Department of
Environment and Conservation
Our environment, our future

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 3265/1
Permit type: Area Permit

1.2. Proponent details

Proponent's name: nghenvironmental on behalf of Wayne Credaro

1.3. Property details

Property: LOT 2 ON DIAGRAM 64719 (Lot No. 2 HAAG YELVERTON 6280)
Local Government Area:
Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
17.87		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 association 1181 is described as a Medium woodland, jarrah & Eucalyptus haematoxylon (Shepherd, 2007) Mattiske vegetation complex Yelverton (Y) is described as Woodland of Eucalyptus marginata subsp. marginata-Corymbia calophylla-Allocasuarina fraseriana-Agonis flexuosas and open woodland of Corymbia calophylla on low undulating uplands in the humid zone. Mattiske vegetation complex Yelverton (Yd) is described as Woodland of Allocasuarina fraseriana-Eucalyptus marginata subsp. marginata-Xylomelum occidentale-Banksia attenuata on sandy slopes in the humid zone. Mattiske vegetation complex Yelverton (Yw) is described as Woodland of Allocasuarina fraseriana-Nuytsia floribunda-Agonis flexuosa-Banksia attenuata on slopes and open forest of Corymbia calophylla-Eucalyptus patens-Eucalyptus marginata subsp. marginata on the lower slopes and woodland	The area under application consists of 17.87 hectares of vegetation in 'degraded' to 'good' (Keighery, 1994) and is predominately Agonis flexuosa, Banksia attenuata, Allocasuarina fraseriana and Kunzea glabrescens (DEC, 2009).	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)	The vegetation condition was determined through a DEC site visit undertaken on 08 September 2009 (DEC, 2009)

of Eucalyptus rudis-Melaleuca rhaphiophylla on valley floors in the humid zone. (Mattiske, 1998)

Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)

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 area under application consists of 17.87 hectares of vegetation in 'degraded' to 'good' (Keighery, 1994) condition. The vegetation consist of predominately *Agonis flexuosa, Banksia attenuata, Allocasuarina fraseriana* and *Kunzea glabrescens* (DEC, 2009). The clearing is for sand extraction after which the area will be used for pasture. The local area (10km radius) is highly fragmented with only a few large remnant vegetation patches remaining.

The Environmental Protection Authority (EPA) Bulletin No 8 recognises the importance of maintaining and improving ecological linkages and the EPA supports the South West Regional Ecological Linkages. The area under application falls with the South West Regional Ecological Linkage area and the removal of the vegetation within the area under application will cause a decrease in the value of the local linkages and further fragment the landscape (Molloy et al, 2009).

There are three declared threatened and two priority fauna species recorded within a 10km radius of the area under application. There are also six species of rare flora and sixteen species of priority flora within a 10km radius of the area under application. The area under application falls within the Whicher Scarp area, which is recognised as having a unique flora and vegetation (Keighery et al, 2008). Furthermore the area is considered to be within a highly cleared landscape and as such small patches of intact native vegetation are considered to have high biodiversity values within the local context.

The proponent engaged Ekologica Pty Ltd to conduct a flora and vegetation survey of the area under application. This survey was undertaken in December 2008. Within the report they advise that only forty eight flora species were identified in the area applied to clear, which is less than half the number expected from the 17 hectare remnant vegetation.

Given the above it is considered that the area under application may comprises a high level of biological diversity.

Methodology

Keighery 1994
Keighery et al 2008
Molloy et al 2009
DEC 2009
Ekologica 2009
GIS Database:
- SAC Bio datasets access on 24/08/2009
- Pre European Vegetation - DA 01/01
- Mattiske Vegetation (01/03/1998)

(b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.

Comments

Proposal may be at variance to this Principle

There are thirty five records of three declared threatened and two priority fauna species recorded within a 10km radius of the area under application. The closest record is an *Engaewa reducta* (Dunsborough Burrowing Crayfish) 75m east of the area under application. *Engaewa reducta* inhabit sandy or loamy soil in heathlands. Given the lack of preferred habitat the area under application is unlikely to be significant habitat for the listed threatened species *Engaewa reducta* (DEC, 2009c).

There are two records of the *Pseudocheirus occedentalis* (Western Ringtail Possum) 3.2km south east and one record 8.7km north of the area under application. The vegetation consist of predominately *Agonis flexuosa, Banksia attenuata, Allocasuarina fraseriana* and *Kunzea glabrescens* in 'degraded' to 'good' condition (Keighery, 1994 and DEC, 2009). Given the vegetation structure and past land use (grazing) the area applied to clear is not considered to be significant habitat for the Western Ringtail Possum (DEC, 2009a).

