GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS
Area Permit Number: 3341/1
File Number: DEC11533
Duration of Permit: From 19 December 2009 to 19 December 2011

PERMIT HOLDER
Filomena Ditri

LAND ON WHICH CLEARING IS TO BE DONE
Lot 9951 on Plan 203883
Lot 9952 on Plan 203883
Lot 9955 on Plan 203883
Lot 11140 on Plan 203883

AUTHORISED ACTIVITY
Clearing of up to 55 hectares of native vegetation within the area hatched yellow on attached Plan 3341/1.

CONDITIONS

1. Dieback and weed control

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

(a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
(b) shall 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.

2. Vegetation management

The Permit Holder shall not clear native vegetation within 30 metres of the *riparian vegetation* of any *watercourse* or *wetland* within and/or adjacent to the area cross-hatched yellow on Plan 3341/1.

Definitions

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

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

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;

riparian vegetation has the meaning given to it in Regulation 3 of the Environmental Protection (Clearing of Native Vegetation) Regulations 2004;

watercourse has the meaning given to it in section 3 of the *Rights in Water and Irrigation Act 1914*;

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*; and

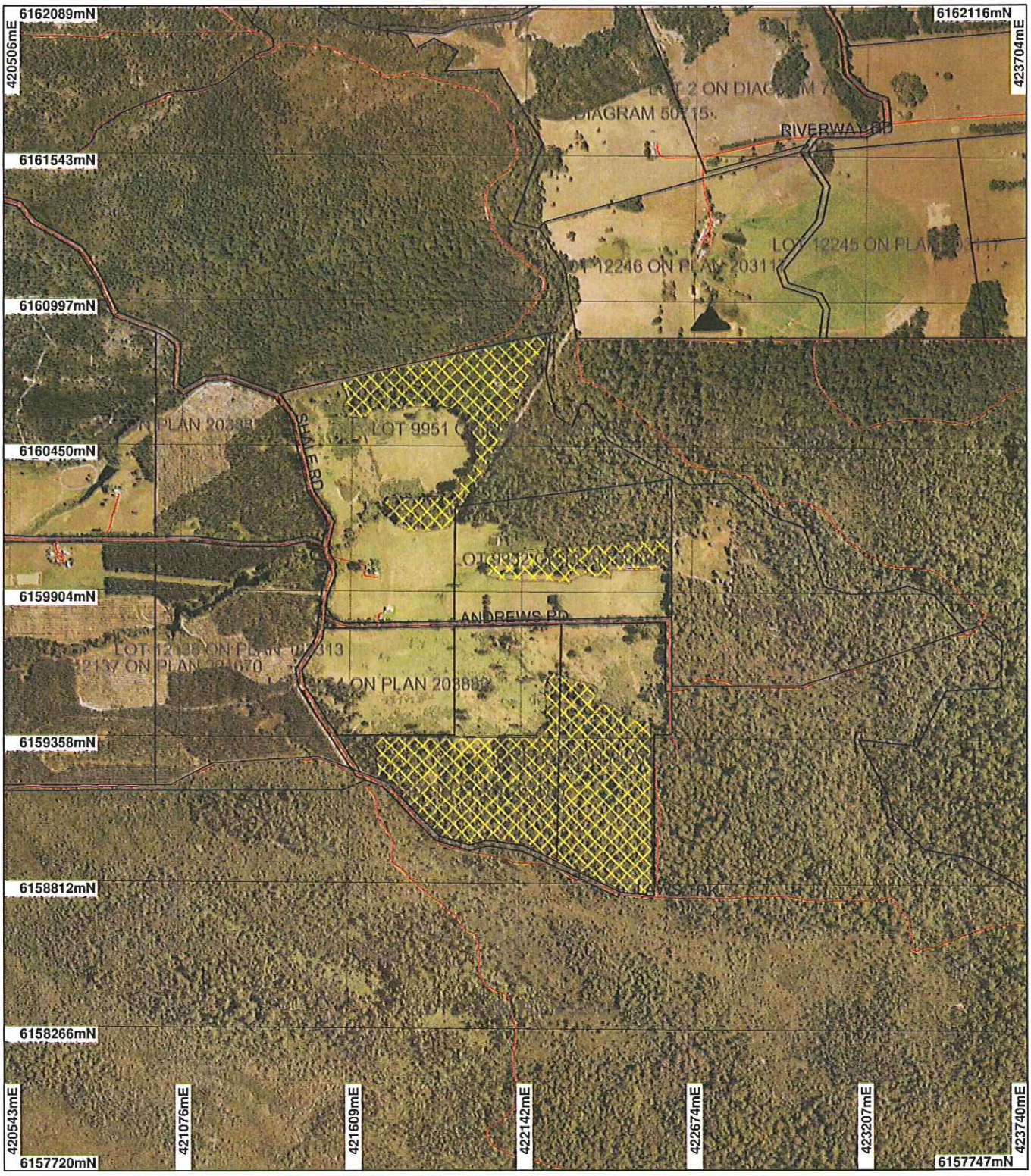
wetland/s means an area of seasonally, intermittently or permanently waterlogged or inundated land, whether natural or otherwise, and includes a lake, swamp, marsh, spring, dampland, tidal flat or estuary.

