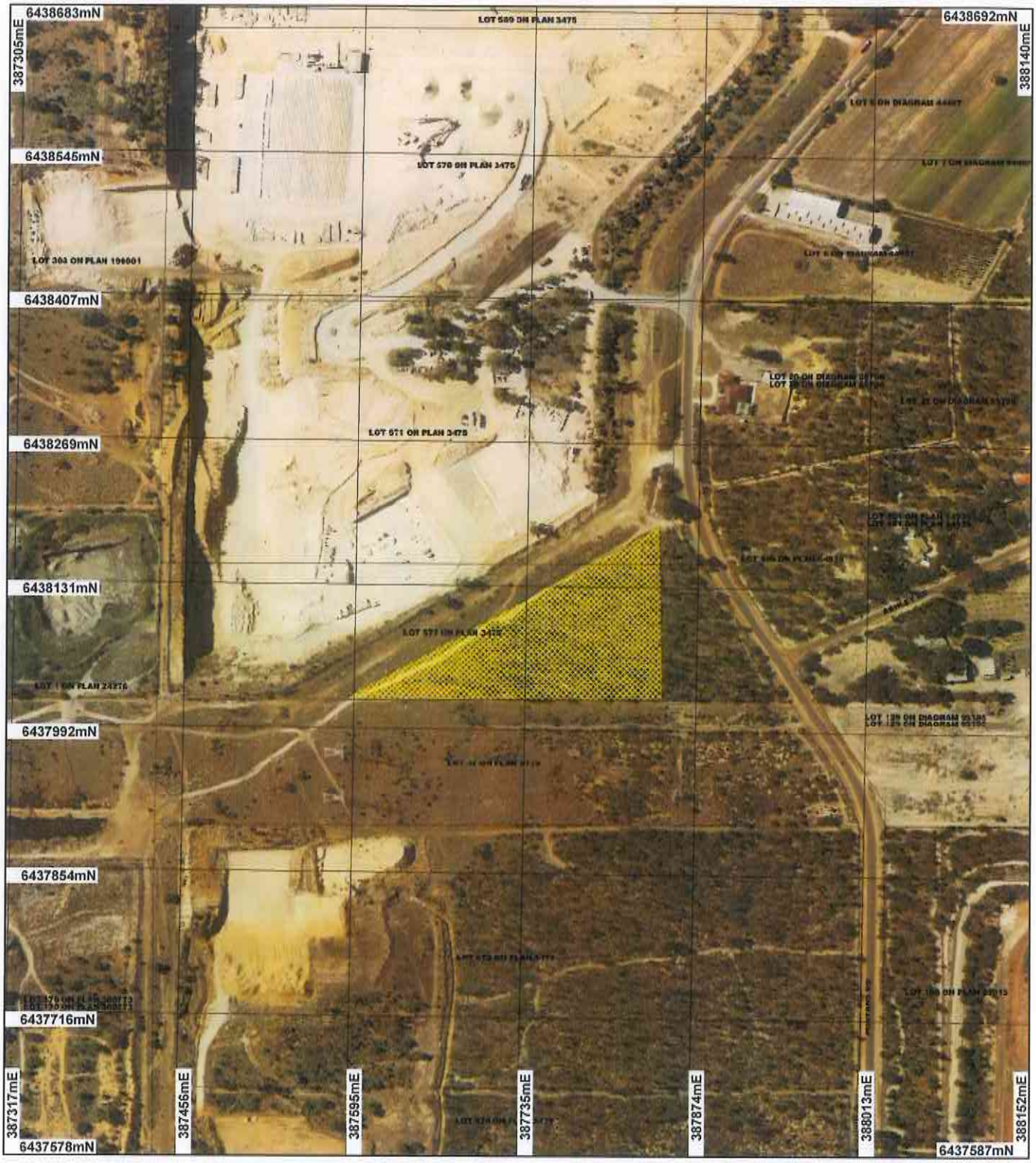
B. Walker

Belinda Walker
A/MANAGER
NATIVE VEGETATION CONSERVATION BRANCH

Officer delegated under Section 20
of the Environmental Protection Act 1986

17 January 2013

Plan 5004/1



LEGEND

Clearing Instruments

- Areas Approved to Clear
- Road Centrelines
- Cadastre
- --> Image Index

(cont)

- Recently added
- Coverage

Perth Metropolitan Central
15cm Orthomosaic - Landgate
2011

N

0 125 m

Scale 1:4898
(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.

