



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: 3189 / 1
File Number: DEC11814
Duration of Permit: From 7 March 2010 to 7 March 2018

PERMIT HOLDER

Shire of Dandaragan

LAND ON WHICH CLEARING IS TO BE DONE

LOT 11736 ON DEPOSITED PLAN 188283

AUTHORISED ACTIVITY

The Permit Holder shall not clear more than 4.5 hectares of native vegetation, within the area hatched yellow on attached Plan 3189/1.

CONDITIONS

1. Period in which clearing is authorised

- (a) Clearing authorised under this Permit must be completed by 4 March 2015, being five years from the date from which this Permit becomes valid.
- (b) The Permit Holder shall not clear native vegetation unless gravel extraction activities are enacted within 6 months of the clearing being undertaken.

2. 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 not move soils in wet 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.

3. Retain vegetative material and topsoil, ripping, revegetation and rehabilitation

- (a) The Permit Holder shall retain the vegetative material and topsoil removed by clearing authorised under this Permit and stockpile the vegetative material and topsoil in an area that has already been cleared.
- (b) Prior to undertaking works pursuant to conditions 3(c), the Permit Holder shall rip the pit floor and contour batters within the extraction site.
- (c) Within twelve months of the area no longer being required for gravel extraction, the Permit Holder must *revegetate* and *rehabilitate* the area cross-hatched yellow on attached Plan 3189/1 by:
 - (i) laying the vegetative material and topsoil retained under condition 3(a) on the cleared area;
 - (ii) deliberately *planting* and/or *direct seeding* native vegetation that will result in a similar species composition, structure and density of native vegetation to pre-clearing vegetation types in that area; and
 - (iii) ensuring only *local provenance* seeds and propagating material are used to *revegetate* and *rehabilitate* the area.

- (d) Within twelve months of undertaking *revegetation* and *rehabilitation* in accordance with condition 3(c) of this Permit, the Permit Holder must:
- (i) determine the species composition, structure and density of the area *revegetated* and *rehabilitated*; and
 - (ii) where, in the opinion of an *environmental specialist*, the composition structure and density determined under condition 3(d)(i) of this Permit will not result in a similar species composition, structure and density to that of pre-clearing vegetation types in that area, the Permit Holder must undertake additional *planting* or *direct seeding* of native vegetation in accordance with the requirements of condition 3(c)(ii) and (iii) of this Permit.

4. Records to 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* and *rehabilitation* of areas pursuant to condition 3 of this Permit:
- (i) the location of any areas *revegetated* and *rehabilitated*, 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* and *rehabilitation* activities undertaken;
 - (iii) the size of the area *revegetated* and *rehabilitated* (in hectares); and
 - (iv) the species composition, structure and density of *revegetation* and *rehabilitation*.

5. 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 4 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 7 December 2017, the Permit Holder must provide to the CEO a written report of records required under condition 4 of this Permit where these records have not already been provided under condition 5(a) of this Permit.

Definitions

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

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

direct seeding means a method of re-establishing vegetation through the establishment of a seed bed and the introduction of seeds of the desired plant species;

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;

local provenance means native vegetation seeds and propagating material from natural sources within 50 kilometres of the area cleared.

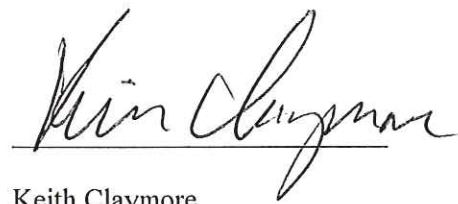
mulch means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation;

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

rehabilitate/ed/ion means actively managing an area containing native vegetation in order to improve the ecological function of that area;

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;

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*.

