



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 2958/1
Permit Holder:	Boral Resources (WA) Ltd
Duration of Permit:	5 April 2009 to 5 April 2011

The Permit Holder is authorised to clear native vegetation subject to the following conditions of this Permit.

PART I – CLEARING AUTHORISED

- 1. Purpose for which clearing may be done**
Clearing for the purpose of constructing a hard rock quarry.
- 2. Land on which clearing is to be done**
LOT 29 ON PLAN 232355 (House No. 199 HATCH BOWES 6535)
LOT 52 ON PLAN 138083 (BOWES 6535)
- 3. Area of Clearing**
The Permit Holder must not clear more than 27 hectares of *completely degraded* native vegetation within the area hatched yellow on attached Plan 2958/1.
- 4. Application**
This Permit allows the Permit Holder to authorise persons, including employees, contractors and agents of the Permit Holder, to clear native vegetation for the purposes of this Permit subject to compliance with the conditions of this Permit and approval from the Permit Holder.
- 5. Compliance with Assessment Sequence and Management Procedures**
Prior to clearing any native vegetation under conditions 1, 2 and 3 of this Permit, the Permit Holder must comply with the Assessment Sequence and the Management Procedures set out in Part II of this Permit.

PART II – ASSESSMENT SEQUENCE AND MANAGEMENT PROCEDURES

- 6. Avoid, minimise etc clearing**
In determining the amount of native vegetation to be cleared authorised under this Permit, the Permit Holder must have regard to the following principles, set out in order of preference:
 - (a) avoid the clearing of native vegetation;
 - (b) minimise the amount of native vegetation to be cleared; and
 - (c) reduce the impact of clearing on any environmental value.

7. Dieback and weed control

- (a) 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*:
 - (i) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
 - (ii) shall not move soils in wet conditions;
 - (iii) ensure that no *dieback* or *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared; and
 - (iv) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.
- (b) At least once in each 12 month period for the *term* of this Permit, the Permit Holder must remove or kill any *weeds* growing within areas cleared under this Permit.

8. Revegetation

- (a) The Permit Holder shall retain the vegetative material and topsoil removed by clearing authorised under this Permit.
- (b) Within six months of any area no longer being required for the purpose of material extraction the Permit Holder must *revegetate* the area permitted to be cleared by:
 - (i) Deliberately *planting* and/or seeding native vegetation using local species from within 20 km of the area cleared.
 - (ii) Laying vegetative material and topsoil retained in accordance with condition 8(a) on the area.
- (c) Within one year of undertaking *revegetation* in accordance with condition 8(b), the Permit Holder must where, in the opinion of an *environmental specialist*, *revegetation* does not provide adequate stabilisation of surface soils, undertake additional planting or seeding of native vegetation in accordance with the requirements of condition 8(b)(i) and 8(b)(ii).

PART III - RECORD KEEPING AND REPORTING

9. Records must be kept

The Permit Holder must maintain the following records for activities done pursuant to this Permit:

- (a) In relation to the clearing of native vegetation authorised under this Permit:
 - (i) the species composition, structure and density of the cleared area;
 - (ii) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings;
 - (iii) the date that the area was cleared; and
 - (iv) the size of the area cleared (in hectares).
- (b) In relation to the *revegetation* of areas pursuant to condition 8 of this Permit:
 - (i) the location of any areas *revegetated* recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings;
 - (ii) a description of the *revegetation* activities undertaken;
 - (iii) the size of the area *revegetated* (in hectares); and
 - (iv) the species composition, structure and density of *revegetation*.

10. Reporting

- (a) The Permit Holder must provide to the CEO, on or before 30 June of each year, a written report of records required under condition 9 of this Permit and activities done by the Permit Holder under this Permit between 1 January and 31 December of the preceding year.

- (b) Prior to 5 January 2011, the Permit Holder must provide to the CEO a written report of records required under condition 9 of this Permit where these records have not already been provided under condition 10(a) of this Permit.