B.Walker Date 17/1/13

B.Walker
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 acknowleged 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.: 5004/1
Permit type: Area Permit

1.2. Proponent details

Proponent's name: Lunard Pty Ltd

1.3. Property details

Property: LOT 572 ON PLAN 3475 (HOPE VALLEY 6165)
LOT 571 ON PLAN 3475 (Lot No. 571 POSTANS HOPE VALLEY 6165)
Local Government Area: City of Kwinana
Colloquial name:

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 17 January 2013

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
There are two Beard vegetation associations and one Heddle vegetation complex mapped over the application area: The first mapped Beard vegetation association 998 is described as 'Medium woodland; tuart' (Shepherd et al, 2001). The second mapped Beard vegetation association 6 is described as 'Medium woodland; tuart & jarrah' (Shepherd et al, 2001). The mapped Heddle vegetation complex, Karrakatta Complex central and south, is described as 'Predominantly open forest of Eucalyptus gomphocephala (Tuart) - Eucalyptus marginata (Jarrah) - Corymbia calophylla (Marri) and woodland of Eucalyptus marginata (Jarrah) - Banksia species' (Heddle et al, 1980).	This application is to clear two hectares of native vegetation within Lots 571 and 572 on Plan 3475, Hope Valley, for the purpose of constructing a hardstand area. The area under application ranges from a degraded (Keighery, 1994) condition around the edges to good to very good (Keighery, 1994) condition in the centre of the application area. Consisting predominantly of open woodland of Corymbia calophylla (Marri), Eucalyptus gomphocephala (Tuart) and Eucalyptus marginata (Jarrah) with a middle storey of scattered Allocasuarina, Macrozamia, Xanthorrhoea, Banksia menziesii, acacia, hakea, Hibbertia sp., Daviesia sp. and Melaleuca shrubs. There is a distinct native ground cover layer including Drosera sp. however grassy weeds dominate in the degraded areas.	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994) Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994) Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)	The vegetation condition and description was determined from a Department of Environment and Conservation (DEC) site visit undertaken on 20 June 2012 (DEC, 2012).

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

The amended application is to clear two hectares (reduced from 2.84 hectares) of native vegetation within Lots 571 and 572 on Plan 3475, Hope Valley, for the purpose of constructing a hardstand area.

The area under application consists predominantly of Corymbia calophylla (Marri), Eucalyptus gomphocephala (Tuart) and Eucalyptus marginata (Jarrah) with scattered Allocasuarina, Macrozamia riedlei (Zamia Palm), Xanthorrhoea, Banksia menziesii, Acacia pulchella, Hakea prostrata, Hibbertia sp., Daviesia sp. and Melaleuca shrubs. There is a distinct native ground cover layer including Drosera sp. however the edges of the application area are in a degraded (Keighery, 1994) condition with a large number of grassy weeds. The remainder of the application area is in a good to very good (Keighery, 1994) condition (DEC, 2012).

The area under application supports a north-south ecological corridor in an extensively cleared landscape. It contributes to a largely continuous wetland/bushland linkage of regional significance (Government of Western Australia, 2000).

Two rare flora species have been recorded in the local area (5 kilometre radius), but are unlikely to occur within the application area due to the absence of known habitat preferences.

There are 15 known priority flora species recorded within the local area. A flora audit was undertaken in October 2011 and did not identify any rare or priority species (Lunard, 2012). Due to absence of habitat for these flora species it is unlikely they occur within the application area.

The good to very good (Keighery, 1994) condition vegetation under application may provide suitable nesting and foraging habitat for indigenous fauna such as the Priority 3 Perth Slider (Lerista lineata), Priority 5 Quenda (Isoodon obesulus fusciventer) and 'Rare or Likely to become Extinct' Carnaby's cockatoo (Calyptorhynchus latirostris) (listed under the Wildlife Conservation Act 1950). A DEC site inspection identified a number of large habitat trees (Eucalypt sp.) scattered throughout the application area that may contain suitable size hollows for black cockatoos (DEC, 2012).

The applicant has advised that weeds and dieback occur within the application area (Lunard, 2012). The disturbance caused by the proposed clearing will increase the risk of weeds and dieback being spread into adjacent vegetation. Weed and dieback management practices will reduce this risk.

Given the good to very good (Keighery, 1994) vegetation condition in the majority of the application area, possible nesting and foraging habitat for indigenous fauna and the remnant contributing to an ecological linkage, the proposed clearing may be at variance to this Principle.

In response to the above assessment the applicant has reduced the area to be cleared (from 2.84 hectares to two hectares).

