GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose permit number:	CPS 3197/1
Permit holder:	South West Irrigation Management Cooperative trading as Harvey Water
Duration of permit:	20 September 2009 – 20 September 2014

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 installing an irrigation water supply pipeline.

2. **Land on which clearing is to be done**
   State Forest 14 (Dwellingup State Forest)
   Lot 15 on Plan 54980
   Lot 1139 on Plan 103994

3. **Area of Clearing**
   The permit holder must not clear more than 3.4 hectares of native vegetation within the area shaded yellow on attached Plan 3197/1.

4. **Type of clearing authorised**
   Any clearing authorised under this Permit must be completed by 20 September 2011, being 2 years from the date from which this Permit becomes valid.

5. **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.

6. **Type of clearing authorised**
   This Permit authorises the Permit Holder to clear native vegetation for activities to the extent that the Permit Holder has the power to clear native vegetation for those activities under the *Water Agencies Act 1984* or any other written law.

7. **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

8. 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.

9. 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.

10. Retain vegetative material and topsoil, 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) Within six months of the area no longer being required for installing an irrigation water supply pipeline, the Permit Holder must *revegetate* and *rehabilitate* the area shaded yellow on attached Plan 3197/1 by:
   (i) laying the vegetative material and topsoil retained under condition 10(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.

(c) Within twenty-four months of undertaking *revegetation* and *rehabilitation* in accordance with condition 10(b) 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 10(c)(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 10(b)(ii) and (iii) of this Permit.

PART III - RECORD KEEPING AND REPORTING

11. 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 10 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*.

12. 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 11 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 20 June 2014, the Permit Holder must provide to the CEO a written report of records required under condition 11 of this Permit where these records have not already been provided under condition 12(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;

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;

local provenance means native vegetation seeds and propagating material from natural sources within 10-40 kilometres of the area cleared;

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

regenerate/ed/ion means *revegetation* that can be established from in situ seed banks contained either within the topsoil or seed-bearing *mulch*;

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;

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

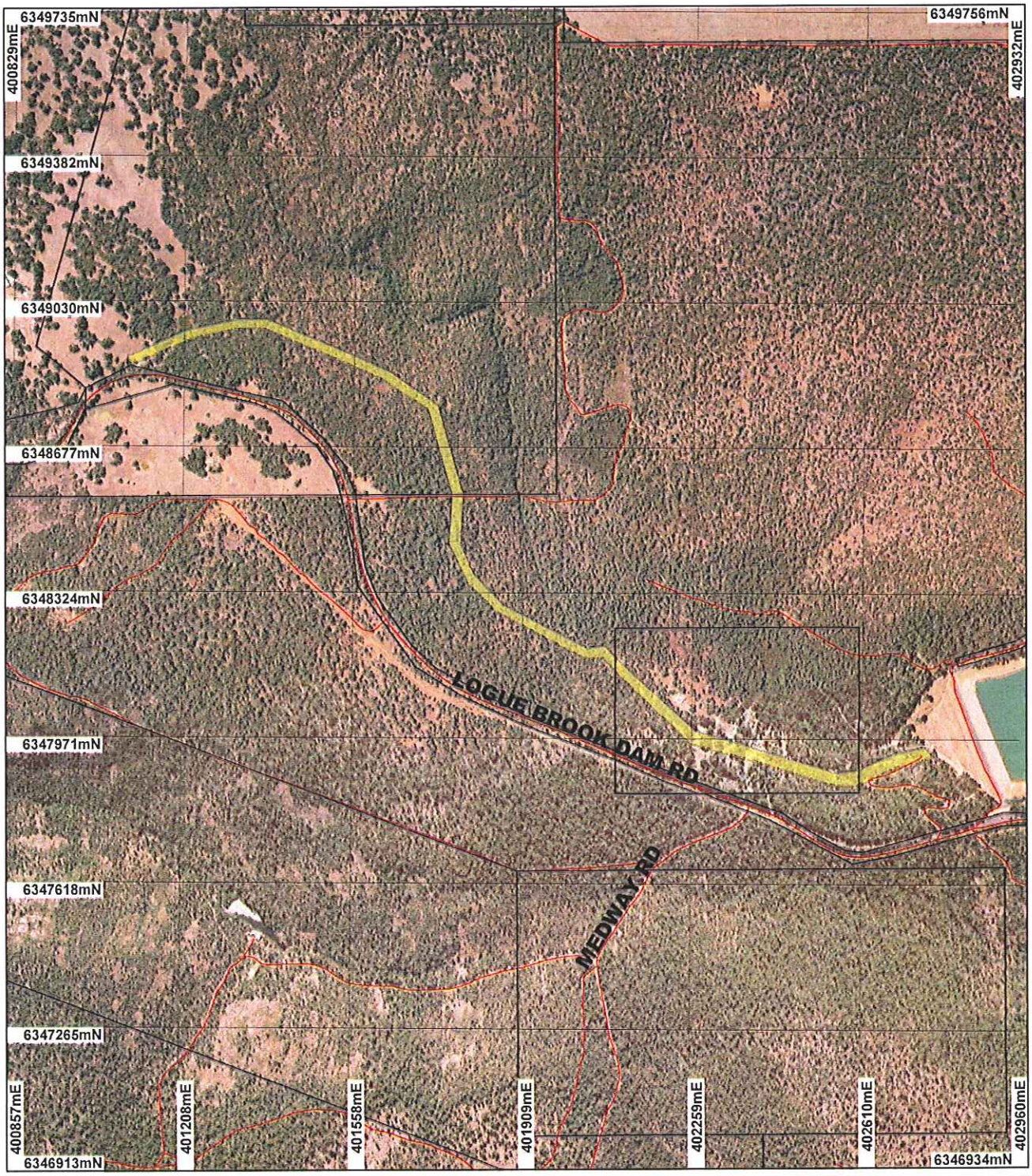
weed/s means a species listed in Appendix 3 of the "Environmental Weed Strategy" published by the Department of Conservation and Land Management (1999), and plants declared under section 37 of the *Agriculture and Related Resources Protection Act 1976*.