Definitions

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

completely degraded the rating given to the native vegetation under application using the *Keighery scale*, referring to the degree of change in the structure, density and species present in the particular vegetation in comparison to undisturbed vegetation of the same type;

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

environmental specialist means a person who is engaged by the Permit Holder for the purpose of providing environmental advice, who holds a tertiary qualification in environmental science or equivalent, and has experience relevant to the type of environmental advice that an environmental specialist is required to provide under this Permit;

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;

planting means the re-establishment of vegetation by creating favourable soil conditions and planting seedlings of the desired species;

revegetate/ed/ion means the re-establishment of a cover of *local provenance* native vegetation in an area using methods such as *regeneration*, *direct seeding* and/or *planting*, so that the species composition, structure and density is similar to pre-clearing vegetation types in that area;

term means the duration of this Permit, including as amended or renewed;

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 *Agricultural and Related Resources Protection Act 1976*.

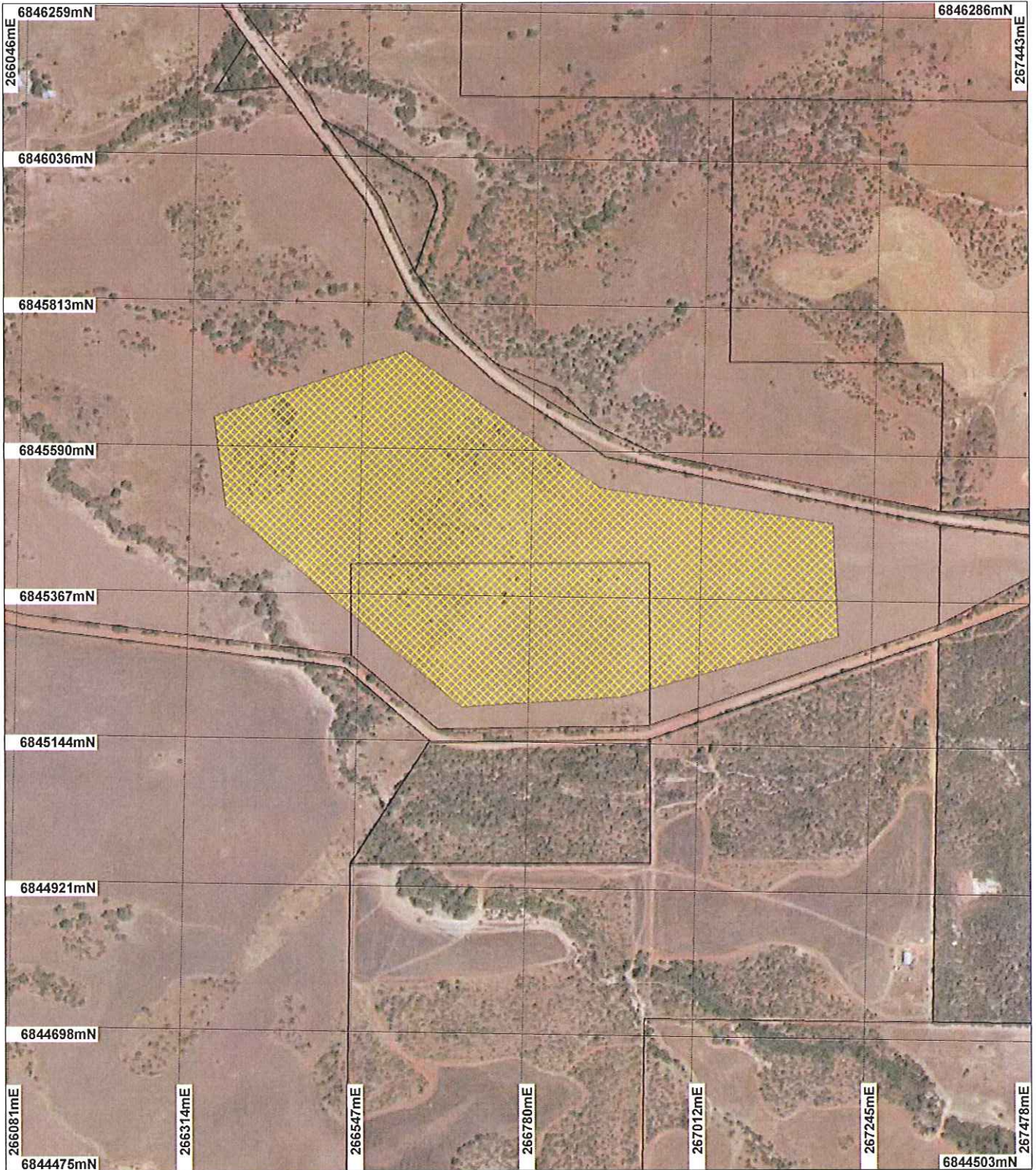


Kelly Faulkner
MANAGER
NATIVE VEGETATION CONSERVATION BRANCH

*Officer delegated under Section 20
of the Environmental Protection Act 1986*

5 March 2009

Plan 2958/1



LEGEND

Clearing Instruments
Cadastre
Hutt Northampton 1.4m
Orthomosaic - Landgate



0 200 m

Scale 1:7993

(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 5/3/09

K Faulkner

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

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



Department of
Environment and Conservation

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1. Application details

1.1. Permit application details

Permit application No.: 2958/1
Permit type: Area Permit

1.2. Proponent details

Proponent's name: Boral Resources (WA) Ltd

1.3. Property details

Property: LOT 29 ON PLAN 232355 (House No. 199 HATCH BOWES 6535)
LOT 52 ON PLAN 138083 (BOWES 6535)
Local Government Area: Shire Of Northampton
Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
27		Mechanical Removal	Mineral Exploration
		Mechanical Removal	Mineral Exploration