Keith Claymore
A/ ASSISTANT DIRECTOR
NATURE CONSERVATION DIVISION

Officer delegated under Section 20
of the Environmental Protection Act 1986

19 November 2009

Plan 3341/1



LEGEND

Clearing Instruments

- Areas Approved to Clear

Road Centrelines

- Cadastre

Cadastre for labelling

NorthCliffe 50cm Orthomosaic - Landgate 2004

N

0 ~500 m

Scale 1:19115
(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.

Keith Claymore Date 19/11/09

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 acknowleged by the agency acronym in the legend.

Department of Environment and Conservation

Our environment, our future

** Project Data is denoted by asterisk. 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.: 3341/1

Permit type: Area Permit

1.2. Proponent details

Proponent's name: Filomena Ditri

1.3. Property details

Property:
LOT 9951 ON PLAN 203883 (BOORARA BROOK 6262)
LOT 9951 ON PLAN 203883 (BOORARA BROOK 6262)
LOT 9952 ON PLAN 203883 (BOORARA BROOK 6262)
LOT 9952 ON PLAN 203883 (BOORARA BROOK 6262)
LOT 9955 ON PLAN 203883 (BOORARA BROOK 6262)
LOT 9955 ON PLAN 203883 (BOORARA BROOK 6262)
LOT 11140 ON PLAN 203883 (BOORARA BROOK 6262)
LOT 11140 ON PLAN 203883 (BOORARA BROOK 6262)

Local Government Area:

Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
		Mechanical Removal	Grazing & Pasture
55		Mechanical Removal	Grazing & Pasture

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
Vegetation Association 1144 Tall forest; karri & marri (Corymbia calophylla) Shepherd (1980) Mattiske (1998) - COLLIS 1 (COy1): Tall open forest to woodland of Eucalyptus marginata subsp. marginata - Corymbia calophylla (Marri) - Banksia grandis (Bull Banksia) - Allocasuarina fraseriana (Sheoak) on low hills and with Allocasuarina decussata (Karri Sheoak) on slopes in perhumid and humid zones. - GRANITE VALLEYS (Vh2): Tall open forest of Eucalyptus diversicolor (Karri) - Eucalyptus patens (Blackbutt) on slopes with Agonis flexuosa (Peppermint) - Allocasuarina decussata (Karri Sheoak) - Callistachys lanceolata (Wonnich) on valley floors in hyperhumid and perhumid zones.	The vegetation is considered to be in a very good (Keighery, 1994) condition and is described as being a closed forest dominated by Marri and Jarrah. The application to clear is for the purpose of grazing cattle. The application area is comprised of three separate sections, a northern, middle and southern section. The vegetation is considered to be in a very good (Keighery, 1994) condition and is described as being a closed forest dominated by Marri and Jarrah (DEC 2009a). The southern section of the application area is comprised of an even aged Karri stand (approximately 50 years old), with few mature trees.	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	The description and condition of the vegetation under application was determined via the use of aerial mapping systems and a DEC conducted site inspection (DEC, 2009).