Keith Claymore
A/ ASSISTANT DIRECTOR
NATURE CONSERVATION DIVISION

Officer delegated under Section 20
of the Environmental Protection Act 1986

20 August 2009

Plan 3197/1



LEGEND

Clearing Instruments
- Areas Approved to Clear
- Road Centrelines
- Cadastre

Pinjarra 50cm Orthomosaic - Landgate 2006

N

0 ~375 m

Scale 1:13000
(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.

Date 20/8/09

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.: 3197/1

Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **South West Irrigation Management Cooperative t/a**

1.3. Property details

Property: STATE FOREST 14
LOT 15 ON PLAN 54980
LOT 1139 ON PLAN 103994

Local Government Area: Shire Of Harvey

Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
3.4		Mechanical Removal	Water/gas pipeline installation

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 types: 3: Medium forest; jarrah-marri; 4: Medium woodland; marri and wandoo; and 968 - Medium woodland; jarrah, marri and wandoo (SAC Bio Datasets 27/07/2009; Shepherd, 2007) Heddle Vegetation Complexes: Darling Scarp Complex: Vegetation ranges from low open woodland to lichens according to depth of soils. Woodland components chiefly E. wandoo with E. laeliae in the north, E. haematoxylon in the south, and E. calophylla throughout the region. Helena Complex In Medium To High\Rainfall: No description available. Yarragil Complex (Minimum Development Swamps) In Medium To High Rainfall: No description available. (Heddle et al, 1980) Mattiske Vegetation Complexes: Darling Scarp (DS) Mosaic of open forest of Eucalyptus marginata subsp. marginata-Corymbia calophylla, with some admixtures with Eucalyptus laeliae in the north (subhumid zone), with occasional Eucalyptus marginata subsp. elegantella (mainly in subhumid zone) and Corymbia haematoxylon in the south (humid zone). Helena 1 (He1) Mosaic of open forest of Corymbia calophylla-Eucalyptus patens-Eucalyptus marginata subsp. marginata with some Eucalyptus rudis on the deeper soils ranging to closed heath and lithic complex on shallow soils associated with granite on steep slopes of valleys in humid and subhumid zones.	The area under application (3.4 ha) is located within State Forest 14, Lot 1139 and Lot 15. The proposed clearing is for the installation of an irrigation water supply pipeline. The area under application have been described into two vegetation habitat types: - jarrah-marri forest; - marri woodland; The area under application is in good to excellent condition with a majority having an intact structure with minimal disturbance.	Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery 1994)	The condition of the native vegetation under application was sourced from the consultant's report (GHD, 2009) and the site inspection conducted on the 30 July 2009 (DEC, 2009).