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 Unit: 35 - Shrublands; jam scrub with scattered York gum	The proposal is to clear 27 hectares of completely degraded (Keighery, 1994; Northampton Geological Report, 2008; DEC, 2009) vegetation which has been cropped over a long period of time. There are two ridges which have not been cropped however they have been severely grazed (Northampton Geological Report, 2008). An onsite inspection of the applied area observed that the vegetation within the applied area does not fit the Beard mapping description. The applied area is predominately <i>Hakea recurva</i> , <i>Acacia tetragonophylla</i> and <i>Pimelea microphala</i> DEC, 2009)	Completely Degraded: No longer intact; completely/almost completely without native species (Keighery 1994)	The vegetation condition was determined through aerial photography (Hutt Northampton 1.4m Orthomosaic Landgate 2001), a site survey of the applied area (Northampton Geological Report, 2008) and a site visit by a DEC Officer (DEC, 2009).

3. Assessment of application against clearing principles

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

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

The proposal is to clear up to 27 hectares of native vegetation in completely degraded (Keighery, 1994DEC, 2009) condition for the purpose of constructing a quarry.

The vegetation under application has been predominately cleared for pasture and may contain scattered regrowth natives. There are also two ridges within the applied area which have not been cleared for pasture however both ridges have been heavily impacted by grazing (Northampton Geological Survey, 2008).

A site survey observed ten native species within the applied area, all of which were shrubs or groundcover species (Northampton Geological Survey, 2008). The vegetation under application is dominantly by *Hakea recurve*, *Acacia tetragonaphylla* and *Pimelea microcephala* (DEC, 2009).

There are 4 recorded occurrences of Priority Ecological Communities (PECs) within the local area (10 km radius), all of which are the same community, namely *Melaleuca* sp. and *Hakea* sp. tickets on Moresby Range. The applied area does not fall within the buffers for these PECs and therefore is unlikely to be impacted by the proposed clearing.

Given the condition of the vegetation under application, the level of disturbance within the applied area and the results of the site survey, the clearing as proposed is not likely to contain a high level of biodiversity in a local context.