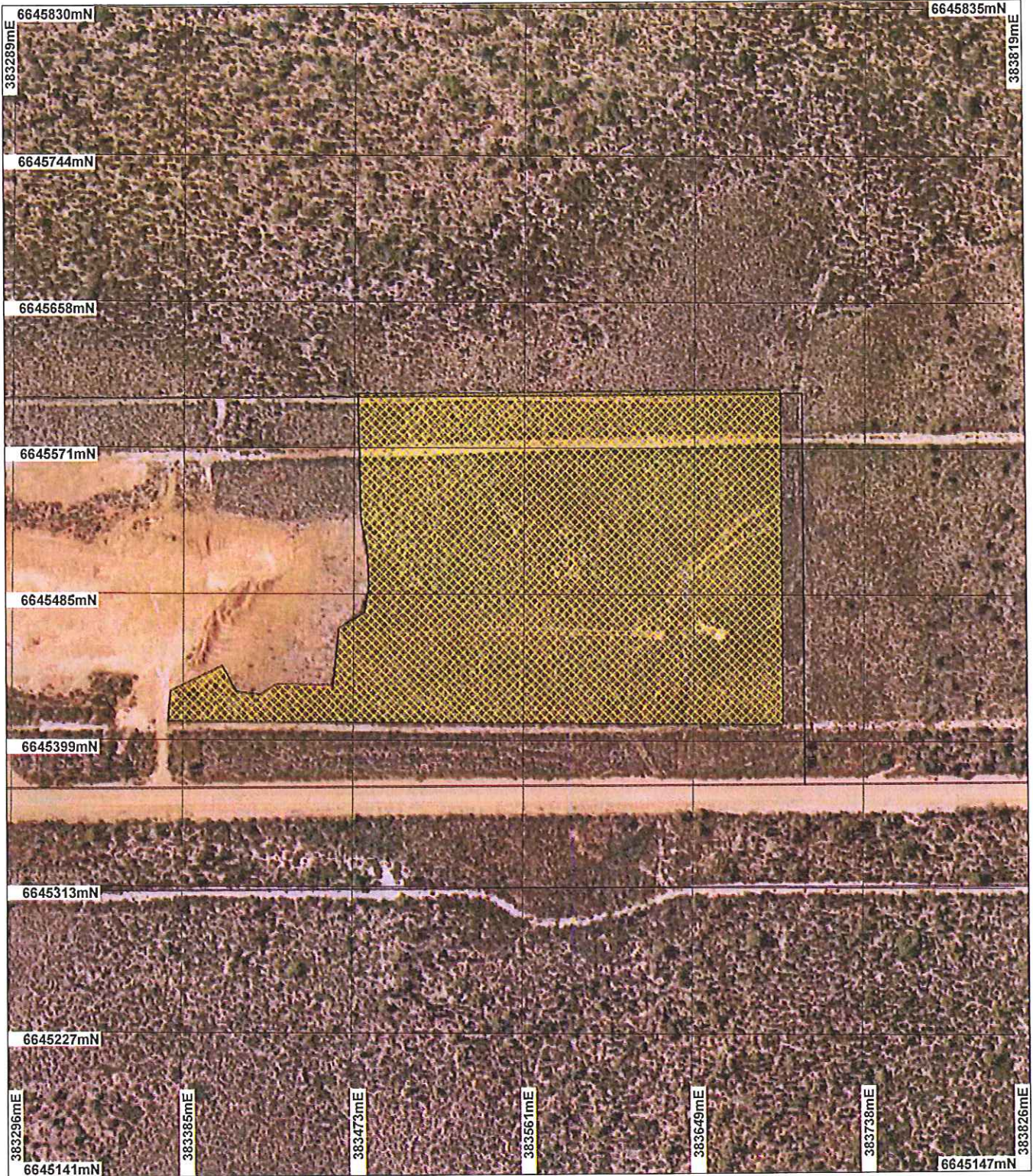


Keith Claymore
A/ ASSISTANT DIRECTOR
NATURE CONSERVATION DIVISION

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

4 February 2010

Plan 3189/1



LEGEND

Clearing Instruments
 Cadastre
 Badgingarra 60cm
 Orthomosaic - Landgate



Scale 1:3066
 (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.