The larger trees observed by DEC staff to contain sizable hollows are located on the western side of Lot 572. The applicants amended application area will see the retention of these hollow bearing trees.

This amended application will ensure that ecological linkages are not severed and therefore the movement of fauna will not be hindered.

DEC supports the reduced application area, however given that the application area still consists of areas of very good (Keighery, 1994) condition vegetation the application remains may be at variance to this Principle.

Methodology

References
- Keighery (1994)
- DEC (2012)
- DEC (2007-)
- Lunard (2012)

GIS Databases
-SAC Bio Datasets - Accessed 3 May 2012

(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 11 terrestrial fauna species of conservation significance recorded in the local area (5 kilometre radius) (DEC, 2007-).

The majority of the vegetation under application is in a good to very good (Keighery, 1994) condition with an Eucalyptus sp. overstorey and a Banksia sp. middle storey. This habitat type may provide suitable foraging habitat for the conservation significant Carnaby's cockatoo (Calyptorhynchus latirostris). The Swan Coastal Plain in Western Australia represents an important foraging area for Carnaby's cockatoo, with a minimum non-breeding population of at least 4,500 birds visiting the area (Shah, 2006). This species is listed as 'Rare or Likely to become Extinct' under the Wildlife Conservation Act 1950 and is also protected under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999. A black cockatoo investigation over 18 days was conducted, with observations carried out three times a day, and no black cockatoo roosting, nesting or foraging habitat was observed (Dixon, 2012).

Hollow-bearing eucalyptus trees were observed during the DEC site inspection (DEC, 2012). These trees could potentially be used as nesting habitat by species of conservation significance. The fauna audit of the application area identified hollows in several jarrah trees suitable as breeding habitat for the indigenous Red-capped Parrot (Purpureicephalus spurius) and the Australian Ringneck Parrot (Barnardius zonarius) (Dixon 2012). Three large tuart trees ranging from 14 metres to 17 metres in height were observed during the fauna and flora audit however no hollows with an entrance large enough for black cockatoos to nest in were identified during the fauna audit (Dixon 2012).

The vegetation within the area under application comprises of a dense understorey suitable for ground-dwelling fauna such as the Priority 5 Quenda (Isoodon obesulus fusciventer) and Priority 3 reptile Perth Slider (Lerista lineata) (listed under the Wildlife Conservation Act 1950), which have been recorded in the local area . No rare fauna were observed during the fauna audit which consisted of observations three times a day (morning, afternoon and evening) in 20 metre by 20 metre quadrats over 18 days (Dixon, 2012).

The area under application supports a north-south largely continuous wetland/bushland linkage of regional significance (Government of WA, 2000) and may provide habitat for local fauna populations moving between remnant vegetation.

Given the good to very good (Keighery, 1994) vegetation condition in the majority of the application area, the potential habitat for local indigenous fauna and proximity to an ecological corridor which may assist the movement of fauna populations through the local landscape, the vegetation under application may contribute to the maintenance of significant habitat for indigenous fauna.

Given the above, the proposed clearing may be at variance to this Principle.

In response to the above assessment the applicant has reduced (from 2.84 hectares to two hectares) the area to be cleared.

The larger trees observed by DEC staff to contain sizable hollows are located on the western side of Lot 572. The applicants amended application area will see the retention of these hollow bearing trees.

This amended application will ensure that ecological linkages are not severed and therefore fauna movement will not be hindered.

The applicant has advised that any on-site fauna will be trapped and relocated and a feral management programme for containment of introduced species including, the brown rabbit, fox and feral cats will be implemented (Stoneridge Quarries, 2012).

DEC is of the opinion that this principle is now not likely to be at variance to this principle.

Methodology

References

DEC (2007)
DEC (2012)
Dixon (2012)
Government of WA (2000)
Keighery (1994)
Stoneridge Quarries (2012)

GIS Databases:
-SAC Bio Datasets- Accessed 3 May 2012

(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

There are two known rare flora species within the local area (5 kilometre radius).

The preferred habitat requirements for these species are not present within the application area.

No rare flora was recorded during an audit of the area under application, undertaken in October 2011 (Lunard, 2012).

The proposed clearing is not likely to be at variance to this Principle.

Methodology

References
- Lunard (2012)

GIS Databases
-SAC Bio Datasets - Accessed 3 May 2012

(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 is one known occurrence of the Threatened Ecological Community (TEC) Callitris preissii Forest and Woodlands of the Swan Coastal Plain within the local area (5 kilometre radius). The closest known record of this TEC occurs seven kilometres north-west of the area under application.