- BROAD SWAMPS (S4): Low woodland of Eucalyptus marginata subsp. marginata (Jarrah) - Nuytsia floribunda (WA Christmas Tree) with some Melaleuca preissiana (Moonah) and closed heaths of Myrtaceae spp. on broad drainage lines in hyperhumid and perhumid zones. - COLLIS (COb): Tall open forest of Eucalyptus diversicolor (Karri) - Corymbia calophylla (Marri) on crests of hills arising above the southern coastal plain in the hyperhumid zone.	The northern section contains mature Marri and Jarrah trees (DEC, 2009a) and a middle storey comprised of Sheoak, Peppermint and Marri wattle with a ground cover of Pteridium esculentum and Macrozamia riedlei. There is some evidence of disturbance as a result of gazing activities and past logging operations, all forested areas of the applied area are not fenced and livestock have been able to graze for the past 30 years. Wildfires have been through the northern area, while the southern area has remained unburnt for more than 30 years (DEC, 2009a). The middle section of the application area contains a stand of paddock trees (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 application to clear is for the purpose of grazing cattle. The application area is comprised of three separate sections, a northern, middle and southern section. The vegetation is considered to be in a very good (Keighery, 1994) condition and is described as being a closed forest dominated by Marri and Jarrah (DEC 2009a). The southern section of the application area is comprised of an even aged Karri stand (approximately 50 years old), with few mature trees. The northern section contains mature Marri and Jarrah trees (DEC, 2009a) and a middle storey comprised of Sheoak, Peppermint and Marri wattle with a ground cover of Pteridium esculentum and Macrozamia riedlei. There is some evidence of disturbance as a result of gazing activities and past logging operations, all forested areas of the applied area are not fenced and livestock have been able to graze for the past 30 years. The proponent intends to increase the area of grazing. Wildfires have been through the northern area, while the southern area has remained unburnt for more than 30 years (DEC, 2009a). The middle section of the application area contains a stand of paddock trees (DEC, 2009a).

There are 20 known records of priority flora species within the local area (10km radius) and the priority 3 species Lomandra ordii was identified just east of the application area. This species is found along river banks (DEC, 2009c) and is also expected to be present in association with riparian zones in the northern section of the applied area (DEC, 2009a). There are three first order watercourses that dissect the application area. The applicant has advised that given the steep terrain associated with the watercourses, the area encompassing riparian vegetation is unsuitable for agriculture and would maintain a vegetated buffer to the Gardiner River (DEC TRIM Ref: DOC94222). The Warren Catchments Council has identified all areas of riparian vegetation need protection from further clearing (Warren Catchments Council 2007 - 2011).

Three Priority Ecological Communities (PECs) have been recorded within the local area (10km radius). The proposed clearing does not occur within the buffer protecting these PECs and no PECs or Threatened Ecological Communities (TECs) were observed during a site inspection (DEC, 2009a) though no surveys or analysis were undertaken.

The local area is well vegetated with approximately 70% of native vegetation remaining. The Beard and Mattiske vegetation types that are mapped as occurring within the application area are well represented, having remaining percentages of pre-European levels above the recommended 30% threshold required to maintain biodiversity (EPA, 2000).

Due to the presence of riparian vegetation that is suitable habitat for Lomandra ordii (DEC 2009c) and the large amount of priority listed flora within the local area, the proposed clearing may be at variance to this principle. A condition will be placed on the permit to ensure that no clearing is done within 30 metres of riparian vegetation associated with watercourses.