Karin Claymore Date *4/2/10*
 K Claymore

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.



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1. Application details

1.1. Permit application details

Permit application No.: 3189/1
Permit type: Area Permit

1.2. Proponent details

Proponent's name: Shire of Dandaragan

1.3. Property details

Property: LOT 11736 ON PLAN 188283 (BOOTHENDARRA 6521)
Local Government Area:
Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
4.5		Mechanical Removal	Extractive Industry

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: 1031 - Mosaic: Shrublands; hakea scrub- heath / Shrublands; dryandra heath	The proposal is to clear 4.5ha of native vegetation within the applied area for the purpose of gravel extraction.	Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery 1994)	The condition of the vegetation under application (excluding areas currently undergoing rehabilitation) was determined through a site inspection (DEC, 2009a).
1036 - Low woodland; Banksia prionotes (Shepherd, 2007)	The gravel reserve has previously been subject to gravel extraction activities and rehabilitation works have recently commenced within this area. The Shire of Dandaragan does not intend to enter these areas as the gravel resource has been exhausted (DEC, 2009a).		

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 proposal is to clear 4.5ha of native vegetation within the applied area for the purpose of gravel extraction.

The vegetation under application is predominately in excellent (Keighery, 1994) condition (DEC, 2009a).

A site inspection of the original applied area noted two priority flora species, namely *Banksia dallanneyi* subsp *pollostata* (P3) and *Desmocladius elongatus* (P3) (DEC, 2009a). A number of other rare and priority flora have been recorded within 10km of the applied area on the same soil and vegetation, some of which may occur within the applied area (DEC, 2009d). The western areas of the gravel reserve where these flora were observed has since been excised from the application.

The vegetation under application is heathland dominated by *Acacia saligna*, *Dryandra sessilis*, *Calothamnus quadrifidus*, *Isopogon* sp, *Allocasuarina humillis* and *Banksia prionotes* (DEC, 2009a) Of these flora species threatened fauna, Carnaby's Black Cockatoo, is known to feed on *Acacia saligna*, *Dryandra sessilis* and *Banksia prionotes* (Shah, 2006). Given the limited extent of these potential feed trees within the applied area, and taking into account the extent of suitable feeding habitat the local area, the vegetation is not likely to be significant for Carnaby's Black Cockatoo (DEC, 2009c).

In addition the sandy/gravelly soils under application and the presence of heath vegetation communities make the applied area potential habitat for the Shield-backed Trapdoor Spider (DEC, 2009b) however the significance of any potential population within the local area (10 km radius) is not certain (DEC, 2009c).

The gravel reserve is bordered on all sides (south side intersected by Watheroo Road) with the Watheroo National Park, with which the application area shares its environmental values. In addition it is noted that the vegetation under application forms part of the Northern Sandplains which is known to contain a high level of biodiversity within Western Australia.

Given the above, the vegetation under application may be at variance to this principle as the vegetation is highly biodiverse in a statewide context and is surrounded by similarly diverse vegetation within the Watheroo National Park.

Methodology References:
DEC (2009a)
DEC (2009b)
DEC (2009c)
DEC (2009d)
Keighery (1994)
Shah (2006)

GIS Database:
CALM Managed Lands and Waters - CALM 01/06/05
SAC Biodatasets - accessed 6 July 2009
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 vegetation under application is in excellent (Keighery, 1994) condition and is heathland dominated by *Acacia saligna*, *Dryandra sessilis*, *Calothamnus quadrifidus*, *Isopogon* sp, *Allocasuarina humilis* and *Banksia prionotes* (DEC, 2009a).

Of these flora species threatened fauna, Carnaby's Black Cockatoo, is known to feed on *Acacia saligna*, *Dryandra sessilis* and *Banksia prionotes* (Shah, 2006). Given the limited extent of potential feed resource for this species within the applied area the vegetation is not likely to be significant habitat when considering the extent of similar vegetation in the local area (10km radius).