Given the distance to the nearest mapped TEC the proposed clearing is unlikely to be at variance to this Principle.

Methodology

GIS Databases
-SAC Bio Datasets - Accessed 3 May 2012

(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 under application is mapped as Beard Vegetation Associations 6 and 998. There is approximately 25 percent and 38 percent of their pre-European extent remaining in the Swan Coastal Plain bioregion respectively (Government of Western Australia, 2011). The vegetation under application is also mapped as the Heddle Vegetation Complex Karrakatta Complex Central and South, which has 30 percent of its pre-European vegetation extent remaining (Heddle et al, 1980).

The national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001). The Environmental Protection Authority (EPA, 2006) recognises the Perth metropolitan Region as a constrained area, providing for the reduction of vegetation complexes to a minimum of 10 percent of the pre-European extent.

The three mapped vegetation associations are all above this 10 percent minimum, consistent with the EPA's recommendation. However the local area (5 kilometres) has been extensively cleared with approximately 30 percent vegetation remaining in the local area.

The application area is significant as a remnant in an extensively cleared landscape as it supports a north-south wetland ecological corridor that is a largely continuous wetland/bushland linkage of regional significance (Government of WA, 2000). The proposed clearing may reduce the effectiveness of this linkage as a dispersal corridor for local indigenous fauna.

In response to the above assessment the applicant has reduced the area to be cleared to two hectares (from 2.84 hectares).

This amended application will ensure that ecological linkages are not severed and therefore the movement of fauna will not be significantly hindered.

Based on the revised application this application is not likely to be at variance to this principle.

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Extent in DEC Managed Lands (%)
IBRA Bioregion*				
Swan Coastal Plain	1,501,209	587, 889	39	33
Shire*				
Town of Kwinana	9,663	1,109	38.3	9.2
Beard Vegetation Association in Bioregion*				
998	50,000	19,000	38.1	41.0
6	56,000	14,000	24.9	35.6
Heddle Vegetation Complex **				
Karrakatta Complex (central and south)	49,912	14,729	29.5	

* Government of Western Australia (2011)
**Heddle et al (1980)

Methodology References:
Commonwealth of Australia (2001)
EPA (2006)
Government of WA (2000)
Government of Western Australia (2011)
Heddle et al (1980)
Shepherd et al (2001)

(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 the local area (5 kilometre radius) with the nearest being a Conservation Category Wetland (CCW) and Environmental Protection Policy (EPP) lake known as Long Swamp, occurring approximately 1 kilometre south-west of the area under application. The nearest watercourse is the Peel Main Drain 3.2 kilometre east of the area under application.

The RAMSAR listed Forrestdale and Thomson's Lakes occur approximately 3.2 kilometres to the north-west of the application area.

Given the distance to the nearest wetlands and watercourses and given that no wetland vegetation was observed during the site inspection (DEC, 2012), the proposed clearing is not likely to be at variance to this Principle.

Methodology References
-DEC (2012)

GIS Databases
-Geomorphic Wetland (Mgt Categories), Swan Costal Plain
-Hydrography, Linear

(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 soils within the area under application are part of the Spearwood Dune System and are described as brown sands with associated siliceous sands and leached sands (Northcote et al, 1960-68). These sandy soils have a high risk of wind erosion, however this impact will be short term until the hardstand area is established.

The proposed clearing is not likely to be at variance to this Principle.

Methodology References
-Northcote et al (1960- -68)

(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

The nearest conservation reserve to the area under application is the Bush Forever site 267 (Mandogalup Road Bushland), which is located approximately 900 metres east of the area under application. Long Swamp (a CCW and EPP Lake) is an area listed on the Register of National Estate and is located approximately 1 kilometre south-west of the area under application. The Harry Waring Marsupial Reserve is located approximately 2.4 kilometres north-east of the application area.

The vegetation under application is connected to Long Swamp, Bush Forever site 267 and the Harry Waring Marsupial Reserve through narrow vegetation linkages occurring on privately owned property. The majority of the vegetation under application is in a good to very good (Keighery, 1994) condition and may provide habitat for local fauna populations moving between Long Swamp, Bush Forever site 267 and the Harry Waring Marsupial Reserve. In addition, the application area supports a north-south ecological corridor. It contributes to a largely continuous wetland/bushland linkage of regional significance (Government of WA, 2000).

In response to the above assessment the applicant has reduced the area to be cleared to two hectares (from 2.84 hectares).