Murray 1 (My1)

Open forest of Eucalyptus marginata subsp. marginata-Corymbia calophylla-Eucalyptus patens on valley slopes to woodland of fs24 Eucalyptus rudis-Melaleuca rhaphiophylla on the valley floors in humid and subhumid zones.

(Mattiske and Havel, 1998)

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 vegetation under application has been identified as two main habitat types: jarrah-marri forest and marri woodland (GHD, 2009). The vegetation under application is predominantly in excellent (Keighery, 1994) condition with an intact structure and minimal disturbance (DEC, 2009). This vegetation may provide habitat for ground dwelling fauna such as Quenda and Chuditch, and foraging habitat for Forest Red-tailed Black-Cockatoo.

A flora survey (GHD, 2009) of the project area did not identify any rare or priority flora. Further, a site visit (DEC, 2009) confirmed that there are no rare or priority flora located within the area under application.

Given the vegetation under application may provide suitable habitat for fauna and comprises some structurally intact vegetation; the area under application may comprise a high level of biological diversity.

To mitigate any impacts from the proposed clearing a weed control and dieback condition will be imposed on this permit.

Methodology

References:
- DEC (2009)
- GHD (2009)

GIS Database:
- SAC Bio Datasets 24/07/2009

(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

Eight fauna species of conservation significance are known to occur in the local area (10km radius) including, Quenda (Isoodon obesulus fusciventer) and Forest Red-tailed Black Cockatoo (Calyptorhynchus banksii naso). The closest record is the Western Spiny-tailed Skink (Egernia stokesii badia) located ~4.6 km north-east of the area under application.

The Black-Cockatoo is known to feed on a large variety of plants including Proteaceous species (e.g. hakea, dryandra and grevillea), marri nuts (Corymbia calophylla), jarrah (Eucalyptus marginata), tuart (Eucalyptus gomphocephala), Casuarina spp and a range of introduced species, (Shah, 2006). This species is listed as a Schedule 1 species under the Wildlife Conservation (Specially Protected Fauna) Notice 2008.

The vegetation under application has been identified as two main habitat types: jarrah-marri forest and marri woodland (GHD, 2009). The majority of vegetation is in excellent (Keighery, 1994) condition with a structurally intact vegetation and minimal disturbance (DEC, 2009). Suitable habitat of structurally intact vegetation with a dense understorey was observed for ground dwelling fauna such as the Chuditch and Quenda (DEC, 2009).

Opportunistic surveys undertaken in the project area, which includes the area under application observed such fauna species as Forest Red-tailed Black Cockatoo, Western Grey Kangaroo and Red-capped parrot (GHD, 2009). The cumulative impacts from the reduction of Black-Cockatoo foraging habitat on the Swan Coastal Plain has resulted in vegetation that provides a food source for Black-Cockatoos being considered as significant habitat (DEC, 2009a). The continual net loss of critical habitat will result in additional pressure on the current population of Black-Cockatoos (DEC, 2009a).

Even though the area under application is long and linear (~2.0km long and ~20m wide), the native vegetation is in predominantly in excellent condition with Eucalyptus marginata and Corymbia calophylla, which may provide foraging habitat for the Black Cockatoo, and may comprise suitable habitat for a range of native fauna; it is considered that the vegetation under application may comprise significant habitat for fauna indigenous to Western Australia.

Methodology

References:
- DEC (2009)
- DEC (2009a)

- Shah (2006)
GIS Database:
- SAC Bio Datasets 24/07/2009

(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 following four rare flora species are known to occur within the local area (10km radius):
- Drakaea elastica;
- Tetraria australiensis
- Synaphea stenoloba; and
- Drakaea micrantha

The closest record is Drakaea elastica located ~5.6km north-west of the area under application.

A flora survey (GHD, 2009) of the project area did not identify and rare flora. Further, a site visit (DEC, 2009) confirmed that there is no rare flora located within the area under application. Therefore, it is considered that the area under application is not likely to be at variance to this Principle.

Methodology

References:
- DEC (2009)
- GHD (2009)

GIS Database:
- SAC Bio Datasets 24/07/2009

(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 four recorded Threatened Ecological Communities (TEC) known to occur in the local area (10km radius), being:
- Eucalyptus calophylla - E. marginata on heavy soils (Floristic Community Type, FCT 3b),
- Eucalyptus calophylla - Xanthorrhoea preissii woodlands and shrublands (FCT 3c)
- Dense shrublands on claypans (FCT 9), and
- Eastern Banksia attenuata and/or E. marginata woodlands (FCT 20b).