Methodology DEC (2009a)

DEC (2009c)
EPA (2000)
Keigery (1994)
Warren Catchment Council (2006)
GIS DataSets:
- CALM Managed Lands and Waters - CALM 01/06/05
- SAC Biodatasets - accessed 6 July 09
- Mattiske Vegetation (01/03/1998)
- 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 may be at variance to this Principle

The following fauna species have been recorded within the local area (10km radius) :
- Little Bittern (Ixobrychus minutus) P4
- Fibulacamptus bisetosus P2
- Calamoecia elongate P1
- Daphnia occidentalis P1
- Black-stripe Minnow (Galaxiella nigrostriata) P3
- Western Mud Minnow (Galaxiella munda) VU
- Pouched Lamprey (Geotria australis) P1
- Balston's Pygmy Perch (Nannatherina balstoni) VU

The freshwater invertebrates (Calamoecia elongate, Daphnia occidentalis & Fibulacamptus bisetosus) and the Pouched Lamprey, Balston's Pygmy Perch, Western Mud Minnow and the Black-stripe Minnow may be impacted by clearing related activities as the Gardner River (a third order watercourse) is located adjacent to the northern section of the application area. An increase in sediment concentration in this watercourse may adversely affect these species and have further negative implications downstream. There are also first order watercourses that dissect the application area. The applicant advised DEC staff that riparian vegetation along the Gardiner River will not be cleared, however, as identified by the Warren Catchment Council (2007 -2011) all areas of riparian will need protection from further clearing. Watercourse buffer conditions will be placed on the permit.

The local area (10km radius) is well vegetated with approximately 70% of native vegetation remaining. A large proportion of this is DEC managed lands and the clearing as proposed is not likely to impact on any vegetation linkages in the local area.

The southern section of the application area consists of mainly Karri regrowth that contain few hollows due to their young age. The middle section (~6ha) of the application area is mature Jarrah Forest. The northern section (~16ha) of the application is similar to the middle section consisting of Jarrah and Marri mature trees. However, the Marri and Jarrah in these areas do not appear to be old enough to provide nesting habitat for Black Cockatoos (DEC 2009g). The proximity of the conservation estate indicates that foraging and roosting habitat will not be limiting at a local scale (DEC 2009g).

Due to the potential impacts the clearing may have on nearby watercourses which may be habitat for the above mentioned conservation significant fauna, the proposal may be at variance to this principle. Buffer conditions to the watercourse will be placed on the permit.

Methodology

DEC (2009a)
DEC (2009g)
Warren Catchments Council (2006)
- CALM Managed Lands and Waters - CALM 01/06/05
- Mattiske Vegetation (01/03/1998)
- SAC Biodatasets - accessed 6 July 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

The vegetation is considered to be in a very good (Keighery, 1994) condition and is described as being a closed forest dominated by Marri and Jarrah (DEC 2009a). The southern section of the application area is comprised of an even aged Karri stand (approximately 50 years old), with few mature trees. The northern section contains mature Marri and Jarrah trees (DEC, 2009a). The middle storey is comprised of Sheoak, peppermint and Karri wattle with a ground cover of Pteridium esculentum and Macrozamia riedlei. There is some evidence of disturbance as a result of gazing activities and past logging operations, all forested areas of the applied area are not fenced and livestock have grazed for the past 30 years. Wildfires have been through the northern area,

while the southern area has remained unburnt for more than 30 years (DEC, 2009a). The middle section of the application area contains a stand of paddock trees (DEC, 2009a).

The local area (10km radius) is well vegetated with approximately 70% of native vegetation remaining. The Beard and Mattiske vegetation types that are to be cleared are well represented, having remaining percentages of pre-European levels above the recommended 30% threshold required to maintain biodiversity (EPA, 2000).

The following Rare flora species were recorded within a 10km radius of the application area:
- Kennedia glabrata x 6
- Meziella trifida x 7
- Reedia spathacea x 4
- Rhacocarpus rehmannianus subsp. Webbianus x 4

Upon inspection by a DEC flora officer during a DEC conducted site inspection, none of the above mentioned flora species were identified as occurring within the application area (DEC, 2009a), and given the high percentage of vegetation surrounding the application area in conservation reserves, the vegetation under application is unlikely to be significant habitat for rare flora.

Methodology
DEC (2009a)
DEC (2009d)
EPA (2000)
Keighery (1994)
GIS DataSets:
- Mattiske Vegetation (01/03/1998)
- Pre European Vegetation - DA 01/01
- SAC Biodatasets - accessed 6 July 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

No Threatened Ecological Communities (TECs) are known to occur within a 10km radius of the application area. During a DEC conducted site inspection, no evidence was observed that would suggest TECs could occur within the applied area. It was noted that due to the vegetation structure, TECs are unlikely to be found within the application area (DEC, 2009a).