In addition the sandy/gravelly soils under application and the presence of heath vegetation communities make the applied area suitable habitat for threatened fauna including the Shield-backed Trapdoor Spider (DEC, 2009b) however the significance of any potential population within the applied area is not known (DEC, 2009c).

Also recorded within the local area (20km radius) are the Australia Bustard (Priority 4), Western Brush Wallaby (Priority 4), White Browed Babbler (western wheatbelt) (Priority 4) and *Daphnia jollyi* (Crustacean) (Priority 1).

The local area retains approximately 40% native vegetation in similar condition to the applied area, much of which is within secure tenure (DEC managed land).

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

Methodology References:
DEC (2009a)
DEC (2009b)
DEC (2009c)
Keighery (1994)
Shah (2006)

GIS Database:
SAC Biodatasets - accessed 6 July 2009
Pre European Vegetation - DA 01/01
Soils, Statewide DA 11/99

(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 5 known records of rare flora occurring within the local area (20km radius) namely *Hemiandra rutilans*, *Hakea megalosperma*, *Spirogardnera rubescens*, *Daviesia dielsii* and *Eucalyptus pruiniramis*.

Of these species both *Hemiandra rutilans* and *Daviesia dielsii* occur on the same mapped soil and vegetation types as the application area however known occurrences of *Hemiandra rutilans* have been recorded only on deep sands unlike the applied area which has sandy/lateritic soils.

A site inspection of the applied area did not identify any rare flora occurring within the application area no survey was undertaken (DEC, 2009a) however given the excellent (Keighery, 1994) condition of the vegetation it is possible that one or more rare flora may occur within the applied area (DEC, 2009d).

A flora survey of the gravel reserve did not identify any rare flora occurring on site (Williams, 2009).

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

Methodology

References:

DEC (2009a)
DEC (2009d)
Keighery (1994)
Williams (2009)

GIS Database:

Pre European Vegetation - DA 01/01
SAC Biodatasets - accessed 6 July 2009
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 (TEC's) within the local area (20km radius).

The vegetation under application identified during a site inspection (DEC, 2009a) is not representative of any known TEC.

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

Methodology

References:

DEC (2009a)

GIS Database:

SAC Bio Datasets accessed 6 July 2009

(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*				
Swan Coastal Plain^	1,501,208	583,140	38.84	32.55
Shire*				
Dandaragan	670,535	299,219	44.62	37.61
Beard Vegetation Association*				
1031	269,495	91,177	33.83	39.67
1036	86,320	32,832	38.04	47.96
Beard Vegetation Association with Bioregion*				
1031	27,730	6,494	23.42	8.51
1036	85,526	32,555	38.06	47.84

* (Shepherd 2007)
^ Area within Intensive Land Use Zone

The gravel reserve is bordered on all sides (south side intersected by Watheroo Road) with the Watheroo National Park, with which the application area shares many environmental values.

The local area (20km radius) retains approximately 40% native vegetation, much of which is within the Watheroo National Park (DEC managed land).

Given the above, the vegetation under application is not likely to represent a significant remnant in an extensively cleared landscape, therefore the proposal is not likely to be at variance to this principle.

Methodology References:
EPA (2000)
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 6 July 2009
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**
The closest surface water expression area is located approximately 830m east of the application area, namely a non-perennial swamp.

Given the distance to the nearest surface water expression area the vegetation under application is not likely to include vegetation growing in or in association with riparian vegetation.

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

Methodology GIS Database:
CALM Managed Lands and Waters - CALM 01/06/05
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
South Coast Significant Wetlands - WRC 10/06/2003

(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 application area is mapped as soils type AC2, being chiefly yellow earthy sands with siliceous sands (Northcote et al., 1968). A site inspection of the applied area identified that both gravel dominant soils and sandy soils occurred within the application area (DEC, 2009a).

The groundwater salinity of the area is mapped as 1000-3000mg/L with a varied salinity risk of low to high. A site inspection of the applied area noted no obvious signs of salinity impact in the vicinity of the application area (DEC, 2009a).