The vegetation under application has been identified as two main habitat types: jarrah-marri forest and marri woodland (GHD, 2009); which are not representative of the four TECs outlined above. Therefore, it is considered that the vegetation under application is not likely to comprise a TEC.

Methodology

Reference:
- GHD (2009)

GIS Databases:
- SAC Bio Datasets 24/07/2009

(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

The vegetation within the area under application is identified as a component of Beard vegetation types 3, 4 and 968, of which there is 69.3%, 24.2% and 51.3% of Pre-European extent remaining within the Jarrah Forest Bioregion respectively (Shepherd, 2007); and Mattiske Darling Scarp Complex, Helena 1 Complex and Murray 1 Complex, of which there is 43.3%, 80.4% and 85.3% of Pre-European extent remaining respectively (Mattiske and Havel, 1998).

The Environmental Protection Authority (EPA) supports a 30% threshold level 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 vegetation types under application, except for Beard type 4 (24.2%), retain more than this 30% threshold level.

Given the extent of vegetation remaining in the Shire (53.9%), the current representation levels of the Mattiske complexes and Beard types and the extensive remnants within the local area (~59% vegetation remaining), it is not considered likely that the vegetation under application is located in an area that has been extensively cleared.

	Pre-European (ha)	Current extent (ha)	Remaining (%)	In secure tenure (%)
IBRA Bioregions*				
Jarrah Forest^	4,506,655	2,440,940	54.1	

Shire of Harvey*	171,210	92,376	53.9	
Local area (10km radius)	31,400	~18,500	~59	
Beard vegetation types*				
3 (within JF Bioregion)	2,390,590	1,657,274	69.3	79.5
4 (within JF Bioregion)	1,022,712	247,941	24.2	25.7
968 (within JF Bioregion)	140,823	72,373	51.3	48.8
Mattiske vegetation complexes**				
Darling Scarp Complex	291,043	126,045	43.3	N/A
Helena 1 Complex	158,422	127,424	80.4	N/A
Murray 1 Complex	686,104	585,544	85.3	N/A

* (Shepherd, 2007)
** (Mattiske and Havel, 1998)
^ Area within Intensive Land Use Zone

Methodology

References:
- EPA (2000)
- Heddle et al (1980)
- Mattiske and Havel (1998)
- Shepherd (2007)

GIS Databases:
- Interim Biogeographic Regionalisation of Australia
- SAC Bio Datasets 27/07/2009

(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 is a minor river (namely Logue Brook) that runs from east to west, located approximately 30m north (at the closest point) of area under application and a significant stream (namely Clarke Brook) that runs from east to west, located approximately 360m south (at the closest point) of area under application.

A site inspection (DEC, 2009) of the area under application identified vegetation that was representative of upland vegetation.

Given the distance to the nearest watercourses and the upland vegetation present, the clearing as proposed is not likely to be at variance to this Principle.

Methodology

Reference:
- DEC (2009)

GIS Databases:
- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain
- Hydrography, linear (hierarchy)
- Rivers

(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

Comments

Proposal is at variance to this Principle

The landscape of the area under application and surrounds can be described as rounded hills of the Darling scarp with gneissic rock outcrops; slopes are moderate to very steep (Northcote et al, 1960-68). The chief soils seem to be hard acidic red soils, and also neutral, yellow and yellow mottled soils with some soils containing ironstone gravel (Northcote et al, 1960-68).

The identified soils are considered to be at risk of water erosion. The long and linear area under application (~2.0km long and ~20m wide) is proposed along the contours with the slope being, at some sections, a gradient of ~33%, steep to very steep (Wells, 1988). The clearing as proposed may increase surface water runoff causing sheet or rill erosion.

Given the steep slopes and the erodibility of the soils, it is considered that the proposed clearing is highly likely to cause appreciable land degradation in the form of water erosion. Therefore, it is considered that the clearing as proposed is at variance to this Principle.

To mitigate any impacts from the proposed clearing a revegetation condition will be imposed on this permit.

Methodology References:
- Northcote et al (1960-68)
- Wells (1988)

GIS Databases:
- Soils, Statewide
- Topographic Contours, Statewide

(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.

