GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: 4622/1
File Number: 2011/008986-1
Duration of Permit: From 19 December 2011 to 19 December 2013

PERMIT HOLDER

Alcoa of Australia Ltd

LAND ON WHICH CLEARING IS TO BE DONE

Lot 99 on Plan 17761, Cockburn Road, Naval Base.

AUTHORISED ACTIVITY

The Permit Holder shall not clear more than 0.95 hectares of native vegetation within the area cross hatched yellow on attached Plan 4622/1.

CONDITIONS

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;

weed/s means a species listed in Appendix 3 of the "Environmental Weed Strategy" published by the Department of Conservation and Land Management (1999), and plants declared under section 37 of the *Agriculture and Related Resources Protection Act 1976*.

Kelly Faulkner
MANAGER
NATIVE VEGETATION CONSERVATION BRANCH

Officer delegated under Section 20
of the Environmental Protection Act 1986

24 November 2011

Plan 4622/1

LEGEND

Clearing Instruments

- Areas Approved to Clear
- Road Centrelines
- Cadastre

Swan Coastal Plain Central
20cm Orthomosaic - Landgate
2009

N

0 ~62 m

Scale 1:2264
(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.

K Faulkner ..... Date 24/4/11

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

** Project Data. This data has not been quality assured. Please contact map author for details.*

Department of Environment and Conservation

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 4622/1
Permit type: Area Permit

1.2. Proponent details

Proponent's name: Alcoa of Australia Ltd

1.3. Property details

Property: LOT 99 ON PLAN 17761 (Lot No. 99 COCKBURN NAVAL BASE 6165)
Local Government Area: Town of Kwinana

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 24 November 2011

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: 998: Medium woodland; tuart (Shepherd, 2009) Heddle Complex - Central and South: Mosaic of woodland of Eucalyptus gomphocephala (Tuart) and open forest of Eucalyptus gomphocephala (Tuart) - Eucalyptus marginata (Jarrah) - Corymbia calophylla (Marri); closed heath on the Limestone outcrops (Heddl et al, 1980)	The application is to clear 0.95 hectares of native vegetation, for purpose of constructing a new building. The application is within Bush Forever Site 346. The vegetation under application consists of Eucalyptus gomphocephala (Tuart), Banksia sp. over a variety of shrubs and ground cover species (DEC, 2011). The Tuart and Banksia species where confined to the southern and middle section of the proposed clearing. The shrub species in the application area was at times dense (DEC, 2011). A variety of weed species were observed in the application area, predominately near the track that bordered the eastern boundary of the proposed clearing and southern section of the application area (DEC, 2011). The condition (DEC, 2011) of the vegetation under application ranges from degraded to very good (Keighery, 1994).	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994) To Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994))	The vegetation condition was determined from a site inspection undertaken by Department of Environment and Conservation (DEC) on the 13 October 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 at variance to this Principle

The application is to clear 0.95 hectares of native vegetation within Lot 99 Cockburn Road, Naval Base, for the purpose to construct a new building. The area under application is approximately 6km north from the city centre of Kwinana. The vegetation under application rages from a degraded to a very good (keighery, 1994) condition (DEC 2011).

A flora and vegetation survey conducted in June 2011, by Mattiske Consulting recorded a total of 43 flora taxa within the application area of which 13 species where considered to be introduced to the area. Of the identified flora taxa there were no species recorded as threatened or priority flora.

Approximately 0.8 hectares of the vegetation under application is mapped within a Priority Ecological Community (PEC) referred to as Floristic Community Type (FCT) SCP 24 - Northern Spearwood shrublands and woodlands. DEC considers the vegetation in the application area to be typical of FCT 24 in structure and composition. The known PEC occurs in areas ranging from Carabooda in the north and Binningup in the south, and has been recorded 29 times comprising of a total area of 1013 hectares. The PEC that occurs within the application area is within a cluster of seven occurrences, totalling approximately 268 hectares all within Bush Forever site 346. DEC notes the propose clearing is adjacent to an existing cleared area and is unlikely to increase fragmentation to the mapped PEC.

Mattiske Consulting (2011) considered the area under application may have once resembled the mapped PEC, however statistical analysis and interpretation of the survey data indicates that the PEC is no longer present in the application area. The consultant's report provides some site specific data, presumably from releves of unspecified size, however, permanently marked quadrats scored at least twice are strongly recommended for determining FCT's present. In addition the actual data used in the dendrogram for comparison of FCT's was not stated, and no interpretation of the dendrogram was provided. Therefore DEC consider the report provided by Mattiske Consulting is not in accordance with the Environmental Protection Authority Guidance Statement No. 51 and a further survey of the area is needed for comparison to determine the likely hood of FCT's within the application area.