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

Methodology

References:

DEC (2009)
Keighery (1994)
Northampton Geological Survey (2008)

GIS Database:

CALM Managed Lands and Waters - CALM 01/06/05
SAC Biodatasets - accessed 09 Feb 09
Pre European Vegetation - DA 01/01
Clearing Regulations, Environmentally Sensitive Areas 30 May 2005
NLWRA, Current Extent of Native Vegetation 20 Jan 2001

(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

The area under application has been predominately cleared for pasture and grazing, there are two small ridges which contain native vegetation however they have been extensively grazed and are in a completely degraded (Keighery, 1994) condition (Northampton Geological Report, 2008; DEC, 2009).

The local area (10km radius) retains approximately 15% native vegetation and therefore remnant vegetation within the local area may have higher levels of significance however given the condition of the vegetation under application it is not likely to be able to provide sustainable habitat for native fauna.

Remnant native vegetation south to south east of the applied area and along watercourse to the west and north of the applied area are in better condition than the vegetation under application and are likely to be better habitat for native fauna.

Given that the applied area is predominately void of native vegetation (some scattered emergent regrowth) and the occurrence of more suitable habitat in close proximity to the applied area, the clearing as proposed is not likely to be at variance to this principle.

Methodology

References:

DEC (2009)
Keighery (1994)
Northampton Geological Report (2008)

GIS Database:

CALM Managed Lands and Waters - CALM 01/06/05
Hydrography linear - DOW 13/7/06
NLWRA, Current Extent of Native Vegetation 20 Jan 2001
Pre European Vegetation - DA 01/01
SAC Biodatasets - accessed 9/2/09

(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 7 known records of rare flora occurring within the local area (10km radius), of these 3 are known to occur on the same soils and vegetation as the applied area.

A site survey of the applied area observed 10 native species within the applied area however none were rare or priority flora (Northampton Geological Report, 2008) however priority 3 species *Grevillea triloba*, was found along Starling Road adjacent to the applied area (DEC, 2009). As the applied area is at its closest point 40

metres from the Starling Road reserve it is unlikely that clearing will impact on this population of priority flora.

The area under application has been predominately cleared for pasture (may be some scattered regrowth) however there are two ridges which retain native vegetation in a completely degraded (Keighery, 1994) condition (Northampton Geological Survey, 2008; DEC, 2009).

Given the condition of the vegetation and the history of severe disturbance to the applied area and taking into account the results of the site survey and inspection, the clearing as proposed is not likely to be at variance to this principle.

Methodology References:
 DEC (2009)
 Keighery (1994)
 Northampton Geological Survey (2008)

GIS Database:
 Pre European Vegetation - DA 01/01
 SAC Biodatasets - accessed 9 Feb 09
 Soils, Statewide DA 11/99

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

Comments **Proposal is not likely to be at variance to this Principle**
 There are no known records of Threatened Ecological Communities within the local area (10km radius).

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

Methodology GIS Database:
 SAC Bio Datasets accessed 9/2/09

(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**

	Pre-European (ha)	Current extent (ha)	Remaining (%)	% In reserves DEC Managed Land
IBRA Bioregions**				
Geraldton Sandplains ^	3,136,033	1,341,273	42.77	41.70
Shire**				
Northampton	1,258,676	909,535	72.26	25.38
Beard Vegetation Complex**				
35 (statewide)*	184,501	19,486	10.56	3.37
35 (in GS Bioregion)*	184,501	19,486	10.56	3.37

* (Shepherd et al. 2007)

** (Shepherd et al., 2001; Hopkins et al., 2001)

^ Area within Intensive Land Use Zone

A site inspection of the applied area observed that the vegetation under application is not consistent with the Beard Vegetation (Unit 35) description of the applied area (DEC, 2009). The applied area is predominately *Hakea recurve*, *Acacia tetragonaphylla* and *Pimelea microcephala* (DEC, 2009).