Comments **Proposal is at variance to this Principle**

The area under application (3.4 ha) is located within State Forest 14 (Dwellingup Sate Forest). The proposed clearing is likely to impact on the environmental values of this conservation area through direct disturbance of vegetation within the State Forest and the spread or introduction of weed species or dieback by machinery. The consequences associated with the spread of such exotic species into areas reserved for conservation, include the significant degradation of the reserve and the potential local extinction of species.

Given the area under application is located within a conservation area, which will directly impact the area through the disturbance of native vegetation and the spread of weeds and dieback it is considered the proposal at variance to this Principle.

To mitigate any impacts from the proposed clearing weed control and dieback, and revegetation conditions will be imposed on this permit.

Methodology GIS database:
- DEC Managed Lands and Waters

(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 area under application is not located in a Public Drinking Water Source Area and there is a low salinity risk.

There is a minor river (namely Logue Brook) that runs from east to west, located approximately 30m north (at the closest point) of area under application and a significant stream (namely Clarke Brook) that runs from east to west, located approximately 360m south (at the closest point) of area under application.

The identified soils are considered to be at risk of water erosion. The long and linear area under application (~2.0km long and ~20m wide) is proposed along the contours with the slope being steep to very steep (Wells, 1988) at some sections.

Given the steep slopes and the erodibility of the soils, it is considered that the proposed clearing may increase surface water runoff and result in sedimentation within Logue Brook. Therefore, it is considered that the proposed clearing may be at variance to this Principle.

Methodology References:
- Northcote et al (1960-68)
- Wells (1988)

GIS Databases:
- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain
- Hydrography, linear (hierarchy)
- Public Drinking Water Source Areas (PDWSAs)
- Rivers
- Salinity Risk LM 25m - DOLA 00
- Soils, Statewide

(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 long and linear area under application (~2.0km long and ~20m wide) is proposed along the contours with the slope being steep to very steep (Wells, 1988) at some sections.

The steep slopes may increase surface water run off; however, surface water will drain into Logue Brook; therefore, it is not considered that the proposed clearing is likely to cause or increase flooding.

Methodology Reference:
- Wells (1988)

GIS Database:
- Hydrography, linear (hierarchy)

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

Comments

Applications for planning consent from the Shire of Harvey and the Western Australian Planning Commission have been submitted (Harvey Water, 2009).

A bed and banks permit is required for the crossing of Clarks Brook; an application has been submitted to the Department of Water (Harvey Water, 2009).

The area under application is located within the RIWI Irrigation District of Harvey District.

There is no other RIWI Act Licence, Works Approval or EP Act Licence that affects the area under application.

Harvey Water has authority under the Water Agencies (Powers) Act 1984 to access land [Part VI] and to undertake the work [Part VIII].

State Forest 14, Lot 15 and Lot 1139 are zoned general farming and forestry under the local Town Planning Scheme.

Methodology

Reference:
- Harvey Water (2009)

GIS databases:
- Cadastre
- RIWI Act, Irrigation Districts
-Town Planning Scheme Zones

4. Assessor's comments

Comment

The assessable criteria have been addressed and the clearing as proposed is at variance to Principles (g) and (h); and may be at variance to Principles (a), (b) and (i).

5. References

Wells, M. (1988) A Method of Assessing Water Erosion Risk in Land Capability Studies - Swan Coastal Plain & Darling Range. Resource Management Technical Report No. 73. Department of Agriculture, Western Australia. ISSN 0729 - 3135.

DEC (2009) Site Inspection Report for Clearing Permit Application CPS 3197/1, Lot 15, Lot 1139 and State Forest 14, Shire of Harvey. Site inspection undertaken 30/07/2009. Department of Environment and Conservation, Western Australia. TRIM Ref DOC94019

DEC (2009a) Fauna advice for CPS 3074/1; Species and Communities Branch, Department of Environment and Conservation. TRIM Ref DOC92367

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.

GHD (2009) Harvey Water - Report for Logue Brook Pipeline, Environmental Impact Assessment, GHD. TRIM Ref DOC89754

Harvey Water (2009) Management Plan - Environment for Logue Brook Pipe Project (Email). TRIM Ref DOC92583

Heddle, E. M., Loneragan, O. W., and Havel, J. J. (1980) Vegetation Complexes of the Darling System, Western Australia. In Department of Conservation and Environment, Atlas of Natural Resources, Darling System, Western Australia.

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

Mattiske, 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.

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)