The area has some foraging capacity for Carnaby's Black Cockatoo and will be result in a net loss of foraging habitat if returned to pasture, which should be avoided (DEC, 2009c). To mitigate the loss of foraging capacity DEC requires that the area is not used for pasture and is to be revegetated after sand extraction has been

completed.

Given the above the clearing maybe at variance to this principle.

Methodology
Keighery 1994
DEC 2009
DEC 2009a
DEC 2009c
GIS Database:
- SAC Bio datasets access on 24/08/2009
- Hydrography, linear - DOE 01/02/04

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

Comments

Proposal may be at variance to this Principle

There are six species of rare flora and sixteen species of priority flora within the local area (10km radius). One species of rare flora and three species of priority flora occur within the same Beard vegetation association (1181) and soil type (Mt7 and Mt9) as the area under application.

Ekologica Pty Ltd conducted a flora and vegetation survey which was undertaken in December 2008. Within the report they advise that the priority two species Boronia capitata was located twice, once in the wetland near the eastern boundary and once near the southern boundary of the area applied to clear. In addition the priority four species Thysanotus glaucus was also located just south of the boundary of the area applied to clear (Ekologica 2008).

The rare flora *Drakaea micrantha* occurs on white-grey sands, in disturbed sites (Brown et al, 1998), flowers during September - October (WA Herbarium, 1998) and is known from low lying *Kunzea* sites, which appear to be present within the applied area and additional remain fairly intact. Therefore *Drakaea micrantha* may occur within the area under application (DEC, 2009b).

Given the proximity and that both priority species occur on white sandy soils (WA Herbarium, 1998) they may occur within the area under application also, but given the 'degraded' to 'good' (Keighery, 1994) condition of the vegetation it is less likely they will occur.

The majority of the site appears to be degraded to the extent that it is unlikely to harbour rare or priority species, except in the case of *Drakaea micrantha*, which is known from low lying *Kunzea* sites, which appear to be present within the applied area and additionally remain fairly intact. Given the Ekologica survey was undertaken in December 2008 when there was no ability to survey for *Drakaea micrantha* an appropriately timed targeted flora survey for *Drakaea micrantha* was recommended.

In October 2009 NGH Environmental commissioned IGNAM (Fire) Consulting to conduct a targeted flora survey for *Drakaea micrantha*. The flora survey methodology is inconsistent with Guidance Statement No. 51 published by the Environmental Protection Authority. Section 3.2.3 of Guidance Statement No. 51 states that it is expected that the flora survey should be coordinated and led by botanists who have had training, mentoring and experience in flora and vegetation surveying. NGH Environmental provided the credentials of the person who undertook the survey and a review of them indicates that they are not a botanist.

Therefore the proposed clearing maybe at variance to this principle.

Methodology
Brown et al 1998
WA Herbarium 1998 accessed on 17/09/2009
Keighery 1994
DEC 2009
DEC 2009b
Ekologica 2008
GIS Database:
- SAC Bio datasets access on 24/08/2009
- Pre-European Vegetation - DA 01/01
- Declared Rare and Priority Flora List - CALM 13/08/03
- Mattiske Vegetation - CALM 24/03/98
- Interim Biogeographic Regionalisation of Australia - EA 18/10/00
- 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 is one known record of a Threatened Ecological Community (TEC) and one known record of a Priority Ecological Community (PEC) that occur in the same vegetation and soil types and is within a 10km radius of the proposed clearing. The TEC is located 6km south east and consists of Eucalyptus calophylla woodlands on heavy soils which are not representative of the vegetation or soil type under application. The PEC is located

2.5km north and consists of Banksia attenuata woodland which is not representative of the vegetation under application. Therefore the proposed clearing is not likely to be at variance to this principle.

Methodology GIS Database:
- SAC Bio datasets access on 24/08/2009
- Pre-European Vegetation - DA 01/01
- Soils, Statewide - DA 11/99

(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 may be at variance to this Principle**

	Pre-European (ha)	Current extent (ha)	Remaining (%)	% In reserves DEC Managed Land
IBRA Bioregions*				
Jarrah Forest (JF)	4,506,655	583,140	38.84	32.55
Swan Coastal Plain (SWA)^	1,501,208	2,440,940	54.16	69.26
Shire*				
Busselton	146,450	61,734	42.15	65.89
Mattiske Vegetation Complex**				
Yelverton (Y)	7637	2308	30.23	12.16
Yelverton (Yd)	1768	1024	57.91	3.44
Yelverton (Yw)	3841	926	24.13	5.19
Beard Vegetation Association*				
181	19,217	9181	47.78	56.78
Beard Vegetation Association with Bioregion*				
181 JF	9978	5149	54.31	68.19
181 SWA	9238	3761	40.72	40.35