The vegetation under application is in a completely degraded (Keighery, 1994) condition (DEC, 2009; Northampton Geological Survey, 2008) consisting of scattered shrubs and groundcover. Much of the applied area has been cleared for pasture activities however there is some scattered vegetation occurring within two ridges which have not been previously cleared but have been heavily grazed (Northampton Geological Survey, 2008).

Given the condition of the vegetation and that the area under application is not representative of Beard vegetation unit 35 the applied area is not considered to be a remnant of native vegetation in this extensively cleared landscape.

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

Methodology References:
 DEC (2009)
 Keighery (1994)
 Hopkins et al. (2001)

Northampton Geological Survey (2008)
Shepherd et al. (2001)
Shepherd (2007)

GIS Database:
Interim Biogeographic Regionalisation of Australia - EA 18/10/00
Local Government Authorities - DLI 8/07/04
Pre European Vegetation - DA 01/01
SAC Biodatasets - accessed 09 Feb 09
NLWRA, Current Extent of Native Vegetation 20 Jan 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 no wetlands or watercourses within the applied area; the closest mapped watercourse is approximately 55 metres south west of the applied area.

As the applied area does not include a mapped wetland or watercourse and is not within the recommended buffer (DoW, 2006) of nearby watercourses the clearing as proposed is not likely to be at variance to this principle.

Methodology References:
DoW (2006)

GIS Database:
EPP Lakes Policy Area - DEP 14/05/97
Clearing Regulations, Environmentally Sensitive Areas 30 May 2005
Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain DEC 11/04/07
Hydrography linear - DOW 13/7/06
Ramsar wetlands - DEC 03

(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

A site survey of the applied area identified the soils onsite as consisting predominately of red brown loams to sandy loams over stony and paler subsoils. As the soils under application can be hard setting as a result of compaction from grazing (Northampton Geological Survey, 2008) and wind erosion of the soils from pasture production, the clearing as proposed is not likely to result in further wind erosion on site.

The vegetation under application is in a completely degraded (Keighery, 1994) condition and consists of shrubs and groundcover vegetation (DEC, 2009). As there is little deep rooted perennial vegetation within the applied area clearing is not likely to increase salinity within the vicinity of the application area.

Given the condition and composition of the native vegetation under application the clearing as proposed is not likely to cause appreciable land degradation.

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

Methodology References:
DEC (2009)
Keighery (1994)
Northampton Geological Survey (2008)

GIS Database:
Average Annual Rainfall Isohyets - WRC 29/09/98
Annual Evaporation Contours (Isopleths) - WRC 29/09/98
Hydrogeology, statewide DOW 13/07/06
Hydrographic catchments, catchments - DoW 01/06/07
Hydrography, linear - DOW 13/7/06
Salinity Risk LM 25m - DOLA 00
Soils, Statewide DA 11/99
Topographic contours statewide - DOLA and ARMY 12/09/02

(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 5 areas of conservation significance managed by the Department of Environment and Conservation (DEC) within the local area (10km radius).

The closest known conservation area is located approximately 50m south of the applied area, namely Nilligarri Nature Reserve.

A site survey of the applied area identified 3 weed species within the applied area, namely *Emex australis* (doublegee), *Lycium ferocissimum* (African Boxthorn) and *Cucumis myriocarpus* (Prickly Paddy Melon) (Northampton Geological Survey, 2008) in addition a site inspection identified *Carthamus lanatus* (Saffron Thistle) as occurring within the applied area (DEC, 2009).

The area under application has not been mapped for Acid Sulfate Soil (ASS) risk however mapping extends to 100 metres south of the applied area and indicates that the applied area is likely to be between no known ASS risk and moderate ASS risk. The clearing as proposed is unlikely to disturb the soil profile associated with ASS.

Given the above the clearing as proposed may be at variance to this principle as clearing of the applied area may result in the spread of weed species into area of conservation significance.

Weed and dieback conditions will be placed on the permit to mitigate the potential for clearing to impact on the Nilligarri Nature Reserve.