Given the high erodibility of the sandy soils under application the clearing as proposed may be at variance to this principle.

Methodology References:
DEC (2009a)

GIS Database:
Acid Sulfate Soil Risk Map, Swan coastal Plain - DEC 07/08/06
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 is at variance to this Principle

The existing gravel reserve is bordered on all sides (south side intersected by Watheroo Road) with the Watheroo National Park, with which the application area shares its environmental values.

Removal of the vegetation under application will degrade the environmental values of this conservation area through potential spread of weed and dieback as well as increasing edge effects to borders of the national park.

A weed and dieback control condition will be placed on the permit to mitigate the potential impacts of clearing on nearby conservation areas.

Methodology

GIS Database:
CALM Managed Lands and Waters - CALM 01/06/05
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

The closest surface water expression area is located approximately 830m east of the application area. Given this distance it is not likely that the clearing as proposed will impact on surface water within the local area.

The area under application is mapped as having a groundwater salinity 1000-3000mg/L and a low to high risk of salinity occurring. A site inspection of the applied area did not observed any signs of salinity impacts despite much of the area being previously cleared for gravel extraction.

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

Methodology

GIS Database:
Evapotranspiration Isopleths - WRC 29/09/98
Groundwater Salinity Statewide DoW 13/07/06
Hydrographic catchments, catchments - DoW 01/06/07
Hydrography, linear - DOW 13/7/06
Mean Annual Rainfall Isohytes (1975 - 2003) - DEC 02/08/05
Salinity Risk LM 25m - DOLA 00
Topographic Contours, Statewide - DOLA 12/09/02

(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 application area is mapped as soils type AC2, being chiefly yellow earthy sands with siliceous sands (Northcote et al., 1968). A site inspection of the applied area identified that both gravel dominate soils and sandy soils occurred within the application area (DEC, 2009a).

Given the high porosity of the sandy soils under application and the extent of native vegetation retained within the local area (20km radius) it is not likely that the clearing as proposed is at variance with this principle.

Methodology

GIS Database:
Environmental Impact Assessments - EPA 22/2/07
Evaporation Isopleths - WRC 29/09/98
Hydrographic catchments, catchments - DoW 01/06/07
Hydrography, linear - DoW 13/7/06
Mean Annual Rainfall Isohytes (1975 - 2003) - DEC 02/08/05
Topographic Contours, Statewide - DOLA 12/09/02

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

Comments

The original proposal was to clear 9.41ha of native vegetation for the purpose of gravel extraction. The applicant has since amended the application to 4.5 ha of native vegetation on the eastern side of the gravel reserve in order to avoid areas of high biodiversity and unsuitable resource (DOC117148).

The land under application is vested with the Shire of Dandaragan for the purpose of gravel resource.

A flora survey of the gravel reserve was undertaken in accordance with DEC request. The results were provided to DEC on 21 December 2009 (Williams, 2009).

Methodology References:
Williams (2009)

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 is at variance to Principles (h), may be at variance to Principles (a) and (g) and is not likely to be at variance to the remaining clearing Principles.

5. References

- DEC (2009a) Site Inspection Report for Clearing Permit Application CPS 3189/1, Lot 11736 Watheroo Road, Boothendarra. Site inspection undertaken 17 July 2009. Department of Environment and Conservation, Western Australia (TRIM Ref. DOC92340).
- DEC (2009b) Threatened Fauna (Spiders) Advice. Department of Environment and Conservation Trim Ref DOC92341
- DEC (2009c) Threatened Fauna Advice. Department of Environment and Conservation Trim Ref DOC92483
- DEC (2009d) Flora Advice. Department of Environment and Conservation Trim Ref DOC92617
- 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.
- 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.
- Williams, D (2009) Report on the condition, structure and flora within Watheroo West Road Lot 11736, conducted by Donald Williams of Williams and Sons on behalf of the Shire of Dandaragan (DOC112765).

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 (now DEC)
DMP	Department of Mines and Petroleum (ex DoIR)
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)