* (Shepherd et al. 2007)
** (Mattiske Consulting 1998)
^ Area within Intensive Land Use Zone

There is approximately 25-30% of native vegetation left within a 10km radius of the area under application. The EPA supports a threshold level of 30% as recommended in the National Objectives Targets for Biodiversity Conservation; below which species loss appears to accelerate exponentially at an ecosystem level (EPA, 2000).

The area is highly fragmented with only a few large remnant vegetation patches remaining. Yw retains less than the 30% target however only 0.4 hectares of the area applied to clear is mapped as Mattiske vegetation complex Yw (Mattiske, 1998). Of the area under application approximately 0.5ha is mapped as Mattiske vegetation complex Y. Given that the Y complex retained only 30.23% in 1998, it is considered that currently there would be less than the recommended 30% threshold level left of this complex.

Given the highly cleared and fragmented landscape the area under application is considered to be a significant remnant of vegetation and therefore the proposal maybe at variance to this principle.

Methodology EPA 2000
GIS Database:
- Heddle Vegetation Complexes - DEP 22/06/95
- Interim Biogeographic Regionalisation of Australia - EA 18/10/00
- Local Government Authorities - DLI 8/07/04
- Mattiske Vegetation - CALM 1/03/1998
- Pre European Vegetation - DA 01/01
- SAC Bio datasets access on 24/08/2009
- 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 maybe at variance to this Principle**
The area under application has two minor perennial watercourses occurring within 100m and Mary Brook within

580m. There are three Environmental Protection Policy lakes which are located 3km north, 3.6km east and 5km north of the area. A multi-use wetland (Palusplain) borders the east of the area applied to clear and a resource enhanced wetland (Palusplain) is located 150m to the south of the area applied to clear. Given the distance to the wetlands the area applied to clear is considered to be the wetlands western buffer zone and is therefore at maybe variance to this principle.

Given the close proximity to the wetland a buffer should be applied to the eastern areas, particularly the north east corner and the south east corner. DEC recommends a 50m buffer from the eastern edge of the application area to limit hydrological impact and potential sedimentation issues (DEC, 2009).

Methodology DEC 2009
GIS Database:
- ANCA wetlands - Environment Australia 26/3/99
- EPP Lakes Policy Area - DEP 14/05/97
- EPP, Wetlands 2004 (DRAFT) - EPA 21/7/04
- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain - DEC 11/04/07
- Hydrography linear - DOW 13/7/06

(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

There is no known Acid Sulphate Soil risk. The mapped soil types are Mt7 and Mt9. The soil seems consistent with Mt7 and is comprised of white sandy soils on top. There is only a slight slope on the applied area, sloping from the west end down to the eastern edge of the area (DEC, 2009). Given the low relief on site and type of soil on site it is unlikely that water erosion or waterlogging will be a risk.

In addition, DAFWA advise that if the project is staged over a period of time and past excavated staged areas are reseeded after the extractive phase is completed the proposed clearing is unlikely to cause appreciable land degradation (DAFWA, 2009). Therefore the proposed clearing is unlikely to be at variance to this principle.

Methodology DEC 2009
DAFWA 2009
GIS Database:
- Acid Sulfate Soil Risk Map, Swan coastal Plain - DEC 07/08/06
- 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
- Hydrogeology, Statewide 05 Feb 2002

(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

Haag Nature reserve is located 1.3km north of the area under application and Yelverton National Park is located 2.8km west of the area under application. There is approximately 25-30% of native vegetation remaining within a 10km radius of the area under application. The loss of the area applied for will disrupt the continuity of a vegetation corridor that occurs in this local area and although fragmented, links to DEC lands in the Yelverton National Park (DEC, 2009).

The area under application falls with the South West Regional Ecological Linkage area. Analysis of the impact of the removal of the vegetation within the application area indicates that on a local level the removal of the vegetation will cause a decrease in the ecological linkage value and increase the fragmentation of the landscape (Molloy et al, 2009).

Due to the short distances to nearby conservation areas, the proposed clearing is likely to impact upon the conservation areas by decreasing wildlife corridors within the local area (10km radius) and increasing the fragmentation of the remnant vegetation. Therefore the proposed clearing maybe at variance to this principle.