Methodology
DEC (2009a)
GIS DataSets:
- SAC Biodatasets - accessed 6 July 09
- Mattiske Vegetation (01/03/1998)
- 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 is not at variance to this Principle

The Beard vegetation association 1144 that is mapped as occurring within the application area has approximately 82.15% (being 131 169 hectares) of its pre-clearing extent remaining within the Warren bioregion. Approximately 41.90% of this occurs within conservation estate (Shepherd et al. 2007). The four Mattiske vegetation types mapped as occurring within the applied area are well represented, the lowest having 63.91% of pre-European levels of native vegetation remaining (Mattiske, 1998). Additionally, the local area (10km radius) is well vegetated with approximately 70% of native vegetation remaining.

See the table below as a summary of the above information.

The proposed clearing is not at variance to this principle.

	Pre-European (ha)	Current extent (ha)	Remaining (%)	% In reserves DEC Managed Land
IBRA Bioregions*				
Warren^	835,925	675,836	80.85	N/A
Shire*				
Manjimup	697,359	595,561	85.40	N/A
Mattiske Vegetation Complex**				
Coy1	22,833	19,460	85.23	N/A

Vh2	9,968	8,780	88.09	N/A
S4	1,568	1,002	63.91	N/A
Cob	21,839	19,611	89.80	N/A
Beard Vegetation Association with Bioregion*				
1144	159,668	131,169	82.15	41.90

* (Shepherd et al. 2007)
** (Mattiske Consulting 1998)

Methodology Mattiske (1998)
Shepherd et al. (2007)
GIS DataSets:
- 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 Biodatasets - accessed 6 July 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 at variance to this Principle

The Gardner River is adjacent to the northern section of the application area. The applicant advised DEC staff that riparian vegetation along the Gardner River (a third order watercourse) will not be cleared and a large buffer along the river front would be maintained (DEC TRIM Ref: DOC94222). There are also three first order watercourses that dissect the application area. The Warren Catchment Council has identified that all riparian areas need protection from further clearing (Warren Catchments Council 2006) and protection for riparian zones would need to be considered (DEC, 2009a).

As the vegetation under application consists of riparian vegetation (DEC, 2009a) the proposed clearing is considered to be at variance to this principle. The applicant has advised that given the steep terrain around the watercourses, it is an unsuitable area for agriculture. However, a watercourse buffer condition will be placed on the permit to ensure clearing of riparian vegetation is avoided.

Methodology DEC (2009a)
GIS DataSets:
- CALM Managed Lands and Waters - CALM 01/06/05
- Clearing Regulations, Environmentally Sensitive Areas 30 May 2005
- Hydrography linear - DOW 13/7/06
- Hydrography linear (hierarchy) - 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 may be at variance to this Principle

The application area is mapped as having the soil type Tc7 (knolls and hillocks). The chief soils of the knolls and hillocks are hard, and sandy, acidic yellow mottled soils with some red earths, all frequently containing ironstone gravels. Associated are leached sands of the swampy plains that vary in size from narrow drainage-ways to plains on which only a few hillocks occur (Northcote et al. 1960 -1968).

During a DEC conducted site inspection no evidence was observed to suggest that the area is subject to inundation or salinity (DEC, 2009a). Due to the presence of gravel in the soil the risk of waterlogging is considered to be low. The application area is situated at a relatively low elevation (ranging from 30-85 metres) in the landscape and a large amount of vegetation remains in the local area (10km radius), reducing the risk of wind erosion.

The steep sandy sides of the northern watercourse may lead to erosion (DEC 2009f), however, buffers to riparian vegetation will be required as a condition of the permit.

The proposed clearing may cause appreciable land degradation.

Methodology DEC (2009a)
DEC (2009f)
Northcote et al. (1960 -1968)
GIS DataSets:
- 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
- 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

The application area is within close proximity to a number of conservation areas. The South Coast National Park (Register of National Estate) lies adjacent to the southern section, Boorara Gardner National Park is located adjacent to the north and east of the applied area and the D'Entrecasteaux National Park borders the southern sections eastern and southern boundaries.