The proposed clearing is within bush forever site 346, referred to as Brownman Swamp Mt Brown Lake and covers a total area of 558 hectares. The proposed clearing of 0.95 hectares will approximately reduce the total area of bush forever site 346 by approximately 0.17 per cent.

Given that the application is within Bush Forever 346, that majority of the vegetation under application comprises of FCT 24 and that sections of the vegetation under application are in a very good (keighery, 1994) condition (DEC, 2011), it is considered the application area comprises a high level of biodiversity. However, given the small size of the area under application in comparison to the remaining vegetation within the bush forever site and that less than 0.1 percent of the known PEC will be impacted upon, it is unlikely that the proposed clearing will significantly impact to the biodiversity in the local area.

The application is at variance to this principle.

Methodology

References:
DEC (2011)
Keighery (1994)
Mattiske Consulting (2011)

GIS Database:
- Bush Forever
- DEC Tenure
-SAC Bio datasets (12/10/2011)

(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 have been 16 fauna species of conservation significance recorded within a 5km radius of the application area (DEC, 2007 -). The most notable are black cockatoo species; Calyptorhynchus banksii subsp. (Forest red-tailed black cockatoo), Calyptorhynchus baudinii (Baudin's black cockatoo) and Calyptorhynchus latirostris (Carnaby's black cockatoo). All three black cockatoo species are listed as fauna that is rare or is likely to become extinct under the Wildlife Conservation Act 1950 and threatened under the Environmental Protection and Biodiversity Act 1999.

The area under application contains Banksia attenuata and Banksia sessilis species (DEC, 2011). A recent site inspection identified evidence to suggest that black cockatoo species have been foraging on banksia species within the application area. A recent flora and vegetation survey conducted by Mattiske Consulting observed Carnaby's black cockatoos within close proximity of the application area (Mattiske Consulting, 2011).

Although there is evidence to suggest black cockatoo species have been foraging within the application area, the proposed clearing is unlikely to impact on the species. As the Banksia species removed from the proposal would equate to approximately less than 5 per cent of the total clearing (DEC, 2011). The application exists within an area where there is a larger extent of comprisable vegetation to the application area remaining. Therefore, it is considered that the application is unlikely to impact upon black cockatoo species in the local area.

Given the above the application is not likely to be at variance to this principle.

Methodology References:
DEC (2011)
DEC (2007-)
Mattiske Consulting (2011)

(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 a 5km radius of the area under application, one declared rare flora (DRF) species Verticordia plumosa var. Ananeotes, was recorded approximately 2.5km north from the application area. The mapped DRF species does not reside in the same vegetation and soil type to the area under application.

A recent flora and vegetation survey conducted by Mattiske Consulting (2011) didn't identify DRF species within or outside the application area.

Given the above, the application is not likely to be at variance to this principle.

Methodology Reference:
Mattiske Consulting (2011)

GIS Database:
- SAC Biodatasets accesed 12/10/11

(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**
The closest Threatened Ecological Community (TEC) is SCP 26a: Melaleuca huegelii - Melaleuca acerosa shrublands on limestone ridges. This TEC occurs approximately 4 km south east of the application area and is considered to reside in the same soil type to that known in the application area.

A flora and vegetation survey conducted by Mattiske Consulting within around the area under application did not identify the Melaleuca species known in TEC SCP 26a.

Given the distance from the application area to the known TEC, along with the vegetation under application containing no Melaleuca species, it is unlikely the mapped TEC will be impact upon by the proposed clearing.

The application is not likely to be a variance to this principle.

Methodology GIS Databases
-SAC Bio datasets accesed 12/10/2011

(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 at variance to this Principle**
The vegetation under application is described as Beard vegetation association 998 and Heddle vegetation complex Cottesloe Complex-Central and South, which have approximately 39 and 41 per cent of their pre-European vegetation remaining respectively.

The local area (5km radius) has approximately 35 per cent of its pre-European vegetation remaining. The vegetation types under application are above the threshold level of 30 per cent recommended in the National Objectives Targets for Biodiversity Conservation below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001).

Given that the proposed clearing consist of the removal of 0.95ha within Bush Forever site 346 which comprises of an area of 558 hectares, it is considered that the proposed clearing will not significantly impact on the biodiversity to the local area. Therefore, it is considered that the vegetation under application is not significant as a remnant in an area that has been extensively cleared. The proposed clearing is not 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	11,998	4,705	39	9
Beard Vegetation Association in Bioregion				
998	50,867	19,595	38	40
Heddle Vegetation Complex				
Cottesloe Complex Central and South	44,995	18,474	41	8

Methodology

Reference:
-Commonwealth of Australia (2001)

GIS Databases
-NLWA, Curent Extent of Native Vegetation
-Pre-European Vegetation
-Heddle Vegetation Complex

(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 at variance to this Principle

Lake Mount Brown Conservation Category Wetland (CCW) has been mapped approximately 1.7 km away from the application area.