Methodology

References:

DEC (2009)

Northampton Geological Survey (2008)

GIS Database:

CALM Managed Lands and Waters - CALM 01/06/05

Hydrography, linear - DOW 13/7/06

Register of National Estate - Environment Australia, Australian and world heritage division 12 Mar 02

System 1 to 5 and 7 to 12 areas DEC 11/7/06

(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.

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

There are no wetlands or watercourses within the applied area; the closest mapped watercourse is approximately 55 metres south west of the applied area.

As the applied area does not include a mapped wetland or watercourse and is not within the recommended buffer (DoW, 2006) of nearby watercourses.

Given that a buffer will be maintained between the applied area and the nearby watercourse the clearing as proposed is not likely to cause deterioration in the quality of surface of groundwater in the vicinity of the applied area.

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

Methodology

References:

DoW (2006)

GIS Database:

EPP Lakes Policy Area - DEP 14/05/97

Clearing Regulations, Environmentally Sensitive Areas 30 May 2005

Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain DEC 11/04/07

Hydrography linear - DOW 13/7/06

Ramsar wetlands - DEC 03

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 vegetation under application is in a completely degraded (Keighery, 1994) condition and consists of shrubs and groundcover vegetation (DEC, 2009). As there is little deep rooted perennial vegetation within the applied area clearing is not likely to cause or exacerbate the incidence or intensity of flooding.

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

Methodology References:
DEC (2009)
Keighery (1994)

GIS Database:
Hydrogeology, statewide DOW 13/07/06
Hydrographic catchments, catchments - DoW 01/06/07
Hydrography, linear - DOW 13/7/
Risk LM 25m - DOLA 00
Soils, Statewide DA 11/99
Topographic contours statewide - DOLA and ARMY 12/09/02

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

Comments

This proposal is to clear native vegetation for the purpose of quarry construction; therefore the proponent will require planning approval from the Shire of Northampton. The Shire of Northampton resolved to grant planning approval (with conditions) on the 21 November 2008, DOC77137.

A quarry of the size indicated by the applicant (Northampton Geological Survey, 2008) will require works approval and licence from the Department of Environment and Conservation.

The area under application is within the Gascoyne groundwater Rights in Water Irrigation area, given that the proposal will require water for resource processing a water licence from the Department of Water is required.

The area under application falls within EPA Position Statement No. 2 agricultural area, which has a general presumption against clearing within the agricultural region. Given the condition of the vegetation under application the clearing is not likely to be at variance with this position statement.

Methodology References:
Northampton Geological Survey (2008)

4. Assessor's comments

Comment

The application has been assessed against the clearing principles, planning instruments and other matters in accordance with s51O of the Environmental Protection Act 1986, and the proposed clearing may be at variance to Principles (h) and is not likely to be at variance to the remaining clearing Principles.

5. References

- DEC (2009) Advice to Assessing Officer and Site Inspection Report, Midwest Region, Department of Environment and Conservation, unpublished document, DOC77286.
- Department of Water (2006) Water Quality Protection Note 6: Vegetation Buffers to Sensitive Water
- EPA (2000) Environmental protection of native vegetation in Western Australia. Clearing of native vegetation, with particular reference to the agricultural area. Position Statement No. 2. December 2000. Environmental Protection Authority, Western Australia.
- EPA (2006) Environmental Offsets, Position Statement No. 9, January 2006, Environmental Protection Authority
- Hopkins, A.J.M., Beeston, G.R. and Harvey J.M. (2001) A database on the vegetation of Western Australia. Stage 1. CALMScience after J. S. Beard, late 1960's to early 1980's Vegetation Survey of Western Australia, UWA Press.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Northampton Geological Report (2008) Bill Marshall and Tim Hunter, prepared for Boral Resources (WA) Ltd, unpublished document, DOC71617
- 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.
- 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.

6. Glossary

Term	Meaning
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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
DolR	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)