This amended application will ensure that ecological linkages are not severed and therefore the movement of fauna between conservation reserves will not be hindered.

DEC is of the opinion that this application is not likely to be at variance to this principle.

Methodology

References
Keighery (1994)
Government of WA (2000)

GIS Databases
- Bushforever
- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain
- Register of National Estate

(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 nearest wetland and watercourse to the area under application is the CCW and EPP Lake, Long Swamp, occurring one kilometre south-west and the Peel Main Drain approximately 3.2 kilometre east of the area under application.

Given the distance to the nearest wetland and watercourse the proposed clearing is not likely to cause deterioration to the quality of surface water in the local area.

Given the low groundwater salinity (500-1000 mg/L) it is not likely that the proposed clearing will cause deterioration in the quality of groundwater.

Therefore the proposed clearing is not likely to be at variance to this Principle.

Methodology

GIS Databases:
-Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain
- Groundwater Salinity, Statewide
- Hydrography, linear

(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 nearest wetland and watercourse to the area under application is the Conservation Category Wetland and Environmental Protection Policy Lake, Long Swamp, occurring one kilometre south-west and the Peel Main Drain approximately 3.2 kilometres east of the area under application.

Given the distance to the nearest wetland and watercourse to the area under application and the sandy soils of the area, the proposed clearing is not likely to cause, or exacerbate the incidence or intensity of flooding.

Therefore the proposed clearing is not likely to be at variance to this Principle.

Methodology GIS Databases
-Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain
-Hydrography, Linear

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

Comments

The assessment of the initial application to clear 2.84 hectares determined that the proposed clearing was 'at variance' to principle (e), 'may be at variance' to principles (a), (b) and (h) and was 'not likely to be at variance' to the remaining clearing principles. In response to the initial assessment the applicant has reduced the area to be cleared and has committed to retaining the vegetation adjacent to Postans Road. The applicant has also advised that they will revegetate cleared areas within Lots 569, 570 and 571 on Plan 3475 which run adjacent to Postans Road.

The City of Kwinana has granted planning approval (Town of Kwinana, 2012).

The area under application is zoned Rural under the Metropolitan Region Scheme and the Town of Kwinana Town Planning Scheme.

Evidence of dieback was observed during the DEC site inspection (DEC, 2012).

The applicant (Lunard, 2012) has advised:
- dieback and weeds occur throughout the application area
- the grass trees and zamia palms will be relocated within the site for revegetation and aesthetic landscaping after clearing has been completed
- on-site fauna will be trapped and relocated, and a feral management programme for containment of introduced species, including the brown rabbit, fox and feral cats will be implemented
- a limestone retaining wall will be constructed around the proposed clearing area.

Methodology References
DEC (2012)
Lunard (2012)
Town of Kwianana (2012)

GIS Databases
-Cadastre
-Metroplitian Regional Scheme
-Town Planning Scheme Zones

4. References

City of Kwinana (2012) Planning Approval, granted 30 November 2012 (DEC REF A578139).

DEC (2007 -) NatureMap: Mapping Western Australia's Biodiversity. Department of Environment and Conservation. URL: http://naturemap.dec.wa.gov.au/. Accessed 26/6/2012.

DEC (2012) Site Inspection Report for Clearing Permit Application CPS 5004/1. Lot 572 Postans Road, Hope Valley. Site inspection undertaken 11 June 2012. Department of Environment and Conservation, Western Australia (DEC REF A518489).

Dixon (2012) Black Cockatoo Calyptorhynchus Latirostris, Short Bill. White Tail Calyptorhynchus Baudinii, Long Bill. White Tail Calyptorhynchus Naso. Red Tail. Black cockatoo assessment/report. Prepared for Stoneridge Quarries. Prepared by Alison Dixon Bsc biology (DEC Ref: 493011).

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.

Government of Western Australia (2000) Bush Forever Volumes 1 and 2. Western Australian Planning Commission, Perth WA.

Government of Western Australia (2011); 2011 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). WA Department of Environment and Conservation, Perth.

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.

Lunard (2012) Flora and Fauna Management Plan SQ-PLA-006. Lunard Pty Ltd trading as Stoneridge Quarries (DEC Ref: A514610).

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., Beeston, G.R., and Hopkins, A.J.M. (2001), Native Vegetation in Western Australia. Technical Report 249. Department of Agriculture Western Australia, South Perth.

Stoneridge Quarries (2012) Applicants advice in response to Department of Environment and Conservation's initial assessment - revised application (DEC Ref: A529253).

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)