There are no known watercourses with a 5km radius of the proposed clearing.

No wetland or watercourse dependent vegetation was observed within the area under application (DEC 2011).

Given the distance to the nearest wetland and watercourse, it is not considered that the vegetation under application is growing in or in association with a watercourse or wetland.

The application is not at variance to this principle.

Methodology

Reference:
DEC (2011)

GIS databases
-Hydrography, linear
-Geomorphic Wetlands (classification), Swan Coastal Plain

(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 area under application contains chief soils of siliceous sands with smaller areas of brown sands and leached sands in the wetter sites (Northcote et al 1960-68).

Given the small area proposed (0.95ha) to be cleared and the vegetation remaining in the local area, it is not considered likely for the proposed clearing to cause appreciable land degradation.

Methodology

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 at variance to this Principle

The area under application is within Bush Forever site 346, referred to as Brownman Swamp Mt Brown Lake. The Bush Forever site consists of 145 native taxa and covers a total area of 558 hectares. The Bush Forever sight also comprises of four CCW's and two PEC's. The area under application is considered to be within a section of the mapped PEC.

The proposed clearing is situated at the southern section of Bush Forever 346 site and will cause fragmentation of the bush forever site. The fragmentation from the proposed clearing is likely to make the reaming vegetation adjacent to the application area more susceptible to invasive weed species and dieback from the proposed clearing, thus reducing the value of the vegetation. Weed and dieback management practices will assist in mitigating the risk of weed and dieback spreading to other vegetation areas.

Given that the application is to clear vegetation within a Bush Forever site and is likely to further impact upon surrounding vegetation within and around the Bush Forever site, the application is at variance to this principle. However, as the proposed clearing would reduce the overall size of the Bush Forever site by approximately 0.17 per cent, it is considered that the impacts on the conservation value to the site are likely to be low and manageable.

Methodology GIS Databases
-Bushforever
-DEC Tenure

(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 Lake Mount Brown CCW has been mapped approximately 1.7 km away from the application area.

There are no known watercourses with a 5km radius of the proposed clearing.

Given the distance to the nearest wetland, and the relatively small area (0.95ha) proposed to be cleared, it is not considered for the proposed clearing to cause deterioration in surface or underground water, therefore the application is not likely to be at variance to this principle.

Methodology GIS databases
-Hydrography, linear
-Geomorphic Wetlands (classification), Swan Coastal Plain

(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**
Given small area proposed to be cleared, it is unlikely the application would be at variance to this principle.

Methodology GIS databases
-Hydrography, linear
-Geomorphic Wetlands (classification), Swan Coastal Plain

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

Comments

The State Strategic Policy have requested that further details and clarification for the proposal including the purpose of the building and any Strategic/Management Plan for the area indentifying future development and conservation areas. The applicant has provided a response in relation to this request which has been forwarded to State Strategic Policy. Planning approval for the proposed new facility has been granted by the Metropolitan South-West Joint Development Assessment Panel (Western Australian Planning Commission, 2011)

The Metropolitan South-West Joint Development Assessment Panel has approved subject to conditions and advice notes Alcoa of Australia's Ltd application to construct a new office and research building within Lot 99 Cockburn Road, Naval Base (Western Australian Planning Commission, 2011).

Methodology Reference:
Western Australian Planning Commission (2011)

4. References

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

DEC (2007 -) NatureMap: Mapping Western Australia's Biodiversity. Department of Environment and Conservation. URL: http://naturemap.dec.wa.gov.au/. Accessed 12/10/2011

DEC (2011) Site Inspection Report for Clearing Permit Application CPS 4622/1, Lot 99 Cockburn Road, Naval Base. Site inspection undertaken 13/10/2011. Department of Environment and Conservation, Western Australia (TRIM Ref. DOCA451003).

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.

Mattiske Consulting Pty Ltd (2011) Flora and Vegetation Survey of 1120 Cockburn Road, Naval Base. Within Clearing Permit Application CPS 4622/1 - Alcoa of Australia Pty Ltd (DEC Ref DOCA432787).

Northcote, K. H. with Beckmann G G, Bettenay E., Churchward H. M., van Dijk D. C., Dimmock G. M., Hubble G. D., Isbell R.

F., McArthur W. M., Murtha G. G., Nicolls K. D., Paton T. R., Thompson C. H., Webb A. A. and Wright M. J. (1960-68): 'Atlas of Australian Soils, Sheets 1 to 10, with explanatory data'. CSIRO and Melbourne University Press: Melbourne.

Shepherd, D.P. (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.

Western Australian Planning Commission (2011) Email received confirming planning approval for the applicants proposed new building (DEC Ref DOC:A452104).

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)