The local area (10km radius) is well vegetated, with approximately 70% of native vegetation remaining. A large proportion of this is DEC managed lands. Clearing and clearing related activities may increase the risk of weeds and dieback being introduced into the nearby conservation areas. The applicant advised that the property of which the application is apart is not within a dieback disease risk area (DEC TRIM Ref: DOC94222). However, dieback can be spread through the movement of vehicles from dieback areas to areas free from dieback and precautions should be taken to ensure the spread does not occur.

The proposed clearing may be at variance to this principle. Weed and dieback conditions have been placed on the permit.

Methodology

GIS DataSets:
- CALM Managed Lands and Waters - CALM 01/06/05
- Northcliffe 1.4m Orthomosaic - 9/10/07

(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 may be at variance to this Principle

The Gardner River is approximately 50m from the northern sections eastern boundary. The applicant advised DEC staff that riparian vegetation along the Gardner River (a third order watercourse) will not be cleared. There are also three first order watercourses that dissect the application area. The Warren Catchment Council has identified all areas of riparian vegetation need protection from further clearing (Warren Catchments Council 2007 - 2011) and protection for riparian zones would need to be considered (DEC, 2009a).

Riparian vegetation plays a vital role in ensuring the integrity of water quality by acting as a filter, helping protect waters from pathogens, turbidity, nutrient runoff and waterborne spread of weeds (DEC, 2005).

Groundwater salinity is between 500-1000mg/L. Although the local area (10km radius) is well vegetated, with approximately 70% of native vegetation remaining, the continued clearing of native vegetation will lead to an incremental increase in groundwater salinity levels.

The proposed clearing may be at variance to this principle. Vegetation management conditions have been placed on the permit to ensure a buffer of vegetation is maintained to all riparian vegetation and watercourses.

Methodology

DEC (2009)
DEC (2005)
Warren Catchments Council (2006)
GIS DataSets:
- 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

Due to the sloping topography of the application area and given that the local area is well vegetated (approximately 70% remaining), flooding is unlikely to result due to the proposed clearing.

Methodology

GIS DataSets:
- 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 Shire submitted a response to a direct interest letter and is not opposed to the proposed clearing (Trim Ref: DOC102065).

The Warren Catchment Council has identified all areas of riparian vegetation need protection from further clearing within the Warren subregion (Warren Catchments Council 2007 - 2011).

Methodology

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 Principle (f), may be at variance to Principle (a), (b), (h) and (i) and not or not likely to be at variance to the remaining clearing Principles.

5. References

DEC (2005) Water Quality Protection Note: Vegetation buffers to sensitive water resources, WQ6, Department of Environment and Conservation, June 2005

DEC (2009a) Site Inspection Report for Clearing Permit Application CPS 3158/1, Lots 9951, 9952, 9953, 9954, 9955 and 11140 on Plan 203883, Boorara Brook . Site inspection undertaken 22/10/2009. Department of Environment and Conservation, Western Australia (TRIM Ref. DOC90281).

DEC (2009b) Advice, Nature Protection Branch. Department of Environment and Conservation, Western Australia (TRIM Ref. DOC90476).

DEC (2009c) florabase accessed via http://florabase.calm.wa.gov.au/browse/profile/1237 on 6/07/09

DEC (2009d) Flora Advice. Department of Environment and Conservation, Western Australia (TRIM Ref. DOC105214).

DEC (2009e) Fauna Advice. Department of Environment and Conservation, Western Australia (TRIM Ref. DOC94811).

DEC (2009f) Additional regional advice. Department of Environment and Conservation, Western Australia (TRIM Ref. DOC10679).

DEC (2009g) Additional Principal Zoologist advice. Department of Environment and Conservation, Western Australia (TRIM Ref. DOC106872).

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.

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.

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. (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.

Warren Catchments Council (2006) (Southern Forest Landcare) Strategy for Natural Resource Management in the Warren Subregion 2007 - 2011

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

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)