Methodology DEC 2009
Molloy et al 2009
GIS Database:
- NLWRA, Current Extent of Native Vegetation 20 Jan 2001
- CALM Managed Lands and Waters - CALM 1/06/04

(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 area under application is mapped with a low groundwater salinity of <500mg/L and no salinity risk. The mapped soil types are Mt7 and Mt9. The soil seems consistent with Mt7 and is comprised of white sandy soils on top. There is only a slight slope on the applied area, sloping from the west end down to the eastern edge of the area (DEC, 2009). Given the free draining soils and distance to the nearest watercourse the proposed clearing unlikely to be at variance to this principle.

Methodology

DEC 2009
GIS database:
- Albany 1.4m Orthomosaic - DLI March 03
- Evapotransporation Isopleths - WRC 29/09/98
- Groundwater Salinity Statewide DoW 13/07/06
- Hydrography, linear - DOW 13/7/06
- Soils, Statewide DA 11/99
- 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 mapped soil types are Mt7 and Mt9. The soil seems consistent with Mt7 and is comprised of white sandy soils on top. There is only a slight slope on the applied area, sloping from the west end down to the eastern edge of the area (DEC, 2009). Given the free draining soils and topography the proposed clearing is unlikely to be at variance to this principle.

Methodology

DEC 2009
GIS database:
- Albany 1.4m Orthomosaic - DLI March 03
- Evapotransporation Isopleths - WRC 29/09/98
- Hydrography, linear - DOW 13/7/06
- Soils, Statewide DA 11/99
- 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 Shire advised that they object to the clearing on the grounds that the vegetation is poorly represented, the area contains resource enhanced and multi-use wetlands and that the area is significant and will reduce the area of remnant vegetation in that area by 20%. The Shire also advises that they are yet to receive an application for an Extractive Industry Licence and that the proponent was recently refused rural subdivision from the Department of Planning and Infrastructure (Shire of Busselton, 2009).

The area is zoned for general farming.

The proponent submitted a targeted flora survey report advising that they found no *Drakaea micrantha* within the application area (IGNAM (Fire) Consulting, 2009). However the Flora survey methodology is inconsistent with Guidance Statement No. 51 published by the Environmental Protection Authority. Additionally other environmental issues raised in the letter of 30 September 2009 were not addressed.

The proponent also advised that they have applied for an extractive industry licence but the Shire is yet to make a decision on the application.

Methodology

Shire of Busselton 2009
IGNAM (Fire) Consulting 2009
GIS database:
- Cadastre - Landgate Dec 07
- Town Planning Scheme Zones - MFP 31/08/98

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 maybe at variance to Principles (a), (b), (c), (e), (f)

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

5. References

Brown A., Thomson-Dans C. and Marchant N.(1998). Western Australia's Threatened Flora, Department of Conservation and Land Management, Western Australia.

DEC (2009) Site Inspection Report for Clearing Permit Application CPS 3265/1, Lot 2 Haag Road, Yelverton. Site inspection undertaken 08/09/2009. Department of Environment and Conservation, Western Australia (TRIM Ref. DOC97852).

DEC (2009a) South West Regional Advice. Department of Environment and Conservation Trim Ref DOC98648

DEC (2009b) Flora Advice. Department of Environment and Conservation Trim Ref DOC98650

DEC (2009c) Principle Zoologist Advice. Department of Environment and Conservation Trim Ref DOC98655

Department of Agriculture and Food (2009) Advice. Commissioner of Soil and Land Conservation. DEC TRIM Ref: DOC99314.

Ekologica Pty Ltd Report on a flora and vegetation survey of Lot 2, Yelverton (2008) TRIM Ref: DOC93165

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.

IGNAM (Fire) Consulting Target Survey *Drakeae micrantha* ms Lot 2 Haag Road, Yelverton (2009) TRIM Ref: DOC111128

Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Keighery, B.J., Keighery G.J, Webb A., Longman V.M. and Griffin E.A. (2008) A Floristic Survey of the Whicher Scarp. Department of Environment and Conservation, Perth.

Mattiske, E.M. and Havel, J.J. (1998) Vegetation Complexes of the South-west Forest Region of Western Australia. Maps and report prepared as part of the Regional Forest Agreement, Western Australia for the Department of Conservation and Land Management and Environment Australia.

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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.

Shire of Busselton Submission (2009) TRIM Ref: DOC96641

Western Australian Herbarium (1998). FloraBase 1998 The Western Australian Flora. Department of Environment and Conservation. http://florabase.dec.wa.gov.au/ (Accessed 17/09/2009).

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)